UNIDIR

METHODOLOGY REPORT

International Security in 2045

The Methodology Behind the Future Scenarios

SARAH GRAND-CLÉMENT

Acknowledgments

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About UNIDIR

The United Nations Institute for Disarmament Research (UNIDIR) is a voluntarily funded, autonomous institute within the United Nations. One of the few policy institutes worldwide focusing on disarmament, UNIDIR generates knowledge and promotes dialogue and action on disarmament and security. Based in Geneva, UNIDIR assists the international community to develop the practical, innovative ideas needed to find solutions to critical security problems.

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Furthermore, the scenarios presented in this report display hypothetical futures. These are not aiming to predict the future and should be seen a discussion tools only. These scenarios also do not necessarily reflect the views or opinions of the United Nations, UNIDIR, its staff members or sponsors.

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1. Introduction

1.1 Purpose and Scope of the Report

To provide a more future-focused approach to international security that also corresponds to the goals of *Our Common Agenda* and can help support the upcoming Summit of the Future,[1] the United Nations Institute for Disarmament Research (UNIDIR) undertook a project to explore **potential future challenges, focusing on threats to international security linked to arms control and disarmament, with a view to identifying options for actions available today to mitigate the identified challenges**.

This project aligns with *A New Agenda for Peace*, one of the policy briefs produced by the United Nations Secretary-General in the lead up to the Summit of the Future. Specifically, *A New Agenda for Peace* mentions that, to achieve lasting peace and prosperity, "we must adapt to the geopolitical realities of today and the threats of tomorrow".[2] This aligns with the project goals to explore what some of these future threats might be and explore what could be done to avoid the least desirable futures.

Specifically, the project sought to:

- develop plausible future scenarios depicting the state of the world in 2045—the United Nations' 100th anniversary;
- understand what these different future scenarios entail for international security and the United Nations, with a specific focus on global challenges and threats to peace and security that pertain to arms control and disarmament;[3] and
- identify pathways for action to help address threats to peace and security relating to arms control and disarmament within the context of the United Nations, to serve as initial points of reflection and discussion starters to improve or address the threats identified.

The results from this research are presented in a separate, substantive report, containing an analysis of expert inputs regarding the hypothetical future scenarios.[4] The purpose of this paper is to complement and expand upon the methodology overview provided in

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[1] One of the calls by the United Nations Secretary-General in *Our Common Agenda* was for a Summit of the Future, to "forge a new global consensus on what our future should look like, and what we can do today to secure it" (United Nations, "Our Common Agenda", 5). The Summit of the Future is planned for 2024 based on General Assembly resolution A/RES/76/307.

[2] United Nations, "A New Agenda for Peace", 11.

[3] While the terms 'arms control' and 'disarmament' can tend to be used interchangeably, they do refer to different outcomes. Disarmament involves removing access and use of weapons, while arms control is about ensuring weapons access, management, and use is for legitimate use and users and not in excessive amounts. Additionally, the use of the term 'disarmament machinery' in this report and beyond refers to both disarmament and arms control and relates to all weapon types—conventional, mass destruction, and new technology.

[4] See Grand-Clément, Sarah. 2024. "International Security in 2045: Exploring futures for peace, security and disarmament". UNIDIR: Geneva.

the substantive report. Specifically, this paper provides an overview of the steps and elements which contributed to create the scenarios used in discussions informing the substantive report. This paper also contains the full narrative of the future scenarios themselves. Figure 1 provides a visual overview of the methodology. This paper provides the specifics regarding step 1—the development of the future scenarios.

Figure 1. Methodological Report Focus

This report has two aims. The first is to encourage transparency with regard to how these scenarios emerged. The second is to make available all the material created during the scenario creation process, so that other entities can make use of this material or build upon it. As the creation of scenarios can be long and resource intensive, this paper aims to make this type of futures methodology more accessible to a wider range of interested stakeholders. Furthermore, the use of the same baseline material but involving different experts would likely yield different scenarios for exploration and discussion and enable a richer discussion on different facets that the future may hold. It should however be noted that this report presents one specific methodology used to create the future scenarios and applied to the International Security in 2045 project; other approaches to creating future scenarios exist and could also be undertaken to explore the same issue.

This report is aimed at members from the research and policymaking communities, as well as staff of the United Nations, government representatives, and other interested stakeholders who want to understand and further explore the use of future scenarios as a way to explore policy options and increase preparedness—and resilience—for the future.

1.2 Report Structure

In addition to this introductory chapter, the report is comprised of three chapters. **Chapter 2** provides an in-depth explanation of the various steps involved in the scenario creation process, including methodological decisions by the project team. **Chapter 3** provides an overview of the five scenarios emerging from the scenario creation process. **Chapter 4** provides some concluding reflections on the methodology and the project team's experiences.

2. Scenario Creation Process

This section presents a step-by-step explanation regarding the six main steps of the scenario creation process followed by the project team, while also providing the material used during the process. An overview of these six steps is provided in Figure 2. The creation of the scenarios was facilitated by software to perform the various calculations involved throughout the process.[5]

Figure 2. Overview of the Scenario Creation Process

STEP 1	Creation of an expert group
STEP 2	Identification of a long list of factors
STEP 3	Assessment of which factors to shortlist
STEP 4	Creation of projections for each shortlisted factor
STEP 5	Assessment of the consistency between projections
STEP 6	Formation of the raw scenarios (scenario clusters)

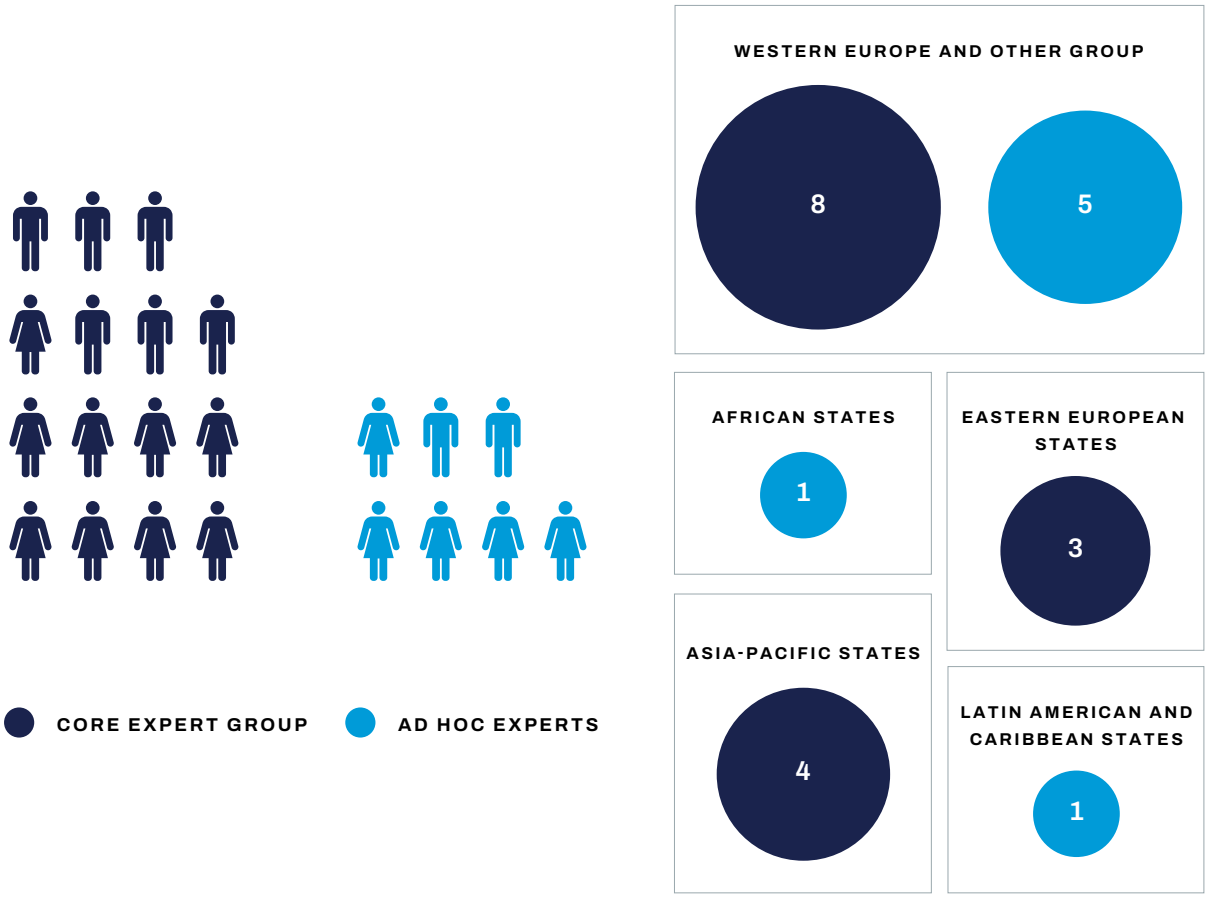
2.1 Expert Group

The first step was the creation of an expert group, which was involved throughout steps 2 through 5 of the scenario creation process. This expert group not only comprised experts in disarmament and international security, but sought expertise in other areas, as a way to reflect the cross-cutting nature of security, and to include external perspectives on how the world may evolve by 2045. Additionally, as the creation of scenarios is a very exchange- and discussion-driven process, heterogeneous views and different areas of expertise enrich the scenario creation process. Thus, the expert group also brought together specific regional expertise, as well as expertise in healthcare, emerging technologies, economics, climate, and the environment.

In total, the expert group was comprised of 15 core members who took part in a majority of the steps of the scenario creation process. An additional seven experts took part in certain steps, or discrete activities within these steps. Experts were selected based on their expertise and knowledge of global policy issues and not necessarily to represent perspectives of specific regions. Figure 3 provides an overview of the gender and region of origin of both the core members of the expert group and the additional ad hoc experts.

[5] The software is that of Scenario Management International: https://www.scmi.de/en/.

Figure 3. Overview of Expert Group Demographics[6]



2.2 Long List of Factors

The second step in the scenario creation process was to identify all elements, or 'factors', understood as defining aspects of the world both now and in the future. Factors within our scope therefore included elements that influence international security directly, such as those directly related to weapons, warfare, armed conflict, or violence, but also broader factors related to issues such as technology, the climate, or the economy. At this stage, factors were worded in a neutral manner, and did not indicate the possible direction of travel of a factor. For example, a factor was phrased as "social cohesion" rather than "low social cohesion".

The identification of the factors was achieved through a range of means. First, desk research was conducted between September and December 2022, which notably included a review of trends reports from international, regional and research organizations, as well as from the private sector. This was complemented by internal brainstorming sessions by the project team to analyse the identified factors and add any additional factors. In parallel, the

[6] The regional groups are based on those of the United Nations: https://www.un.org/dgacm/en/content/regional-groups.

project team created a system overview to categorize and define the factors. This overview also ensured that all relevant areas of influence were considered. These activities led to the creation of an initial long list of factors, which was shared with the expert group. The expert group was invited to provide their reflections and additions to this long list during a workshop held on 14 September 2022. Inputs were aggregated, and a new long list created which was sent for a final review to the expert group.

In total, the final long list comprised 73 factors across eight high-level categories: international relations, conflict and violence, people and society, economy, energy, environment, health, and technology. The high-level categories do not serve an analytical purpose and are used purely to organize the factors. The 73 factors are presented below.

INTERNATIONAL RELATIONS

1. **Access to nuclear weapons technology:** Extent to which access to nuclear weapons technology is regimented and controlled.
2. **Access to rare earth metals and other raw materials of strategic interest:** Extent to which international relations is shaped by the availability of and access to rare earth metals and other raw materials of strategic interest on free markets versus controlled by super/major powers or resource cartels.
3. **Attitude towards multilateralism:** Extent to which Member States perceive multilateralism, including United Nations multilateral processes, as the preferred method of cooperation, compared to other forms of cooperation (or lack thereof) such as unilateralism, bilateralism, regionalism, or 'coalitions of the willing'.
4. **Commitment to a legal- and rules-based order:** Extent to which a rules-based order is the foundation of international relations versus other types of approaches (e.g., values-based order, power politics, etc.).
5. **Future of international accountability systems:** Extent to which States are held accountable for abiding (or not) by international legal and regulatory frameworks.
6. **Nature of inter-State relationships:** Extent to which inter-State relationships are characterized by amicable relations, increased tensions, or regional or ideological fragmentation.
7. **Polarity in international relations:** Extent to which the future world order is characterized by increasing or decreasing polarization in international relations (e.g., a uni-, bi- or multi-polar world).
8. **Resilience of States:** Extent to which the sovereignty, legitimacy, and governability of all States remain stable and effective.
9. **Role of private actors in international relations:** Extent to which the role of private actors, including the private sector, evolves in relation to the role of the State, including the extent to which private actors influence behaviours, attitudes and policy choices of States.
10. **Space governance:** Extent to which there is regulation of capabilities, activities, and behaviours of all actors (State and non-State) in outer space.
11. **Weapons governance:** Extent to which development, acquisition, and/or use of weapon technologies remains governed by bilateral, regional or multilateral treaties, or other forms of governance.

CONFLICT AND VIOLENCE

1. **Attitude towards conflict or dispute resolution:** State preferences towards conflict or dispute resolution, leading them to prioritize peaceful and diplomatic means for the settlement of disputes over the use of force.
2. **Conflict intensity:** Level of intensity of conflict, based on the capabilities deployed and expected damage/impact: grey zone/measures short of war, low-intensity conflict, conventional war, conflict involving the use of WMDs, or other unconventional warfare.
3. **Conflict strategy:** The different types of military strategies that may be used in future conflicts, including hybrid warfare (defined for this study as the use of military and non-military actions, such as legal, political, economic, etc.), flash wars, wars of attrition, exhaustion, or annihilation.
4. **Inter-State conflict:** Frequency and diffusion of conflicts between States, including territorial and border disputes.
5. **Intra-State conflict:** Frequency and diffusion of conflicts within States, including civil wars, and ethnic or sectarian violence.
6. **Militarization of the digital domain:** Extent to which the digital domain is used by State actors to conduct malicious cyber operations against other States.
7. **Military expenditure and modernization:** Extent to which modernization programmes impact military expenditure and military inventories.
8. **Nature of conflict actors/belligerents:** Types of conflict based on the nature and legal status of the belligerents: peer-to-peer conflict, near-peer conflicts, irregular warfare, or others.
9. **Role of humans in conflict:** Extent to which the role of humans changes as technology becomes more embedded (e.g., uncrewed systems, AI, human–machine teaming, etc.).
10. **Role of non-State military actors in armed conflicts:** Extent to which States outsource or rely on warfighting capabilities provided by private military companies and/or other non-State armed groups.
11. **Terrorism and violent extremism:** Extent to which different forms of violent extremism and terrorist acts affect safety, security, and stability.
12. **Weaponization of outer space:** The extent to which military technologies and weapons systems are placed and used in outer space.

PEOPLE AND SOCIETY

1. **Access to global commons:** Extent to which the availability of resources seen as part of the global commons (e.g., water, irrigable land, energy sources, etc.) are aligned with societies' expectations of access to them.
2. **Adherence to human rights:** Extent to which human rights are respected (or not) globally.
3. **Demographic changes:** Trends in population growth, gender balances, and age balances.

4. **Evolution of the concept of identity:** Way in which people approach and define their own identity, including multiple identities (e.g., national, ethnic, political, etc.), within and beyond national borders, in both the physical and virtual world.
5. **Intergenerational dynamics:** Extent to which differences in generations' perspectives, preferences, and expectations impact how individuals interact.
6. **Internal displacement:** Scale and duration of populations that are forced to leave their homes but have not crossed an internationally recognized border.
7. **International migration and displacement:** Predictability, scale, and duration of international movement of people, including economic migrants and those moved by crises or disasters.
8. **Level of armed violence:** Scale of non-conflict related violence within a society (e.g., drug cartels, armed crime, racially motivated crime, etc.).
9. **Level of social mobility:** Ability for populations to access education and economic opportunities in an effort to improve their standard of living.
10. **Level of unemployment:** Percentage and distribution of the global population that are either under-employed or unemployed.
11. **Media literacy and societal resilience to disinformation:** Extent to which voter sentiments, public policies, official narratives, etc., are influenced by disinformation campaigns or other malicious information operations.
12. **Models of State governance:** Prevalence and direction of different types of State governance (e.g., democracy, oligarchy, authoritarian and totalitarian regimes, etc.).
13. **Prevalence of radicalism:** Extent to which religious or ideological radicalism is undermining safety and security of people and institutions.
14. **Prevalence of transnational organized crime:** Scale and scope of the transnational movement of illicit substances, moneys, weapons, and ammunition.
15. **Social cohesion:** Extent to which there is a shared understanding and solidarity between social, cultural, ethnic, racial groups and other groups within societies.
16. **Societal ability to adjust to demographic changes:** Ability of States to adjust to changes in national demographics, such as population growth, gender balances, and age balances (e.g., demographic death spirals, etc.).
17. **Societal attitudes towards conflicts:** Societal perception of, and reaction to, conflict (e.g., glorification of war, pacifism, no opinion).
18. **Trust in institutions:** People's trust in the competence and integrity of national and international institutions (e.g., the United Nations principal organs and bodies) as well as relevant judicial systems.
19. **Urbanization:** Percentage of the global population living in cities and urban areas compared to those living in rural areas.

ECONOMY

1. **Access to financial systems:** Degree to which States are able to access financial instruments and independently or jointly exercise monetary and economic policies.
2. **Economic inequalities between States:** Differences in GDP between States.
3. **Economic inequalities within States:** Distribution of wealth and level of financial inclusion within States between different social, cultural, and racial groups, accounting for regional and country-level differences.
4. **Future of trade:** Extent to which free trade remains (or not) the bedrock of the global economy and the extent to which this impacts trade agreements (e.g., multilateral, bilateral, regional, or preferential free trade agreements).
5. **Interdependence of supply chains:** Extent to which supply chains become more or less interdependent, globalized, or localized.
6. **Resilience of the global financial system:** Stability and predictability of financial systems and frequency and severity of global and regional financial and monetary crises globally and the ability to recover from them.
7. **Role of private sector in natural resource management:** Extent to which the private sector owns and profits from natural resources such as water, minerals etc.

ENERGY

1. **Availability of and access to energy:** Extent to which energy supply is able to meet global demand and ensure global access, including consideration of energy storage and transportation capabilities.
2. **Energy generation:** Extent to which different types of energy sources are used to meet energy needs, from traditional fossil fuels to different forms of clean and renewable energy, to nuclear fusion.
3. **Energy policy:** Extent to which States seek to predominantly pursue strategic independence in the energy sector, opt for pooling and sharing of energy resources, or move towards a global market.

ENVIRONMENT

1. **Approach towards environmental issues:** Way in which societies are mitigating and adapting to the impacts of different environmental risks (i.e., climate change, ecosystem collapse, pollution), whether through a coordinated and coherent global approach, regional approaches, or fragmented national/local/community-level approaches.
2. **Food and water security:** Extent to which climate change and extreme environmental phenomena such as floods, heat waves, and droughts impact availability and access to food and water.

3. **Liveability of Earth's surface:** Extent to which effects of climate change, environmental degradation and pollution (e.g., desertification, rising sea levels, extreme temperatures, hazardous waste, etc.) impact the liveability of various parts of the world.
4. **Prevalence of extreme weather events:** Frequency and intensity of extreme weather events (e.g., hurricanes, droughts, floods, etc.).

HEALTH

1. **Access to healthcare:** Extent to which people have access to healthcare (independent of the model of healthcare systems).
2. **Advances of science and technology:** Extent to which innovations in life sciences, including health security, biosafety and biosecurity, genetic engineering, and human enhancements, are adopted in both the civilian and military contexts.
3. **Frequency and intensity of diseases:** Frequency, intensity and lethality of both novel diseases as well as previously known or eradicated diseases.
4. **Resilience of global healthcare systems:** Ability for national health systems to respond to health crises as well as the ability of international institutions, particularly the WHO, to effectively coordinate actions.

TECHNOLOGY

1. **Access to digital technologies:** Degree to which the digital divide either increases or decreases and the subsequent impact on access by populations to digital technologies.
2. **Digital and other data:** Extent to which data quality, security and other features are governed and such governance frameworks respected.
3. **Digital ecosystem:** Extent to which the digital domain either evolves towards a global ecosystem or towards a fragmented one where data flows, digital infrastructures, and ICT governance become a national or regional prerogative (e.g., ICT balkanization).
4. **Digital resilience:** Extent to which societies develop cultures, mechanisms, and tools to absorb, manage, and recover from events that impact the confidentiality, integrity, or availability of the digital domain.
5. **Geography of innovation:** Extent to which technological innovation is distributed (or not) across geographies, including in emerging markets.
6. **Malicious uses of emerging technologies:** Extent to which malicious actors have access to emerging technologies, such as cyber and AI, and use these in the conduct of their activities.
7. **Reliance on digital technologies:** Extent to which societies rely on digital technologies.
8. **Space stakeholder diversity:** Amount and type of actors in space, whether they be States or non-governmental entities.
9. **Technological convergence:** Impact of the convergence of AI technologies with other powerful dual-use technologies, such as cyber or biotechnologies.

10. **Technological innovation:** Extent of the emergence of new technologies as well as their impact on society (e.g., connectivity, computing power, etc.)
11. **Technological–industrial base:** Extent to which States seek to pursue the ability to independently develop and produce technological solutions versus other options such as the emergence of 'technology alliances' (e.g., pooling and sharing of capabilities, 'friendshoring', etc.).
12. **Technology governance:** Extent to which technology governance is be able to follow the pace of technological innovation to ensure responsible development and use of emerging technologies.
13. **Virtual presence and the metaverse:** Extent to which the use of virtual reality or other immersive technologies like the metaverse become embedded in everyday life, including the commercial sector and in the public sector and whether or how this challenges and impacts issues of surveillance, anonymity, and privacy.

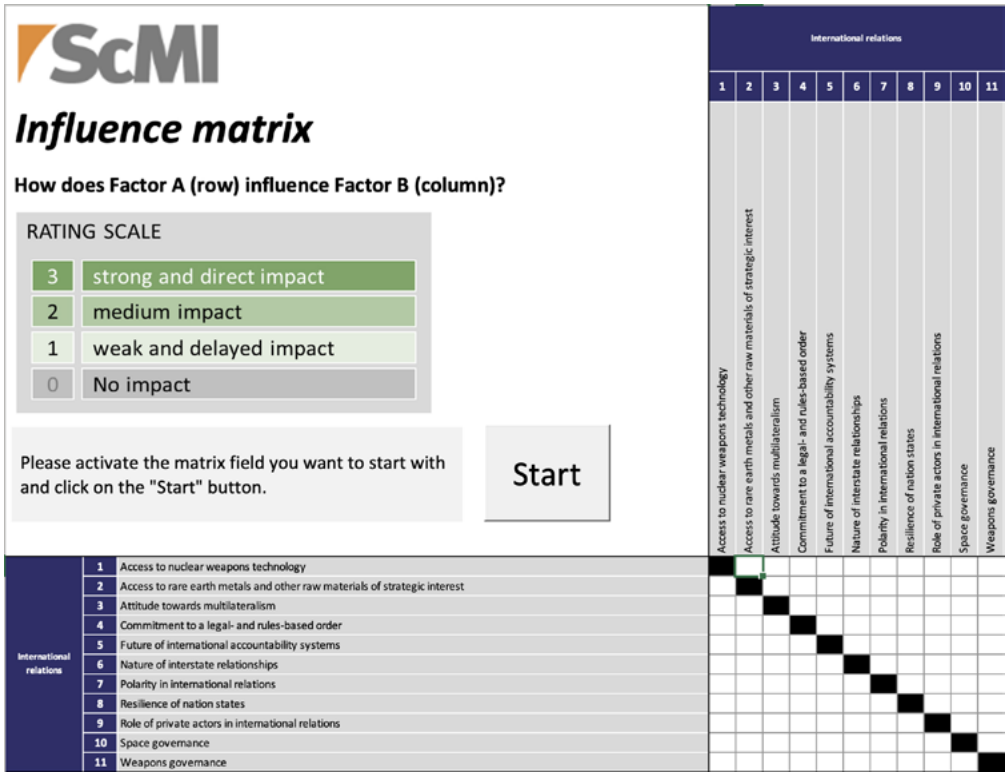
2.3 Short List of Factors

The third step in the scenario creation process was to shortlist the 73 factors above to a maximum of 20. These shortlisted factors would focus on identifying those from the long list deemed as having a particularly strong influence on others, seen as most critical to the functioning or make-up of the world, or which may play a prominent role in shaping the future. As these factors are drivers of change, they would consequently lead to scenarios which are very different from one another.

In order to identify these factors, the expert group was asked to conduct an influence analysis. This exercise entailed each expert individually rating the direct relationships—or influences—between the factors, as visualized in Figure 4. For example, experts were asked to rate the influence of "access to nuclear weapons technology" on "access to rare earth metals and other raw materials of strategic interest", using the rating scale of 3 to indicate strong and direct impact, 2 to indicate medium impact, 1 to indicate weak and delayed impact, and 0 to indicate no impact.[7] If experts were unsure of what value to assign to a pair of factors, they were asked to leave it blank. The influence analysis took place in November 2022.

[7] The software automatically calculates indirect influences, which in turn makes an analysis of the direct influences as conducted by the expert group sufficient.

Figure 4. Influence Analysis



The second phase of the influence analysis exercise was to discuss areas of divergence and disagreements between experts during a workshop, held on 1 December 2022. Ahead of that, the scores shared by each expert were anonymized and aggregated, with all responses holding the same weight. The aggregated scores were calculated from the average of the values inserted for each pair of factors, with commercial rounding used. Based on these aggregated scores, the study team identified the fields with the highest deviation, in other words, fields where the span between the individuals' ratings was of a value of 3. This highlighted over 2,200 fields for review, out of a total of over 5,000 fields.

Given the high number of fields with a deviation of 3, the areas for discussion in the workshop focused specifically on the pairs of factors which featured the greatest divide between experts—in other words, fields containing an even or nearly even split between those having selected a rating of 3 and those having selected rating of 0. This narrowed the most contentious factor pairs to 14. For each of these pairs, the project team asked experts to provide their opinions and discuss the reasons behind the different ratings. Once all opinions were voiced, experts were invited to (anonymously) provide another rating, to identify if there was more agreement towards a final rating for these pairs of factors. The remaining fields with a high deviation were discussed and debated by the members of the project team themselves, with ad hoc outreach to specific experts in any instances where it was deemed necessary.

Once all scores regarding the influence of factors on one another was finalized, an analysis was run by the scenario creation software in order to identify (a) factors that influence the entire system as a whole (otherwise known as active factors), (b) those that influence the system and are also in turn influenced by it, (c) those which primarily influence other factors,

and (d) those which do not influence other factors nor are influenced by them (otherwise known as passive factors). Factors which fell into categories (a) and (b) were the ones considered for the shortlist. These factors were further divided into two categories, with some defined as 'definite factors'—in other words, those which ranked the highest and therefore would be the most likely candidates for the shortlist—and the others as 'optional factors'. However, discussions with the expert group following the influence analysis highlighted several elements:

- Some high-level categories—such as 'energy' and 'health'—may not be represented to the same extent as factors within categories such as 'international relations' or 'conflict and violence' due to biases in the background of workshop participants and towards the ultimate goal of the study (in other words, exploring the future of international security).
- Some factors felt very similar one to the other, a fact which became particularly evident during the influence analysis scoring.
- Some experts were surprised by the ranking of some of the factors following the influence analysis—with a feeling that some should be ranked more highly.

This feedback led to a decision by the project team to combine factors that had been identified as being similar;[8] this also enabling some lower scoring factors to be included in the list of 'definite' and 'optional' factors, thereby also increasing the diversity of factors included. These changes further demonstrate the role of the influence analysis as a way to screen and re-arrange the factors ahead of the next steps.

Following the completion of the influence analysis and the modifications highlighted above, the shortlist amounted to a total of 31 factors. Of these, 14 factors were identified as 'definite' factors and were automatically included in the final shortlist. To finalize the rest of the shortlist, the remaining 'optional' factors—a total of 17—were put to the expert group, with each expert asked to select up to seven optional factors that they felt should belong in the shortlist. The aggregated results thus helped the study team to identify the remaining factors for the shortlist, which is provided in full below:

1. **Attitude towards conflict or dispute resolution:** State preferences towards conflict or dispute resolution, leading them to prioritize peaceful and diplomatic means for the settlement of disputes over the use of force.
2. **Attitude towards multilateralism:** Extent to which Member States perceive multilateralism, including United Nations multilateral processes, as the preferred method of cooperation, compared to other forms of cooperation (or lack thereof) such as bilateralism, regionalism, unilateralism, or 'coalitions of the willing'.

[8] This also explains why some of the shortlisted factors presented below do not entirely match those within the long list in section 2.2.

3. **Commitment to a rules-based order:** Extent to which a rules-based order is or will remain the foundation of international relations, and States are held accountable for abiding (or not) to existing and future international regulatory frameworks.

4. **Conflict intensity:** The level of intensity of conflict, based on the capabilities deployed and expected damage or impact (to include human loss, infrastructure, environmental damage, etc.).

5. **Distribution of wealth:** Extent to which wealth and economic opportunities will be distributed equitably both within and among countries, taking into account (i) economic and financial disparities within States (i.e., distribution of wealth and level of financial inclusion within countries between different social, cultural, racial and other diversity groups, accounting for local, regional and country-level differences), and (ii) economic and financial disparities between States (e.g., showcased by differences in GDP and other macroeconomic and financial indicators between countries).

6. **Food and water security:** Extent to which changing climatic conditions such as precipitation rates, floods, heat waves, droughts, and climate change will impact availability and access to food and water.

7. **Future of trade and supply chains:** Extent to which free trade remains (or not) the bedrock of the global economy as well the extent to which supply chains, including those related to rare earth metals and other raw materials of strategic interest, will become more or less interdependent, globalized, or localized.

8. **Impact of technological innovation:** Extent to which technological innovation will impact societies based on (i) the geography of innovation (i.e., whether innovation will be distributed across geographies, including emerging markets), and (ii) the extent to which technology governance will be able to follow the pace of innovation to ensure responsible development and use of emerging technologies.

9. **International and internal migration and displacement:** Proportion of safe, regular, and orderly migration within the broader population movements, including forcible displacement, within and across countries.

10. **Liveability of Earth's surface:** Extent to which effects of changing climatic conditions (e.g., desertification, rising sea levels, extreme temperatures, etc.) will impact the liveability of various parts of the world.

11. **Models of State governance:** Prevalence of different types of State governance (e.g., democracy, oligarchy, totalitarian regimes, etc.).

12. **Nature of inter-State relationships:** Extent to which inter-State relationships are characterized by amicable relations, increased competition or tensions, or regional or ideological fragmentation.

13. **Polarity in international relations:** Extent to which the future world order will be characterized by increasing or decreasing polarity in international relations (e.g., a uni-, bi- or multi-polar world).

14. **Prevalence of conflict:** Frequency and diffusion of conflicts, including both intra-State (e.g., civil wars, ethnic or sectarian violence) and inter-State (e.g., conflicts between countries, territorial and border disputes).

15. **Resilience of global healthcare systems:** Ability for national health systems to effectively respond to health crises and coordinate with other countries, including through the support of international institutions such as the WHO. This also includes considerations on the extent to which people have access to healthcare (independent of the model of healthcare systems).

16. **Resilience of States:** Extent to which the sovereignty, legitimacy, and governability of all States remain stable and effective.

17. **Role of private actors in international relations:** Extent to which the role of the private sector will evolve in relation to the role of the State, including the extent to which private actors will influence behaviours, attitudes and policy choices of States.

18. **Technology governance[9] and weaponization:** Extent to which the use of new and emerging technology will be impacted by: (i) governance and (ii) weaponization of technologies.[10]

19. **Transformation of the global energy sector:** Extent to which availability of energy sources, technology (e.g., energy storage and transportation), and policy choices support the progressive and sustainable transition to low-carbon energy sources.

20. **Trust in institutions:** People's trust in the competence and integrity of national and international institutions (e.g., the United Nations principal organs and bodies) as well as relevant judicial systems.

2.4 Projections of Shortlisted Factors

The fourth step in the scenario creation process was to create 'projections' to outline the multiple ways in which a factor could potentially develop. While the factors were described neutrally beforehand, the projections are supposed to provide different directions of future developments. Thus, projections of a single factor could include both a trend and its counter-trend, meaning that both options could theoretically be part of the scenarios. Specifically, the

[9] "Technology governance can be defined as the process of exercising political, economic and administrative authority in the development, diffusion and operation of technology in societies. It can consist of norms (e.g. regulations, standards and customs), but can also be operationalised through physical and virtual architectures that manage risks and benefits. Technology governance pertains to formal government activities, but also to the activities of firms, civil society organisations and communities of practice. In its broadest sense, it represents the sum of the many ways in which individuals and organisations shape technology and how, conversely, technology shapes social order"; source: OECD, "Technology governance".

[10] At this point in the process, this factor was originally: "Future of space: Extent to which the use of and behaviour in outer space will be impacted by: (i) Space governance (defined as the extent to which behaviour in outer space, of both States and commercial actors, will be regulated through a governance framework) and (ii) Militarization of outer space (defined by the extent to which military technologies and weapons systems are developed and placed in outer space)". However, feedback following the first workshop on the specificity of this factor versus other factors led to a change to make its scope broader.

following principles were applied in the development of projections:

- Projections were not supposed to be constrained by how the project team or expert group believed a certain factor might evolve, but rather were meant to consider the breadth of possibilities of how a factor may develop, up to a maximum of five projections per factor.
- The projections of one factor should only present alternative projections. In other words, we avoided having projections of a factor which could occur concurrently to one another.
- No probabilities were assigned to the projections. All projections were given equal weight and relevance.
- The projections should not describe the cause or effect of a given future. The projections should only clearly describe how factors develop in the future.
- The projections should encompass creative thinking without veering into describing wildcards or improbable developments.

The project team developed initial projections between December 2022 and January 2023. These draft projections were then shared in January 2023 with targeted members of the expert group, to obtain their insights and to refine and validate the projections. The final set of projections are provided below.

1. Attitude towards conflict or dispute resolution

a. **Preference for peaceful resolution of conflicts and disputes:** The large majority of States have rejected the notion of using conflict as a means to resolve conflicts and disputes.

b. **Conflicts and disputes primarily resolved by use of force:** There has been a collapse of the peaceful resolution architecture and States see conflict as the only option to resolve conflict.

c. **No dominant dispute resolution approach:** States use a mix of peaceful and non-peaceful means to resolve conflicts and disputes.

d. **No willingness to resolve conflict:** Lack of willingness to resolve any of the conflicts or disputes, whether it be through peaceful, diplomatic means or through the use of force, resulting in an overall state of continuous conflict.

2. Attitude towards multilateralism

a. **Multilateral cooperation is preferred:** The preferred method for inter-State cooperation is multilateral.

b. **Pragmatic action is preferred:** States no longer believe in multilateral cooperation and pragmatically select the form of cooperation that best meets their needs, e.g., bilateral, regional, coalitions of the willing, etc.

c. **Unilateral action is preferred:** States prefer to undertake unilateral action.

3. Commitment to a rules-based order

a. **Harmonious relations between the majority of States:** Inter-State relationships are overall cooperative, with harmonious relations characterizing the vast majority of State interactions.

b. **Underlying tensions between certain States:** Overall, inter-State relationships are amicable, but there is increased competition and/or tensions between certain States.

c. **Fragmentation negatively affecting relations between States:** Inter-State relationships are increasingly fragmented along regional, ideological, and other divides, negatively affecting these relationships.

4. Conflict intensity

a. **High-intensity conflicts:** Conventional wars occur and are the most frequent type of conflict with actors primarily resorting to the use of a diverse range of conventional weapons and battlefield and tactics, including urban warfare. Where applicable, the risk of nuclear escalation and other WMD use is present.

b. **Low-intensity conflicts:** Conflicts are fought primarily at a lower intensity than conventional war using a combination of limited or selected military capabilities including proxy and insurgency warfare as well as conflict with and between non-State actors.

c. **Hostilities under the threshold of armed conflict:** Actors primarily use 'grey zone' or selected hybrid tactics (e.g., cyberattacks, fomenting civil disorder and other destabilization operations, etc.) which are difficult to attribute in addition to falling under the threshold of these being recognized as acts of aggression, avoiding conventional warfare as well as the use of proxy warfare and insurgency.

d. **Conflict avoidance:** Priority is given to diplomatic and non-violent actions (e.g., legal, political, economic, and diplomatic measures such as the removal of ambassadors, taking disputes before international legal bodies, economic sanctions, etc.) to resolve disputes and crises.

e. **Peace is here:** Limited to no conflicts occurring. There is no resort to any form of kinetic or non-kinetic violence against people or infrastructure.

5. Distribution of wealth

a. **Equitable distribution of wealth and economic opportunities globally and domestically:** Wealth is distributed equitably domestically among various demographics, as a share of real per capita GDP (or other measures of wealth, e.g., GINI Coefficient, PPP, Lorenz curve, etc.), and globally, as a share of real global GDP (or other measures of wealth).

b. **Inequitable wealth and economic opportunities distribution globally, equitable domestically:** Wealth is distributed inequitably between countries. However, wealth is distributed equitably within countries.

c. **Equitable wealth and economic opportunities distribution globally, inequitable domestically:** Wealth is distributed equitably between countries. However, wealth is not distributed equitably domestically—it is largely concentrated in the top few percent of the population.

d. **Widening wealth gaps everywhere:** The distribution of wealth is widening globally and domestically.

6. Food and water security

a. **Worsening food and water access along with worsening climate conditions:** The majority of people's access to food and water has declined as changing climatic conditions have worsened.

b. **Access to food and water despite climate conditions:** Changing climatic conditions have worsened, but there is continued availability of and access to food and water, although some regions have been more affected than others.

c. **Stable supply of food and water along with minimal climate impacts:** The impact of changing climatic conditions have been minimal and there has been no major impact on the availability of and access to food and water, although some regions have been more affected than others.

d. **Reinvigorated food and water supply along with mitigated climate impacts:** The impacts of changing climatic conditions have been significantly mitigated and the number of severe weather events is beginning to decrease, ensuring sufficient and safe access to food and water globally.

7. Future of trade and supply chains

a. **Global ecosystem:** Free trade is the bedrock of the global economy and States work cooperatively to ensure the transnational flow of goods, people, and capital is open and properly regulated.

b. **Regional integration, global symbiosis:** Trade and supply chains are primarily focused on regional integration, such as regional ecosystems. However, inter-regional relationships are pursued on the basis of mutual interest/benefit.

c. **Friendshoring in a globally fractured world:** Supply chains and trade are driven by geopolitical divides with 'friendshoring'[11] occurring between blocs that share common values and interests.

d. **Self-reliant, yet cooperative:** States focus on self-reliance and free trade is not usually pursued. However, States maintain amicable relations at both regional and global levels and do pursue trade agreements whenever necessary that are beneficial for both parties.

e. **Autarkic self-reliance:** States focus on self-reliance—free trade is not pursued at either regional or global levels. Trade is pursued only when a country requires a critical good or material that they do not have natural (or sufficient) access to. Trade is perceived as a zero-sum game.

[11] "[Friendshoring] is shorthand for the practice of relocating supply chains to countries where the risk of disruption from political chaos is low"; source: Sarah Kessler, "What Is 'Friendshoring'?", New York Times, 18 November 2022, https://www.nytimes.com/2022/11/18/business/friendshoring-jargon-business.html.

8. Impact of technological innovation

a. **Distributed innovation for the benefit of all:** Technological innovation is widespread, generating positive impacts for all; governance is global.

b. **Centralized innovation for the benefit of all:** Technological innovation is driven by few countries, but the results and benefits are made available to all; governance is global.

c. **Centralized innovation for the benefit of the few:** Technological innovation remains concentrated in few countries with benefits equitably distributed only within the respective societies; governance is fragmented but effective in specific geographies.

d. **Elitarian innovation:** Lack of adequate governance frameworks results in technological innovation remaining concentrated in few countries for the benefit, and profit, of elite groups.

e. **Innovation stalemate:** Technological innovation globally has plateaued—no more added value can be generated through innovation; governance is ineffective or non-existent.

9. International and internal migration and displacement

a. **Increased proportion of safe migration:** Increased proportion of safe, regular, and orderly migration within broader population movements, including forcible displacement, as compared to present day.

b. **Decreased proportion of safe migration:** Decreased proportion of safe, regular, and orderly migration within broader population movements, including forcible displacement, as compared to present day.

c. **No change in migration safety:** There is a status quo regarding the proportion of safe, regular, and orderly migration within broader population movements, with no change as compared to present day.

10. Liveability of Earth's surface

a. **Decreased liveability overall:** Average global temperatures have risen. The frequency and intensity of climate disasters (e.g., forest fires, floods, hurricanes, droughts, etc.) have increased globally as well, creating a positive feedback loop that decreases liveability overall.

b. **Liveable in most places:** Average global temperatures are relatively constant. While most places continue to experience climate disasters, these disasters are usually contained and recoverable.

c. **An adapted world:** Climate adaptation has resulted in more parts of the world becoming liveable, enabling human settlements in previously climate-affected places.

11. Models of State governance

a. **Democratization:** There is a general trend towards strengthening democratic processes and institutions globally and the majority of States have moved towards democratization, with many considered as full or flawed democracies.

b. **Democratic backsliding:** There has been a gradual decline in the democratic characteristics of political systems worldwide, with most democratic States now regarded at best as flawed democracies.

c. **Authoritarianism takes hold:** Undemocratic and authoritarian regimes are now the majority, with few States being regarded as full or flawed democracies.

d. **Supranational unions:** States generally favour supranational unions (e.g., the European Union) and have increasingly delegated governance upwards towards such former and new supranational unions.

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12. Nature of inter-State relationships

a. **Harmonious relations between the majority of States:** Inter-State relationships are overall cooperative, with harmonious relations characterizing the vast majority of State interactions.

b. **Underlying tensions between certain States:** Overall, inter-State relationships are amicable, but there is increased competition and/or tensions between certain States.

c. **Fragmentation negatively affecting relations between States:** Inter-State relationships are increasingly fragmented along regional, ideological, and other divides, negatively affecting these relationships.

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13. Polarity in international relations

a. **Multiple spheres of influence:** The world is divided into multiple poles of hegemony.

b. **Bipolar world order:** There are two major superpowers with their own spheres of influence. Most States are aligned with one of the blocs with very few exceptions.

c. **Hegemonic world order:** There is a single hegemonic global power that is able to exercise its will upon all other States.

d. **Authority of States in decline:** States are no longer the most important player in international relations.

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14. Prevalence of conflict

a. **Conflicts abound:** The world is engulfed in conflict, with most occurring between States.

b. **Frequent localized conflicts:** Frequent conflicts, primarily at the intra-State level (including instances of armed violence).

c. **Infrequent localized conflicts:** Conflict occurs infrequently, and when it does it tends to be localized, and primarily intra-State (including instances of armed violence).

d. **Few State-on-State conflicts:** Few conflicts occur, but when they do they tend to be inter-State conflicts.

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15. Resilience of global healthcare systems

a. **Prepared and globally coordinated health systems:** National health systems are able to respond effectively to health crises within their borders and to coordinate effectively at the global level.

b. **Prepared and regionally coordinated health systems:** National health systems are able to respond effectively to health crises within their borders and to coordinate effectively with neighbouring countries.

c. **Effective health systems though without regional coordination:** National health systems are able to respond effectively to health crises within their borders but fail to coordinate effectively with other countries.

d. **Unprepared and uncoordinated health systems:** National health systems are not able to respond effectively to health crises or to coordinate with other countries.

16. Resilience of States

a. **States are cohesive and stable:** There is high social cohesion, and in turn this has helped States be stable and effective in the implementation of their policies.

b. **Social cohesion but in opposition of government(s):** There is high social cohesion, but it has been shaped in opposition to governments, with States struggling to be resilient due to this internal opposition.

c. **Incohesive and low resilience of States:** Low social cohesion overall has meant that States are finding it more difficult to be stable and effective.

17. Role of private actors in international relations

a. **Private actors lead States from the front:** The influence of private actors has increased, with such actors being the primary source of knowledge, power, capital, and narrative in international relations, surpassing the role of States in setting and driving the policy agenda.

b. **Private actors lead States from the back:** States remain the core players within international relations, but are under significant pressure and influence from private actors, which have a critical influence on decisions and behaviours of States.

c. **Role of private actors in international relations stays similar:** The influence and impact of private actors on States and international relations has broadly stayed the same. States continue to be perceived as the legitimate power source ("representative of the people"), but private actors continue playing an important role across many facets of everyday life.

d. **Private actors have a decreasing influence on international relations:** The influence of private actors has diminished overall. While various types of private actors continue having an influence on States, these are more reined in, and private actors have less if no say at all regarding international relations more broadly.

18. Technology governance and weaponization

a. **No new technology governance and no weaponization:** No additional governance has been agreed since present day on emerging technology matters; while there are gaps, there have been no moves to further weaponize technologies.

b. **Additional governance preventing weaponization:** Additional governance on emerging technologies has been agreed since present day; by filling gaps, weaponization of technologies has been avoided.

c. **Despite additional governance, there is weaponization of emerging technologies:** Additional governance on emerging technologies has been agreed since present day, but despite filling gaps that narrow uses of emerging technologies, militarization has occurred.

d. **No new technology governance and increased weaponization:** No additional governance has been agreed since present day on emerging technologies and as such there are gaps in what is covered, and these have been exploited to enable weaponization of such technologies.

19. Transformation of the global energy sector

a. **Complete green transformation:** Nuclear fusion, hydrogen, and battery storage technologies have been sufficiently developed to be deployed and used at scale. New energy sources are abundantly available globally.

b. **Fragmentation between green and non-green energies:** Nuclear fusion, hydrogen, and battery storage technologies have been sufficiently developed to be deployed and used at scale, however adoption of these methods by States has been fragmented, with some continuing to rely on oil and gas due to issues such as lack of resources and infrastructure.

c. **Lack of willingness towards green transition:** Nuclear fusion, hydrogen, and battery storage technologies have been sufficiently developed to be deployed and used at scale but the transition has been deemed too difficult or expensive; countries continue to rely on oil and gas as the primary sources of energy.

d. **Oil and gas are primary sources:** Oil and gas are the primary sources of energy. Nuclear fusion has yet to be developed, hydrogen is yet to be deployed at scale, and battery technologies have not been developed sufficiently.

20. Trust in institutions

a. **Trust in institutions:** People place a high level of trust in national and international institutions to deliver the desired results, to retain their impartiality, or to not be affected by corruption.

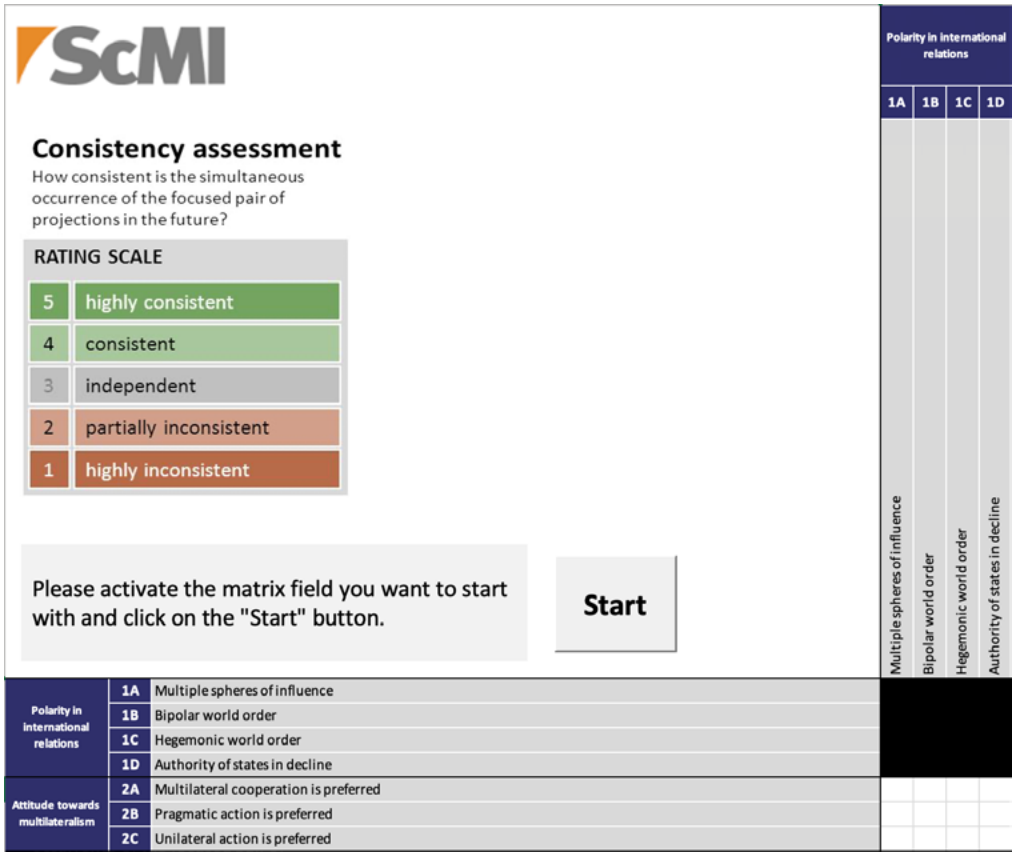
b. **Ambivalence towards institutions:** Trust depends on the institution, with this affecting both national and international institutions.

c. **Low trust in institutions:** Institutions at all levels are plagued by low levels of trust.

2.5 Consistency of Projections

The fifth step in the scenario creation process was to assess whether or not each pair of projections could logically occur simultaneously—in other words, assessing the extent to which projections are consistent with one another. Similar to the influence analysis used to shortlist the factors, the expert group was asked to first undertake an individual exercise where they were to assign a rating regarding the consistency of each pair of projection of all shortlisted factors. For example, experts were asked to rate the logical consistency of "multilateral cooperation is preferred" and "multiple spheres of influence" occurring simultaneously in the future (see Figure 5), inputting a 5 if deemed highly consistent, a 4 if deemed consistent, a 3 if deemed independent (no relationship), a 2 is deemed partially inconsistent, and a 1 if deemed inconsistent. Experts were asked to leave cells blank if they were unsure of what value to assign. They were also asked to only evaluate direct relationships, as well as to focus only on the logic of two projections coexisting rather than the likelihood of them coexisting. This first step took place in February 2023.

Figure 5. Consistency Analysis



This individual exercise was then followed by a workshop, held on 14 March 2023, with the aim to discuss areas of divergence that emerged after anonymizing and aggregating all inputs. Once again, all responses held the same weight when aggregated. Furthermore, the analysis was conducted block by block,[12] with each cell analysed individually. The scores were not averaged; rather, the project team looked to see whether there was a majority rating as to whether a pair of projections was considered consistent, inconsistent, or independent. If this was the case, then the score was determined based on the majority score. For example, if eight of the experts provided a rating for a particular pair of projections and, of these, one person put a "5", five people put a "4" and two people put a "2", the study team selected the rating "4", while also ensuring that this rating made sense within the wider block logic. Blocks which showed the most variation in scores—and therefore uncertainty among the expert group—were selected for further discussion.

Given the high number of fields (190) needing discussion, the selection focused on those with the highest level of divergence or where the project team felt the divergence was due to too few inputs from experts. This led to a total of 13 blocks for discussion during the workshop. Thereafter, the final rating of these blocks and the remaining fields with a deviation were then discussed and decided on by the project team themselves. Several techniques were used in combination to finalize the remaining fields, which included a number of discussions as to the relationship between sets of projections, some targeted individual re-scoring to examine whether scoring patterns changed or remained the same following the discussions, as well as ad hoc outreach to specific experts in any instances where it was needed.

2.6 Scenario Clusters

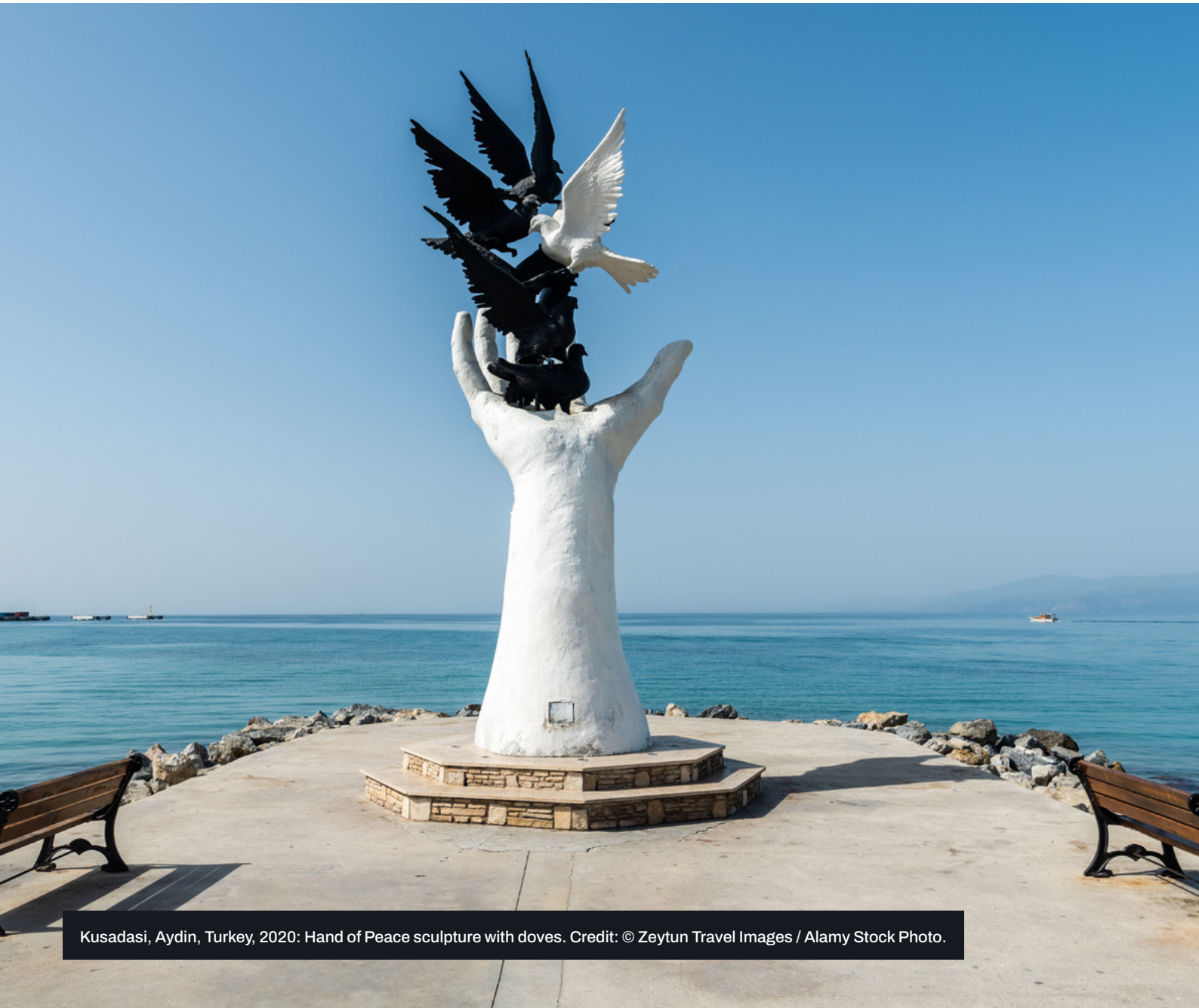
Based on the results of the previous step, the sixth and last step in the scenario creation process was to run the data in the scenario software in order to create clusters of consistent projections, thus forming the basis of the scenarios.

This step served as a way to identify the clusters that are formed when the data regarding projection consistency is analysed. As part of this step, all projections were included and all carried the same weight, and were grouped based on the scores of the consistency analysis. In other words, projections formed clusters based on how consistent they were deemed to be with one another, to form logically coherent possible futures. To achieve this output, the software performed the following tasks: first, it identified the bundles of projections with the highest consistency ratings while ensuring that these bundles include a high variety of differing projections. Second, it clustered these projection bundles in a way that combined the ones with the highest similarities. As a result, the raw scenarios are in themselves highly similar and consistent, but between the scenarios,

[12] A block refers to all projections under one factor; for example, 'Polarity in international relations' is a block containing four projections.

there is a high degree of dissimilarity. Thus, the software yields scenarios which depict the whole “window of possibilities” provided by the projections.

The output from this step was groupings of projections, which form the ‘raw’ scenarios. A narrative is then built around these groupings. Therefore, all scenarios feature the same factors (and in some cases, some similar projections), with the differences emerging from the different combinations of projections. Due to the clustering process, a projection could however appear in different scenarios, only in one scenario, or in none, depending on the results of the consistency analysis.

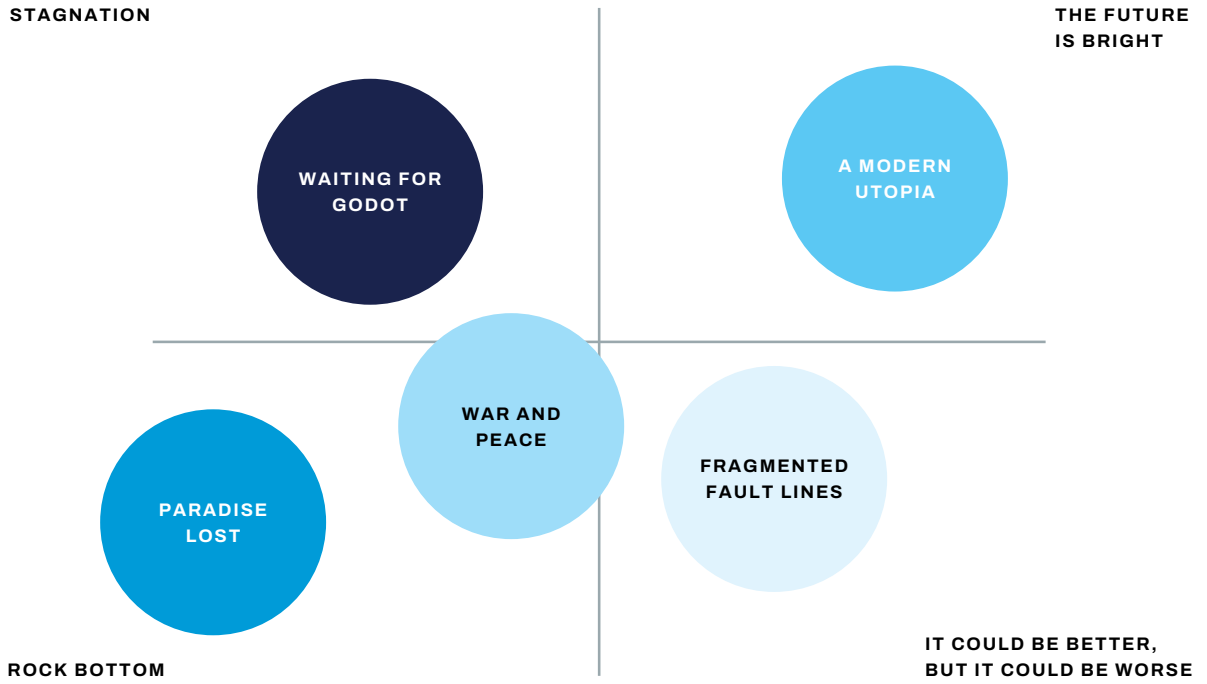


Kusadasi, Aydin, Turkey, 2020: Hand of Peace sculpture with doves. Credit: © Zeytun Travel Images / Alamy Stock Photo.

3. Scenario Creation Outputs

A total of five scenarios emerged from the scenario creation process outlined above, which subsequently formed the basis of the workshop discussions. The narratives of each of these scenarios are presented in this section, with a visualization of all scenarios provided in Figure 6.[13]

Figure 6. Visualization of the Five Scenarios



3.1 War and Peace

In the past two decades, the world has **increasingly fragmented itself along geopolitical and ideological lines. Two competing spheres of influence** now again aim to dominate world affairs in their quest for global influence. While total war has yet to consume us, low-level conflict and the use of force has become increasingly commonplace to resolve disputes, stunting our ability to resolve any new or protracted discords and eliminating the possibility of any benefits accrued from cooperation.

The leadership of the two superpowers within their respective spheres is not only characterized by military or economic might, but also by ideology. As a result, most States are aligned

[13] Disclaimer: The scenarios display hypothetical futures. These are not aiming to predict the future and should be seen a discussion tools only. These scenarios do not necessarily reflect the views or opinions of the United Nations, UNIDIR, its staff members or sponsors.

with one of the blocs, with very few exceptions. These **geopolitical and ideological schisms have weakened the international rules-based order** to the point where international institutions have been largely rendered futile. In turn, **cooperation at the multilateral level has become ineffective,** with **States preferring to pragmatically select the form of cooperation that best meets their need**s, including bilateralism, regionalism, and coalitions of the willing.

The State-on-State wars of the mid-2020s and early 2030s have shaped the confrontation dynamics between the two superpowers, which have elected to **avoid direct confrontation with each other**. Instead, **the two blocs prefer to wage frequent low-intensity, localized proxy wars**, which mainly take the form of border disputes and instances of armed violence. On occasion, these proxy wars also enable insurgency warfare, in their pursuit of expanding their spheres of influence. These pursuits, along with the ideological schisms, have created a positive feedback loop where victory in these conflicts is perceived as a zero-sum game. In other words, victory can only be achieved in the form of absolute victory; **any mechanism for a peaceful resolution of conflicts has become futile and belligerents see military victory as the only viable resolution**. As such, belligerents seek to gain an advantage wherever they can in pursuit of military victory at all costs—including the **weaponization of any new and emerging technologies following the failure to implement new governance instruments for these**.

These geopolitical fragmentations mean that the global economy is no longer 'global'. Rather, **trade and supply chains are dictated by the geopolitical and ideological schisms** that characterize the world and are only pursued within each sphere of influence. Private actors, which tend to prefer the unrestricted flow of goods, capital, and labour, are also feeling these trade and supply chain restrictions. Yet, to their dissatisfaction, **the influence of private actors on international relations as a means to pursue their interests has decreased** as States have sought to reassert their dominance in global politics.

As a result of these issues, combined with poor economic planning and a lack of adequate financial safeguards that led to the Great Crash of 2032, the world's population is now poorer than the previous generations, **with wealth gaps widening between and within States**. This has had a domino effect; with decreased revenue at a time when national spending is focused on military priorities, less funding has been allocated by governments to social protection, research and development, education, and healthcare. Industrial and innovation policies have also suffered as a consequence of the lack of funding; **the world is now experiencing an innovation stalemate** which has not been seen since the industrial revolution.

The lack of technological innovations has meant **no substantive progress has been made on developing sustainable green energy sources**, such as nuclear fusion or hydrogen. This, combined with the occurrence of conflicts, limited multilateralism, and overall lack of cooperation between the two blocs, has resulted in the **continued reliance of fossil fuels**. Consequently, the **climate has continued to deteriorate**, we are unable to engineer ourselves out of decreased crop yields and water shortages, and **liveability in the Earth has decreased**. The thawing of the permafrost and continued encroachment on wildlife by the ever-growing need for larger farms means that novel zoonotic diseases have proliferated—wreaking havoc on **unprepared and uncoordinated health systems**.

On the domestic front, there has been a **gradual decline in the democratic characteristics of political systems worldwide**. Increased repression by governments, limited ability to express political views, faltering economies and the increased inability of leaders to provide basic needs in favour of fuelling conflicts elsewhere, have **turned the masses against their governments and goaded distrust of public institutions**. People have started to band together in opposition to their governments. Under the stresses of scarcity and to placate their populations, States have put in place increasingly **hostile policies towards migrants**, who they see as undue burdens; for those who attempt to find a better life elsewhere, the journey has become more perilous and the benefits uncertain.

3.2 Waiting for Godot

As a result of the economic and geopolitical turbulence of the mid- and late 2020s, States developed a preference to chase after short-term gains instead of long-term solutions for the benefit of all. Due to the inability of States to design and implement credible solutions to rising global challenges that came to a breaking point in the late 2020s, civil society and other actors have looked elsewhere for solutions and leadership. This been a slow and complicated path, and currently international relations are in limbo given that **States are no longer the most important players in international relations**.

The lack of action and accomplishments, and quandaries by States in the past two decades have left a void in international relations. In light of these developments, **private actors have gained traction as the preeminent actors in international relations**. They have become the most important source of legitimacy and knowledge, as well as brokers of power, capital, and narratives in international relations. As such, they are perceived as the most efficient actors at the international level by the public. Consequently, **the rules-based order that was built by States, for States, has weakened**. Multilateralism is a vestige of a previous ethos, with **States—and the private actors—preferring unilateralism** and pursuing other forms of co-operation, such as bilateralism and coalitions of the willing, whenever necessary.

However, most of the leading private actors in international relations originate from a small set of States. This has led to some discomfort and uneasiness arising from other States that are not able to wield such influence, and has created **tensions between certain sets of States**. Indeed, even if certain States do not possess the leading private actors—or 'national champions'—in international relations, it is still their desire to ensure their soft power is maximized. One such avenue to this end is to ensure that their national health systems are able to effectively respond to health crises. Yet, due to soft power competition, **States are disinclined to coordinate with each other to respond to such health crises**, as demonstrated by the uncoordinated response to the COVID-35 pandemic along with the 'blame game' that followed.

Conflicts in this world are dominated by intra-State conflicts rather than inter-State conflicts. While States may attempt to support their national champions by **employing grey zone tactics** against other States, such

as cyberattacks, information warfare, and economic manipulation, these tactics rarely lead to State-to-State confrontations. Instead, these grey zone tactics frequently fuel intra-State conflicts, such as sectarian, ethnic, or gang violence, in the targeted State. **Resolving disputes, then, may take different forms** depending on the typology of conflict as well as the actors involved. Put simply, some conflicts may be resolved through violence while others may be resolved through mediation. In this environment, therefore, while there is **no new governance of emerging technologies, there are practically no moves to further weaponize them**.

Due to frequent intra-State conflicts, democratic systems have deteriorated with **most democracies being regarded as flawed**, as governments have become more inclined to enact States of emergencies and similar laws. As such, people across different States are increasingly dissatisfied and are **coalescing around opposition to their governments**. This internal opposition has made governance more difficult. Additionally, **States are struggling with low resilience and fragility**, creating a Catch-22 situation which further exacerbates internal tensions and conflicts. This has made it difficult for these fragile States to improve migration safety—in terms of both capacity and political will—so **migration safety has remained similar to today**.

While there have not been any major shifts in the global economy, there has been a **continued focus on more regional and sustainable trade and supply chains**—continuing a trend since the late 2010s. Yet, even with trade and supply chains focused on regionalization, **inter-regional cooperation is still pursued where necessary and beneficial to all parties involved**. At the same time, States and private actors continue to be hesitant to share the benefits accrued from an innovative economy. Thus, **innovation and high value-added sectors continue to be concentrated in a few States**. Moreover, due to a lack of a hegemonic economic theory, there are **wide variations in the distribution of wealth and economic opportunities within and between countries**, with States experimenting with different monetary, fiscal, and industrial policies. As such, **people's trust in national and international institutions is mixed,** depending on their economic well-being.

As a result of innovation, along with the benefits accrued of innovation, being concentrated in a few States, **the transition to using green energy sources has been fragmented**. Some States simply do not have the technology to transition away from fossil fuel use. Nevertheless, **even though climate disasters persist, they are usually contained and recoverable**. Furthermore, despite the worsening climate, **access to food and water remains stable**, especially in States where there is high innovation, as they are able to develop, amongst others, new farming technologies.

3.3 Paradise Lost

All hope seems lost, and the past—even with all its issues—is looked at with nostalgia as being the 'good old times'. We are living in a world that has descended into conflict, where economies are faltering, authoritarianism has taken hold, the climate is deteriorating, and the

space for fruitful dialogue is quickly closing. The Doomsday Clock is currently at 10 seconds to midnight.

In the past 20 years, tensions between certain States continued to mount and, eventually, overspill. Unlike the Cold War, however, superpowers have not shied away from direct confrontation with each other. This has led to **a world engulfed by high-intensity, mainly inter-State conflicts** that are waged primarily with conventional weapons. New arenas of conflict are also opening, **which have notably been driven by the weaponization of new and emerging technologies, in the absence of any governance mechanisms for them**. To make matters worse, **States demonstrate no willingness to resolve conflicts**, whether through peaceful or violent means, resulting in a continuous cycle of strife.

The **rules-based international order has since collapsed**, and there is no way to hold States accountable anymore. As such, **inter-State relationships have fragmented** along geopolitical and ideological lines, as smaller States are subjugated by more powerful States. Moreover, with no rules, States no longer believe in multilateralism, nor do they trust in the good will of other forms of cooperation, thereby **preferring to undertake unilateral actions**. As a result, **States have lost interest in participating in international relations**.

This has translated to States becoming more inward looking, and **no longer seeking to pursue trade at the regional or global level unless out of necessity**. Private actors too have evolved to be more inward looking and now have very nationally focused markets, with **equally reduced influence on international relations**, not least due to the ongoing and unresolved conflicts. In turn, **technological innovation has become concentrated in a few States,** with the **benefits accrued available to only a small group of elites**. The **disparity in wealth and economic opportunities globally has accelerated**, contributing to a continuous feedback loop for global tensions.

In response, however, the authority of States at home has trended upwards. Conflicts around the world have shaped domestic politics as **authoritarian governments are now the majority,** with the remaining democracies being regarded at best as flawed. Indeed, people have even welcomed the emergence of authoritarian regimes; in the current context, all people want is peace and stability, in whatever form it can be offered to them, and democracy is not their main priority anymore.

Given the ongoing conflicts and widening wealth disparities, for the vast majority of people, **institutions at both the national and international levels are not trustworthy**. Institutions are not trusted as actors that are able to deliver the desired results or provide good governance. Instead, they are perceived as corrupt, inept, and partisan organizations, seeking to maximize profit and benefit from the masses. For example, **national health systems have been unable to respond effectively to any health crises and have failed to coordinate** with systems in other States. This lack of trust has led to **low social cohesion across States**, as conflict and poverty have divided communities. This has affected migrant communities the most, where scarce resources have pitted local communities against migrant communities who they perceive as a threat to their livelihoods; **migration safety has therefore decreased**.

Many of these issues have been further exacerbated by the **worsening climate and the decreased liveability of Earth**. Ongoing conflicts have **stalled any efforts or political will to transition towards green energy**

sources. There has also been very little to no innovation in farming, which has led to lower and lower crop yields. In addition, the lack of global trade has meant that even the lower yields of essential crops, such as wheat or other grains, have had difficulty making it to the global market—thereby **restricting people's access even to staple foods**.

3.4 Fragmented Fault Lines

The world is no longer governed under a single international order. Efforts were made to conserve the type of 'borderless' globalization that humanity pursued in the latter half of the twentieth century up until the early twenty-first century. However, diverging worldviews, power struggles, and doubt in the competence and integrity of international organizations, including the United Nations and its agencies, such as the IMF, WHO, ICJ etc., **has divided the world into multiple spheres of hegemony, each with their own set of laws, principles, institutions, and ideals**.

While these spheres of influence are not in a state of conflict with each other or have expansionary ambitions, neither are they particularly friendly or cooperative. Inter-State cooperation is varied and unsettled with **the spheres pursuing the forms of cooperation that suits them best** at any given time. The apprehensiveness that characterizes the relationship between the spheres has led to a **deficit in trust and cooperation**, limiting their collective ability to pursue a sustainable peace and to address global issues cooperatively.

In this fragmented environment, **the rules-based order no longer exists as conceived following the Second World War**, impacting conflict and dispute resolution mechanisms. The new international frameworks have meant that there is **no single preferred approach to resolving disputes**—it may be violent and bloody in some cases, but orderly and amicable in others. While this unpredictability may be the enemy of a sustainable world peace, it is also a deterrent against full-scale war. As such, **hostilities are mostly carried out via grey zone tactics**, such as cyberattacks, sanctions, and information warfare, aiming to avoid an escalation to armed conflict. In some rare cases, however, disputes have resulted in armed conflict between States. **State behaviour in this world can be depicted as 'precautionary yet prepared'**, which manifests in the domain of new and emerging technologies where, despite additional governance mechanisms (precautionary), States have nonetheless developed weapon systems incorporating advanced emerging technologies (prepared).

This 'precautionary yet prepared' characteristic also manifests itself in the global economy, trade, and supply chains. States in this world are **more self-reliant than ever before, yet they ensure that the possibility to pursue trade is not closed off** at either the regional level or the global levels. Changes were brought forth to the global economy in the late 2030s, in part due to the **influence of private actors on the decisions and behaviours or States**, as well as the realization that the current state of affairs was not sustainable for the planet. These changes are reminiscent of the Import Substitute Industrialization (ISI) policies pursued by some developing countries in the twentieth century, with States now seeking to innovate and produce natively as much as possible while limiting imports.

The marked different approach to trade than in the past, as well as the fragmented and uncooperative nature of international relations, has had wider impacts. On the one hand, **benefits accrued from innovation are unequally distributed** between spheres of influence, as some are better positioned to create and absorb innovation than others due to more established education systems, better funded research institutions, and innovation-friendly policies. To compensate and to help prevent 'brain drain', **States now put greater emphasis on the equitable distribution of domestic wealth and economic opportunities**. On the other hand, with innovation more centralized, some States are better equipped than others to transition away from fossil fuel use. The world is **fragmented between the use of green energy sources in some States and non-green sources in others**. While the **effects of climate change have been minimized and the supply of food and water remains stable**, thanks notably to changes in the economic domain, lack of cooperation in other areas means that although the Earth is liveable, **the effects of climate change continue to be felt**, in some regions more than others.

The fragmentation at the international level is also reflected in our health systems and migration patterns. Unlike the global response to the COVID-19 pandemic in the early 2020s, **national health systems are coordinated regionally and within their respective spheres**. And while fewer violent conflicts occur resulting in fewer internally displaced peoples, **migration continues as in the early 2020s, with no changes in safety or orderliness**, due to the effects of climate and the draw of a better life elsewhere.

Despite the tense and uneasy disposition of international relations and a general lack of trust towards international organizations, **States tend to be stable domestically**. It is almost instinctive that in a world where the 'global' is unnerving, the 'domestic' provides comfort. The ISI-esque economic policies along with reforms to improve distribution of wealth and economic opportunities at home have been popular with the general citizenry. **Communities are cohesive, national institutions are trusted, and democracy is thriving**.

3.5 A Modern Utopia

In the past two decades, there has been a cultural shift in attitude, led mainly by the demographic cohort born in the 2010s and early 2020s. This new generation of leaders is much more inclined towards working together to solve global challenges. This cohort's experience with events such as COVID-19, COVID-26, the Great Economic Crash of 2032, and devastating impacts of climate change has moulded their worldviews. They realized in the early 2030s that the world was in a downward spiral. Therefore, over the past decade or so, the world's motto has become "we can do better"—and it has been embraced by all.

Improvements have been seen in all aspects of life and the world has become a more equal place at both the individual and the State levels. All States have a greater say—and agency—which has been a critical factor in enabling genuine collaboration and cooperation. As a result, **relations between the majority of States are harmonious** and the **rules-based order—agreed and followed by all—is**

foundational. **Multilateral cooperation has been revitalized**, as it proved itself to be critical to grappling with a range of 'wicked problems' which defined the early twenty-first century.

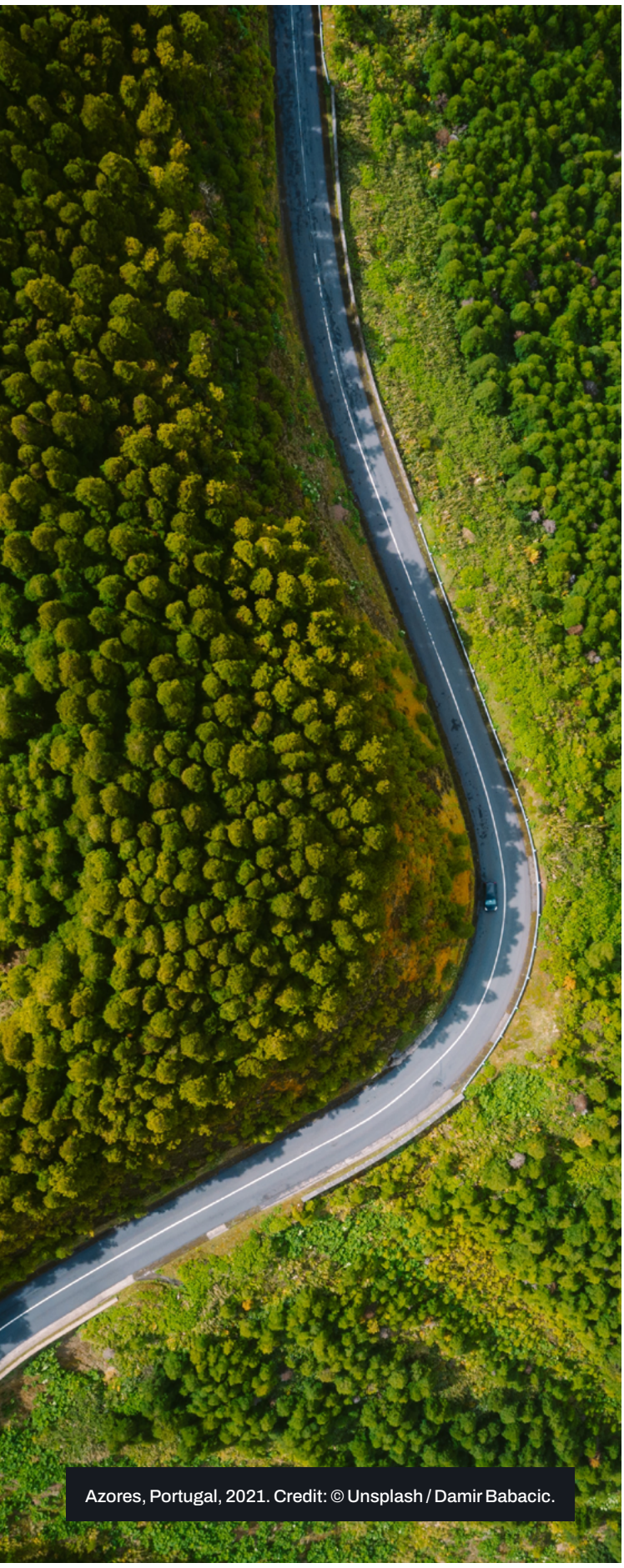
Renewed faith in multilateralism emerged hand in hand with a **resurgence of trust in the competence and integrity of national and international institutions** following a series of wide-ranging, though at times unpopular, reforms. Indeed, multilateralism has become even more critical in a world with **multiple spheres of influence**. Assuredly, the hegemonic poles that lead their respective spheres have understood that accepting one another and working together is the best solution for all.

Despite reticence from certain actors at the time of the reforms, the positive impacts these have wrought over the years are undeniable. The **peacebuilding architecture has been strengthened and is the preferred mechanism for resolving tensions and issues**. As a matter of fact, to maintain good relations, **States actively work to avoid all-out conflict**. Disputes and tensions still occur, but priority is given to diplomatic and non-violent actions to resolve them, such as legal, political, economic, and diplomatic measures. As such, **conflict occurs infrequently** and **when it does, it tends to be localized**, with primarily intra-State conflicts occurring, including instances of armed violence. Increasingly, actors are even choosing not to resort to any form of kinetic or non-kinetic violence against people and infrastructure. In fact, such positive impacts were first seen in the domain of new and emerging technologies, where **additional governance mechanisms regarding the behaviour of both States and commercial actors were agreed upon**, and **weaponization of emerging technologies avoided**.

The motto "we can do better" has also extended to climate issues. While numerous technological innovations have taken place over the past decades in a number of fields, with the **benefits made widely available**, those relating to the energy sector have significantly changed the liveability of Earth by enabling sustainable energy sources. Lifestyle changes combined with these significant advances and collaborative efforts have enabled **the development and widespread use of green technologies**, including nuclear fusion, hydrogen, more efficient and greener batteries, and the deployment of carbon capture technologies at scale. Humans now live in an adapted world: **more parts of the world are becoming liveable again**, enabling human settlements in previously climate-affected places. With the impacts of changing climatic conditions significantly mitigated and the number of severe weather events decreasing, **sufficient and safe access to food and water is ensured globally**.

These circumstances have been conducive to **free trade, which has become the bedrock of the global economy**, with States working cooperatively to ensure that the transnational flow of goods, people, and capital is open and properly regulated. Along with other reforms, this has been an essential factor that has ensured the **equitable distribution of wealth domestically and globally**. Migration of people is now a choice, rather than driven by obligation, despair, or helplessness due to situations of conflict, lack of economic opportunities, and no foreseeable liveable future. As such, **migration of people has become safer, more predictable, and more orderly**.

Domestically, the disenfranchisement felt by the populations only a few decades ago with regard to national political systems has been completely overturned. Indeed, the general trend in recent years has been towards



Azores, Portugal, 2021. Credit: © Unsplash / Damir Babacic.

strengthening democratic processes and institutions globally and **most States have moved towards democratization**, with many considered as full or flawed democracies. Taking on the example of existing regional organizations with highly integrated policies and institutions, other States have even coalesced to form similar supranational unions. Social cohesion has also increased; in turn, **States are more cohesive and stable**. **The influence and impact of private actors on States and international relations has broadly stayed the same**. States continue to be perceived as the legitimate power source, with private actors also playing an important role across many facets of everyday life. This is one of the reasons for which, along with the lessons learned during the COVID-19 and COVID-26 pandemics, **national health systems are not only prepared to effectively respond to health crises but are also globally coordinated,** to an extent that was previously unseen.

4. Reflections on the Methodology

The scenario creation process and the five scenarios which emerged satisfied the first aim of the research project, which was to develop a set of future scenarios for subsequent discussion. Nonetheless, there are reflections on the methodology and the project team's experience which we suggest be taken into account by other prospective users of this methodology.

First, **the importance of having a diverse and sizeable expert group**. There is a fine line to maintain between having a sufficient number of experts and having too many, and thus making the expert group too large to manage properly. The number of core experts within our expert group was sufficient, although it would have been feasible to expand the amount of core experts to 20. However, quantity is not sufficient in itself, and quality is key. As part of this, a diversity of views is critical in order to develop robust scenarios, both to ensure that the scenario creation process benefits from a wide range of expertise but also as a way through which to minimize group bias and subjectivity to the greatest extent possible. Diversity encompasses ensuring different areas of expertise are represented, but also a range of genders, seniority, geographic backgrounds and more.

Second, **the importance of retaining the experts involved in the expert group throughout the duration of the scenario creation process**. Ensuring that the same experts take part throughout the process is important to ensure consistency of inputs and thus outputs. Unexpected circumstances may of course hamper expert participation across all activities, such as other meetings or leave. This can however be mitigated by being realistic about the time expectation needed from experts, knowledge of when key activities will take place, and an agreement with the experts to ensure that they will commit to their role in the expert group throughout the duration of the process—for example, through the use of formal agreements. In our case, while experts were told of the time commitment and length of the study from the start, certain activities ended up taking longer than planned and timelines were extended. In total, we estimate that the expert time required amounted to around 28 hours per person over a period of around seven months.

Third, being aware of **the impact of current affairs throughout the scenario creation process, and implementing mechanisms to identify and decrease this impact if harmful to the scenario creation**. It is almost inevitable that current affairs play a role in shaping some of the expert group's reflections. In this particular instance, for example, the project team sought to mitigate the effects of current affairs as much as possible, by examining a broad range of literature on trends, holding workshops and meetings within the project team and the wider expert group, and including a broad range of expertise in the expert group. However, the timing of scenario creation notably coincided with the end of the pandemic, whereby there was increased attention on epidemic diseases and the broader healthcare infrastructure than there may normally have been. This may therefore explain the reasons behind the factor on healthcare being included in the shortlist, whereas pre-pandemic it may not have been deemed as important. Similarly in other such exercises of the same nature, other factors may, at different points in time, prove to be more influential. For example, a factor such as 'virtual presence and the metaverse' may be included in the shortlist if fast-paced developments were to occur in this field, bringing it to the forefront above other

factors. Being aware of the possible impact of current affairs on the scenario creation process can help ensure the project team is able to account for possible effects, such as having a diverse group of experts knowledgeable on a range of different issues and topics, or taking current affairs into account when moderating discussions and workshops.

Finally, **being prepared for the time commitment and resources needed for the development of future scenarios**. The scenario creation process requires not only a significant time commitment by the expert group, but even more so by the project team. The project team plays a critical role in preparing the materials and instructions for the expert group, running the analysis and more. Therefore, it is important that, to ensure a successful creation of future scenarios, any project team must have the time to facilitate this process. This is also particularly the case if members of the project team are also active members of the expert group, as was the case here, undertaking all scoring exercises alongside the rest of the expert group. It should also be noted that resources beyond time, such as software to run the various scenario components or workshop facilitation tools, are also needed, and should be factored in by any entity looking to produce or work with this type of methodology.

Montreal, Canada, 2016. Credit: © iStock/Josie Desmarais.

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