Futures Series 11

OUR WORLD OF FUTURES STUDIES AS A MOSAIC Part 2

Edited by Tero Villman • Sirkka Heinonen • Hazel Salminen

The Finnish Society for Futures Studies

Tulevaisuuden tutkimuksen seura ry.
Sällskapet för framtidsstudier
Finnish Society for Futures Studies

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TO THE READER

In 2024, the Finnish Society for Futures Studies (FSFS) introduced the first volume of the book Our World of Futures Studies as a Mosaic. Expanding on the ambition and objectives of the first volume and complementing the mosaic of diverse approaches to futures studies and foresight with perspectives from across the globe, we are happy to introduce the second installment, Our World of Futures Studies as a Mosaic, Part 2.

Similarly to Part 1, this new volume seeks to recognize and draw insights from the variety of contexts, traditions, and perspectives that together enrich the field of futures studies. Adhering to the metaphor of a mosaic, the series continues to conceptualize each contribution as a unique piece of a larger composition. Rather than striving for an exhaustive representation, the focus remains on crafting a reflective and inspirational collection that underscores the richness and diversity inherent in the field. Authors were encouraged to contribute with chapters that reflect the histories, traditions, schools of thoughts, people, practices, and forward-looking perspectives of their respective regions or networks, thereby fostering mutual learning and deeper understanding within the global futures studies community. It is through such collaborative efforts that we aim to advance the construction of this intricate mosaic, layer by layer and perspective by perspective.

With its twelve chapters, Our World of Futures Studies as a Mosaic, Part 2, weaves together texts from five continents, offering local and regional contributions discussing futures studies and foresight to the readers. The chapters marked as peer-reviewed have undergone an formal double blind review process, while the other chapters have been reviewed by the editors and, in some cases, also by other experts.

In the first chapter, Muhammad Alaraby analyses the evolution of futures work and foresight in Egypt and the UAE, noting the differences in the countries' strategy and focus, but also shedding light on the challenges and possibilities in their common cultural context of Arab Futures.

Paola Aceituno O. addresses the challenge of institutionalizing futures studies in Chile, showing the evolution from episodic planning exercises towards a proposal for a permanent foresight institutional framework. She perceives strategic foresight as a key state capacity to tackle uncertainty and guide public action through long-term horizons.

Guillermo Gándara Fierro introduces us to the national project Mexico 2050, where the Millennium Project's 15 Global Challenges framework was applied at

the national scale. This collaborative foresight exercise produced three contrasting scenarios towards 2050, demonstrating the power of scenario narratives for strategic dialogue for policy action.

Yuna Lee provides us with insights on the history and contemporary practice of US Congressional Foresight, through cycles of growth and retrenchment. Her analysis is based on archival sources and expert interviews, depicting challenges and subsequent responses, thus drawing a line from Alvin Toffler's 'anticipatory democracy' to the 'anticipatory governance' framework.

Shermon Cruz presents the emergence and transformation of futures studies and foresight in the Philippines. The chapter notably brings to light the Philippine concepts of Siyasip, Hiraya Foresight, and Maharlika Foresight as important examples of how futures work can be culturally grounded.

In the chapter on Japan's Science and Technology Foresight Surveys, Asako Okamura, Yuko Ito, Yutaro Kurogi, Yasuhiro Ogura, Yoshiko Yokoo, and Hidenori Gamo give. us a thorough historical review and account of methodological evolution. They describe in detail how these Surveys have been regularly conducted, highlighting how no single factor can explain this exceptional continuity, but several factors appear to have been influential.

Iryna Gerasymenko and Olena Sushyi describe how the institutional landscape and the practices of futures studies and foresight have developed over time in Ukraine. Based on survey responses and the literature, they also analyse and reflect on the paradox of looking towards the future in a time of war and extreme uncertainty.

Éva Hideg, Judit Gáspàr, and András Márton present the antecedents, key stages, and characteristic features of the 50-year history of Hungarian academic futures studies. They elaborate on the particular social and science policy environment of Hungary and its changes, and the theoretical and methodological progresses.

Yuna Lee and Ian Miles examine the evolution of the United Kingdom's national Foresight Programme in three institutional cycles as a case study of anticipatory governance. They argue that the FP's development has been shaped not only by methodological learning but also by political pressures and successive crises.

Patrick van der Duin relates the developments of foresight in the Netherlands to the modern history of foresight, making note of and interpreting also the commonalities between the Netherlands and other Western European countries as well as the specificities of the Netherlands.

Mara Di Berardo examines the evolution of the Foresight Europe Network (FEN), focusing on the co-evolution and interplay of the network's governance, strategic priorities, and practices, and conveying how stability, directionality, and enactment together influence the development of informal networks.

Guillermo Gándara and Karelys Abarca depict the development of the Ibero-American Foresight Network (RIBER), the largest Spanish-speaking foresight network in the world. They also feature RIBER's collaborative effort in producing its Latin America 2050 publication and consider future challenges and opportunities for the network.

As language shapes culture and communication, for this publication, we also invited the authors to provide an abstract in their local language as well as reflect on their local/regional languages and the concepts used in futures studies. Language is, indeed, a mirror of our perception of the world and of any conceptualizations we are addressing. Thus, it is interesting to ponder what terms are used for future and futures-orientated concepts, and what their different meanings and interpretations are in different regions and cultures. We hope this approach provides additional depth to the writings.

We wish you happy and enlightening moments of reading!

Helsinki, Finland May 26, 2026

Editors,

Tero Villman *Sirkka Heinonen* *Hazel Salminen*

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We, the Editors, express our gratitude to all of the Authors, whose invaluable contributions have created this publication and to the Anonymous Reviewers, who with their insights helped make the texts even better. We want to acknowledge the Finnish Association for Scholarly Publishing (Suomen tiedekustantajien liitto ry) for the grant, which financially supported the development of the layout and graphics of this publication, and Salla Vasenius and Johanna Viherä for the implementation. This financial support has been crucial in bringing our vision to life, allowing us to present the Authors' contributions in a visually engaging manner.

Special thanks to Juho Ruotsalainen, Margit Suurnäkki, and Amos Taylor for their valuable help in proofreading. Finally, we are also grateful to the Finnish Society for Futures Studies for their support throughout this project, for publishing this manuscript in their Futures Series, and for their continuous efforts in advancing futures studies in Finland and internationally.

AFRICA AND THE MIDDLE EAST

Muhammad Alaraby
M.A, PGDip.
Head of the Strategic Foresight Program, FARAS, Abu Dhabi
Co-founder, the Arab Futures Society

1 BEING A FUTURIST IN THE ARAB WORLD: Promises and pitfalls of futures in Egypt and the UAE

Abstract

This chapter surveys the evolution of Arab futures studies from the 1970s to the present. By comparing Egypt and the UAE, it examines the social and institutional roles of futurists in each nation. The analysis demonstrates that despite shared cultural roots, both countries exhibit fundamentally different approaches to future-oriented thinking. This comparison underscores the adaptability of foresight to national contexts and highlights the necessity of "Arab futures" to navigate regional political, technical, and social shifts. Methodologically, the study utilizes qualitative data and in-depth interviews with practitioners to evaluate these diverse experiences.

Keywords: Strategic Foresight, Arab Futures, Scenario Planning, Egypt, United Arab Emirates (UAE)

ملخص:

يقدم هذا الفصل ملمحاً عاماً عن تطور الدراسات المستقبلية في العالم العربي منذ سبعينيات القرن العشرين حتى يومنا الحالي. كما يعقد مقارنة بين مسارات تطور الدراسات المستقبلية والاستشراف الاستراتيجي في كل من مصر ودولة الإمارات، من خلال دراسة دور المستشرفين والمتخصصين في الدراسات المستقبلية في كلا البلدين في إطار خبراتهم الاجتماعية والمؤسسية المختلفة. يوضح الفصل أنه على الرغم من اشتراك البلدين في الجذور الثقافية، إلا أن كلاً منهما لديه تجربة مختلفة تماماً في مقاربتهما للتفكير المستقبلي. تؤكد هذه المقارنة قدرة التفكير المستقبلي على التكيف مع خصوصيات تجارب البلدان المختلفة، والحاجة إلى مستقبلات عربية لاستكشاف التحديات السياسية والتقنية والاجتماعية التي تفرضها تحولات العالم على المنطقة. وقد اعتمد هذا الفصل على بيانات كيفية وإجراء مقابلات معمقة مع مستشرفين عرب لتقييم تجاربهم .

Introduction

Over the past half-century, the Arab world has navigated profound socio-economic shifts, from the 1973 oil crisis to the end of the Cold War, maintaining its status as a global geopolitical pivot. Amidst contemporary conflicts and technological disruption, interest in futures thinking has resurfaced, echoing the intellectual momentum of the late 1960s and early 1970s (Salem, 2019). Driven by digital capabilities, this resurgence addresses the need to manage regional complexity while expressing an ambition to redefine sovereignty and shape global trends.

This vitality is reflected in a surge of initiatives, think tanks, and academic programs—particularly in Egypt and the UAE—and the adoption of national strategic visions. Such transformations are visible in the rise of green, smart cities (Zigurat, 2023) and the use of foresight tools to address regional sustainability (Kenney, 2024). Within this framework, Arab futures postulate that "decolonized" perspectives are essential for autonomous policy planning. The possibility of Arab futures depends on creating visions that are globally integrated yet locally sensitive to ensure regional resilience (Tirpak, 2025).

Despite this momentum, the field remains under-researched, with limited focus on how the discipline adapts to specific Arab organizational and cultural contexts. Arab futurists have yet to develop a unique tradition reflecting their societal particularities. Consequently, this chapter compares the trajectories of Egypt and the UAE to assess the "state of the art" of regional foresight. This comparison illustrates the field's adaptability and its potential to transform organizational cultures, while identifying the structural challenges facing nations that share a common heritage but divergent strategic approaches.

Methodology

The chapter focuses on the experiences of futurists in Egypt and the UAE to assess the current state of the art. It explores how Arab futurists define their roles within wider organizational and social contexts. The primary research question is, What dynamics shape the professional role of futurists in the Arab world, and how do the experiences of foresight in Egypt and the UAE diverge or converge based on institutional frameworks, leadership, and technology, rather than shared cultural and social norms?

This chapter employs a qualitative research design to extract the historical evolution of futures studies in the Arab world and to assess the current "state of the

art" in Egypt and the UAE. It analytically engages with open-source data that describes the evolution of the art in the Arab world since the 1970s, including publications and official data available online. By using this data, the chapter explores how the field has transitioned from broad pan-Arab initiatives in the 1970s to the increasingly state-focused or sector-specific projects observed today.

To bridge the gap between official rhetoric and professional reality, the author conducted 11 in-depth, semi-structured interviews with a diverse group of researchers, professionals, and officials.[1] The interlocutors included experts working for prominent futures institutions, government-affiliated think tanks, and academic centres in both countries, such as the Information and Decision Support Centre (IDSC) in Egypt and the Sharjah Police Foresight Department in the UAE. Engaging with these practitioners was essential to contrast the practical realities of the field against the official narratives promoted by each state. This method provided a lens into the "isolated island" position of many foresight entities and helped identify the structural and institutional challenges that frequently impede futures thinking.

The interview protocol was designed to explore five core thematic areas: professional identity, societal role, organizational context, the influence of technology, and prospects. Specifically, participants were asked how they define their roles and whether they even perceive themselves as "futurists." Further inquiries focused on the role of futurists within their specific social and organizational settings, the central influence and perception of technology as a transformative force, and the perceived opportunities and challenges for expanding the field. Ultimately, this comparative approach assesses the divergent circumstances of the field in two nations that, while sharing a common Arab culture and tradition, have adopted fundamentally different strategic approaches to foresight.

As the primary quest is to explore the experiences of practitioners, it is essential to distinguish between futurists and futures researchers. The Association of Professional Futurists (APF) defines the former by their mastery of methodologies like scanning and visioning, with their utility measured by translating insights into actionable strategic plans (APF, 2025). Conversely, futures researchers prioritize 'neutral' scientific anticipation and resilient reactions to possible futures, often leaving active vision promotion to political actors. This chapter assesses where Arab practitioners fall on this professional spectrum.

1 A list of the interviewees' names is available in the acknowledgment section.

The historical & institutional context

The evolution of Futures Studies in the Arab world

Futures studies emerged in the Arab world during the mid-1970s as an intellectual response to the region's shifting political landscape. Following the retreat of Pan-Arab nationalism, a generation of intellectuals—including economists and political thinkers—sought to map the region's trajectory through primarily non-governmental research projects. These initiatives, spurred by the 1973 Oil Shock and inter-Arab conflicts, explored alternative futures but remained fragmented (Mansour, 2014). Despite their transnational ambitions, these efforts focused more on political visioning than on developing rigorous, tailored foresight methodologies.

A seminal study of this phase was The Arab World in 2000, published by the Arab Development Institute and led by Antoine Zahlan (see Zahlan, 1975). Operating on the premise that "if Arabs don't plan their future, others will plan it for them," the study projected sectoral developments based on 1970s data (Mansour, 2014). However, the methods were relatively simplistic, and the study failed to correlate developments across sectors or construct a cohesive, aspirational vision for the Arab future.

Other 1970s initiatives included the Cairo Group for Arab Long-Range Planning (ALRP, 1977), established in 1977 and sponsored by the Kuwait-based Arab Fund. Though intended to bolster long-term capabilities, the project was short-lived. Similarly, the "Troika Committee"—economists Antoine Zahlan, Burhan Dajani, and Ahmed Gaballah—prepared background papers for the 1978 pan-national conference in Baghdad (Troika Committee, 1978). By 1979, the League of Arab States (LAS) sponsored an economic union strategy. While it emphasized futuristic planning, its horizon was limited to a single decade. (Mansour, 2014)

The watershed moment arrived in 1988 with *The Future of the Arab Nation*, a transnational scenario-planning initiative by the Centre for Arab Unity Studies (CAUS) (Saadeldin et al., 1989). It identified three regional trajectories: the Base (status quo), Reform, and Unity scenarios. Unlike earlier economy-centric projects, this study examined geopolitics, culture, and identity over a twenty-year horizon (Alkilani, 2016). While a feat in localizing futures thinking, it failed to foresee the regional fragmentation following the 1990–1991 Gulf War.

The frustration stemming from this geopolitical shift, the end of the Cold War, and diminishing hopes for Arab unity led to a stagnation of the field at the regional level (see Kashan, 2000). Consequently, little was done to advance futures methodologies within academic or policy circles, resulting in significant gaps in knowledge accumulation.

The Egyptian trajectory

The evolution of futures studies in Egypt is rooted in the 1970s, a decade of profound socio-political transformation and systemic volatility. During this era, the Egyptian intelligentsia experienced sharp ideological polarization, divided between an emerging Islamist insurgency, a state-aligned conservative right-wing, and a radicalized and Nasserist left-wing.

Amidst this landscape, Ismail-Sabri Abdalla authored a seminal scenario-based inquiry into the Egyptian revolution, positing three trajectories: negation, incremental progression, or comprehensive reconstruction.[2] This theoretical breakthrough warned of the structural repercussions and global dependency inherent in the unplanned "Open Door" (*Infitah*) policy. Despite Abdalla's influence as a statesman and head of the Institute of National Planning, his Marxist orientation led to the marginalization of these efforts, resulting in two decades of stagnation (El-Issawy, 2000).

In 1997, the field saw a resurgence with the UNDP-sponsored project *Egypt 2020*, led by Abdalla. This multidisciplinary initiative constructed five scenarios for the nation: the Status Quo, the Islamist State, the Neo-Capitalist State, the Neo-Socialist State, and the Popular Consolidative State. While establishing a benchmark for strategic foresight in the Arab world, the project exposed persistent constraints regarding sustainable funding and a deficit of trained practitioners (Mansour, 2014).

The momentum from *Egypt 2020* inspired the 2004 establishment of the Centre for Futures Studies (CFS) within the Egyptian Cabinet's Information and Decision Support Centre (IDSC).[3] Under Mohamed Ibrahim Mansour, the CFS addressed global challenges like technological disruption and resource security. Its flagship project, *Egypt 2025* (Mansour, 2008), used a participatory approach to create scenarios for water security, investment, and a new administrative capital (Göll, 2012).

The post-2011 revolutionary period necessitated a restructuring of the IDSC, during which the CFS contributed significantly to the drafting of "Vision 2030"—the state's official strategy for sustainable development, adopted in 2016. Following a period of bureaucratic transition, the IDSC-CFS was reorganized in 2022 into the General Directory for Futures Studies (GDFS).

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2 For more on the pivotal role of Abdallah in developing the field in Egypt, see Institute of National Planning. (n.d.). A.D. Ismail-Sabri Abdalla [Pioneers of the Institute of National Planning].

3 IDSC website: https://www.idsc.gov.eg

Currently, the IDSC-GDFS remains the preeminent entity in the Egyptian foresight landscape. It produces rigorous research series, including "What If" Scenarios: Explorations of systemic contingencies, *Fikra Lebokra* (An Idea for Tomorrow): Innovative proposals for future governance, and Sectoral Futures: Integrated political and technical analyses focusing on the future of work, energy, health, water, food, and education.[4]

While the IDSC remains active, other institutional efforts have faced sustainability challenges. The Bibliotheca Alexandrina's Unit for Futuristic Studies, established in 2009, initially bridged sociology and foresight through its peer-reviewed periodicals *Marased and Awaraq*. Despite its intellectual breadth—covering Islamic culture, economic reform, and cyber technologies—the unit ceased operations in 2017 due to resource constraints and bureaucratic shifts.[5] Other defunct or inactive entities include the Future Studies Centre at Assiut University and the Egyptian Arab Future Research Association (Göll, 2012).

Futures studies lack formal institutionalization in Egyptian academia. While the National Planning Institute recently introduced a foundational diploma, dedicated postgraduate programs remain unrealized. However, receptivity is growing within disciplines like political science and sociology, which increasingly accept these employing futures-oriented methodologies.

The UAE trajectory

Futures studies in the UAE have followed a distinct path, diverging from traditional pan-nationalist influences to become a core component of a state-led strategy. This approach aims to reorient the national psyche towards a future-centric outlook and facilitate global integration (Oloumi & Simmonds, 2025). To realize this, the UAE has adopted a technical strategy, prioritizing technological integration across sectors to digitize governance and attract global capital.

Consequently, the "Future" has transitioned from a conceptual abstract to a central pillar of state rhetoric and strategic planning. While official narratives suggest that the future has been a foundational element of the union since 1971, complementing a profound pride in heritage and the legacy of the late Sheikh Zayed bin Sultan Al Nahyan, this emphasis underwent a significant acceleration during the second decade of the 21st century (Abdulla, 2021).

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4 IDSC-GDFS's publications are available here: https://www.idsc.gov.eg/PeriodicPublications/details/78

5 Bibliotheca Alexandrina Digital Assets: https://www.bibalex.org/ar/publication/index

This emphasis accelerated through Dubai's distinctively ambitious and progressive developmental model. Unlike the broader federal approach, Dubai's "Sheikh CEO" leadership style prioritized rapid, future-centric projections that shaped the national psyche long before the formal institutionalization of the field.[6] In this regard, Dubai, the largest city, has shown greater progressiveness and ambition than any other emirate, even the federal capital, Abu Dhabi, due to its unique economic makeup, which depends more on trade, investment, and logistics than on hydrocarbons. However, over time, this model of progress created a shift towards the future across the whole country.

The strategic shift was catalysed by a focus on innovation, starting with the 2000 launch of eGovernment (UAE-ICP, 2012). To formalize this, the Mohammed bin Rashid Centre for Government Innovation was established in 2014, followed by 2015 as the "Year of Innovation". These milestones culminated in the 2016 creation of the Ministry of Cabinet Affairs and the Future, a first for the region. (MBRF, 2020)

This institutional shift integrated foresight and scenario planning into the national policy-making cycle. In 2017, the ministry launched its inaugural strategy to develop predictive models for health, education, development, and the environment. The strategy aligns current policies with future trends, enhances national expertise, and fosters international collaboration.[7] Concurrently, the UAE Future Foresight Platform was introduced as a digital resource to prepare stakeholders for future complexities.

These institutional milestones are anchored in the UAE Centennial 2071, a comprehensive 50-year vision designed to position the UAE as a global leader by its centenary. This initiative provides the strategic framework for the 2017 Future Foresight Strategy, transitioning national planning from medium-term objectives to a generational perspective encompassing education, economic development, and governmental integration.[8]

The Prime Minister's Office (PMO) serves as the primary custodian of foresight methodologies within the federal government. It oversees the development of scenario planning toolkits designed to assist governmental entities in analysing

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6 This model was embodied by Sheikh Mohammed bin Rashid Al Makhtoum, the long serving ruler of Dubai and the prime minister of the UAE. For more on this model, check his book "The Sheikh CEO: Lessons in Leadership" available on the website: https://sheikhceo.com

7 The UAE Future Foresight Strategy: https://u.ae/en/about-the-uae/strategies-initiatives-and-awards/strategies-plans-and-visions/innovation-and-future-shaping/future-foresight

8 The UAE Centennial 2071 Plan: https://u.ae/en/about-the-uae/strategies-initiatives-and-awards/strategies-plans-and-visions/innovation-and-future-shaping/uae-centennial-2071

potential future trajectories and innovative solutions. In 2023, the PMO institutionalized "future readiness" within the Government Excellence Model (GEM) (Crowe UAE, 2023), subsequently updating it in 2024 to include rigorous criteria for strategic foresight.[9]

The establishment of the Museum of the Future (MOTF)[10] under the Dubai Future Foundation in 2022 represents a watershed moment for the field. The institution serves to showcase and investigate advancements in science, technology, and innovation. According to scholar J. Sweeney (personal communication, January 2026), the MOTF doesn't just show a definitive future—it crafts a perceptive one, challenging and transforming how the public views what lies ahead.

The museum's architecture symbolizes the UAE's narrative of using technology to bridge historical heritage and future aspirations. While the facade features Arabic calligraphy—embodying an official quote by Sheikh Mohammed bin Rashid—the interior explores ultra-modern scientific concepts. According to Nick Foster (2025, p. 67), the MOTF is an epitomical symbol of merging future narrative with business endeavour, technology, and science fiction. Since its opening, the MOTF has become a global centre for future-tech events and the permanent host of the annual Dubai Future Forum, the world's preeminent gathering of futurists.

Dubai Future Foundation plays a major role in institutionalizing specialized training with Dubai Future Academy (DFA)[11], the nation's first organization offering futures studies training. This initiative has provided the foundational capacity-building necessary to transition from theoretical interest to a professionalized workforce capable of executing national strategies.

Strategic foresight has seen significant adoption, especially within law enforcement, where specialized units utilize these tools for anti-narcotics efforts, fraud prevention, cybercrime mitigation, and the reform of rehabilitation systems. Police forces in Dubai, Sharjah, and Abu Dhabi have actively integrated these methodologies into their operational frameworks.

9 The UAE future readiness index: https://u.ae/en/about-the-uae/uae-in-the-future/dubai-future-readiness-index

10 The Museum of the Future: https://museumofthefuture.ae/en

11 The DFA: https://www.dubaifuture.ae/initiatives/capacity-building/dubai-future-academy

The academic landscape has similarly experienced a surge in futures-oriented programs. Currently, three national universities lead this academic expansion:

- The University of Dubai: Home to the Centre for Futures Studies and a Scenario Lab, it offers specialized diplomas covering futures thinking and scenario planning for the energy, health, and government sectors.[12]
- Zayed University: The Strategy and Future Department focuses on aligning institutional strategic plans with national long-term visions.[13]
- UAE University (UAEU): It has introduced "The University for the Future" to examine trajectories for higher education (UAEU, 2025). It also houses the Department of Future Foresight, which promotes institutional preparedness across the economy, technology, and education.
- The American University in the Emirates offers a postgraduate program focused on trend scanning, scenario development, and sustainable futures.

A robust network of Abu Dhabi-based think tanks—including Emirates Centre for Strategic Studies and Research (ECSSR), the Emirates Policy Centre (EPC), and Trends Research and Advisory—provides data-driven support for decision-making through initiatives on global transformations and energy security. Additionally, Future for Advanced Research and Studies (FARAS) has launched a strategic foresight program headed by the author in February 2023. Its flagship publication, *Futures Insights*, is a monthly series featuring original voices and debates beyond a purely technological focus.[14]

These multi-scale endeavours demonstrate that the 'Future' is central to the UAE's nation-building efforts, moving beyond mere vision documents to a state of advanced strategic integration. However, as explored in the following sections, this official approach faces significant hurdles in localization and in bridging the gap between futurists and decision-makers within their respective institutional capacities—challenges that both converge and diverge with the experiences of other Arab nations.

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12 The Centre for Futures Studies: https://cfs.ud.ac.ae

13 The Strategy and Future Department at Zayed University: https://www.zu.ac.ae/main/en/sfd/index

14 Futures Insights Series: https://futureuae.com/en-US/Mainpage/Category/109/strategic-foresight

Futurists, society, and technology in Egypt and the UAE

Futurists as policy advisors

In Egypt, the professional identity of a "futurist" remains in a state of nascent development, with only a select few explicitly having adopted the title. For most practitioners, the field has not yet achieved the institutional maturity required to establish a distinct professional class. Consequently, these individuals often locate themselves within a spectrum of professional roles:

- Academic specialization: Many practitioners identify primarily as academics seeking to establish futures studies as a research sub-specialization within established disciplines such as political science, international relations, and sociology. (Aldeeb, personal communication, January 2026)
- Institutional Facilitation: Others view themselves as facilitators within state or non-governmental entities dedicated to strategic foresight. (S. Ashour, personal communication, December 2025)

A recognized tension exists between the need for professional toolkits and a formal academic foundation in futures studies. While institutional frameworks offer technical training, formal academic engagement remains limited. Practitioners who self-identify as futurists typically possess extensive experience or have contributed to high-level initiatives such as Egypt 2020 and Egypt 2030, often citing international organizations—such as the UNDP and United Nations University—as instrumental in enriching their professional skills.

In contrast, the UAE trajectory features a more assertive professional identity, with most practitioners explicitly identifying as "futurists". This distinction stems from applying strategic foresight to policy development rather than academic inquiry. As noted by AlZarouni (2026), a futurist's utility is defined by translating insights into actionable policy options and strategic plans. These practitioners are deeply integrated into the global community, often holding memberships in prestigious bodies like the Association of Professional Futurists (APF) and the World Futures Studies Federation (WFSF).

Generally, professionals in Egypt fall into the category of futures researchers who prioritize academic rigour and neutral inquiry over proactive advocacy. Conversely, UAE futurists focus explicitly on policy development. This reflects a broader methodological spectrum: Egypt leans towards futures research (e.g., macroscenarios and probability), while the UAE leans towards the futurist approach

(e.g., weak signal identification and plausibility). Despite these varying levels of professionalization, there is a regional consensus: the core mandate is to inform decision-makers by unveiling megatrends and uncertainties. Ultimately, the specialized capability to construct alternative scenarios serves as the qualifying metric distinguishing a futurist from a traditional researcher.

Society and the Future's Gap

In Egypt, a "perception gap" persists as society often conflates foresight with undisciplined prediction or speculation. Despite established frameworks, the field remains poorly defined in the public consciousness, leaving its success heavily contingent on the commitment of institutional leadership. Consequently, practitioners must articulate the value of foresight themselves, a task frequently obstructed by bureaucratic compartmentalization and rigid workflows. To address these challenges, several initiatives have sought to enhance public "futures knowledge":

- The Bibliotheca Alexandrina's UFS: This unit conducted workshops on the foundations of futures studies and "Post-Normal Times" theory for students and the public. Its open-source publication policy significantly extended its outreach.
- The Cairo School for Liberal Arts and Sciences (CILAS): By adopting a liberal arts approach, CILAS integrated futures thinking with education and cultural studies through research labs focusing on game theory and "Black Swan" events.[15]
- The IDSC-GDFS: Through university collaborations, it introduced foresight thinking tools to students via short courses and "future labs," revealing a high demand for the discipline among the youth.

Despite these efforts, the absence of a unified national association of futures studies has led to fragmented, interrupted initiatives that struggle to localize knowledge effectively.

Egyptian futures thinking prioritizes political and administrative strategic foresight over fundamental societal transformation, as evidenced by the approach to urban development. Driven by national and GCC investments, the official narrative focuses on "4th-generation" cities, with the IDSC-GDFS exploring resilient, smart, and green urban centres towards 2050 (for example, IDSC, n.d.).

15 See, for example, the syllabus of the research lab, a critical introduction into futures studies which the author was facilitating:
https://www.ci-las.org/the-research-lab-a-critical-introduction-into-futures-studies.htm

However, this perspective remains adaptive rather than transformational, often importing global urbanization models as "blank slates" without accounting for the socio-economic realities of existing cities. Consequently, these projects risk creating a spatial and social divide between the elite and inhabitants of older centres like Cairo, Alexandria, and Mansoura, whose futures remain under-explored.

The UAE's trajectory follows a modernist framework prioritizing institutional efficiency and challenge-based adaptation without fundamentally altering the social fabric. Within this paradigm, academic programs often reinforce institutional needs, and some futurists view societal engagement outside official frameworks as being beyond their mandate. However, "seeds for change" are emerging through more inclusive models: the DFF has introduced transformative tools like Causal Layered Analysis (CLA) to broaden debates, while the Sharjah Police Department of Strategic Foresight is organizing discussions intended to eventually include broader societal stakeholders (AlZarouni, personal communication, January 2026).

Technology: Disruption and development

In Egypt, technology is viewed through a developmental lens as a fundamental component of futures research. Discourse centres on technology's role in labour, geopolitics, and socio-economic transitions, with a profound concern for the ethical and societal implications of disruption. This focus reflects modest public investment in emerging tech, a result of chronic economic challenges and budgetary pressures following the 2011–2014 political turmoil.

The recent financial stabilization has enabled Egypt to launch initiatives catalysing foreign and domestic investment in technological startups, the number of which has increased sevenfold in five years (PwC, 2024). A primary driver is the expansion of Artificial Intelligence (AI) education, ranging from traditional engineering faculties to new specialized AI colleges across various governorates (Daily News Egypt, 2025).

Despite this progress, technological tools are only integrated into foresight methodologies on a limited scale. According to Ashour (personal communication, December 2025), this restricted role is attributable to a deficit in the specialized expertise required to calibrate technologies for foresight applications. For example, experimental attempts to utilize a locally developed Large Language Model (LLM) have yielded suboptimal scenarios due to a lack of updated research data within the model.

Conversely, the UAE's approach to foresight is characterized by a central reliance on technology, which serves as the primary conduit for futures thinking. In this paradigm, technology is viewed as the essential transformative force capable of propelling the nation into the future. This emphasis is so pronounced that "Technology" and "The Future" often appear as synonymous terms within official state narratives.

The UAE's national foresight strategy is intrinsically linked to two major disruptive technology initiatives: the Fourth Industrial Revolution (4IR) Strategy and the Mars 2117 Project. The 4IR Strategy aims to establish the UAE as a global innovation hub, focusing on six core themes—the human, security, experience, productivity, frontiers, and foundations—and is bolstered by the C4IR UAE's research on AI and blockchain. Meanwhile, the Mars 2117 Project utilizes space exploration as a catalyst for economic diversification, exemplified by the entirely Emirati-led Hope Probe mission (Strohal Legal group, 2022). Broadly, the UAE positions itself as a frontier for global capital in emerging technologies like AI and robotics, a drive closely tethered to its investments in cyber warfare and defence indigenization. (Keshavarzian, 2022; IISS, 2024)

Challenges and pitfalls

Futures studies and strategic foresight in Egypt and the UAE face common obstacles, including short-term decision-making, fragmented institutional knowledge, and challenges adapting the field for Arabic speakers.

The Professional-Political gap

A fundamental tension exists between the extended horizons required for rigorous foresight and the immediate demands of political decision-makers, who often prioritize "instant fixes" over long-term strategic possibilities (Salem, 2019). In Egypt's stressed political system, long-termism is frequently viewed as a rhetorical luxury, while in the UAE, a persistent gap remains between futurists and the leadership despite official pro-future narratives. Consequently, futurists often feel compelled to align their work with immediate policy needs, risking the reduction of foresight to routine bureaucratic practice or the "tyranny of the ad hoc" within think tanks that prioritize short-term regional security analyses.

Fragmentation and the "silo" effect

The effectiveness of foresight is hampered by a lack of horizontal integration across governmental and academic sectors. In Egypt, entities often operate in "isolated island" positions, unaware of one another even within the same city. This fragmentation prevents knowledge accumulation and the development of a foresight tradition that resonates with societal values. (R. Esmat, personal communication, January 2026)

In the UAE, a similar lack of collaboration exists between entities at both the federal and emirate levels. Institutional cooperation in the UAE is often hindered by regulations, such as "non-competitiveness" rules, which explicitly prevent organizations from collaborating or exchanging foresight experiences. This fragmentation is particularly profound among think tanks.

Related to that is the lack of a community of practice in both countries. A community is essential for honing the skills of futurists, researchers and practitioners, establishing a futures tradition and developing the methods in ways that reflect the needs of society. While attempts to build an association for the practitioners and organizations of foresight have been halted (E. Moawad, personal communication, January 2026), a renewed attempt is underway to gather the futures-related entities in Egypt, an effort led by IDSC-GDFS (Ashour, personal communication, December 2025).

Human capital and the challenge of indigenization

The sustainability (of the field) is threatened by a deficit in local expertise and a reliance on external frameworks that may not align with the regional context. Despite the high interest in (futures in the UAE, highly trained futurists with deep theoretical knowledge remain a minority within government agencies. A significant challenge is the business model's reliance on outsourcing foresight services to foreign experts, which prevents nationals from building indigenous, sustainable skills and know-how.

In Egypt, on the other hand, the lack of academic programs hinders human capital development, leaving institutions short of trained futurists. Consequently, emerging researchers in state agencies, think tanks, or independent roles must rely on self-learning, as specialized online courses are often prohibitively expensive.

The localization of futures knowledge in Arabic remains a significant obstacle. Despite translation efforts, the accessibility of English makes it the dominant medium, creating a barrier to "indigenizing" the field and hindering transformative, participatory approaches. This issue is particularly salient in the UAE, which relies more heavily on foreign advisors and futurists for project implementation compared to Egypt.

Opportunities and prospects

Future studies remain insufficiently institutionalized within Egypt's organizational and social frameworks. Despite pervasive uncertainties caused by political instability, geopolitical volatility, and economic challenges, long-term thinking is often confined to official rhetoric. Consequently, foresight is frequently perceived as a luxury reserved for entities with surplus time and resources. (Aldeeb, personal communication, December 2025)

Egypt remains a fertile ground for expanding futures theory through several key opportunities:

- **Human capital development:** the increasing interest could facilitate the establishment of dedicated "futures hubs" in universities or NGOs.

- **Youth engagement:** Recruiting youth into UN, government, and NGO programs provides early exposure to foresight toolkits (BadrEldin, personal communication, January 2026). This is bolstered by the expertise of Egyptian futurists abroad (Lahham, personal communication, January 2026).
- **The private sector:** As an emerging economy with high foreign investment, Egypt's business sector is an untapped resource. Market incentives may drive firms to adopt foresight to navigate new markets (K. Shoair, personal communication, January 2026).

In contrast, the UAE model focuses on institutional sustainability and global leadership:

- **State-led sustainability:** Robust state support guarantees the long-term integration of foresight into organizational culture.
- **Futures diplomacy:** The UAE excels in "futures diplomacy," using events like the Dubai Future Forum to position itself as a global hub for planners and technologists.
- **Global niche branding:** By fostering this ecosystem, the UAE is transitioning from a practitioner to a global coordinator of future-oriented innovation

Conclusion

The evolution of futures studies in the Arab world over the past half-century reveals a significant transition from the transnational, pan-Arab ambitions of the 1970s to the state-centric and sector-specific models of today. While projects like the American University in Cairo's Almostaqbal initiative attempt to revive an integrative regional lens (Gameel et al., 2022), the inquiries and interviews conducted for this study demonstrate that the "image of the future" is fundamentally a product of current national realities. In Egypt, the approach remains primarily developmental as the state navigates socio-economic hurdles, whereas the UAE model is anchored in a quest for global technological and investment leadership.

The primary data gathered through interviews with practitioners in both countries highlights that these models are shaped not by shared cultural or social norms, but by the willingness of leadership to empower foresight and the specific organizational cultures in which futurists operate. My conversations with these professionals suggest a persistent "perception gap" and a struggle against the "tyranny of the ad hoc," where long-term thinking is often sidelined by immediate political or administrative crises. Furthermore, the lack of a robust community of practice and a reliance on external, often Western, frameworks hinder the indigenization of the field, particularly regarding the use of the Arabic language.

Ultimately, for the region to move towards "transformative futures," the field must transcend institutional silos and integrate broader social stakeholders into the foresight process. There remains a critical need to bridge the gap between Arab foresight and the rising discourse of indigenous futures in the Global South by revisiting the region's cultural heritage. While technical efficiency and economic sustainability currently dominate the agenda, the future of the field depends on its ability to re-engage with political and social discourse, ensuring that the envisioned future is not just a technological frontier, but a reflection of local identity and societal aspirations.

Notes on futures terminology in Arabic

The Arabic language is an extremely rich tradition that has remarkable width in geography and depth in history, which makes it adaptable and innovative in addressing futures. It has various styles and dynamics in expressing the richness of the field and its methodologies. Table (1) shows the most common Arabic words of futures, their meaning and transliterations.

Table 1. The common Arabic words on futures and foresight.

Arabic Word	Transliteration	Meaning	Concept
المستقبل	Al-Mustaqbal	Future	Prospect and time to come
المستقبلات	Al-Mustqbalat	Futures	The field in plural, commonly used as (Al-Dirasat Al-Mustaqbalia)
الاستشراف	Al-Istishraf	Foresight	The act of seeing from afar and above. Commonly used with adjective (Al-Istrategi); strategic, taken from the same Greek origins (Stratos)
الاستباق	Al-Istibaq	Anticipation	Proactive actions, being ahead of events before they take place
التنبؤ	Al-Tanabbu'	Prediction	Foretelling and forecasting
التوقع	Al-Tawaqqu'	Expectation	Commonly used to refer to projections

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THE AMERICAS

Paola Aceituno O.
Ph.D. in Administration,
Universidad del Valle
Founder of ProspectivaChile

2 FROM THE PLANNING STATE TO THE ANTICIPATORY STATE: The challenge of institutionalizing futures studies in Chile

Abstract

The evolution of anticipatory governance in Chile reflects a gradual transition from episodic planning exercises toward the proposal for a permanent foresight institutional framework. This article reconstructs the historical trajectory of state-linked foresight initiatives, from early planning agencies to contemporary parliamentary debates on the creation of a Strategic Futures Agency. It argues that while Chile has accumulated significant methodological and institutional experience, foresight has remained fragmented, dependent on political cycles, and insufficiently institutionalized.

The recent Strategic Foresight Roundtable, convened by the Senate's Commission on Future Challenges represents a turning point in the effort to embed anticipatory capacity within the state, culminating in a legislative proposal to establish a Strategic Futures Agency.

From this experience, key lessons emerge regarding the need to consolidate a stable institutional framework with a clear mandate, technical capacities, and continuity over time, and to advance toward a national foresight ecosystem that integrates public and territorial actors, strengthens anticipatory governance, and safeguards the state's capacity to anticipate and respond to structural and emerging challenges. Strategic foresight is presented as a key state capacity to address uncertainty, guide public action through long-term horizons, and counteract the short-term logic that dominates decision-making.

Keywords: Prospectiva, foresight, future studies, anticipatory governance, Future commitees

Resumen

La evolución de la gobernanza anticipatoria en Chile refleja una transición gradual desde ejercicios de planificación episódicos hacia la propuesta de un marco institucional permanente de prospectiva. Este artículo reconstruye la trayectoria histórica de las iniciativas de prospectiva vinculadas al Estado, desde las primeras agencias de planificación hasta los debates parlamentarios contemporáneos sobre la creación de una Agencia de Futuros Estratégicos. Se argumenta que, si bien Chile ha acumulado una importante experiencia metodológica e institucional, la prospectiva ha permanecido fragmentada, dependiente de los ciclos políticos e insuficientemente institucionalizada.

La reciente Mesa de Prospectiva Estratégica convocada por la Comisión Desafíos del Futuro del Senado representa un punto de inflexión en el esfuerzo por incorporar capacidades anticipatorias dentro del Estado, culminando en una propuesta legislativa para la creación de una Agencia de Futuros Estratégicos.

A partir de esta experiencia, emergen lecciones clave sobre la necesidad de consolidar un marco institucional estable, con un mandato claro, capacidades técnicas y continuidad en el tiempo, así como de avanzar hacia un ecosistema nacional de prospectiva que integre actores públicos y territoriales, fortalezca la gobernanza anticipatoria y resguarde la capacidad del Estado para anticipar y responder a desafíos estructurales y emergentes. La prospectiva estratégica se presenta como una capacidad clave del Estado para abordar la incertidumbre, orientar la acción pública mediante horizontes de largo plazo y contrarrestar la lógica cortoplacista que predomina en la toma de decisiones.

Introduction

The systematic incorporation of anticipation into public action has become a central component of anticipatory governance (Fuerth & Faber, 2012), understood as the state's capacity to reflect on and manage possible futures in a structured manner and integrate that knowledge into public decision-making. In this framework, foresight is not an isolated technical exercise but a structural governance tool to manage uncertainty and strengthen long-term strategic orientation.

In Chile, foresight has developed in a fragmented and intermittent manner. Since the mid-twentieth century, a range of planning and future-oriented initiatives have been implemented through ministries, planning agencies, regional governments, and publicly funded institutions. These experiences provide a valuable empirical foundation for analysing both the potential and the structural limitations of foresight within the Chilean political-administrative system.

This article systematizes these experiences and examines the recent legislative initiative to create a permanent institutional framework for strategic foresight. It further examines parliamentary Future Committees worldwide and the Chilean foresight agency bill, proposing a foresight ecosystem that articulates the relevant actors.

State, planning, and foresight: the Chilean case

From the mid-1950s onward, Chile developed multiple planning initiatives led by Corporación de Fomento de la Producción (CORFO, the corporation for the promotion of production), the Ministry of Agriculture, and the National Planning Office (ODEPLAN).

Established in the 1960s, ODEPLAN reported directly to the President and served as a central technical body for national planning and development. In 1990, its transformation into the Ministry of Planning and Cooperation (MIDEPLAN) consolidated its institutional role and concentrated its functions to the design and implementation of public policies for national development.

Initially, in the 1950s, future-oriented planning exercises were closely linked to the executive branch, emerging as a consequence of the incorporation of planning theory into public policy (Aceituno, 2015). At this stage, anticipatory capacity was not conceived as an autonomous institutional function; rather, it was incipiently embedded within state planning instruments.

Although planning is, by definition, oriented toward the achievement of future objectives, planning and foresight should not be treated as equivalent concepts. Instead, they constitute complementary and mutually reinforcing approaches. Whereas planning tends to organize courses of action toward predefined goals, foresight contributes to the systematic exploration of multiple futures, the management of uncertainty, and long-term strategic reflection, dimensions that are central to the development of anticipatory governance.

Between 1974 and 1984, through ODEPLAN, early foresight initiatives can be traced (Soms, 2010). These efforts emerged in a context marked by economic liberalization and the initial impacts of globalization, as well as by a new territorial-administrative distribution of the country.

Between 1980 and 1986, the Research and Foresight Department of the Presidential Advisory Committee operated, focusing primarily on methodological dissemination and capacity-building. In this scenario, foresight was incipiently

incorporated as an input for the state's strategic reflection, particularly in territorial matters and institutional reorganization (Aceituno, 2015). Later, the transformation of ODEPLAN into a ministry (MIDEPLAN) made it possible to host various foresight studies and promote capacity-building processes at both central and regional levels. However, foresight was often used as an instrumental or experimental resource rather than as a permanent component of an anticipatory governance architecture.

A significant milestone in this period was the "First workshop on foresight research methodology and its application to decision-making", jointly organized with UNDP and the Iquique Professional Institute in 1982. This activity gave rise to the first national publication on foresight, which systematized methods and techniques and presented an international overview of future studies.

A few years later, a pioneering effort in the academic-technical field, Fundación de Estudios Prospectivos, Planificación Estratégica y Decisiones de Alto Nivel (FUNTURO) (1987–1990), emerged, linked to the University of Chile and ODEPLAN. FUNTURO conducted research, training, and international networking activities, published methodological texts, and carried out the first documented foresight exercise in Chile, entitled "Profiles and Trends of the Pacific Basin: A View from Chile, with a horizon to the year 2000", based on the Delphi technique. FUNTURO also organized regional meetings, facilitated visits by European foresight practitioners, and hosted the First Latin American Congress of Futurists in Santiago in 1989. These initiatives played a fundamental role in introducing the language and tools of foresight in Chile.

In 2011, MIDEPLAN was restructured and reoriented toward social policy, becoming the Ministry of Social Development and Family. This institutional shift weakened long-term planning and anticipatory functions, illustrating the vulnerability of foresight to political and administrative redefinition.

The cessation of this institutional space entailed not only the loss of a specific unit but also the weakening of anticipatory thinking that could have contributed to a robust and coherent anticipatory governance framework (Aceituno, 2015). Overall, in the last 50 years, Chile has accumulated valuable foresight experience but failed to embed it structurally within state architecture, reflecting broader institutional difficulties in sustaining long-term strategic capacities.

Foresight studies for public management in Chile

In the Chilean and broader Latin American context, a range of terms has been used to refer to futures-oriented approaches, including *prospectiva*, *estudios de futuro*, and *anticipación estratégica*. While *prospectiva*—derived from the French *prospective*—is the most widely used term in policy and academic settings, *futures studies* tends to prevail in works inspired by Anglo-Saxon literature. These variations reflect not only linguistic differences but also distinct epistemological traditions and methodological orientations.

Within this framework, regional, sectoral, and national-level initiatives have been developed, characterized by the systematic application of foresight methodologies, particularly those associated with the French school. This tradition, originally developed by Gaston Berger and later systematized by Michel Godet, emphasizes the construction of desirable futures, the strategic use of scenarios, and the articulation between long-term thinking and decision-making processes. Its influence in Chile is evident in the adoption of scenario-building techniques and structural analysis tools, especially in regional and sectoral planning exercises.

In recent years, the application of foresight to Regional Development Strategies (RDS) has become increasingly consolidated, positioning these instruments as one of the principal arenas in which strategic foresight is operationalized. Typically structured around 10-year horizons, these strategies articulate shared visions of regional futures and have functioned as key instruments guiding public action and development planning over time.

Table 1 provides a systematic overview of foresight exercises linked to public management in Chile.

Table 1. Foresight studies and initiatives in Chile (chronological order).

Period	Institution	Study / Initiative	Scale	Implementers
1980–1986	Presidential Advisory Committee	Research and Foresight Department	National	State
1982	Presidential Committee / UNDP	Foresight Methodology Workshops	National	Iquique Professional Institute
1987–1990	FUNTURO	Programs, Congresses, Publications	National / International	University of Chile / ODEPLAN
1999	MIDEPLAN	Aysén Region Foresight Study	Regional	Esteban Soms García
2003	MIDEPLAN – Catholic University	Northern Sectoral Studies (Mining, Aquaculture, Fisheries)	Regional-Sectoral	Catholic University
2003	MIDEPLAN	Water Resources System Arica–Parinacota	Regional	MIDEPLAN
2003	MIDEPLAN – Talca / Austral Universities	Tourism, Forestry and Valdivia 2020	Regional	Universities
2005	MIDEPLAN – Austral University	Exploratory Scenarios Valdivia 2020	Regional	Austral University
2009	MIDEPLAN	Chile 2018: National Development Vision	National	MIDEPLAN
2001–2006	Ministry of Economy	Chile 2010 Foresight Project	Sectoral	Ministry of Economy
2000–2010	Araucanía Regional Government	Regional Development Strategy	Regional	Regional Government
2010–2018	Agricultural Innovation Foundation (FIA)	Chile 2030 Agro-Food and Forestry Vision	Sectoral	FIA / World Bank
2011	Municipality of Pudahuel	Pudahuel 2045 Foresight Study	Local	Municipality
2009–2030	Aysén Regional Government	Regional Development Strategy	Regional	ILPES-CEPAL / Regional Government
2009–2019	Los Ríos Regional Government	Regional Development Strategy	Regional	MIDEPLAN / Austral University / SUBDERE
2009–2020	Los Lagos Regional Government	Regional Development Strategy	Regional	SUBDERE
2015	Ministry of Energy	Energy 2050	Sectoral	Ministry of Energy
2020–2028	Ñuble Regional Government	Regional Development Strategy	Regional	University of Chile / Regional Government
2023–2037	Los Ríos Regional Government	Regional Development Strategy	Regional	University of Chile / Regional Government
2023–2033	Tarapacá Regional Government	Regional Development Strategy	Regional	University of Chile / Regional Government
2024–2034	Atacama Regional Government	Regional Development Strategy	Regional	University of Atacama / Regional Government

Foresight and anticipatory governance

The concept of anticipatory governance refers to the capacity that states must build in order to address the present without losing sight of the future, systematically incorporating the anticipation of change, the management of uncertainty, and long-term decision-making.

Fuerth and Faber (2012) argue that anticipatory governance is an approach for addressing complex and accelerated contexts, conceiving it as a "system of systems" that disciplinarily articulates public policy, foresight, management, and budgeting, integrated through mission-oriented networks and permanent feedback mechanisms to monitor and adjust governmental decisions.

For its part, the OECD Strategic Foresight Unit defines anticipatory governance as the "systematic incorporation and application of strategic foresight across the entire architecture of government, including policy analysis, engagement, and decision-making" (OECD, 2019).

Futures studies have been widely recognized as a key tool enabling governments to address uncertainty, structural changes, and long-term transformations (PNUD, 2017; Prítyi et al., 2022; EU, 2023). Endowing the state with anticipatory capacity is therefore not merely a technical exercise, but a political decision that requires a clear institutional structure with defined competencies, resources, legitimacy, and multilevel coordination.

Anticipatory Governance and Parliamentary Futures Initiatives

With the creation of the Finnish Parliament's Committee for the Future, the idea of anticipatory legislation and a formal governmental commitment to the future have emerged. This approach has been replicated as a public policy in different countries, as global challenges place increasing pressure on democratic systems to respond, prompting states to establish or strengthen their foresight capacities. In this context, the creation of a Future Committee emerges as a relevant institutional response to complexity and uncertainty.

A Future Committee is a parliamentary legislative body whose primary objective is to establish an anticipatory governance framework that enables the state to address emerging challenges and medium- and long-term risks. Unlike foresight agencies (which produce technical and neutral reports), a Future Committee performs deliberative and legislative functions, translating anticipation into laws and political decisions. Its role is to institutionalize a commitment to the long

term by legislating on frontier issues. It must also act as a space for the social construction of the future, seeking to generate democratic consensus and prepare society for complex changes beyond the immediate political conjuncture.

Chile joined this trend with the Senate's Commission on Future Challenges, Science, Technology, and Innovation (Comisión Futuro, n.d.), which has progressively incorporated future-oriented analysis into parliamentary debate.

Additionally, the Future Commission of the Province of Córdoba, Argentina, was established in June 2025, representing an advance in anticipatory governance as the first subnational legislative body of this kind in Latin America. Currently, at least 14 Future Committees can be identified worldwide (Table 2), four of which are located in Latin America and five in Europe (Aceituno, 2025).

Table 2. Active and inactive future commissions (Aceituno, 2025).

Country	Year Established	Committee/Commission	Current Status
Finland	1993	Committee for the Future (Eduskunta)	Active
Israel	2001	Commission for Future Generations	Dissolved (2006)
Mexico	2004	Special Prospective Commission (Chamber of Deputies)	Dissolved (2006)
Scotland	2005	Scotland Futures Forum	Active
Chile	2012	Senate Commission on Future Challenges	Active
Brazil	2013	Senate Future Commission	Active
Germany	2015	Bundesrat Commission on Innovation, Technology and the Future	Inactive
Austria	2015	Commission on Innovation, Technology and the Future	Active
United Kingdom	2017	All-Party Parliamentary Group on Future Generations	Active
Estonia	2017	Foresight Centre (Riigikogu)	Active
Argentina	2019	Future Commission	Inactive
Philippines	2019	Committee on Sustainable Development Goals and Futures Thinking	Active
South Korea	2020	Parliamentary Foresight Committee	Active
Lithuania	2020	Committee for the Future	Active
Uruguay	2021	Special Futures Commission	Active
Paraguay	2022	Congress Future Commission	Active
Iceland	2018–2021	Committee of the Future (Althingi)	Active
Argentina (Córdoba Province)	2025	Future Commission (Unicameral Legislature)	Active

The Chilean process toward a formal institutional framework for foresight

In 2022, the Senate's Future Commission convened a Strategic Foresight Roundtable with the explicit objective of drafting a legislative proposal to institutionalize anticipatory and future-building capacities within the state. The Roundtable operated through thematic working groups focused on organizational design and institutional scope, holding twenty-five sessions and incorporating diverse disciplinary and political perspectives. A representative of the current President (Gabriel Boric) also participated and attended most of the sessions.

The Roundtable aimed to convene all political and social sectors. In addition, international speakers participated, including representatives from the European Strategy and Policy Analysis System (ESPAS) of the European Union, Spain's National Office for Foresight and Strategy, and former members of the Finnish Parliament and its Committee for the Future. The four most recent former Chilean presidents—Ricardo Lagos, Eduardo Frei, Sebastián Piñera, and Michelle Bachelet—participated in the process, reflecting on the constraints that their administrations faced in the absence of institutionalized foresight and expressing their full support for the proposal.

The process unfolded between December 2022 and January 2023, culminating in the submission of the legislative proposal to the Future Commission, which subsequently forwarded it to the President.

The main features of the legislative proposal developed by the Foresight and Strategy Roundtable can be systematized as is shown in Table 3.

Table 3. Main features of the legislative proposal developed by the Foresight and Strategy Round-table.

Dimension	Component	Description
Reinforced autonomy and legal structure	Legal personality and own assets	The institution is defined as an autonomous public-law corporation with administrative and financial independence
Reinforced autonomy and legal structure	Collegiate leadership	Governance is entrusted to a council of seven experts appointed by the President with Senate approval (two-thirds majority)
Reinforced autonomy and legal structure	Independence from political cycles	Council members serve nine-year terms and cannot be removed at the discretion of the incumbent President
Comprehensive and multidisciplinary approach	Transdisciplinary capacity	Integration of multi- and transdisciplinary expertise through collaboration with academic and public/private institutions
Comprehensive and multidisciplinary approach	Foresight orientation	Focus on identifying emerging phenomena and developing scenarios to anticipate risks and opportunities
Decentralization and participation	Territorial reach	Decentralized structure operating through macro-regions (north, central, south) in coordination with regional and local actors
Decentralization and participation	Citizen participation	Institutionalized engagement with civil society through advisory bodies and participatory mechanisms
Intersectoral coordination and transparency	Network-based coordination	Central node coordinating foresight capacities across ministries and state agencies
Intersectoral coordination and transparency	Public accountability	Compliance with transparency, probity, and access to information regulations; oversight by the Comptroller General

Taken together, these elements define a model (Figure 1) aimed at combining institutional autonomy, technical capacity, and systemic coordination within the state. The model is structured around four specific areas: Strategic Foresight (futures analysis), Cultural Change (structural change), Democracy and Society (participation), and Multilevel Coordination (articulation). These pillars are supported by a dedicated and autonomous institutional body or agency and multilevel coordination that brings together the state and society. Ultimately, the entire system seeks to achieve concrete outcomes such as resilience, effective governance, and more robust decision-making.

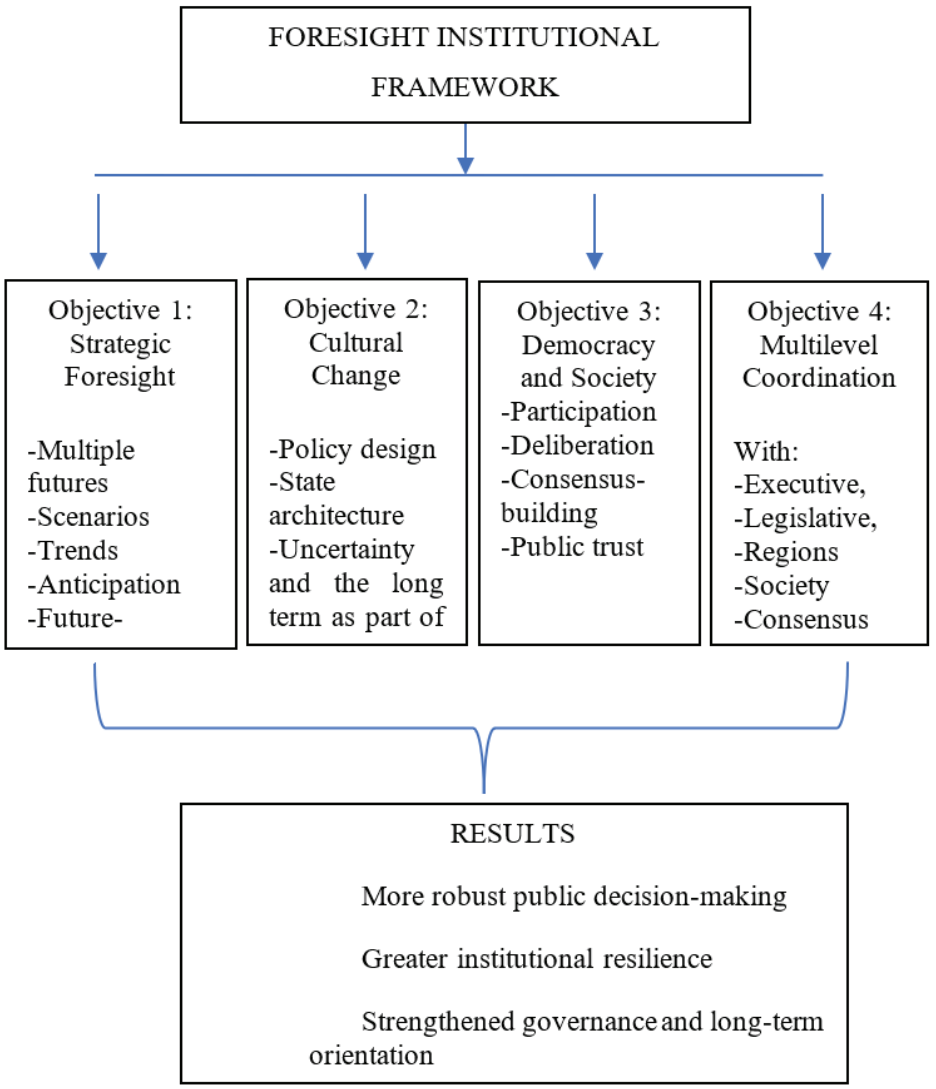

Figure 1. Chilean ideal model of institutional framework.

Notwithstanding the submission of a concrete proposal by the Roundtable, the Executive introduced significant modifications. Although these amendments were limited in scope, they were consequential, altering core aspects of the original design, as detailed below.

A. Institutional design: Council (Executive) vs. Agency (Roundtable)

The Roundtable proposed the creation of a "Strategic Futures Agency," conceived as an autonomous public-law corporation with legal personality and its own assets, seeking "reinforced autonomy." The Bill created a "National Council for the Future and Development," which, while autonomous and technical, is established as the legal successor to the current "National Council for Science, Technology, Knowledge and Innovation" (CTCI), using its existing administrative structure.

B. Independence from the political cycle (term length)

This is perhaps the most significant technical difference regarding long-term protection. The Roundtable suggested nine-year terms for council members to transcend presidential periods and guarantee absolute independence from the electoral cycle. The Executive proposed four-year terms (coinciding with a government's term), with the possibility of renewal, and links updates of a National Development Strategy to the presidential cycle, to be presented six months before the end of the mandate.

C. Thematic focus: Productivity vs. comprehensive anticipatory governance

The Roundtable proposed a broad anticipatory governance approach, explicitly warning of the risk of reducing foresight to an exclusively technological or productive innovation focus, which would weaken real anticipatory capacity. The Executive, by contrast, placed strong emphasis on sustainable productive development and closely linked foresight to the economy and production, creating an "Interministerial Committee for Sustainable Productive Development" and establishing coordination between the Ministries of Economy and Science under this strategy.

D. Ministerial dependency and articulation

The Roundtable proposed cross-cutting articulation under a "whole-of-government" logic, coordinating futures units across ministries and regional governments. The Executive situated the Council's relationship with the President through the Ministry of the Interior (to give it political weight), while the technical and administrative unit was to rely on the Undersecretariat of the Interior, absorbing programs from the Undersecretariat of Science. It also institutionalized a productive development policy led by the Ministry of Economy.

In sum, while the Roundtable described an ideal "Agency" model, the Executive opted for a pragmatic solution by reforming the current "National Council for Science, Technology, Knowledge and Innovation" (CTCI) – a scientific institutional framework – incorporating foresight functions into it and directly connecting it to the government's economic and productive strategy, aligned with the four-year governmental cycle. However, this approach entails risks, particularly the tendency to reduce foresight to an exclusively technological focus, disregarding its historical tradition and broader scope. Dispensing with futures studies specialists and replacing them with profiles focused solely on innovation or technology constitutes another gap that weakens the anticipatory capacity and risks repeating well-known mistakes.

Proposals and reflections

The consolidation of anticipatory governance in Chile requires moving beyond isolated foresight exercises toward the construction of a coherent and institutionalized ecosystem. This implies not only the creation of dedicated capacities but also the articulation of actors, levels of government, and knowledge systems under a shared long-term orientation. The need to move toward anticipatory governance has consistently been reaffirmed. The Executive Branch and Parliament must be supported by public institutions specialized in futures studies.

In this context, a foresight institution – conceived as a technical body that produces anticipatory knowledge – shares with Future Committees (FCs) a long-term orientation, but operates at different levels and with distinct fields of action. Unlike FCs, a foresight institution does not perform normative or deliberative functions, and its outputs are technical rather than political.

Precisely for this reason, its contribution is key not only for Future Committees, but for all parliamentary committees, which, under key circumstances, should receive a "futures report" and a cost analysis together with legislative initiatives. However, this body should not only produce reports and specialized technical advice for the state; it should also provide public information in key areas to guide decision-makers across different sectors. The creation or strengthening of a technical foresight body within the state architecture requires, at a minimum, prior answers to three strategic questions:

- What should be the objectives, scope, and limits of the institution?
- What organizational design and technical and extended capacities are required?
- What degree of independence is most appropriate to fulfill its mandate?

The preliminary answers presented below draw on an analysis of international reports, specialized academic literature, and the accumulated experience gained through the coordination of the Foresight Roundtable.

Objectives and scope

The central aim of the foresight institution is to strengthen the state's strategic capacity for anticipation, inter-institutional articulation, and cultural change, creating conditions for the collective construction of futures and sustainable social development. This implies the systematic production of foresight intelligence through applied research to overcome political myopia.

This institution must integrate foresight into public policy design, promoting anticipatory governance and a cross-cutting foresight culture within decision-making spaces. Its ultimate purpose is to contribute to sustainable, equitable, and resilient development by strengthening informed decision-making and the construction of desirable futures.

A foresight institution must provide sufficiently useful information (SOIF, 2021) to strengthen capacities for response, preparedness, and anticipatory adaptation, both socially and politically.

Areas of action and institutional limits

The domains of action of the institutional framework must be clearly delimited to avoid duplication, overlap, or unrealistic expectations. The functions of a foresight institution can be systematized into four interrelated domains (Table 4): knowledge production, governance and coordination, policy support, and cultural transformation.

Table 4. Core functions of a foresight institution.

Functional Domain	Function	Description	Strategic Contribution
Knowledge Production	Environmental scanning of invariant drivers	Identification of structural and relatively stable forces shaping long-term dynamics	Early detection of systemic changes
Knowledge Production	Continuous monitoring of changes, trends, and risks	Ongoing tracking of emerging issues and uncertainties	Adaptive capacity—and timely response
Knowledge Production	Development of rigorous foresight analyses	Application of methodologies such as scenarios, Delphi, and trend analysis	Robust anticipatory intelligence
Knowledge Production	Preparation of regular technical reports	Periodic reporting on key trends and future developments	Informed decision-making
Knowledge Production	Production of strategic reports on its own initiative	Autonomous identification of relevant foresight topics	Agenda-setting capacity
Knowledge Infrastructure	Provision of relevant, accessible, and up-to-date data	Ensuring availability of high-quality information	Evidence-based policy support
Knowledge Infrastructure	Facilitation of access to specialized knowledge	Linking decision-makers with expert communities	Reduction of knowledge gaps
Governance and Coordination	Promotion of connectivity and coordination among relevant actors	Articulation across institutions and sectors	Whole-of-government approach
Governance and Coordination	Knowledge exchange at national, subnational, and international levels	Circulation of practices and information across scales	Policy coherence and learning
Governance and Coordination	Establishment of alliances with international institutions	Collaboration with global foresight networks	Methodological innovation and benchmarking
Policy Support	Preparation of foresight reports for Congress and government	Direct input into legislative and executive processes	Strengthening anticipatory governance
Policy Support	Effective linkage between foresight analyses and decision-makers	Translation of analysis into actionable insights	Policy impact
Cultural & Social Dimension	Promotion of a foresight culture across all levels	Embedding long-term thinking in institutions and society	Cultural transformation
Cultural & Social Dimension	Stimulation of long-term thinking	Encouraging future-oriented perspectives	Reduction of short-termism
Cultural & Social Dimension	Development of awareness-raising campaigns	Public communication on future challenges	Social legitimacy
Cultural & Social Dimension	Promotion of foresight training	Capacity-building through education and dissemination	Human capital development
Inclusion & Participation	Inclusion of youth, women, and communities	Broadening participation in futures thinking	Democratic legitimacy
Evaluation & Learning	Continuous evaluation of relevance and usefulness	Assessment of outputs and user satisfaction	Institutional learning and improvement

Taken together, these functions reveal that foresight institutions operate not only as knowledge producers but also as coordinators, enablers, and catalysts of systemic anticipatory capacity.

Organizational design and degree of independence

Ideally, a foresight institution should have autonomy, stability, and a high technical level of expertise. Given that its work may involve analysing and communicating undesirable scenarios, it is essential that its membership not fluctuate substantially across successive administrations. To this end, a system of partial replacements with staggered terms relative to electoral cycles is recommended to ensure continuity of management.

Leadership levels should be composed of experts from different disciplines, including specialists in strategic foresight. The head of the entity may be appointed by the Executive with the agreement of another branch of the state, or elected from among peers, thereby reinforcing institutional legitimacy. The internal processes should incorporate inclusive perspectives and encompass a broad spectrum of actors, avoiding an approach restricted to central power. Likewise, the institution should periodically report to Parliament and/or the Executive.

Toward a network-based foresight ecosystem

A robust foresight system should move beyond isolated institutional arrangements and adopt a distributed, network-based architecture. Such an approach enables coordination across multiple levels of governance while preserving flexibility, contextual sensitivity, and adaptive capacity in the face of uncertainty.

From this perspective, a foresight institution should not be conceived as a standalone technical body, but rather as the central node of a broader participatory and democratic ecosystem. This reflects the systemic nature of anticipatory governance, which requires foresight capacities to be embedded across the entire state architecture and connected to societal actors.

Accordingly, a network-based institutional model is proposed, adaptable to each country's political, administrative, and cultural context (Aceituno & Vitale, 2025). This model shifts the focus from institutional centralization toward functional articulation, where the value of foresight lies not only in knowledge production but in its capacity to circulate, connect, and inform decision-making processes across the system.

Under this approach, a foresight ecosystem is structured through differentiated, yet interdependent, institutional components operating at multiple governance levels. These components do not function hierarchically, but rather as part of a coordinated network that enables both vertical integration and horizontal collaboration (Table 5).

Table 5. Components of a network-based foresight ecosystem.

Component	Level	Core Role	Strategic Function
National Foresight Institution (NFI)	National	Central coordination and knowledge integration	Systemic articulation and strategic direction
Ministerial Foresight Units (MFUs)	Sectoral	Integration within ministries	Embedding foresight into public policy
Subnational Foresight Networks (SFNs)	Territorial	Regional and local implementation	Context-sensitive anticipation
International Foresight Networks (IFNs)	Global	External collaboration and exchange	Access to global knowledge and methodologies

This architecture reflects a shift from centralized foresight models toward distributed and networked governance, enabling both vertical coordination and horizontal knowledge exchange, and bringing together public institutions, parliament, civil society, academia, and the private sector.

Implementation strategy

The implementation of a foresight ecosystem should follow a phased and adaptive approach structured around four core dimensions: institutional design, governance, technical capacity, and societal engagement.

a. Institutional design
   A modular architecture allows gradual scaling, beginning with pilot experiences before national deployment. Ensuring technical quality and continuity of expert teams is critical to avoid the discontinuities that have historically affected foresight initiatives in Chile.

b. Governance and coordination
   The establishment of interministerial advisory bodies and coordination mechanisms is essential to avoid fragmentation. At the same time, subnational units should retain a degree of autonomy to ensure contextual relevance, while operating under shared national guidelines.

c. Technical and analytical capacity
   The development of robust foresight capabilities requires continuous evaluation of outputs and the incorporation of advanced analytical tools, including artificial intelligence and big data. Equally important is the consolidation of national and international expert networks.

d. Societal engagement and culture
   Foresight should not remain confined to technocratic domains. Promoting futures literacy in education systems, fostering public debate, and enabling participatory mechanisms are essential to build legitimacy and embed long-term thinking in society.

Taken together, these dimensions suggest that foresight ecosystems must be conceived as adaptive and evolving systems, capable of integrating technical robustness, institutional coordination, and democratic legitimacy.

Final remarks

Chile's trajectory demonstrates both the potential and fragility of institutionalizing anticipatory governance. Historical discontinuities show how foresight can be displaced when political priorities shift, revealing its structural dependence on institutional stability. The Strategic Foresight Roundtable represented a significant effort to embed long-term thinking within the state; however, subsequent executive modifications expose persistent tensions between institutional autonomy and electoral cycles. Therefore, advancing toward a robust anticipatory governance framework requires not only clear mandates, well-defined institutional boundaries, and high-level technical capacities, but also a systemic vision capable of preventing fragmentation, redundancy, and the instrumental use of foresight. Absent these conditions, institutional proliferation may lead to inefficiencies, reduced legitimacy, and growing public distrust.

Looking ahead, the consolidation of anticipatory governance in Chile will depend fundamentally on sustained political commitment to long-term state capacities. A central challenge lies in avoiding the reduction of foresight to a purely technocratic or sector-specific function—particularly within economic policy domains—thereby preserving its broader strategic and societal scope. Strengthening a genuinely systemic, participatory, and democratically grounded anticipatory culture will be decisive to ensure that foresight effectively contributes to resilience, legitimacy, and sustainable development.

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Guillermo Gándara Fierro
Executive Director,
the Ibero-American Foresight Network

3 MEXICO 2050: A national foresight mosaic in collective construction and the application of global challenges at a country scale

Abstract

This chapter traces fifty years of strategic foresight in Mexico—from the pioneering efforts of the Fundación Javier Barros Sierra in 1975 through the consolidation of a national ecosystem of futures practice—and examines the work "Mexico 2050: Challenges, Scenarios & Actions". This project represents a precursor effort in applying the Millennium Project's 15 Global Challenges framework at a national scale through a collaborative foresight exercise. Coordinated between 2017 and 2021 by the Mexico Node of the Millennium Project, this work engaged 19 Mexican experts across disciplines to analyse how global challenges manifest in the national context, visualize three contrasting scenarios towards 2050, and propose 75 transformative guiding projects. This chapter examines its methodological approach, the collective construction process, and the lessons learnt from translating global foresight frameworks into actionable national insights. It also situates Mexico 2050 within the broader arc of Mexican futures thinking, including the expansion of the methodology to Latin America 2050 in 2024 and the formation of the Mexican Network of Futures in 2025. The Mexico 2050 experience offers some lessons on participatory foresight methodology, the narrative power of the tripartite scenario structure as a tool for strategic dialogue, and the challenges of bridging foresight research with policy action in contexts of political volatility and institutional fragility.

Keywords: Strategic Foresight, Mexico, scenarios, global challenges, Millennium Project

Resumen

Este capítulo recorre cincuenta años de prospectiva estratégica en México—desde el esfuerzo pionero de la Fundación Javier Barros Sierra en 1975 hasta la consolidación de un ecosistema nacional de prácticas de prospectiva—y examina su obra "México 2050: Desafíos, Escenarios y Acciones". Este proyecto representa un esfuerzo pionero en la aplicación del marco de los 15 Desafíos Globales del Millennium Project a escala nacional mediante un ejercicio de prospectiva colaborativa. Coordinado por el Nodo México - El Proyecto Milenio, este trabajo involucró a 19 expertos mexicanos de diversas disciplinas para analizar cómo se manifiestan los desafíos globales en el contexto nacional, visualizar tres escenarios contrastantes hacia 2050 y proponer 75 proyectos transformadores que sirven de guía para un escenario deseado. Este capítulo examina su enfoque metodológico, el proceso de construcción colectiva y las lecciones aprendidas al traducir los marcos de prospectiva globales en perspectivas nacionales. También sitúa a México 2050 dentro del marco más amplio del pensamiento prospectivo mexicano, que incluye la formación de la Red Mexicana de Futuros (2025) y la expansión de la metodología a América Latina 2050 (2024). La experiencia de México 2050 ofrece algunas lecciones sobre la metodología de prospectiva participativa, el poder narrativo de la estructura de escenarios tripartitos como herramienta para el diálogo estratégico y los desafíos de vincular la investigación prospectiva con la acción política en contextos de volatilidad política y fragilidad institucional.

Introduction

As the 21st century began, futurists anticipated strong global disruptions resulting from technological advances, climate change, global poverty, migration, pandemics, and poor health systems (Glenn et al., 2024; Sardar & Sweeney, 2016). Additional factors would include the empowerment of civil societies, the distancing between the irreconcilable visions of governments and their governed, the inefficiency of educational systems, unemployment, the penetration of transnational organized crime, and the breakdown of cultures (Mattar, 2023). These visions characterized what scholars have termed "post-normal times", an in-between period in which old orthodoxies are dying, new ones are yet to be born, and very few things seem to make sense (Sardar & Sweeney, 2016; Miklos, 2024)

Bauman's concept of "liquid modernity" (2002) captures this contemporary condition: a sociological category defining the current state of society, which lives in a fluid and volatile state without solid values and where uncertainty prevails due

to the dizzying speed of change. In this context of "liquid times" (Bauman, 2013), social structures no longer last long enough to solidify and do not serve as frames of reference for action.

Foresight studies conducted globally and locally anticipated these early warnings. However, despite this dark foreshadowing, decision-makers often chose not to act because they could not visualize the risks of post-normal times. The tension between anticipatory knowledge and political action became particularly acute in developing countries like Mexico, where short-term political cycles, institutional fragility, and urgent social demands often overshadow long-term strategic thinking. It was in this context that the Mexico Node of the Millennium Project decided to undertake a national foresight exercise: to analyse how the "15 Global Challenges" (Glenn et al., 2024) would manifest in Mexico's specific historical, cultural, and socioeconomic context, to imagine possible futures, and to construct actionable pathways towards desirable futures for the country by 2050.

This chapter examines the "Mexico 2050: Challenges, Scenarios & Actions" project as a case study in national-scale foresight methodology. We analyse the process of adapting global frameworks to national realities, the participatory methodology employed in constructing collective knowledge, the scenario-building approach, and the translation of foresight insights into proposed transformative projects. The chapter offers lessons for foresight practitioners, policymakers, and researchers interested in strategic anticipation at the national scale, particularly in contexts characterized by complexity, uncertainty, and institutional challenges.

Foresight practice and Futures Thinking in Mexico

Before examining the Mexico 2050 project itself, it is essential to understand the historical trajectory of foresight practice in Mexico. The development of futures studies in the country represents a fifty-year journey of institution building, methodological evolution, and growing recognition of the value of anticipatory thinking for national development.

The Pioneer era: Fundación Javier Barros Sierra (1975–1990s)

The formal practice of Foresight in Mexico began on March 7, 1975, with the establishment of the Fundación Javier Barros Sierra A.C. (FJBS), the first academic institution in Mexico, and arguably in Latin America, dedicated exclusively and

systematically to foresight studies. In its early years, FJBS dedicated significant effort to acquiring and disseminating knowledge about foresight practice, publishing an important series of booklets on the subject. Much of its work focused on foresight for the country's educational sector (FJBS, 2025).

In 1983, FJBS launched the Foro México 2010 project, one of the first comprehensive national-scale foresight projects globally. In 1985, as part of this project, the first "21st Century Studies Meeting" convened in Mexico City, bringing together world-class researchers leading national foresight projects. During its first decade, FJBS conducted various research projects on foresight in the fields of demography, education, economics, food, employment, technology, communications, transportation, biotechnology, foreign trade, and health (Millán & Alonso, 2000; Ruelas-Barajas & Alonso, 2010). Despite various periods of intermittency, the FJBS continues to be active to this day.

Expansion and diversification: 40 years of Strategic Foresight & Futures Studies at Tecnológico de Monterrey (1990–2030)

Parallel to FJBS' work, a decade and a half later, Tecnológico de Monterrey (MT) became a major force in Mexican foresight practice. Figure 1 shows the main developments in its development. As Arias (2024, p. 15) explains, "the history of futures thinking at our institution is not new. In the 1990s, the first regional prospective studies were conducted; in 1998, the first master's program in strategic foresight in Latin America was launched; and about 20 years ago, we began disseminating studies on megatrends and innovation opportunities through the strategic and technological observatory, an open resource platform for academic and non-academic audiences". As documented by Gándara & Camelo (2016), between 1990 and 1993, the Strategic Studies Centre developed prospective planning projects for several Mexican states and subsequently produced municipal-level prospective plans for cities.

A watershed moment came in 2002, when MT welcomed the first master's degree graduates in Strategic Foresight in Latin America; another in 2008, when they were recognized as a postgraduate program of excellence by the National Council of Science and Technology. In 2011, MT incorporated Strategic Foresight formal courses into four undergraduate programmes. By 2015, MT had produced over one hundred research projects across social, political, territorial, and technological foresight, with several honoured between 2009–2014 by the Association of Professional Futurists. Through the Tec 21 Model, since 2019, futures thinking has expanded into more than 50 academic courses across all faculties. Also in 2019,

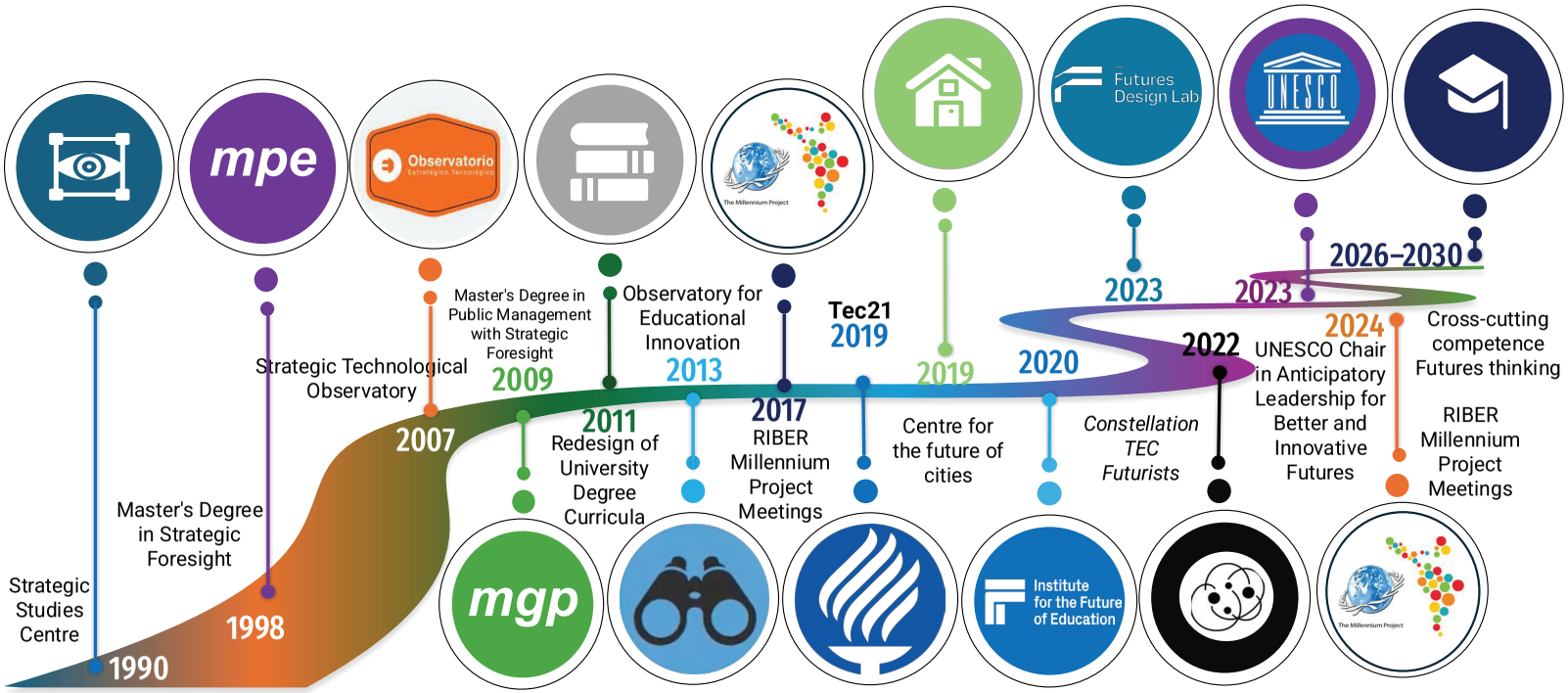

Figure 1. Timeline of futures studies at Tec de Monterrey.

the Centre for the Future of Cities was founded, and a year later, the Institute for the Future of Education.

The Constellation of Tec Futurists was born in 2022. "We began building constellations of value, communities connected around themes that motivate and frame their transformative action. One of these is the Constellation of Futurists, a diverse, multidisciplinary, and spontaneous community of practice made up of professionals, researchers, and enthusiasts who share a passion and interest in the culture of anticipation" (Arias, 2024, p. 16).

In 2023, Futures Design Lab (FDL) was founded as an innovation services lab guided by a futures and design perspective to support organizations and institutions in envisioning, charting, and implementing the path toward desirable futures. In 2024, FDL organized both the IX Annual Meeting of Ibero-American Foresight Network and MP's Planning Committee at Monterrey Campus. During this period, the UNESCO Chair in anticipatory leadership at Tec also began its activities.

As a manifestation of MT's commitment to long-term thinking, in 2026, Futures Thinking has been incorporated in the new curriculum as a cross-cutting educational competence for all Tec graduates from 2030 onwards, marking the institutionalization of futures thinking at the very core of the university's educational mission. According to Arias (2024), this momentous milestone represents a sign of the urgent need to incorporate prospective methods, as a process or as a discipline of thought, in all our academic, professional, and civic practices.

Academic institutionalization: UNAM, CENTRO, COLTAM, UAM & IAPEM (2003–2025)

Next, a few central academic institutions for futures studies will be presented.

Universidad Nacional Autónoma de México (UNAM) has played a central role in the academic institutionalization in Mexico. From 2003, it ran an annual Prospective Studies Seminar; from late 2005, it incorporated futures courses into its undergraduate Political Science programme and postgraduate offerings; and from 2010, its "Papers de Prospectiva" series deepened the dissemination of methodologies and practical cases.

CENTRO University, again, made a distinctive contribution in 2014 with its Specialization in Designing Tomorrow postgraduate programme, guided by design-thinking and creative methodologies, and supported by leading Mexican futurists. CENTRO also hosts a UNESCO Chair on the democratic access to futures imagining, which emphasizes that the capacity to envision and shape the future should be accessible across society.

El Colegio de Tamaulipas (COLTAM) has offered a master's degree in Futures Studies since 2015, which in 2024 was updated to Foresight and Strategy. UAM Cuajimalpa launched its UNESCO Chair on futures of urban life in the Global South in 2023; and IAPEM established a Centre for Governmental Foresight in 2013 to train state and municipal administrators in foresight methods.

International networks and global connections

Established in the early 2000s, the Mexico Node of the Millennium Project has become a bridge between global foresight knowledge and the Mexican context. Between 2005 and 2010, it organized the annual "Premio del Milenio" competition, which went global and reached 110 countries. The Node has coordinated the Spanish translation of the Millennium Project's Futures Research Methodologies (2014–15) and The State of the Future 20.0, produced the "FUTUROS" encyclopaedic dictionary (2014 & 2024), "Futuros México Hacia 2050" (2021), and Mexico 2050 (2023), as well as coordinated the Latin America 2050 research (2023–24). Mexico also hosts nodes of international networks including RIBER, the World Future Society, the World Future Studies Federation, the Club of Rome, Teach the Future, and the Association of Professional Futurists.

Birth of the Mexican Futures Network (2025)

The evolution of foresight practice in Mexico culminated in recent years with the formation of a national network of futures practitioners and scholars. The Mexican Futures Network (RMF) was formally established in 2025, with 100 associated members as of March 2026, representing the maturation of the foresight practice in the country—transitioning from isolated institutional efforts to a coordinated ecosystem of universities, civil society organizations, government agencies, and private sector actors, all committed to anticipatory thinking for national development.

Given its central values such as collaboration and transparency, professional ethics and trust, plurality and inclusion, and social commitment, the RMF seeks to build and strengthen a collaborative, ethical, and multidisciplinary network of futures studies. This network based on diverse knowledge rooted in collective intelligence, expands futures thinking, democratizes access to strategic anticipation and futures exploration methodologies, and facilitates effective communication between the explorers of long-term alternatives and decision-makers to guide the construction of desirable futures. (RMF, 2025)

Reflections on fifty years of Mexican Foresight

As Ted Gordon (2023) noted in his foreword to the English edition of the Mexico 2050 publication, the prominence of human rights concerns in Mexico—from unlawful killings and enforced disappearances to violence against women and systemic corruption—creates an urgent context for foresight work. Yet as he also observed, "there are intellectual stars who are determined to help Mexico re-emerge as a country of human freedoms, of democracy, of safety," many of whom contributed to Mexico 2050 (Gordon, 2023).

Gordon highlighted the courage evident in the book, which calls for unified climate policies among the US, Canada, and Mexico; recognition that Mexico is weakened by human rights abuses and deficient justice administration; acknowledgment of widespread corruption and extreme economic inequality. He also noted the wisdom in understanding the connections between national security and climate change, and between potable water and agriculture; recognizing the need to understand the causes of transnational crime to mitigate its effects; becoming aware of the need for effective new institutions; and above all, recognizing that "some problems—even pandemics—can be anticipated... and if action is taken, anticipation can reduce the intensity of the problem or perhaps avoid it entirely." Gordon saw the Mexico 2050 essays as "an indication of Mexico's enthusiastic interest and expertise in this kind of anticipatory thinking. It deserves our attention and commendation." (Gordon, 2023)

This fifty-year trajectory of Mexican foresight—from the pioneering work of the FJBS through the development of university programmes, international networks, and governmental applications—has created the foundation upon which the Mexico 2050 project could build. The project thus represents not an isolated initiative but the culmination of decades of capacity-building in Futures Thinking, and the application of this capacity to the nation's most pressing challenges.

The Mexico 2050 project: genesis and collective construction process

The imperative of national foresight in Mexico

In the 2010s, Mexico faced a complex confluence of challenges: persistent inequality and poverty, democratic fragility, violence associated with transnational organized crime, environmental degradation, educational deficits, and an economy struggling to generate quality employment. Traditional national development

plans, tied to six-year presidential terms, proved insufficient for addressing structural challenges requiring long-term vision and sustained effort across political cycles. For all these reasons, in addition to Mexico's integration into the global economic networks, its vulnerability to climate change, and its demographic transition, the need for national foresight was particularly acute.

The Mexico 2050 project was conceived to address this need by providing a comprehensive, methodologically rigorous, and participatory analysis of the country's possible futures, grounded in global knowledge frameworks but firmly rooted in Mexican realities. Strategic anticipation was a necessity for navigating an increasingly turbulent future.

Origins and motivations

The genesis of the Mexico 2050 project occurred in 2015 by Concepción Olavarrieta and Guillermo Gándara during a journey to Montemorelos. Both, as leaders of the Mexico Node of The Millennium Project, recognized the urgent need to apply the Global Challenges framework systematically to analyse Mexico's futures.

The project was formally conceived with three fundamental objectives. The first was to promote awareness and a culture of anticipation in the Mexican community regarding how to confront or mitigate threats and seize opportunities towards 2050. The second was to foster better public policies and projects by encouraging their design and implementation in ways that recognize the importance of creating better future options. The third was to promote the collective analysis of and reflection on the present and future that could serve as inspiration and a platform for jointly building the Mexico that its society desires.

Engaging expert voices

A distinctive feature of the Mexico 2050 project was its commitment to building collective knowledge through the genuine participation of diverse expert voices. It sought to involve diverse specialists from research centres, universities, the public sector, private initiatives, and non-governmental organizations to analyse each of the 15 Global Challenges from their areas of expertise. The coordinators undertook a deliberate search for thematic specialists throughout Mexico, applying selection criteria that emphasized disciplinary depth, practical experience beyond purely academic knowledge, the capacity for systemic and prospective thinking, and a genuine concern for the country's long-term development. This process resulted in engaging 19 authors representing diverse disciplines, institutions, and perspectives—a diversity that was wholly intentional, given that Mexico's complexity demands multiple analytical lenses.

To ensure quality and coherence, the project employed a three-filter review process. The first filter focused on thematic coherence, completeness of analysis, and alignment with the chapter guidelines. The second applied a methodological lens, checking the consistency of the strategic foresight approach and the quality of the futures analysis. The third and final filter evaluated the overall coherence, policy relevance, and editorial quality. This iterative process, whilst time-consuming, ensured that each chapter met the high standards and still preserve the individual voices and insights of each author.

The methodological approach: applying global challenges at national scale

Adaptation of the 15 global challenges to the Mexican context

The methodological innovation of Mexico 2050 lay in its systematic adaptation of the Millennium Project's global framework to national realities. This was not mere localization but rather a deep contextualization that respected the integrity of the global framework whilst illuminating Mexico-specific manifestations, dynamics, and possibilities.

Each author was tasked with addressing their assigned challenge through four analytical lenses (Table 1). Beginning with a diagnosis on how the global challenge manifests in Mexico today, including its historical roots and current conditions, the authors then developed a trend prognosis projecting how the challenge will evolve by 2050 if the present dynamics continue. From there, the authors articulated visions for change, exploring alternative pathways and transformations that were genuinely possible. Finally, each chapter offered broader reflections on the implications for policy, society, and individual action. This structured approach ensured analytical consistency across chapters while allowing each author flexibility in their specific methodology and emphasis.

Scenario construction methodology

The second major methodological component involved constructing three internally coherent scenarios towards 2050. This process exemplifies the foresight practice: moving beyond trend extrapolation to explore divergent yet plausible futures. From the 15 challenge chapters were extracted 45 key factors deemed most determinant for Mexico's futures (Mattar, 2023). These factors represented the critical uncertainties and structural drivers that would shape the country's trajectory.

Table 1. The 15 sustainability challenges adapted to the Mexican context (Olavarrieta et al., 2021; 2023).

Challenge	National Focus	Key Factors for the future
1. Sustainable Development, Climate Change & National Security	Mexico at risk due to climate change effects, requiring urgent attention as a matter of national security, given its geopolitical, environmental, technological, economic, social and psychological complexity	Ecological equilibrium; social progress; economic viability; cultural diversity; climate policies; national security themes
2. Clean Water for Everyone	Water paradox: abundance at the national scale with severe local scarcity, pollution, and access conflicts in a country possessing ~1/3 of the global renewable water resources	Water quality of rivers and lakes; institutional capacities for sustainable management; infrastructure for storage, sanitation, irrigation and distribution
3. The Horn of Scarcity and its People	Mexico's rapid demographic transition from a young to an ageing population; implications for ecosystems under pressure; strategies to reverse negative trends in lands, ecosystems and biodiversity	Demographic transition; migration patterns; urbanisation dynamics
4. Democracy in Mexico	Five central challenges in democratization: guaranteeing citizens' rights; socioeconomically integrating all sectors; seeking alternatives to traditional political participation; creating democratic institutions; building democratic political culture	Trust in democracy; participatory processes; open government; institutional weakness
5. Long-Term Mexican Policies and Decision-Making	Development planning system within the international context and the Mexican legal framework determining government decision-making; challenges of formulating long-term policies	The nature and orientation of public policies; the participation of social actors; rule of law and public policy exercise
6. Convergence of ICT Foresight in Mexico by 2050	Advances in future ICTs enabling Mexico to join the real global connectivity of the Internet of Things by 2050; migration to IPv6; development of 5G mobile technologies; redefining digital rights	Public-private partnerships for new technologies; the evolution of ICT utilization; population and productive sector access to ICTs
7. Reducing the Gap Between Poverty and Wealth	In Mexico, 1% has 43% of the wealth whilst 42% live below the poverty line; comprehensive analysis of 21 factors related to inequality causes/effects and 7 key social actors	Economic growth, investment and employment; progressivity/regressivity of State policies; innovation and technological change
8. Health Foresight for Mexico 2050	A holistic vision of a Health System with all elements and expected developments; key factors including the system structure, population health characteristics, expenditures, infrastructure, resources, and new market opportunities	Public health expenditure; biotechnology for health; personalized medicine; robotics role in medicine
9. Mexican Education Foresight in 2050	The future of education in liquid times; end of modernity's educational system; a crossroads between the past (contradictions, lags) and the globalisation tsunami; the possibility of a utopia emerging	Regenerative education for a common future; inequality gaps in access and quality; educational policies; institutional weakness
10. Peace and Conflict in Mexico	Seven types of confrontations by violence intensity: from non-violent crises to limited war between cartels; sources feeding conflicts (geography and political system); the vital role of civil society	Historical-cultural and social conflicts; main social conflicts (agrarian, political, socio-environmental, ethnocultural); peacebuilding
11. Gender Equality Perspective	Four pillars for improving gender equality: Economic Participation and Opportunity, Educational Attainment, Health and Survival, Political Empowerment	Public policy to reduce gender inequality in technological education; women's labour market participation; gender violence; political empowerment
12. Transnational Organised Crime	History beginning in 1930 showing accelerated cartel development from 1960; national/international alliances; global networks; income estimates within GDP; emphasis on risk factors promoting social dysfunctionalities	Criminal connivance; resilience against TOC; Latin American ecosystem projects for social prevention
13. Five Energy Challenges for Mexico by 2050	Energy security as a major challenge with 50% from fossil fuels in 2020; transition pathways to clean energy; the challenges of organised crime and corruption affecting the energy supply	GHG emissions; towards a new energy model; electromobility
14. Scientific, Technological & Social Innovation Foresight	Investing in science and technology as a societal responsibility; forming the country's capacity for discovery, creation and use of benefits; transforming the economy and society through innovation capabilities	Governance and R&D expenditure trends; priority knowledge areas for region; STI systems and reform
15. Public Ethics and Values of the Mexican Public Servant by 2050	The year 2021 marked 500 years of corruption in Mexico; corruption developed, expanded, sophisticated and nested in daily life; its antithesis is ethics—strengthening the governors' and citizens' values	State policy; corruption vs. trust in executive, legislative, judicial powers; ethical State, ethics for citizenship, regional ethics networks

Their identification involved a systematic review of all 15 chapters, the surfacing of recurring themes and critical uncertainties, consultations among coordinators and select authors, and a prioritization process based on impact potential and the strength of interconnections. These factors were then subjected to morphological analysis, a foresight methodology that explores how different states of multiple variables can be combined to form coherent futures (Ritchey, 2011). For each factor, the team developed multiple hypotheses about how it could evolve, considering complex interactions and non-linear effects (Gándara et al., 2024). This analytical rigour ensured that the resulting scenarios were not arbitrary narratives but systematically constructed pathways emerging from a holistic factor analysis.

Three contrasting scenarios

The methodology produced three scenarios, each representing a distinct pathway:

Scenario 1: "National plenitude: A democratic, just, and peaceful Mexico". This desirable scenario paints a future where Mexico successfully addresses its structural challenges. In this optimistic future, Mexico reaches 150 million inhabitants enjoying a substantially improved quality of life. Life expectancy rises to 85 years for women and 81 for men—better than the official government projections. Democracy becomes inclusive and participatory, supported by renewed institutions. Inequality is significantly reduced through effective redistributive policies, and the country completes its energy transition, with renewables accounting for 55 percent of the energy matrix. The education system is transformed to meet the 21st-century needs; universal access to safe, quality water is achieved; and the health system becomes genuinely preventive with universal coverage. Crucially, Mexico experiences the best peace environment in its history: transnational organized crime is significantly curtailed, public ethics are institutionalized, and corruption substantially diminished. According to the authors, this scenario is a technically feasible future, contingent on sustained political will, effective policies, and societal commitment maintained over three decades.

Scenario 2: "Futures Mexico: The eternal promise". This trend scenario depicts a future of "lights and shadows" where Mexico makes partial progress on some challenges whilst others stagnate or worsen. In this scenario, Mexico makes partial, uneven progress. The population fluctuates around official projections, and life expectancy follows the current trends of approximately 81 years (84 for women, 79 for men). Formal democratic institutions are maintained, but their quality remains variable. Inequality persists despite gradual improvements in certain indicators, and some regions and sectors advance while others are left behind. An institutional weakness continues to hamper

consistent progress; policies remain tied to six-year presidential cycles that discourage long-term planning; and while the threat from transnational organized crime diminishes somewhat, it remains significant. This scenario captures a continuation of historical patterns: Mexico perpetuating its status as "the eternal promise" that never quite fulfils its potential.

Scenario 3: "Agony and desolation: Mutilated, unpunished, and atrocious Mexico". This catastrophic scenario explores what happens if the worst trends materialize without effective counterweights. In this scenario, the population falls below projections due to increased mortality and mass migration. Life expectancy stagnates or retreats to 78 years for women and 72 for men. Democracy collapses or is severely degraded, with authoritarian tendencies filling the institutional vacuum. Inequality becomes extreme. Violence escalates across multiple dimensions; feminicides, organized crime, and social breakdown become defining features of daily life. Environmental collapse intensifies the water crises and drives irreversible ecosystem degradation. The education system fragments and becomes dysfunctional; the health system is overwhelmed by preventable deaths; corruption becomes endemic and institutionalized; and the state's capacity to guarantee basic security and services effectively fails. This scenario uses a vivid narrative to communicate the human costs of political inaction and poor governance, deliberately confronting readers with what prolonged drift could produce.

From scenarios to action: guiding projects

The third methodological component translated foresight insights into actionable proposals. For each of the 15 challenges, the authors proposed five "guiding projects", totalling 75 transformative initiatives designed as catalysts for steering Mexico towards the desirable scenario.

These projects were designed to meet demanding criteria: they had to be genuinely transformative, capable of generating structural rather than merely incremental change; inclusive, benefiting all social sectors and especially the most vulnerable; environmentally responsible and economically viable over the long term; capable of catalysing immediate public and private capital flows; anchored to clearly defined long-term development goals; and equipped with rigorous evaluation and permanent monitoring mechanisms. These criteria sought to ensure that the 75 guiding projects would not become mere declarations of intent—the historical fate of so many Mexican planning documents—but genuine catalysts for national transformation. Collectively, they constitute an ambitious agenda, grounded in foresight analysis, yet designed for practical implementation.

Key findings and methodological insights

Lessons on national-scale foresight

The Mexico 2050 experience offers some lessons for conducting national-scale foresight exercises. Institutional anchoring proved critical: the Mexico Node of The Millennium Project provided essential legitimacy and continuity that made it possible to sustain a multi-author project. The Node's connection to the global MP network also enhanced credibility both domestically and internationally.

The project demonstrated that methodological rigour and broad participation are not mutually exclusive. The three-filter review process maintained quality without stifling individual authorial voices—a balance that is difficult to strike, since excessive standardization produces bland consensus while insufficient coordination yields incoherence.

The defined publication commitment provided the necessary discipline without truncating analysis. In this sense, the dissemination strategy was of great importance: publishing in both Spanish and English (Figure 2) with two prestigious editorials (arbitrated by their own referees), presenting at major book fairs, and engaging media channels all proved essential, thus reaching a broad audience nationwide.

Figure 2. The covers of Mexico 2050: Challenges, Scenarios & Actions (Olavarrieta et al., 2021; 2023).

Finally, a political context is never a neutral backdrop—it actively shapes both the motivation for foresight work and its reception. The project unfolded during a period of significant political turbulence in Mexico, which simultaneously motivated the work and complicated how the evidence-based recommendations were received. Navigating these political realities without compromising intellectual integrity is among the most demanding aspects of national foresight practice in Mexico.

The power of narrative in the practice of strategic foresight

The Mexico 2050 scenarios demonstrate the power of narrative in foresight practice in several interconnected ways. Based on the authors' experience in the media, the three scenarios—an aspirational vision, a trend trajectory, and a catastrophic disruption—created a framework for strategic dialogue rather than simply disseminating a predictive debate. This highlights the transformative power of strategic foresight toward action (Gándara, 2024), as organizations use scenarios not only for adaptation but also as a narrative foundation for developing broader strategies, making the quality of the narrative inseparable from the quality of the strategy.

Each type of scenario serves its own narrative function. The trend scenario anchors the conversation in a recognizable reality, providing participants with a common ground from which divergence becomes legible. It tells us, "This is where we are headed if nothing changes." The aspirational scenario does the opposite: it suspends projection and invites collective imagination, functioning less as a prediction and more as a shared vision that makes present and future action meaningful. The catastrophic scenario, in turn, uses a vivid narrative to create emotional resonance: it makes abstract risks feel real and distant decisions feel urgent. Together, the three narratives do not compete; they triangulate. As Green & Appel (2024) explain, narrative transport produces an experiential state of immersion in which all mental processes are focused on the events occurring in the narrative, generating effects on persuasion, belief updating, and emotional engagement that systematically differ from those induced by non-narrative information. A single scenario cannot achieve this triangulation. Contrast between the futures—the allure of the desirable, the weight of the probable, and the urgency of the avoidable—is required to transform stakeholders from passive observers into active architects of the future.

The challenge, in all three narratives, lies in maintaining methodological systematicity while taking advantage of their narrative power: creatively using each scenario to stimulate the imagination, grounding it in internal consistency.

Bridging foresight and policy

A persistent challenge in foresight practice is translating research into policy action, and Mexico 2050 navigated this with mixed success. On the positive side, the 75 guiding projects provided concrete starting points for policymakers; the endorsements by globally recognized individuals with testimonials on the back cover provided institutional legitimacy; media coverage sparked public conversations about Mexico's futures; and the work has been adopted in university courses (i.e.

Tecnológico de Monterrey, COLTAM, UNAM, CENTRO, UANL, IAPEM), ensuring that its influence extends to future decision-makers. At the same time, direct uptake in government policy has been limited. Political cycles have continued to prioritize short-term concerns, and institutional fragility has hampered the sustained implementation of long-term visions. The work ultimately had greater resonance in civil society and academia than in formal government planning. These limitations reflect not the failures of the project but the structural challenges of strategic foresight in contexts where political incentives favour short-termism and the institutional capacity for long-term planning remains weak.

From Mexico 2050 to Latin America 2050: scaling the methodology

Perhaps the most significant legacy of Mexico 2050 has been its role as precursor and methodological model for the subsequent "Latin America 2050: Challenges, Scenarios and Actions" project (Olavarrieta et al., 2024). The Latin America 2050 work scaled a national methodology to the regional level, engaging 25 authors from 10 Latin American countries. The experience and lessons from Mexico 2050 directly informed this expansion.

The Latin America 2050 project drew on Mexico's methodological foundations while refining them for larger-scale application. The basic tripartite structure—challenges leading to scenarios leading to guiding projects—was retained, as was the participatory process of engaging diverse expert voices. Scenario construction techniques were adapted for the regional scale, with greater attention to cross-national dynamics and regional integration.

Final reflections

Mexico 2050 demonstrates that systematic, participatory national foresight is possible even in contexts marked by political volatility, institutional fragility, and resource constraints. Its achievements—methodological innovation, collective knowledge construction, actionable scenarios, and regional influence—show what committed foresight communities can accomplish. Yet, the project also reveals persistent challenges: the gap between anticipatory knowledge and policy implementation, epistemological limitations, and the difficulty of measuring long-term impact. These tensions are not uniquely Mexican; they reflect structural fault lines in foresight practice worldwide. An OECD analysis identifies key interlocking challenges facing strategic foresight globally: closing the gap between foresight and policy action, and embedding foresight within governmental ecosystems rather than leaving it as an isolated function (Dal Borgo & Monteiro, 2022).

As Mexico and the world navigate the turbulent waters of the 21st century—characterized by climate crisis, technological disruption, democratic fragility, and persistent inequality—the capacity for strategic foresight becomes ever more critical. The Mexico 2050 project and the broader trajectory of Mexican foresight development demonstrate that this capacity can be built, that long-term thinking can influence present action, and that alternative futures can be imagined even in difficult circumstances. The question for the next decades is whether Mexican society will invest in and institutionalize the anticipatory capacities that fifty years of foresight practice have painstakingly built. The Mexico 2050 project provides both inspiration and methodology to support this.

In the end, perhaps the most important contribution of Mexico 2050 is not its specific scenarios or projects but its demonstration that national foresight is possible and necessary. In an age of anxiety and uncertainty, the ability to systematically reflect on alternative futures and act strategically in the present to shape them is arguably one of the most useful skills a society can possess to navigate the long term. Mexico 2050 demonstrates that this capacity can be developed, even under difficult circumstances. That may well be its most enduring lesson.

However, these lessons cannot be fully understood without returning to the starting point of this chapter: the fifty-year trajectory of Mexican foresight. Mexico 2050 was made possible by a generational investment in strategic foresight knowledge and by the perseverance of a community of practice that continues to prioritize the long term, when the political system could only think in six-year cycles. The institutional genealogy reviewed here also helps explain both the achievements and limitations of the project. The same fragmented ecosystem that generated fifty years of innovation in foresight—characterized by strong individual institutions but weak inter-institutional coordination and minimal state support—is precisely the ecosystem in which translating anticipatory knowledge into sustained policy action has proven most difficult to do. The gap between foresight and its implementation is not simply a technical problem of communication or dissemination; it reflects a deeper structural misalignment between the temporal logic of foresight (long term) and the temporal logic of Mexican politics (electoral cycles). Closing this gap will require not only better foresight products, but also a transformation of the institutional architecture within which foresight operates—a challenge that the newly formed Mexican Futures Network and the growing community around it will have to address in the coming years. It is an outstanding task that Mexico 2050 leaves for the next generation of Mexican futurists.

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Yuna Lee
PhD, Research Fellow
University College London
Seoul National University

4 U.S. CONGRESSIONAL FORESIGHT: Revisiting History and Contemporary Practice

Abstract

This study revisits the evolution of foresight practices within the United States Congress, focusing on key institutional initiatives of the 1970s and 1980s such as the Congressional Research Service, the Congressional Clearinghouse on the Future, and the Congressional Institute for the Future. It shows how these early efforts gradually developed into today's more institutionalized strategic role centred on the Government Accountability Office, "the investigative arm of Congress." The analysis draws on archival sources, including Futures Research Quarterly from 1985 to the early 1990s and on interviews with experts who have worked with the government. Challenges identified in early congressional foresight, such as accelerating complexity, partisan dynamics, and short-term political priorities, remain salient today. Over time, responses to these challenges have evolved from Toffler's "anticipatory democracy" to the "anticipatory governance" framework, with the Government Accountability Office forming a cumulative legacy grounded in systematic, policy-embedded anticipation that supports collective learning and institutional adaptation. From this perspective, congressional foresight in the U.S. has advanced through cycles of growth and retrenchment shaped by political and institutional constraints, and this pattern itself underscores the need for renewed and sustained institutionalization of foresight mechanisms.

Keywords: United States, congress, congressional foresight, government foresight, anticipatory democracy, anticipatory governance, legislative foresight

Introduction

> *"One distinguishing characteristic of really civilized men is foresight, … we have to, as a nation, exercise foresight for this nation in the future; and if we do not exercise that foresight, dark will be the future. "*
>
> — President Theodore Roosevelt, "Conservation as a National Duty", 13 May 1908

In his 1908 address Conservation as a National Duty, United States President Theodore Roosevelt (1908) defined natural resources as the nation's foundational wealth and framed foresight as a hallmark of a civilized society. Warning that short-term exploitation threatened the nation's future, he cast foresight as an ethical obligation to future generations, situating it within a broader normative framework of long-term institutional responsibility. Congress likewise recognized the need to prepare for long-term challenges. Whereas executive foresight emphasized strategic coordination, U.S. congressional foresight focused on providing anticipatory insights to Members and committees. Particularly from the 1950s onwards, organizations such as the Congressional Research Service (CRS), the Office of Technology Assessment (OTA), and the Congressional Budget Office (CBO) have contributed to long-term deliberation, early issue identification, and institutional learning (Lanouette, 1978).

This study revisits several legislative foresight initiatives in the US, particularly the lesser-known experiments of the 1970s: the CRS Futures Research Group (FRG), the Congressional Clearinghouse on the Future (CCF), and the Congressional Institute for the Future (CIF). These cases illustrate how foresight was conceptualized and partially institutionalized within Congress, revealing both innovative practices and structural constraints. Other organizations, including OTA, NAPA, ASPA, and ISTA, also shaped congressional foresight, but this chapter focuses on CRS, CCF, and CIF because they represent explicit attempts to embed foresight within Congress's informational and decision-making functions.

In contemporary practice, the Government Accountability Office (GAO) has emerged as the central actor in congressional foresight. Expanding beyond its traditional audit and oversight role, GAO now also conducts predictive assessments of long-term risks and opportunities and integrates these insights into legislative processes. Among the legislative bodies, the CBO also performs a predictive function, primarily projecting fiscal and economic outcomes, but this differs from the GAO's approach, which identifies emerging trends and scenarios, and directly incorporates anticipatory analysis into oversight and evaluation. In this respect,

the GAO stands out as the institution that most fully integrates foresight into congressional governance. Accordingly, this chapter pursues three objectives: to review historical congressional foresight initiatives in the United States such as the CRS, CCF, and CIF; to analyse the contemporary evolution of foresight functions centred on GAO; and to distil broader lessons for sustaining foresight within legislative institutions.

A historical overview: The case of the CRS, CCF, and CIF initiatives

In the post-war and Cold War periods, forward-looking thinking gained importance as Congress increasingly confronted systemic risks, technological change, and alternative future scenarios. Early congressional engagement with foresight emerged through research support, issue monitoring, and deliberative experimentation. Initial efforts, most notably within the CRS, focused on strengthening the analytical capacity to help legislators navigate a more complex policy environment. Subsequent initiatives, such as the CCF and CIF, created more explicit spaces for examining long-term social and technological change through temporary or semi-formal structures that facilitated information exchange and future-oriented deliberation. Their design and longevity were shaped by debates over Congress's proper role in long-range planning, including questions of legitimacy, politicization, and the tension between short-term accountability and long-term societal interests. (Lanouette, 1978; Bimber, 1996; NAPA, 2016; Sadowski, 2015)

Against this backdrop, this section examines the historical development and activities of the CRS, CCF, and CIF (see Figure 1) to illuminate their respective contributions to the evolution of foresight within the U.S. legislative process.

(1) CRS: Advancing foresight from within the Library of Congress

Situated within the Library of Congress, the CRS has long served as a central analytical infrastructure through which future-oriented considerations entered legislative decision-making. Its origins trace back to 1914, when Congress created the Legislative Reference Service (LRS) to provide factual information and legislative precedents. This early mandate reflected a reactive, document-driven support model focused on information retrieval rather than policy analysis. After the Second World War, the Legislative Reorganization Act of 1946 expanded the LRS's responsibilities to include systematic policy analysis, addressing concerns that Congress lacked the analytical capacity of the executive branch and laying the foundation for more integrated, long-term legislative analysis. Throughout the

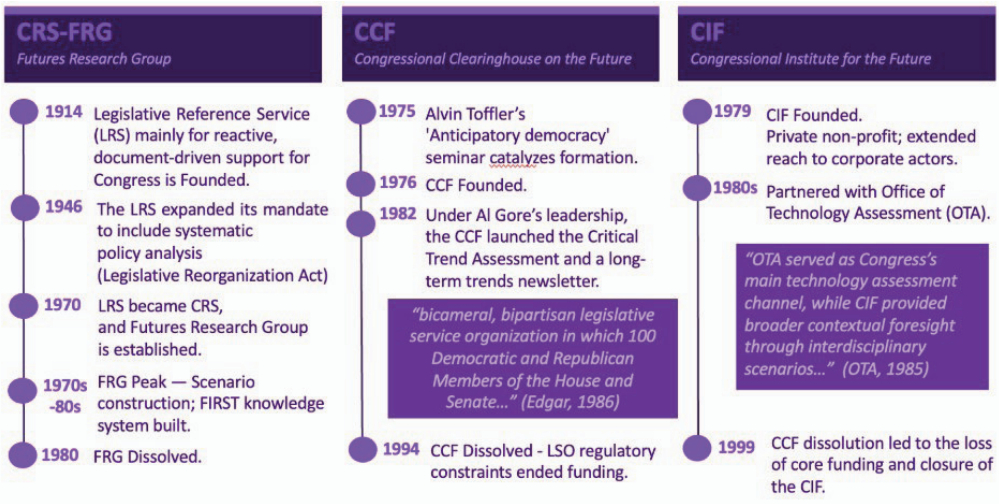

Figure 1. A chronological overview of CRS-FRG, CCF, and CIF.

1950s, the service supported legislators on major issues such as the Cold War, civil rights, social security, and/as well as science and technology, earning the reputation in the press as 'Congress's right arm'. (Library of Congress, 2014; 2024)

In 1970, the LRS became the CRS, Congress's non-partisan policy think tank. The establishment of the FRG within CRS marked a significant milestone in congressional foresight. CRS increasingly engaged with policy domains characterized by long-term uncertainty: science and technology, national security, economic development, and social welfare. The FRG emerged to meet the growing demand among Members and analysts for "what if…?" information, incorporating scenario construction, interdisciplinary trend analysis, and training in forward-looking methods. From the late 1970s through the 1980s, FRG played an important role in embedding foresight practices within the legislative process, particularly in support of the House Energy and Commerce Committee on issues such as energy security, technological change, and environmental risk (Hahn, 1985)[1].

According to William H. Robinson[2] (1990), CRS's foresight initiatives aimed to help Congress respond proactively to long-term societal challenges. Key themes included the need for long-term decision-making, the growing internationalization of policy issues, and the importance of leadership capable of integrating interdisciplinary insights. These themes reflected a recognition that policymaking must

1 Dr. Walter A. Hahn was Senior Specialist in Futures Research at the CRS and this content is based on his article, Futures in Politics and the Politics of Futures, published in Futures Research Quarterly in 1985.

2 William H. Robinson served as Deputy Director and Senior Specialist at the CRS of the Library of Congress.

engage with global megatrends beyond electoral cycles and bureaucratic boundaries.

A notable contribution of CRS-FRG was the development of futures-oriented knowledge management systems, such as the Future Information Retrieval System (FIRST). FIRST introduced a classification framework designed to support strategic document retrieval and provide infrastructure for forward-looking policy decisions. Despite the initial resistance from traditional librarians, the compromise between archival rigor and futures-oriented flexibility demonstrated the potential for constructive epistemic integration. (Lanouette, 1978; Hahn, 1985)

In the late 1970s, FRG also collaborated with Senate subcommittees, including the Subcommittee on Science, Technology, and Space (STS). According to the records, the FRG at the time identified emerging issues in the fields of STS over the next two to ten years, mapped global and national trends, and developed three concise alternative scenarios. These scenarios helped Members clarify assumptions and prioritize cross-cutting issues, influencing later methodological efforts such as the Joint Economic Committee's 1980 Dynamic National Development Project, which reviewed two decades of technological innovation and proposed strategic trajectories for the next thirty years. (Hahn, 1985)

Although the formal foresight function was dissolved in 1980, FRG established a foundational model for integrating anticipatory analysis into legislative deliberation. Its contributions continue to inform the contemporary efforts to institutionalize foresight within Congress. Today, CRS remains a central support institution, adapting its research practices to address emerging challenges such as technological innovation, globalization, and systemic risk.

(2) CCF: A bipartisan forum for Long-Term Thinking

Alongside the institutional foresight efforts led by the CRS-FRG, the Congress also saw parallel attempts by Members to integrate long-term thinking into legislative discourse. The most visible expression of this trend was the establishment of the CCF in 1976, widely described as the "future caucus" and the only congressional member organization dedicated to futures work. Comprising roughly thirty Members from both chambers and parties, the CCF aimed to cultivate a culture of strategic foresight that extended beyond the limits of formal research institutions as a Legislative Service Organization (LSO). The CCF emerged from a 1975 seminar on "anticipatory democracy" led by Alvin Toffler at the request of Senator John Culver and Representatives Charlie Rose and John Heinz. (Bezold, interview, 2026[3]; C-SPAN, 1995)

3 Based on a personal interview with Clem Bezold on January 8, 2026.

> *"Vice President Gore, when he was at one time co-chair of something called the Congressional Clearinghouse on the Future, which was a group set up with our help in 1975 to encourage long-range thinking on the hill…"* (Toffler, A. on C-SPAN, 1995)

> *"…we tried to form something called the Congressional Clearinghouse on the Future, which became the Future's Caucus... the caucuses could be bipartisan… Newt Gingrich invited us to the White House to talk to the White House staff, give a seminar on the third wave."* (Toffler, H.[4] on C-SPAN, 1995)

To ensure bipartisan participation, futurists associated with both parties, such as Newt Gingrich and Al Gore, were invited to join (Toffler & Toffler, 1995; C-SPAN, 1995). The bipartisan character of the CCF reflected a growing recognition that structural shifts in society, global demographics, and technological disruption required attention beyond short-term policy cycles. The CCF organized foresight-oriented events such as topical briefings and knowledge-sharing forums, featuring futurists, scientists, and policy practitioners including Herman Kahn, Margaret Mead, and Buckminster Fuller (Lanouette, 1978). It also encouraged House committees to participate in exercises anticipating key issues over the coming decade, experimenting with early forms of long-term agenda setting. Here, the normative vision of "anticipatory democracy" articulated by Toffler informed initiatives promoting citizen participation, institutional foresight, and deliberative long-term governance (Bezold, 1978; 2018).

During his tenure as CCF Chair in 1982, Representative Albert Gore Jr. introduced a Critical Trend Assessment method influenced by the workshop *Public Issues Early Warning System: Legislative and Institutional Alternatives*. The CCF's substantive impact was most evident in its efforts to integrate foresight into legislative agenda-setting, including advocating for a trend-monitoring agency, proposing legislation on global resources and population risks, and seeking to institutionalize findings from the Carter Administration's Global 2000 report. Though none of these proposals were enacted , they reflected a normative ambition to embed long-term thinking within the federal legislative framework. (Wilson Center, 2002)

The CCF also produced *What's New*, a quarterly newsletter summarizing legislative, technological, and social developments with potential long-term implications, distributed widely across Capitol Hill (Edgar, 1986). As Bob Edgar[5] noted, the CCF functioned as a "bicameral, bipartisan legislative service organization in which 100 Democratic and Republican Members of the House and Senate shared

4 Heidi Toffler, a strategic adviser and wife of Alvin Toffler.

5 Bob Edgar served as Chairman of the CCF from 1982 through 1986.

ideas and formed foresight-based alliances." Its emphasis on future-oriented discussion and learning rather than direct policymaking was described by Executive Director William McCord as both the Clearinghouse's "greatest strength and potential weakness". (Edgar, 1986)

In 1994, new regulatory constraints on LSO, including prohibitions on private contributions, stricter financial oversight, and limits on administrative expenditures, led to the dissolution of the CCF. Nevertheless, the CCF had made a significant contribution by offering an early model of foresight and anticipatory governance.

(3) CIF: Bridging public foresight and private expertise

Established in 1979, the CIF was a private non-profit organization operating without legal obligations or congressional ethical regulations, serving as a private-sector counterpart to the CCF. This autonomy allowed the CIF, unlike the congressional membership-based CCF, to extend its reach to corporate leaders and civil society decision-makers, conducting scenario development and risk analysis across multiple policy domains and sectors (Edgar, 1986). The CIF's principal mission was to enhance the systematic understanding of socio-technical change, environmental shifts, and emerging governance challenges. To this end, not merely as a conventional think tank, it provided foresight, anticipatory policy scenarios, and early warning mechanisms to policymakers and the public.

The CIF was able to amplify its influence through its collaboration with the OTA, which operated from 1973 until 1995. While the OTA served as Congress's primary channel for technology assessment, the CIF provided broader contextual foresight by developing interdisciplinary scenarios addressing digital inequality, climate risks, and demographic change. This collaboration[6] exemplified a hybrid model of foresight in which technological analysis and societal futures research converged to strengthen congressional deliberative capacity (OTA, 1985). The CIF contributed to foresight scenarios examining the long-term consequences of the digital divide and educational stratification. In the fields of energy and environmental policy, it provided predictive insights into global resource variability and sustainability changes, informing subsequent congressional deliberations on climate and energy strategy.

A core function of the CIF was to enable corporate or private funding to support CCF activities in accordance with evolving LSO regulations (Bezold, interview, 2026). With the dissolution of the CCF in 1999 due to financial and organiza-

6 A notable example of this collaboration can be found here: https://nsarchive.gwu.edu/sites/default/files/documents/6442923/National-Security-Archive-Office-of-Technology.pdf

tional constraints, this central function of the CIF was effectively and naturally eliminated. Despite this, the CIF offers us lessons in the necessity of external foresight to complement internal governmental mechanisms, the strategic value of a public–private foresight interface for addressing complex systemic problems, and the integration of early warning systems and long-term scenario planning into policy processes. As a result, it has contributed to laying a foundational platform for subsequent innovations in anticipatory governance that maintain functional linkage with public decision-making while operating beyond congressional formalism.

Legislative Strategic Foresight today: GAO

The historical foresight initiatives examined in the previous section did not succeed in establishing a permanent and integrated foresight institution within the U.S. Congress. Nevertheless, by collectively forming a conceptual and organizational repertoire available to the legislature, they laid an important foundation for subsequent institutional development. In the twenty-first century, with the rise of global interdependence, the proliferation of complex system risks, and growing recognition of the need for anticipatory capacity within democratic institutions, interest in foresight-centred governance has once again increased. Within this evolving context, the GAO has emerged as a central actor in the reconstruction and development of a strategic foresight ecosystem (see Figure 2) within the legislative domain (GAO, 2007; 2018; 2023a; School of International Futures, 2024).

GAO's early development: the 1980s to the mid-2000s

Established in 1921 as an independent and bipartisan legislative agency, the GAO has long supported Congress through auditing, performance evaluation, and policy analysis. In the early 2000s, as policy challenges became increasingly volatile

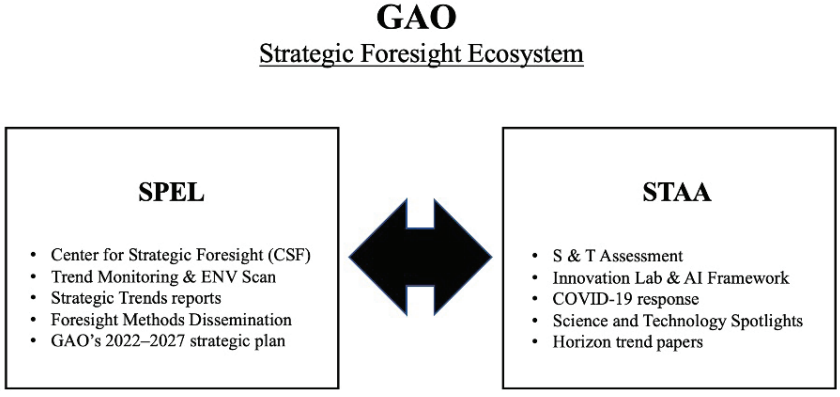

Figure 2. The GAO Strategic Foresight Ecosystem: contemporary architecture.

and interconnected, the GAO began formalizing strategic foresight capabilities, culminating in the creation of the Center for Strategic Foresight (CSF) and the Science, Technology Assessment and Analytics (STAA) team, both of which built on earlier efforts from the 1980s and the work of two major champions of anticipatory thinking.

The first was Eleanor Chelimsky, Deputy Comptroller General and head of the Program Evaluation and Methodology Division (PEMD) at GAO from 1980 to 1996. Chelimsky had strengthened GAO's methodological foundations and introduced forward-looking analytical tools, including scenario-based budget forecasting, high-risk scanning, and long-term fiscal simulation models. PEMD had also pioneered a "forecasting-evaluation synthesis" that integrated risk assessment, systems analysis, scenario construction, and predictive analytics into a unified evaluative framework. Chelimsky's 1986 presentation at the International Symposium on Forecasting signalled early efforts to link programme evaluation with foresight within the international research community (Chelimsky, 1987).

The second was David Walker, Comptroller General at GAO from 1998 to 2008. Walker argued that the U.S. political system lacked predictive capacity and, thus, advanced a vision for GAO that extended beyond traditional auditing. His framework "foresight, insight, and anticipation" outlined how GAO could help Congress reassess governmental strategy and performance (GAO, 2007). Walker oversaw two major reforms, including the GAO Human Capital Reform Act of 2004 (P.L. 108-271). In 2004, the renaming of the agency from the "General Accounting Office" to the "Government Accountability Office" symbolized a shift from accounting toward broader accountability and strategic oversight (GAO, 2014). Between 2004 and 2009, GAO integrated emerging long-term trends—fiscal imbalances, national security risks, and global interdependence—into a systematic foresight framework. Walker also introduced a leadership-focused foresight boot camp to cultivate anticipatory thinking within the organization and launched public engagement efforts such as the Finance Wake-up Tour (2006–2008) to raise awareness of long-term fiscal challenges.

These developments laid the institutional foundations for the GAO's contemporary foresight architecture, enabling the establishment of CSF in 2018 and Science, Technology Assessment & Analytics (STAA) in 2019 as central components of Congress's long-term analytical capacity.

GAO in the present

Building on these historic champions' foresight and oversight strategies, the GAO (UK Government, 2024) began integrating strategic foresight into its internal architecture from the mid-2000s, gradually transforming into a forward-looking policy organization. Specifically, these strategic foresight functions operate within the GAO through two core teams: the CSF and the STAA. Both programmes aim to enhance long-term analytical and predictive capacity. However, the CSF reviews future trends across social, economic, security, and environmental domains, focusing on the question, “Which trends will shape our future?”, to support strategic foresight and policy direction, whereas the STAA primarily conducts science and technology analysis, concentrating on, “What is this technology and how does it work?”, to provide policy-relevant implications of emerging technologies.

(1) GAO’s SPEL-CSF: Strengthening Strategic Foresight

Within the GAO, the Office of Strategic Planning and External Liaison (SPEL)[7] coordinates inputs from strategic foresight, planners, analytical units, and subject-matter leads, while communicating strategic priorities to internal stakeholders, thereby systematizing foresight capabilities across the agency within a broad management framework. In particular, the CSF (2019a)[8], established within SPEL in 2018, serves as the GAO’s primary hub for identifying, monitoring, and analysing emerging issues faced by policymakers. It leads environmental scanning and trend monitoring, systematically identifying new risks, long-term challenges, and cross-cutting developments related to congressional oversight and accountability. These activities reflect the GAO's obligation to provide Congress with reliable, fact-based information, as exemplified at the inaugural CSF meeting in September 2019, which addressed two emerging security issues: space policy management, so-called "Deep Space" (GAO, 2019c) and the societal implications of AI-generated synthetic media, so-called "Deepfake" (GAO, 2020a).

The CSF’s principal outputs including trend analyses, horizon scans, and long-term risk assessments, are utilized for interagency collaboration, advisory engagement, and capacity building with domestic and international partners. A prime example is the Strategic Trends Papers, which assess key trends potentially affecting government and society in alignment with the GAO (2022a)’s most recent strategic plan (*GAO Strategic Plan 2022–2027: Trends Affecting Government and*

7 Strategic Planning and External Liaison (SPEL): https://www.gao.gov/about/careers/our-teams/SPEL

8 Center for Strategic Foresight (CSF): https://www.gao.gov/about/what-gao-does/audit-role/csf

Society)[9]. Similar to the Global Trends published by the U.S. National Intelligence Council and the Global Strategic Trends issued by the UK Defence Futures, the CSF draws on external experts, focus groups, and diverse foresight approaches across a four-year cycle to produce and coordinate trend analyses that inform the GAO's long-term strategic plan. The CSF also fulfils an educational function by fostering a culture oriented towards long-term thinking and resilience through internal workshops and interdepartmental collaboration. These serve as a central mechanism enabling the GAO to systematically assess long-term risks and opportunities, while simultaneously contributing to the establishment of its status as a leading strategic foresight institution within Congress.

(2) GAO's STAA: The return of Science & Technology Assessment

In January 2019, the GAO launched the STAA (2022b) with a team of 49 analysts to address the continuing gap in congressional technology assessment capacity following the closure of the OTA. The STAA's mission focuses on science and technology assessment for Congress, auditing federal S&T programmes, collecting and applying engineering and science best practices, including cost, schedule, and technology readiness evaluations, and developing advanced analytical capabilities through the operation of the Innovation Lab.

The STAA produces four types of publications centred on congressional technology analysis and forward-looking assessment: Science and Technology Spotlights, concise two-page summaries highlighting critical issues; in-depth technology assessments providing detailed evaluation and analysis; On the Horizon trend papers offering forward-looking insights to assist Congress in anticipating long-term changes and potential risks; and reports providing analyses and recommendations based on audits of federal agencies (Persons, 2020). Its activities have also encompassed in-depth studies on areas such as synthetic biology, post-quantum data security, digital twins, and workforce challenges in the era of generative AI. Notable outputs include the Artificial Intelligence Accountability Framework in 2021, the Improper Payment Integrity Simulator in 2022, and ongoing collaboration with international organizations such as the OECD since 2023.

The COVID-19 pandemic, meanwhile, served as a notable demonstration of

9 The GAO Strategic Plan 2022–2027 series addresses twelve topics, including research and development in science and technology within an innovation-driven global economy, vulnerabilities in global supply chains, racial and ethnic disparities across society, reliance on digital technologies and cybersecurity impacts, workforce changes resulting from automation and emerging technologies, shifts in online learning, preparedness for biological events, national security threats in the digital era, climate change, the federal government's unsustainable long-term fiscal trajectory, healthcare issues, and demographic change. https://www.gao.gov/about/what-gao-does/audit-role/csf

STAA's capacity to respond rapidly to emerging science and technology challenges. STAA released a Coronavirus Overview on 3 March 2020, just six weeks after the virus was first detected in the United States, followed by a series of related Spotlights (GAO, 2020b). STAA further contributed to the GAO's broader COVID-19 efforts by providing technical expertise to enhance the congressional understanding of key federal actions and lessons learned from the pandemic response. The pandemic also accelerated the activities of the Innovation Lab, which tracked real-time COVID-19 data and provided visualizations of the viral spread to Congress, helping policymakers to comprehend the rapidly evolving developments and underscoring the importance of prior investment in technological infrastructure and subject-matter expertise. According to Timothy M. Persons (2020), former Chief Scientist and Executive Director of STAA, if COVID-19 has revealed anything, it is that science and technology play a more important role than ever in responding to developments around us, and that these are the changes that shape our lives and determine our future.

Conclusions: Lessons and implications

This chapter has traced the evolution of foresight within the U.S. Congress, from early institutional experiments to the contemporary integration of foresight capabilities. Historical initiatives such as the CRS, CCF, and CIF demonstrated creativity and normative ambition, yet struggled to achieve durability. The GAO's current foresight architecture embeds anticipatory analysis directly within the legislature's core oversight and accountability functions, while at the same time restoring elements of the long-term policy analysis and technology assessment once undertaken by the OTA. Such experiences illustrate that preparedness for foresight and science and technology assessment is not merely a contingency capacity, but a core capability that enables effective and timely action even in the face of unforeseen crises. Consequently, the evolutionary trajectory of legislative foresight in the United States, viewed in the context of anticipatory governance frameworks (Fuerth, 2009; Fuerth & Faber, 2012; Fuerth & Ronis, 2020; OECD 2019, 2021; Bezold, 2026) highlights three institutional conditions essential for sustaining legislative foresight: (1) Vision and Mission, (2) Process and Structure, and (3) People and Networks.

Vision and mission: Science and Technology Foresight

The contemporary foresight architecture of the GAO embeds two specialized organizational units, the CSF and the STAA, within the same institution, thereby separating and complementing strategic and technical analytical functions to ad-

dress long-term trends, risks, and technological policy implications concurrently. CSF systematically analyses long-term social, economic, and policy trends, while STAA provides policy-relevant technical insights through science and technology assessment. This clear delineation of vision and mission enables GAO to maintain expertise and bipartisan credibility within Congress's support and analytical functions, restoring and institutionalizing the legacy of OTA, and integrating legislative foresight into core oversight and evaluation responsibilities.

Process and Structure: Monitoring and Feedback Systems

The CSF is responsible for analysing strategic trends and scenarios, while the STAA conducts technology assessments. Their complementary functions encompass broad societal transformations and technological developments, enabling the integrated delivery of forward-looking activities. However, the GAO's foresight function does not exercise legislative authority directly and remains largely confined to an advisory and analytical role. Consequently, establishing binding feedback loops across the legislative process is challenging; nevertheless, indirect integration is achieved through strategic channels such as regular reports, hearings, and committee briefings, thereby seeking to enhance the visibility and influence of foresight analysis. Although this differs from the more organic and cyclical feedback system of, for example, the Finnish Parliament Committee for the Future, widely recognized as a successful model of parliamentary foresight practice, the GAO's current system functions as a pragmatic alternative capable of delivering tangible effects within the decentralized, party-centred structure of the U.S. Congress.

People and networks: foresight facilitators and champions

GAO's foresight activities combine internal analytical capacity with external expert networks to ensure sustainability. CSF invites fellows from the government, the private sector, academia, and international organizations to integrate professional analytical capability with global futures research, while STAA draws on S&T experts to maintain analytical rigour in technology assessment. Nevertheless, the contemporary GAO lacks embedded legislative champions akin to the legislative entrepreneurship demonstrated by figures such as Al Gore and Newt Gingrich during the establishment of the CCF in the mid-1970s. To address these limitations, the GAO leverages collaboration with legislators, decentralized learning networks (such as FFCOI and PSFN), and external networks spanning academia, industry, and international partners to link long-term analysis with policy action, promote the dissemination of foresight knowledge, and strengthen its institutional influence.

Concluding implication

Taken together, the evolution of foresight within the U.S. Congress illustrates both the possibilities and the constraints of embedding long-term thinking in a decentralized and politically pluralistic legislature. The foresight architecture of the GAO, centred on the CSF and STAA, offers a sophisticated model that both revives the historical legacies of foresight embedded in the congressional system and integrates anticipatory analysis into core accountability functions, while maintaining analytical rigour, bipartisan credibility, and organizational adaptability. Through fellowship programmes, technical expertise, and a diverse range of methodologies, the GAO systematically identifies emerging risks, technological developments, and long-term societal trends, and conveys these insights to Congress.

Yet, the U.S. model remains circumspect. The GAO cannot compel legislative action, and the committee-based structure of Congress, together with short-term political incentives, limits the direct policy impact of foresight. Nevertheless, the current GAO model demonstrates that sustainable legislative foresight depends on the complementary operation of a clear mission, structured processes, and engaged individuals and networks. Strategic use of hearings, regular reporting, and collaboration with staff and external partners helps to mitigate the structural constraints and strengthen the institutional ownership of the long-term analysis. These lessons from the U.S. further underscore that effective foresight requires not only institutional design but also leadership commitment and networked learning. In a politically complex environment, the GAO provides a compelling example of how multiple embedded forms of foresight can operate effectively within advisory limits, offering valuable lessons for legislative foresight practices elsewhere.

Abbreviations

ASPA: American Society for Public Administration
CCF: Congressional Clearinghouse on the Future
CBO: Congressional Budget Office
CIF: Congressional Institute for the Future
CRS: Congressional Research Service
CSF: Center for Strategic Foresight
FIRST: Future Information Retrieval System
FFCOI: Federal Foresight Community of Interest
FRG: Futures Research Group
GAO: Government Accountability Office
ISTA: International Society for Technology Assessment
LRS: Legislative Reference Service
LSO: Legislative Service Organization
NAPA: National Academy of Public Administration
OTA: Office of Technology Assessment
PEMD: Program Evaluation and Methodology Division
PSFN: Public Sector Foresight Network
SPEL: Strategic Planning and External Liaison
STAA: Science, Technology Assessment and Analytics
STS: Science, Technology, and Space

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ASIA

Shermon Cruz
Adjunct Faculty,
Asian Institute of Management to Founding Chair,
Global South Futures Community

5 FROM PROBING OUR FUTURES TO DECOLONIAL FORESIGHT: The origins and evolution of futures studies and foresight in the Philippines

Abstract

This article examines the historical emergence and contemporary transformation of futures studies and foresight in the Philippines. It argues that the Philippine experience is not merely a story of adopting imported futures methods, but of translating, institutionalizing, and increasingly reimagining them through local histories, public institutions, educational reform, and decolonial critique. From early anticipatory imagination in nationalist thought and the futuristics efforts of the late twentieth century, the field has evolved into a broader ecosystem that now spans government, science and technology, legislative reform, universities, executive education, and civil-society networks. The article highlights key milestones in this trajectory, including PREPF and Probing Our Futures: The Philippines 2000 A.D., the rise of national visioning frameworks such as AmBisyon Natin 2040 and PAGTANAW 2050, the Engaged Foresight Framework, the influence of regional and global networks, the case of Northwestern University, and the expanding role of universities, corporate and public institutions. It further argues that newer threads like Siyasip, Hiraya Foresight, Maharlika Foresight, and the Global South Futures Community signal an important shift from technical forecasting toward more participatory, culturally grounded, and decolonial forms of anticipatory practice. In doing so, the article presents the Philippines not as a peripheral recipient of futures knowledge, but as an increasingly distinctive site for the reinvention of foresight in the Global South.

Keywords: Futures Studies, Engaged Foresight, Strategic Foresight, Filipino Foresight, Philippine Futures, Decolonial Futures, Siyasip, Maharlika Foresight

Abstrak

Sinusuri ng artikulong ito ang makasaysayang pag-usbong at kontemporanyang pagbabago ng futures studies at foresight sa Pilipinas. Ipinapakita nito na ang karanasan ng Pilipinas ay hindi lamang kuwento ng pag-angkop sa mga futures method na nagmula sa labas ng bansa, kundi kuwento rin ng pagsasalin, pagsasainstitusyon, at unti-unting muling pagsasalin ng mga ito sa pamamagitan ng lokal na kasaysayan, mga pampublikong institusyon, reporma sa edukasyon, at kritikang dekolonyal.

Mula sa mga unang anyo ng anticipatory imagination sa makabayang kaisipan at mga futuristics effort noong huling bahagi ng ika-20 siglo, lumawak ang larangan tungo sa isang mas malawak na ekosistemang sumasaklaw ngayon sa pamahalaan, agham at teknolohiya, repormang lehislatibo, mga unibersidad, executive education, at mga network ng civil society.

Binibigyang-diin ng artikulo ang mahahalagang yugto sa pag-unlad na ito, kabilang ang PREPF at Probing Our Futures: The Philippines 2000 A.D., ang paglitaw ng mga pambansang balangkas ng bisyon tulad ng AmBisyon Natin 2040 at PAGTANAW 2050, ang Engaged Foresight Framework, ang impluwensiya ng mga panrehiyon at pandaigdigang network, ang kwento ng Northwestern University, at ang lumalawak na papel ng mga unibersidad, korporasyon, at pampublikong institusyon.

Dagdag pa rito, ipinapakita ng artikulo na ang mga bagong hibla ng pagaaral at praktika tulad ng Siyasip, Hiraya Foresight, Maharlika Foresight, at ng Global South Futures Community ay nagpapahiwatig ng mahalagang pagbabago mula sa teknikal na forecasting tungo sa mas participatory, kultural, at dekolonyal na anyo ng anticipatory practice.

Sa kabuuan, inilalarawan ng artikulo ang lumalaganap na futures knowledge, at patuloy na paglikha nang kaalamang siyasip mula sa Global South.

Introduction

The development of futures studies in the Philippines is more accurately seen not as arising from one definitive starting point, but as an evolving field formed through several overlapping origins. One point of origin is found in older traditions of imagining the nation, in which the future was articulated through anticolonial thought, reformist texts, and disputes over sovereignty and development. A second emerges with the rise of futuristics, social forecasting, and long-term planning in the late twentieth century. A more contemporary stage is marked by the diffusion of foresight into governance, science and technology, education, executive development, and decolonial futures work.

Any rigorous discussion of the Philippine field must guard against two distortions:

viewing it simply as an offshoot of Western futures studies, or attributing it solely to the contributions of a single institution or practitioner. A more accurate picture is that Philippine futures studies has taken shape through the convergence of local political and cultural issues, international methodologies, experimentation within universities, initiatives in the private and public sector, regional collaboration, and decolonial critique (Cruz & Moura, 2023). What has emerged is not so much one unified school as a growing ecosystem of texts, organizations, and practitioner communities.

This article does not attempt a fully comprehensive history of futures studies and foresight in the Philippines. Instead, it offers an interpretive and historically grounded account of the major lineages, milestones, institutions, and conceptual shifts that have helped shape the field. Because the archival and documentary record remains fragmented, especially for earlier futuristics work and locally circulated initiatives, the narrative is best understood as a mosaic of developments rather than a definitive or exhaustive chronology.

The mosaic metaphor is particularly fitting here. The field of foresight in the Philippines has never been a single, homogeneous whole; it is composed of many different pieces shaped by colonial history, postcolonial aspiration, disaster-prone ecological realities, rich cultural plurality, and an ongoing struggle over who gets to imagine and enact the future. The article is structured around the six historical phases identified in Table 1 below, which trace the field from early anticipatory imagination in the pre-1980s to its current decolonial turn.

Table 1. A mosaic of historical phases in the development of Futures Studies and Foresight in the Philippines.

Phase	Approximate Period	Defining Characteristics	Key Illustrations	Significance
I. Early anticipatory imagination and futuristics	Pre-1980s to 1980s	The future appears first through nationalist imagination, long-range thinking, social forecasting, and early futuristics work.	José Rizal's "The Philippines a Century Hence"; Emilio Aguinaldo's speeches; Marcos' The Way to the Future; Talisayon's paper; PREPF; Probing Our Futures: The Philippines 2000 A.D.; Philippine Futuristics Society.	Establishes that Philippine futures thinking was not merely imported; it had early intellectual, political, and planning roots.
II. Transnational exchange and professional networking	1990s to 2000s	Philippine futures work becomes more connected to global and regional futures communities, methods, and educational initiatives.	Inayatullah's Alternative Futures for the Philippines; Jim Dator's archetypes; WFSF Global Conference in the Philippines; Tony Stevenson; Cesar Villanueva's articles.	Shows how the field was shaped through dialogue with global and regional exchange, not in isolation.
III. Early institutional experimentation and futures education	Early 2010s	Futures work moves from advocacy and networking into visible institutional experimentation, especially in university-based education.	Cruz Panatag Shoal's Futures article (2013); Center for Engaged Foresight; NWU-PhilForesight (2012); Laoag as an early Futures Literacy site; UNESCO National Commission; APFN groundwork.	Marks the transition from scattered activity toward sustained institutional experimentation.
IV. Regionalization and institutionalization in planning and governance	Mid-2010s to early 2020s	Foresight becomes more visible in governance, development planning, science and technology, and public policy.	AmBisyon Natin 2040; PAGTANAW2050; Senate Committee on SDGs and Futures Thinking; DAP Center for Strategic Futures; The Millennium Project.	Foresight becomes embedded in public institutions and national planning discourse.
V. Distributed expansion across universities and sectors	Early 2020s to present	The field diffuses across higher education, executive education, local governance, and sector-specific institutions.	UNESCO Chair at NWU; Philippine Futures Thinking Society; UP NCPAG Governance Futures Lab; PUP RISFI; Ateneo RIFE; AIM executive programmes; DepEd Futures Thinking Unit; APF.	Foresight is no longer concentrated in one institution or sector, but distributed across the ecosystem.
VI. Global recognition, culturally grounded, and decolonial futures	Early 2020s to present (simultaneous)	The field becomes more visible globally while also becoming more reflexive about language, power, epistemology, and the Global South.	Siyasip; Hiraya Foresight; Maharlika Foresight; Global South Futures Community; decolonial and Global South framing; School of International Futures.	Philippine foresight is gaining global recognition while being reimagined conceptually, culturally, and decolonially.

Language and futures terminology in the Philippine context

One of the most encouraging advances in Philippine foresight is the attempt to envision the future not only through the English language and Western frameworks, but by drawing on Filipino and ethno-linguistic concepts, proverbs, and ways of sensing and understanding the world. The English term "future" can be rendered in Filipino as *hinaharap* (literally, "what is being faced"), *kinabukasan* (tomorrow or what is to come), or in Ilocano, *masakbayan* (the future as an experiential verb, a priori). Each carries different connotations: hinaharap is relational and directional; kinabukasan is temporal and quotidian; masakbayan has deeper philosophical and contextual resonances. Similarly, "foresight" has been translated as *pangitain* (a mental image or vision of the future), *pagtingin sa hinaharap* (looking toward the future), or *siyasip* (prudent foresight) and within institutional and academic contexts, as "futures thinking," "futures literacy," and "strategic foresight," rendered verbatim but contextualized with Filipino meaning-making.

Bussey's (2014) notion of intimate futures is especially relevant here because it foregrounds the role of language in foresight, arguing that the ways people speak about the future are deeply bound up with identity, context, and the embodied limits and possibilities of meaning-making. This matters because language does not merely describe futures; it shapes how futures are felt, owned, and acted upon.

Words like siyasip, masakbayan, maharlika, and hiraya do more than render current futures terminology into another language; they also transform its tone. They introduce into the field imaginative, reflective, prudent, humble, inquisitive, and caring associations that are hard to convey completely through English alone. In the Philippine context, a more multilingual futures discourse may therefore be one of the field's most important next steps.

The mosaic framing is itself relevant here. A mosaic does not require every piece to be the same colour or texture—only that each piece be genuinely itself while contributing to a composition no single piece could form alone. That is what the language of Filipino futures contributes to the broader field: not a mere rendering of what is already there, but a distinct texture and a different quality of futures clarity.

Phase I: Early anticipatory imagination and Futuristics (pre-1980s to 1980s)

Before futures studies became a recognized field in the Philippines, anticipatory imagination was already present in Philippine thought. José Rizal's 1889 essay The Philippines a Century Hence may be read as one of the earliest future-oriented texts in Philippine intellectual history, projecting the country's socio-political and economic trajectories across a century and treating the future not merely as an extension of the present, but as a space of alternative possibilities (Rizal, 1912/2011). A related strand can be seen in the revolutionary vision of Emilio Aguinaldo, whose speeches and proclamations framed the future of the Philippines as that of a sovereign, constitutional, and internationally recognized republic (Aguinaldo, 1899/2022; National Historical Commission of the Philippines, n.d.). While neither Rizal nor Aguinaldo should be understood as futurists in the contemporary professional sense, their works suggest that the Philippine relationship to the future was already deeply tied to questions of identity, reform, emancipation, nationhood, and collective destiny—a civilizational and political project before it was formalized as a methodological and institutional field.

One of the earliest and most clearly defined institutional foundations of futures work in the Philippines is the PREPF initiative (Population, Resources, Environment, and the Philippine Future), which resulted in the 1980 publication Probing Our Futures: The Philippines 2000 A.D. (Miranda, 1980). This volume describes PREPF as a futures-oriented research programme affiliated with the Development Academy of the Philippines (DAP), the University of the Philippines (UP) School of Economics, and the UP Population Institute. The project examined historical and current developments, identified alternative futures, and connected those envisioned futures to present policy decisions.

The same volume also shows that the language of futurity had entered the official discourse during the Marcos period, though in forms that must be read critically. Probing Our Futures cites Ferdinand E. Marcos on the importance of vision in shaping present action, while bibliographic records confirm that Marcos published The Way to the Future in 1975 (Marcos, 1975). This is not to suggest that authoritarian state rhetoric was equivalent to democratic or participatory approaches to foresight. It does, however, indicate that the future had already been enlisted as a political and developmental asset in official discourse well before the recent revival of foresight.

Philippine academic writing from 1978 was already treating futuristics, futures studies, and social forecasting as a rigorous and necessary branch of the social

sciences. The Philippine Center for Advanced Studies at UP Diliman produced relevant output in 1979; the first Philippine futuristics conference was convened in 1980; and the Philippine Futuristics Society was established in that same period, publishing its own journal under the title Futuristics (Talisayon, 1978; 1990; Philippine Futuristic Society, 1989). These early threads indicate that futures work in the Philippines developed from an existing blend of national imagination, development planning, state-sanctioned discourse, and social-scientific experimentation.

Phase II: Transnational exchange and professional networking (1990s to 2000s)

The Philippine field also grew through engagement with major futures thinkers and transnational networks. Sohail Inayatullah's 1988 article "Alternative Futures for the Philippines" was one of the earliest international futures analyses devoted specifically to the country, examining post-Marcos pathways through competing development models and positioning the Philippines as a site of contested futures within wider scholarship (Inayatullah, 1988).

By the mid-2000s, Tony Stevenson contributed more explicitly to the discussion of Filipino and Philippine futures. His 2006 article "From Vision into Action" emphasized the practical challenge of translating futures vision into institutional and civic response, while "Courage and Resilience: Creating Filipino Futures" drew on the image of the typhoon as a mythic device for understanding plausible Philippine political futures not simply as cycles of crisis, but as recurring encounters with upheaval, adaptation, and resilience. (Stevenson, 2006; 2007)

Jim Dator's influence became especially important at the level of method. His 2009 essay "Alternative Futures at the Manoa School" articulated the four generic alternative futures—continuation, collapse, discipline, and transformation—which became part of the scenario grammar used by Filipino futurists. Their uptake is visible in Cruz's 2013 Journal of Futures Studies article on the Panatag Shoal controversy, which explicitly applied Dator's archetypes to explore alternative geopolitical futures (Cruz, 2013; Dator, 2009).

Surrounding this methodological trend is a more locally grounded, values-oriented tradition exemplified by Cesar Villanueva—portrayed in Inayatullah's (1996) What Futurists Think as peace-focused and committed to justice—and by Marcus Bussey, whose intimate futures workshops argued for the inclusion of the body and spirit in futures practice, understanding language as an active medium through which futures are felt and made socially real (Bussey, 2014).

The World Futures Studies Federation (WFSF), a UNESCO and UN consultative partner founded in 1973, played a particularly important role in legitimizing futures education in the Philippines. It convened the third Asia-Pacific Futures Course in Bacolod City in 1994 and hosted "Creating a 21st Century Philippines Futures in Education and Futures of Education" in 1996 in conjunction with the Philippines Futuristics Society, connecting local futures work to peace-oriented and values-driven pedagogy across the region (WFSF, n.d.-a, n.d.-b; Inayatullah, 1996). If WFSF helped internationalize the field, the Asia Pacific Futures Network (APFN), founded in 2015, helped regionalize it by exploring how futures studies in Asia might diverge from Western approaches and be grounded in local languages and Asian philosophies (APFN, n.d.; Cruz et al., 2016). The Association of Professional Futurists (APF) added another layer by linking local practice to a broader discourse on competence and professional excellence (APF, 2025).

Phase III: Early institutional experimentation and futures education (early 2010s)

Northwestern University (NWU) emerged as an early institutional champion of futures work in the Philippines, beginning in 2012 with the NWU Philippine Center for Foresight Education and Innovation Research Institute (NWU PhilForesight). A significant milestone was the 2014 "Resilient Cities, Brighter Futures" workshop held with the UNESCO National Commission of the Philippines and the Laoag city government. This positioned Laoag as an early Philippine test bed for Futures Literacy, as documented in UNESCO's Transforming the Future: Anticipation in the 21st Century (Miller, 2018). NWU PhilForesight became one of the founding members of APFN in 2015, and collaborated with Teach the Future (n.d.) in developing the country's first Introduction to a Futures Studies curriculum for Political Science and Mass Communication students.

Phase IV: Regionalization and institutionalization in planning and governance (mid-2010s to early 2020s)

By the early 2020s, foresight in the Philippines had moved more decisively into public institutions. At the legislative level, Senate Resolution No. 9, approved in March 2019, formally created the Senate Committee on Sustainable Development Goals, Innovation and Futures Thinking—indicating that futures thinking had entered the legislature rather than remaining confined to academic or specialist circles (Senate of the Philippines, 2019).

Within executive and administrative learning, the Development Academy of the Philippines (DAP) has become a major institutional node through its Center for Strategic Futures, which seeks to mainstream futures thinking, innovation, and analytics in policy-making. In 2021, DAP introduced the Certificate Course on Futures Thinking, which later evolved into the Certificate Course on Foresight and Futures Thinking, institutionalizing foresight as a recurring educational offering (DAP, 2021; 2024; 2025a; 2025b).

National planning instruments represent another crucial channel. The National Economic and Development Authority's (NEDA) AmBisyon Natin 2040, formally endorsed by Executive Order No. 5 as the country's long-term vision, provided a state-sanctioned vocabulary for preferred futures (NEDA, 2016).PAGTANAW 2050 has been described by the National Academy of Science and Technology Philippines (NAST) as the first interdisciplinary, Philippine-centred science, technology, and innovation (STI) foresight and strategic plan funded by the Department of Science and Technology (DOST) (NAST, 2021; 2026). It signals a shift from short-term, sectoral planning toward long-range, anticipatory, and integrated STI-led national development.

The foresight infrastructure expanded further through the Asian Development Bank. Its 2025 report Foresight in Action: Prospective Policy Making in Asia and the Pacific (Asian Development Bank, 2025) documents a collaboration with NEDA that progressed from a 2019 futures workshop to a 2022–2023 Applied Foresight Program and a Causal Layered Analysis workshop informing the Central Luzon Regional Development Plan 2023–2028. The Department of Science and Technology's Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development (DOST-PCAARRD) has similarly institutionalized a DOST Foresight Framework and Protocol, partnering with the Center for Engaged Foresight in delivering scenario-strategy masterclasses for DOST staff (DOST-PCAARRD, 2021; 2025).

The Millennium Project also shaped the evolution of foresight in the Philippines by linking local practice to global futures research and methodological innovation. Its Philippines Node pursues capacity-building in futures methodologies, and the 2021 First Philippine Futures Summit, organized by the Philippine Futures Thinking Society, drew directly from its Future of Work and Technology Scenarios and Actions Report (The Millennium Project, 2021).

Phase V: Distributed expansion across universities and sectors (early 2020s to present)

In 2023, Northwestern University became the host of the UNESCO Chair in Anticipatory Governance and Regenerative Cities—the first of its kind in the Philippines—marking a progression from university-led experimentation to a globally acknowledged platform for anticipatory governance (Northwestern University, 2023; 2025; UNESCO, 2026). Across the wider university sector, foresight has become a distributed ecosystem rather than a single-campus initiative. The UP National College of Public Administration and Governance (UP NCPAG) Governance Futures Lab has engaged over 5,000 participants since its establishment in 2022, while the Polytechnic University of the Philippines' Research Institute for Strategic Foresight and Innovation (RISFI) and Ateneo de Manila University's Research Institute for the Futures of Education (RIFE), founded in 2024, extend futures practice into public administration and education research respectively (Ateneo de Manila University, 2024; UP NCPAG, n.d.; PUP, 2025). The Center for Engaged Foresight (CEF) served as a key connective organization across this expansion, collaborating with Development Academy of the Philippines, Asian Institute of Management, University of the Philippines National College of Public Administration and Governance, Department of Science and Technology, Department of Health, the Department of Education to name a few to diffuse foresight vocabularies, capabilities and strengthen futures literacy across public and private sector contexts (CEF, n.d.).

The Asian Institute of Management (AIM) represents the primary site of mainstreaming through executive education, with its Futures Thinking Fundamentals programme described as the first of its kind in the country equipping corporate leaders with environmental scanning, strategic thinking, and innovation tools (AIM, 2024; 2025). Basic education also emerged as a key arena: Secretary Leonor Briones announced the creation of a Department of Education (DepEd)

Futures Thinking Unit in 2019, and subsequent planning documents—including the Basic Education Development Plan 2030—have embedded futures vocabulary into the official school reform policy (DepEd, 2019; 2021; 2022). These developments connect the Philippines to UNESCO's broader Futures of Education agenda through the national dialogue series Futures of Education: Learning to Become, launched in 2020[1].

Phase VI: Culturally grounded and decolonial futures (early 2020s to Present)

Since the early 2020s, the field has been shifting away from merely adopting foreign foresight methods and toward developing ideas, terminologies, and practices grounded in Filipino language, culture, values, and historical experience. This phase signals a more deliberate attempt to indigenize and decolonize anticipation, asking not only what kinds of futures Filipinos envision, but also whose knowledge, language, and perspectives are being used to imagine those futures.

Siyasip

One emerging contribution to the Philippine futures vocabulary is Siyasip. The term combines siyasat—to investigate or inquire—and isip—thought or mind—together with connotations of prudence and foresight, defining it as mindful imagination, mindful anticipation, and thoughtful inquiry and foresight. Siyasip links futures practice to a Filipino ethic of reflective care before action—a kind of deliberate, attentive, and responsible looking-ahead rooted in the relational values of Filipino culture. The inaugural issue of SIYASIP Futures Magazine (UNESCO CHAGRC, 2024) introduced the concept as not merely a publication title, but as an attempt to name foresight in a more culturally resonant frame. It marks another step in the broader movement from applying imported methods toward building local concepts through which anticipation itself can be understood and practised.

Hiraya Foresight

Another contemporary strand has coalesced around culturally grounded and action-oriented approaches to foresight, becoming most explicit through Hiraya Foresight. The term hiraya derives from the ancient Filipino expression hiraya manawari—a wish or aspiration that something come to pass—and carries connotations of imagination, aspiration, and willed possibility that the English

1 UNESCO Futures of Education, https://www.unesco.org/en/futures-education and National & local dialogues, https://www.unesco.org/en/futures-education/national-local-dialogues

word "foresight" does not fully convey. The Hiraya Foresight framework is presented as an indigenous and culturally grounded approach developed to democratize and indigenize futures literacy and to loosen the colonial habits of anticipation. It draws on Filipino cultural values—bayanihan (collective solidarity), kapwa (shared identity and being), and loob (inner motivation and moral orientation)—as resources for futures thinking. Hiraya matters as an example of conceptual localization: not simply translating imported methods, but reshaping the very imagination of futurity through Filipino language and ethical-cultural sensibilities (Cruz & Kahn-Parreño, 2024).

Maharlika Foresight

Maharlika Foresight represents a third thread in this culturally grounded strand. The word maharlika, rooted in Sanskrit—where mahat (great) and likha (creation) together signify "great creation"—was historically used in pre-colonial Philippines to refer to the noble warrior class, and has been revived in contemporary futures discourse as a marker of Indigeneity, self-respect, sovereignty, and self-determination in envisioning what lies ahead. Maharlika Foresight seeks to centre pre-colonial and indigenous Philippine epistemologies as legitimate sources of anticipatory knowledge—challenging the assumption that futures thinking must be organized primarily around the Western taxonomies of time, progress, and development. In this sense, it is not simply about inserting Filipino words into existing frameworks, but about reclaiming the ontological authority to define what counts as knowledge about the future and to question the power dynamics over who holds the right to imagine it.

Together, Siyasip, Hiraya Foresight, and Maharlika Foresight constitute a growing conceptual vocabulary for Philippine foresight that is culturally specific, ethically grounded, and decolonial in orientation. They signal that the Philippine futures field is not only expanding institutionally but also being reinvented conceptually from within.

The Global South Turn and decoloniality

The most recent phase in the Philippine story is increasingly decolonial. The Global South Futures Community describes itself as a space connecting futures and foresight professionals from the Global South to decolonize futures studies, collaborate, and democratize the field. A 2025 FuturePod conversation (Hayward, 2025) framed it explicitly as part of a South-to-South effort to counter the dominance of Global North perspectives in futures and foresight. In the Philippine context, this decolonial turn pushes further by foregrounding epistemic justice: not only searching for how to build foresight capacity, but who has the agency to

imagine the future and which languages, worlds, and histories count as legitimate sources of anticipation.

More recently, the UNESCO Chair on Anticipatory Governance and Regenerative Cities organized a series of symposia on regenerative futures between 2025 and 2026, bringing together 400 participants from across the country and around the world. This culminated in a Regenerative Futures Report (Cruz, 2025) proposing a move beyond conventional sustainability toward deep systemic transformation: legally recognizing the rights of nature, ensuring fair and accessible financing, embedding foresight as a core civic skill, and deploying art and culture as democratic foresight practices to disrupt and reimagine prevailing paradigms. This decolonial current is also visible in the emergence of Filipino Fellows in the School of International Futures' Next Generation Foresight Practitioners programme[2], reflecting the Philippines' growing participation in transnational foresight communities.

Not All Futures Thinking is Foresight

It is also necessary to recognize that not all futures thinking initiatives are equal. As the foresight language has become more visible across institutions, some programmes and workshops have adopted futures terminology without the corresponding theoretical or methodological rigour—using "foresight" as a label for general strategic discussion or trend awareness rather than a disciplined practice grounded in the traditions and methods of futures studies. A more mature field requires not only broader participation, but also stronger conceptual clarity, methodological discipline, and critical self-awareness.

Conclusion

The evolution of futures studies and foresight in the Philippines is best understood as a history of layering rather than replacement. Older traditions of national imagination and civilizational reflection were followed by formal futuristics and policy-oriented social forecasting in the 1970s and 1980s. These were expanded through international and regional lineages involving Inayatullah, Dator, Stevenson, Villanueva, WFSF, APFN, APF, and The Millennium Project. In the 2010s and 2020s, foresight moved more deeply into governance, science and technology, education, executive learning, and university ecosystems through the Senate, DAP, NEDA, NAST, DOST-PCAARRD, DepEd, Northwestern University, UP, PUP, Ateneo, AIM, and emerging public-safety spaces. Enabling initiatives like

2 https://nextgenforesight.org/fellowship

Engaged Foresight and more recent threads—Siyasip, Hiraya Foresight, Maharlika Foresight, and the Global South Futures Community—suggest that the Philippine field is becoming not only more established but also more self-aware about language, plurality, and the politics of knowledge (Cruz & Moura, 2023).

What emerges from this history is not a simple narrative of adoption. It is a story of translation, encounter, institutional struggle, and conceptual reinvention. The Philippine field has been shaped by global methods, but it has not been reducible to them. Its most significant trajectory may be that it is gradually learning to speak in more Philippine, more Asian, and more Global South registers without abandoning scholarly and methodological rigour. That is what makes the Philippine story important within the wider mosaic of futures studies: it shows how the field becomes more alive when it is rooted not only in tools and frameworks, but also in memory, plurality, public purpose, civic engagement, and the courage to imagine otherwise.

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Peer-reviewed Chapter

Asako Okamura
Senior Research Fellow
NISTEP*

Yoshiko Yokoo
Affiliated Fellow
NISTEP*

Yuko Ito
Ph.D., Senior Research Fellow
NISTEP*

Yutaro Kurogi
Ph.D., Senior Research Fellow
NISTEP*

Yasuhiro Ogura
Ph.D., Senior Research Fellow
NISTEP*

Hidenori Gamo
Visiting Researcher, Ph.D.
NISTEP*

*The Center for S&T Foresight and Indicators, National Institute of Science and Technology Policy.

6 JAPAN'S SCIENCE AND TECHNOLOGY FORESIGHT SURVEYS: A Historical review and methodological evolution

Abstract

This chapter reviews the history and methodological development of Japan's large-scale Science and Technology Foresight Surveys. First published in 1971 and conducted approximately every five years, the Surveys are characterized by a combination of continuity, adaptation, and close linkages with policy. They have long been based on an expert-centered Delphi survey approach, while maintaining several defining features: a broad coverage of science and technology fields and large-scale participation from industry, academia, and government. This methodological backbone has supported continuity across the Surveys. At the same time, the Surveys have adapted their design to reflect the changing societal needs, including policy concerns. They have evolved into a broader foresight framework that increasingly incorporates societal perspectives through horizon scanning, visioning, and scenario analysis. Across successive Surveys, the emphasis has shifted from a seed-oriented approach to societal-needs-oriented, problem-solving-oriented, and eventually social-

vision-oriented approaches. This transition reflects a move away from a largely technology-centered and one-directional framing—whether "from technology to society" or "from society to technology"—toward a more interactive perspective in which science, technology, and society mutually shape one another and co-evolve. This combination of continuity and adaptation has enabled the Surveys to respond to urgent issues, such as COVID-19 and carbon neutrality, without sacrificing comparability across the Surveys. The accumulated archive has also enhanced the value of the Surveys by supporting historical verification through follow-up evaluations: by examining how expectations about the future have shifted over decades, the Surveys make "future knowledge" retrospectively testable.The relationship between the Surveys and policymaking has varied over time, but their policy relevance can be observed through both formal and informal channels. Their main contribution lies not in directly determining policy choices, but in providing a structured and shared knowledge base for policymaking. The Surveys' long-term continuity, methodological adaptability, and accumulated archive have also helped sustain their legitimacy as a foresight exercise in policy contexts.

Keywords: Japan, Delphi Survey, Horizon Scanning, Visioning, Scenario, Policy

Abstract (in Japanese)

本章では、日本の大規模な科学技術予測調査の歴史と方法論的発展を概観する。科学技術調査は、1971年に出版された第一回調査以降、おおむね5年ごとに実施されている。調査の特徴は、継続性、適応性、そして政策との密接な関係をあわせ持つ点にある。

調査は長年にわたり、専門家を中心とするデルファイ調査を基盤とし、幅広い科学技術分野を対象としていること、産業界·学界·公的機関から大規模な参加を得ることといった、いくつかの基本的特徴を維持してきた。この方法論的基盤が、調査全体の継続性を支えてきた。

一方で、科学技術予測調査は、政策上の関心を含む社会的ニーズの変化を反映して、調査設計·枠組みを変化させてきた。ホライズン·スキャニング、ビジョニング、シナリオ分析などを通じて、社会的視点をより積極的に取り込む、より広範なフォーサイトの枠組みへと発展している。調査を重ねるなかで、その重点は、シーズ志向のアプローチから、社会ニーズ志向、課題解決志向、そして社会ビジョン志向のアプローチへと移行してきた。この変化は、「技術から社会へ」あるいは「社会から技術へ」という、主として技術中心で一方向的な捉え方から、科学技術と社会が相互に影響を及ぼし合い、共進化するという、より相互作用的な視点への転換を示している。

このように継続性と適応性を併せ持つことにより、調査間の比較可能性を損なうことなく、COVID-19やカーボンニュートラルといった緊急性の高い課題にも対応することが可能となった。また、蓄積されたアーカイブが、科学技術予測調査の価値を高めている。将来に対する期待が数十年にわたってどのように変化してきたのかをフォローアップ評価を通じて歴史的に検証することで、科学技術予測調査における「未来に関する知識」を事後的に検証可能なものとしている。

科学技術予測調査と政策形成との関係は時代によって変化してきたが、政策との関連性は、公式·非公式の双方の経路を通じて確認することができる。政策への主な貢献は、政策選択を直接決定することにあるのではなく、政策形成の基礎となりうる構造化された共有知識基盤を提供することにある。こうした長期的な継続性、方法論的な適応性、そして蓄積された共有知識基盤は、政策形成における科学技術予測調査の正当性を支えるうえでも寄与してきたと考えられる。

Introduction

Japan's large-scale Science and Technology Foresight Surveys (hereafter, the S&T Foresight Surveys or the Surveys) began as an initiative of the Science and Technology Agency (STA) (STA, 1971) and have since been conducted on a nearly five-year cycle. Since the 5th Survey (NISTEP, 1992), the National Institute of Science and Technology Policy (NISTEP)[1] has led the Surveys, which have been positioned as a key reference base for shaping the government's science, technology, and innovation (STI) policy.

While the Delphi method has been consistently used as the core approach to eliciting expert views on the future of science and technology (S&T), the overall methodological portfolio has expanded gradually in response to socio-economic changes in Japan and globally. In recent Surveys, the scope has moved beyond S&T trajectories alone to address the evolving relationship between S&T and society, incorporating approaches such as horizon scanning, visioning, and scenario analysis. At the same time, efforts have been made to broaden stakeholder engagement—for example, by integrating citizens' perspectives on future society—and to deepen the analysis of societal issues connected to S&T.

"Future" in Japanese

In Japanese, "future" is commonly expressed as mirai (未来) or shōrai (将来)—terms that can be interpreted literally as "time that has not yet come" and "time that will come later" (or "time yet to be brought about"), expressions often traced to Buddhist linguistic and conceptual traditions. "Foresight" is frequently used in Japanese as a loanword (フォーサイト, fōsaito), but it is also rendered through several Japanese equivalents depending on which facet of foresight is emphasized—for example, mirai yosoku (未来予測) for future prediction/forecasting, gijutsu yosoku (技術予測) for technology forecast/foresight, and mirai dōsatsu (未来洞察) for future insight.

This chapter proceeds as follows. First, against the backdrop of social conditions in Japan and worldwide, it outlines the origin and early developments from the 1st through the 10th Surveys, focusing on the methodological evolutions. Next,

1 NISTEP was established in 1988 as a national research institute under the STA. Following a major administrative reform in 2001, it was reorganized as an affiliated research institute of the Ministry of Education, Culture, Sports, Science and Technology (MEXT).

it examines the relationship between the Surveys and policymaking. Although the Surveys are intended to provide an evidence base to support STI policy, the degree of proximity to policymakers has varied over time as political and administrative priorities and contexts have shifted. It then reviews more recent developments in the 11th and 12th Surveys, and related studies that addressed salient policy challenges during this period, such as the COVID-19 pandemic and carbon neutrality. Building on this historical review, the chapter considers the Surveys' roles and significance and identifies outstanding issues and directions for future improvement.

Origins and early development

Overview

The S&T Foresight Surveys have been conducted continuously for more than 50 years, roughly every five years. Each Survey adopts a long-term horizon of 20–30 years and covers a broad range of S&T fields[2] while engaging a large and diverse set of stakeholders (Table 1). The primary aim is to inform the discussions on S&T and STI policy. From the 1st through 7th Survey, the results were also positioned as a reference for private firms in developing technology R&D strategies. The latest, 12th Survey articulated a broader purpose, emphasizing its role in fostering dialogue among stakeholders across industry, academia, and government. Up to the 6th, the Surveys relied solely on the Delphi method focused on anticipating technological developments (a technology-oriented approach). Since the 7th Survey, its scope expanded into a multi-method framework (multiple survey components) to incorporate societal dimensions.[3]

2 S&T fields are reviewed in each survey, but broadly the survey covers the following domains: health, medicine, and life sciences; agriculture, forestry, fisheries, and food; environment, resources, and energy; electronics, telecommunications, and information; materials, processes, and manufacturing; cities, architecture, civil engineering, and transportation; space, oceans, the Earth, and scientific infrastructure; and the economy and society.

3 The Surveys from the 1st to 8th are summarized in Kuwahara et al., 2008.

Table 1. Survey summary.

Survey No.	Year of publication	Methods	Number of Fields (*) and Topics Covered by Delphi Survey	Number of respondents for Delphi Survey	Source
1st	1971	Delphi	644 topics in 5 fields	2 482	STA (1971)
2nd	1977	Delphi	656 topics in 20 fields, 7 areas	1 316	STA (1977)
3rd	1982	Delphi	800 topics in 13 fields	1 727	STA (1982)
4th	1987	Delphi	1071 topics in 17 fields	2 007	STA (1987)
5th	1992	Delphi	1149 topics in 16 fields	2 385	NISTEP (1992)
6th	1997	Delphi	1072 topics in 14 fields	3 586	NISTEP (1997)
7th	2001	Delphi, Societal Needs Survey	1065 topics in 16 fields	3 106	NISTEP (2001)
8th	2005	Delphi, Societal Needs Survey, Scenario (S&T), Bibliometric approaches	853 topics in 13 fields	2 239	NISTEP (2005)
9th	2010	Delphi, Scenario, Regions, S&T goals from social perspectives	832 topics in 12 fields	2 900	NISTEP (2010)
10th	2015	Sectoral S&T Forecasts (Delphi), Visioning, Scenario	932 topics in 8 fields	4 309	NISTEP (2015)
11th	2019	Delphi, Horizon Scanning, Visioning, Scenario	702 topics in 7 fields	5 352	NISTEP (2019)
12th	2025	Delphi, Horizon Scanning, Visioning, Scenario	836 topics in 8 fields	4 761	NISTEP (2025)

Methodological development over time

Across its successive Surveys, the S&T Foresight Survey has evolved from a seed-oriented approach[4] (1st–6th) to a societal-needs-oriented approach (7th–8th), then to a problem-solving-oriented approach (9th), and, from the 10th Survey onward, to a social-vision-oriented approach[5]. This transition reflects a shift from a largely technology-centered, one-way framing—"from technology to society" or "from society to technology"—toward an interactive perspective in which S&T and society mutually shape one another and co-evolve.

4 A seed-oriented approach is generally understood as a technology-push approach. It is primarily driven by existing scientific and technological seeds and their potential for development, rather than by articulated social needs. While social needs may also be considered, they do not usually constitute the main starting point for technological development.

5 These phase categories are simplified and approximate, intended to facilitate the understanding of the complex nature of the historical development. In reality, the transitions occurred gradually and through more complex processes.

The seed-oriented phase (1st–6th Surveys)

The first Survey (STA, 1971) (then referred to as a 'Technology Forecast' Survey), was Japan's first national-level long-term outlook exercise covering a wide range of S&T fields. It was launched amid a growing recognition that Japan's era of rapid economic growth had peaked and that the country needed to chart and steer its own future course, rather than continuing a catch-up trajectory vis-à-vis advanced economies. At the same time, the negative externalities of high growth—most notably pollution and broader environmental degradation—had become increasingly visible, underscoring the need to re-examine how S&T should develop and contribute to society.

In this context, in 1969, the Japan Techno-Economics Society organized a study mission comprising 21 representatives from industry and academia. Over a 20-day period, the mission visited 19 U.S. firms and research institutes to gather information on technological trends and development prospects for the 1970s ('The future of industry', 1970). Several key members of the mission were also involved in the early stages of the Surveys. A central concern of the mission was how to generate reliable inputs for decision-making, particularly with respect to markets and technological change. During this process, the Delphi method became known in Japan as a structured approach to technology forecasting, and it was subsequently adopted as the core methodology in the Survey. Approximately 600 "topics"—concise statements describing prospective S&T or R&D themes and S&T-related social systems—were developed in the 1st Survey, and experts took part in two rounds of assessment to rate each topic's feasibility and importance.

Topic examples

- Uncrewed probes conduct exploration missions to the vicinity of Uranus, Neptune, and Pluto. [1st Survey]
- Pocket telephones that can send and receive calls from any location are put into practical use. [3rd Survey]
- The complete base sequence of DNA in the human chromosomes is determined. [4th Survey]
- Evaluation methods and therapies that restore paralyzed motor function through transplantation of neural stem cells. [9th Survey]
- A transition to a high-productivity society enabled by flexible work styles that do not require commuting to the office and assume multiple jobs/side work. [11th Survey]
- Robotic devices that support the cognitive and motor functions of older adults and people with mild disabilities, enabling independent living. [12th Survey]

The Delphi survey has been implemented continuously through the 12th (most recent) Survey. Its basic architecture has remained stable: field-specific subcommittees—comprising more than 100 experts in total—develop roughly 600 to 1,000 topics in total, after which several thousand experts respond to two successive questionnaire rounds, rating each topic's expected timing of realization, importance, and international competitiveness.

At the same time, the Surveys have repeatedly adapted its design in response to shifts in S&T trends and broader societal change. While the 1st and 2nd Surveys (STA, 1977) mainly emphasized social and economic development through S&T largely from a seed-oriented perspective, they were also informed by a needs-oriented perspective. This included explicit consideration of "peripheral" issues surrounding technological development—such as themes likely to become important in the future and anticipated changes in people and society—and the broad respondent base to include generalists as well as experts from the humanities and social sciences. Moreover, beyond conventional technical domains, the Surveys introduced fields defined by application contexts and societal purposes, such as daily life, education, and safety.

Subsequently, the Surveys were conducted largely in alignment with established S&T domains. In addition to these domain-based inquiries, the Surveys introduced cross-cutting analytical axes to enable wide-ranging discussion across fields. In the 3rd (STA, 1982) and 4th Survey (STA, 1987), these axes were primarily technology-oriented, including themes such as robotics, bioengineering, and international collaborative development. In the 5th (NISTEP, 1992) and 6th Survey (NISTEP, 1997), the framework incorporated socially grounded axes—such as environmental issues, population ageing, and safety—while also adding axes related to the promotion of basic research and the development of advanced S&T, reflecting an increased policy emphasis on foundational research.

Efforts were also made after the 6th Survey to illustrate some of the Delphi topics in manga form, with the aim of communicating the results to audiences beyond S&T experts and policy circles[6].

6 These illustrations continued across most of successive Surveys, including the most recent one. The 7th Survey is particularly noteworthy because the well-known manga artist Leiji Matsumoto was invited to create illustrations. In the 11th Survey, a poster that brought together multiple topics in a single visual image was produced by the MEXT to be included in the S&T White Paper. The poster was distributed to elementary and junior high schools across Japan.

The societal-needs-oriented phase (7th–8th Surveys)

From the late 1990s onward, as the interdependence between S&T and society deepened, the Surveys increasingly incorporated perspectives related to societal expectations and potential adverse societal impacts. In the 6th and 7th Survey (NISTEP, 2001), questions were added to the Delphi Survey asking about concerns regarding the potential negative implications of realizing each topic for the natural environment, safety and security, and ethics, culture, and society.

During the 2000s, the Surveys placed growing emphasis on using S&T to address emerging societal challenges and respond to social needs. In the 7th Survey, social needs were examined in a separate survey and incorporated into the analysis through lenses such as socio-economic systems, the declining birthrate and population ageing, as well as safety and security. New domains—such as distribution and services—were also added as application fields for information and communication technologies (ICT). In addition, social factors related to S&T development, including institutional and systems development and changes in public awareness, also came to be addressed as topics. These changes, together with the deepening of policy linkages discussed later, were reflected in a change in the Survey's English name. After the 7th Survey, it was renamed from "Technology Forecast Survey" to "Technology Foresight Survey", while the Japanese name remained unchanged.

In this way, the survey design was revisited each time to align with contemporary policy demands, societal change, and advances in S&T.

Another major turning point was the 8th Survey (NISTEP, 2005). Moving beyond the technology focus of the earlier rounds, it broadened the scope from basic science to social needs. This shift led to the renaming of the Survey from the "技術予測調査 (gijutsu yosoku cyousa) / Technology Foresight Survey" to "科学技術予測調査（kagaku gijutsu yosoku chousa）/ Science and Technology Foresight Survey". The 8th Survey adopted an overarching framework that combined quantitative and qualitative approaches: alongside the Delphi method, it introduced bibliometric approaches (science mapping)[7] to detect signals emerging from basic science, as well as citizen questionnaires to capture social needs and scenario work. It was also the first round to be explicitly integrated into the policy process through collaboration with policymakers (see section The Science, Technology and Innovation Basic Plan for details).

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7 Science mapping was incorporated only in the 8th Survey. Thereafter, it was conducted separately by a different unit of NISTEP, partly because some argued that, as it relies on recent or past data, it should not be regarded as foresight itself. Since then, the Surveys have used science mapping as one of its information sources.

The problem-solving-oriented phase (9th Survey)

The 9th Survey comprised three components: the Delphi survey, scenario development, and an exercise exploring regional future visions[8] (NISTEP, 2010). It examined how S&T could contribute to addressing major global and national challenges. Under four overarching "grand challenges"—health, sustainability, safety, and S&T capabilities—the Survey articulated societal goals for S&T and analysed them in conjunction with expected S&T advances. It also explored the establishment of cross-disciplinary subcommittees within the Delphi process to strengthen integrative assessment across fields.

This 9th Survey was the first to introduce normative visions, namely 'desirable' or 'preferable' visions for regions. This can be seen as a precursor to the visioning exercise introduced from the 10th Survey onward.

The social-vision-oriented phase (10th Survey onward)

The 10th Survey marked a further methodological and conceptual shift (NISTEP, 2015). In the context of Japan's transition from S&T policy to STI policy, it incorporated visioning for the first time, alongside the Delphi survey and scenario development. The visioning exercise drew on new trends and emerging changes and, based on assessments of Japan's strengths and weaknesses, set out a future vision and measures that Japan should take. The scenario exercise examined those visions and measures for each possible choice of Japan's position in the world. The Delphi survey also introduced fields and topics with an explicit focus on data science.

The 10th Survey also adopted a web-based questionnaire for the first time. By disseminating invitations through academic societies and related associations and obtaining the voluntary cooperation of their members, it enabled broader expert participation than the conventional mail-based survey.

Policy linkages and channels

The development of the S&T Foresight Surveys has been closely linked to the country's policy-formulation process and socio-economic context. Until the early 1990s, Japan's S&T administration system was relatively decentralized, and policy was often formulated in a bottom-up manner. Government funding also account-

8 This exercise developed into a regional workshop series held in 20 regions across Japan between 2010 to 2023, including some online workshops during the COVID-19 pandemic.

ed for a smaller share of national R&D than in Europe and the United States. In this context, the Surveys helped stakeholders across industry, academia, and government share long-term perspectives on S&T, and this was expected to bring greater coherence and efficiency to R&D activities.

The Science, Technology and Innovation Basic Plan

A major institutional turning point came in the mid-1990s and early 2000s. The Basic Act on S&T was enacted in 1995, and from 1996 onward, S&T Basic Plans were formulated on a five-year basis. The 2001 administrative reform further strengthened central coordination by establishing the Council for Science and Technology Policy (CSTP) in the Cabinet Office. From the First (1996-2000) to the Third Basic Plan (2006–2010), major policy agendas included expanding public R&D investment and defining priority areas. This created a demand for clearer rationales for prioritization, including links between societal goals and priority areas. In this context, the Surveys were expected to provide one useful source of input for such policy discussions.

Previously, reporting had been limited to occasional submissions to bodies such as the Council for Science and Technology, the predecessor of the CSTP. The Basic Plans provided a clearer target for the Survey, and the explicit planning cycle made it possible to design and schedule it so as to contribute more effectively to policymaking.

The 7th Survey was conducted during the planning phase of the Second Basic Plan (2001–2005). Although it was launched a year earlier than the usual cycle, it still came too late to substantially shape the deliberations on the Basic Plan. In response, the 8th Survey was launched a further year earlier, and subsequent Surveys have been timed broadly in line with the Basic Plan cycle.

The 8th and 9th Surveys were financially supported by Cabinet Office research funds, and the link to the Basic Plan became more formalized. The 8th Survey was explicitly framed to contribute to the Third Basic Plan (2006–2010). Regular meetings were held with CSTP members to report progress, gather requests, and reflect them in the survey design. The results were widely referenced in the Basic Plan, particularly in the sectoral strategies (strategies for specific sectors and policy domains) and they were also provided to relevant committees within MEXT. Similarly, the 9th Survey was conducted primarily to inform the deliberations on the Fourth Basic Plan (2011–2015). Its design also followed the direction of those policy discussions, including the emphasis on S&T to support future society.

From the 10th Survey onwards, the funding base shifted back to internal MEXT funding. The 10th Survey was primarily intended to contribute to the Fifth Basic Plan (2016-2020), but mainly did so indirectly, through input to the MEXT committees responsible for deliberations on the Basic Plan. Direct input to the CSTP was also provided as needed in response to specific requests. The 11th Survey followed a similar pattern, with input to the MEXT committee remaining the main channel. In addition, it broadened its contribution to a wider range of STI-related policies by providing input more widely to MEXT committees in various fields and to policy discussions within MEXT.

Following the 2021 revision of the Basic Act on S&T to the Basic Act on STI, and the corresponding formulation of the Sixth Basic Plan as the STI Basic Plan, the 12th Survey was designed in light of the Plan's expanded scope, including the humanities and social sciences. It was framed as contributing to broader STI policy deliberations, including those of expert committees under the CSTI, the successor to the CSTP, as well as to stakeholder discussions on future visions and goals.

Utilization in other policymaking

Beyond the Basic Plan cycle, the S&T Foresight Surveys have informed policymaking through multiple channels. This section highlights three documented pathways: (i) direct inputs to cross-government strategy formulation, (ii) contributions to ministry-led future visions linked to a major national event, and (iii) institutionalization through routine government reporting in the STI White Paper. Where possible, the examples below are drawn from policy or official documents that explicitly reference NISTEP's contributions.

Long-term strategic guidelines "Innovation 25" (Cabinet Office)

"Innovation 25" was a long-term strategic guideline looking toward 2025, positioned as a government commitment associated with then Prime Minister Abe's policy speech in September 2006. Developed by an expert council spanning industry and academia under the then Minister in charge of innovation, it was approved by the Cabinet on 1 June 2007 (Cabinet Office, 2007).

During the drafting process, the Innovation 25 Strategy Council requested analytical inputs from NISTEP, which then provided materials based on the 8th Survey and organized 12 workshops on "what kind of society Japan should aim for by 2025" (NISTEP, 2007). These inputs, alongside evidence from other organizations, informed the "Innovation 25 Interim Summary" released on 26 February 2007 (Innovation 25 Strategy Council, 2007). NISTEP's contribution is

explicitly acknowledged in the Japanese version (e.g., the Preface and Chapter 4), although it is not clearly stated in the English version.

The Cabinet Decision presented five societal visions for Japan in 2025 "opened through innovation," including healthier lives (preventive care), safety and security (crime/disaster prevention and emergency information systems), diverse life choices (work–life balance), contributions to global challenges (energy and environment), and openness to the world (mutual understanding and global dissemination of Japan's technology, traditions, and culture).

Viewed from 2026, many elements described (in these visions)—such as the widespread access to Automated External Defibrillator (AED), IC-chip-based payments and government procedures, the spread of telework, ubiquitous mobile access to information, and expanded international mobility—can be interpreted as realized or moving toward realization. Innovation 25 also set out a policy roadmap that went beyond technology strategy to include enabling social conditions, regulatory review, and new institutional arrangements—an early example of innovation policy explicitly framed from a societal perspective.

Japan Vision 2020 (MEXT)

"Japan Vision 2020" was a future vision released in January 2014 under the initiative of the minister responsible for the Tokyo Olympic and Paralympic Games and developed mainly by mid-career and younger officials in MEXT (MEXT, 2014). Aimed for the Tokyo Games, originally scheduled for 2020 and later postponed to 2021 because of COVID-19, it set out a vision of a desirable society by 2020, proposing concrete initiatives to revitalize Japan through sports, culture, education, and S&T. Its central concept was "feel the Olympic inspiration, individual change, social change", which was presented as a guiding idea for making the Tokyo Games a success.

At the request of the Japan Vision 2020 working group, NISTEP provided results from the 9th Survey and exchanged views on future developments. This contribution was reflected in Proposal 1: "Realizing and Sharing Our 'Dreams' through the Olympics", in which the results from NISTEP's Delphi survey were cited as examples of S&T anticipated to materialize around 2020 (MEXT, 2014).

The Tokyo Games were held in 2021 without major disruption or infection clusters despite the continuing risk of COVID-19, providing an opportunity to present Japanese culture to the world.

White Paper on Science, Technology, and Innovation

The White Paper on STI is the government's annual report to the Diet on measures for the promotion of STI[9]. It typically consists of two parts: Part 1 presents a thematic in-depth analysis of an issue for the year, while Part 2 summarizes the implementation of specific government measures.

In recent editions, since 2020, the S&T Foresight Surveys have been explicitly listed in Part 2 as a government measure. The Survey was included under the "Promoting R&D that anticipates global needs" section in the 2020 and 2021 editions, and under "Formulation of evidence-based strategies, planning and promotion of policies that embody the future society" from the 2022 to 2025 editions (MEXT, 2022). In addition, the Survey results have periodically appeared in the thematic content of Part 1: early rounds were introduced in the 1970s, and the 11th Survey was featured in the 2020 edition with a detailed account of the methods and findings (MEXT, 2020).

Taken together, these cases indicate that the Surveys have contributed to national policy not only through the Basic Plan, but also through various pathways, including strategic cross-government initiatives, ministry-led vision processes, and formal inclusion in recurring official reports. In practice, NISTEP has also provided the Survey results to additional policy venues, including internal administrative meetings and public councils, upon request from ministries and policymakers. Although such cases are rarely documented, they constitute an important pathway of policy influence.

Linkages with industries

Finally, the relationship with industry should be briefly noted. Apart from an earlier user survey in 2000, direct evidence that NISTEP's foresight activities have been used in corporate decision-making remains limited. Nevertheless, various narratives suggest such use. For instance, NISTEP has repeatedly received requests from corporate R&D divisions and industry-related organizations for information on its foresight content and methods, particularly in connection with the consideration of new R&D initiatives. In response, NISTEP has provided the information and exchanged views with these actors.

Interaction has also taken place through personnel exchanges. In addition to ad-hoc participation in workshops and committees, secondees from private compa-

9 It has been submitted annually under the Basic Act on S&T, enacted in 1995 and revised in 2021 as the Basic Act on STI. Prior to 2021, it was issued as the White Paper on S&T, which had been published since 1958.

nies, including manufacturing and energy firms, have joined NISTEP for periods ranging from one to several years and have been involved in its foresight activities. The 8th Survey saw the highest number of such secondees, with ten participants from the industry sector. As NISTEP's foresight does not involve highly confidential information, these secondees were presumably able to bring knowledge and know-how back to their companies. Since then, however, the number of corporate secondees has steadily declined and currently stands at one. One possible explanation is that firms have increasingly developed their own foresight activities or turned to alternative sources, such as private think tanks and databases offering foresight-related services. Another possible reason is that Japanese firms have tended to place greater emphasis on shorter-term, development-oriented R&D, while showing relatively limited commitment to longer-term research.

Recent developments

Learning through follow-up evaluations

The continuity of the Delphi survey's core design since the 1st has made it possible to conduct systematic follow-up evaluations roughly 20 years after each survey, when many proposed topics would be expected to be realized. A topic is considered "realized" when it has been implemented in practice, delivers societal value and aligns with the feasibility anticipated at the time of the Survey. High realization rates can thus suggest that the topic selection and feasibility judgments were reasonably well grounded in both S&T and the surrounding societal context. The evaluations also aim to reflect on S&T and society change and extract lessons to improve future survey designs.

After a pilot evaluation in 1991, the 1st and 2nd Surveys were evaluated in 1996. Since then, the Surveys have been evaluated 20–30 years after implementation, focusing on (i) whether each topic had been realized by the time of evaluation, and (ii) the reasons explaining this realization or non-realization. Kurogi & Yokoo (2023) report the evaluation from the 5th to 7th Survey, combining evidence gathered from publicly available sources with expert input (including a NISTEP Expert Network questionnaire) and finalizing judgements in expert meetings with members of the Delphi subcommittee. The conclusion of the report includes notes that the influence of needs on the advancement of S&T has become relatively more significant over the years.

About 20 years after each Survey (1st–7th), roughly 60–70% of topics were assessed as realized (Figure 1). For the 7th Survey, the realization rates were relatively

high in information and communications, the environment, and manufacturing, but lower in health and medicine, earth and ocean, and urban/architecture/civil engineering, and transportation. Across fields, technical constraints were the most common reason for non-realization, followed by social constraints (in environment), and cost constraints (in earth and ocean, urban/architecture/civil engineering, and transportation). Other reasons for non-realization, such as the emergence of alternative technologies and a lack of needs, were not significant.

The significance of a follow-up evaluation lies not only in assessing the validity of the Surveys, but also in fostering a continuous process of reflection and learning for the improvement of both the Delphi survey and the overall framework. For example, examining how the topics were framed and identifying what degree of specificity remains understandable after 20 years can yield valuable insights for the design of subsequent Delphi surveys. Furthermore, the recognition that several breakthrough technologies had not been captured in the Delphi topics highlighted the importance of detecting early signals and led to the incorporation of horizon scanning into the survey framework from the 11th Survey onwards.

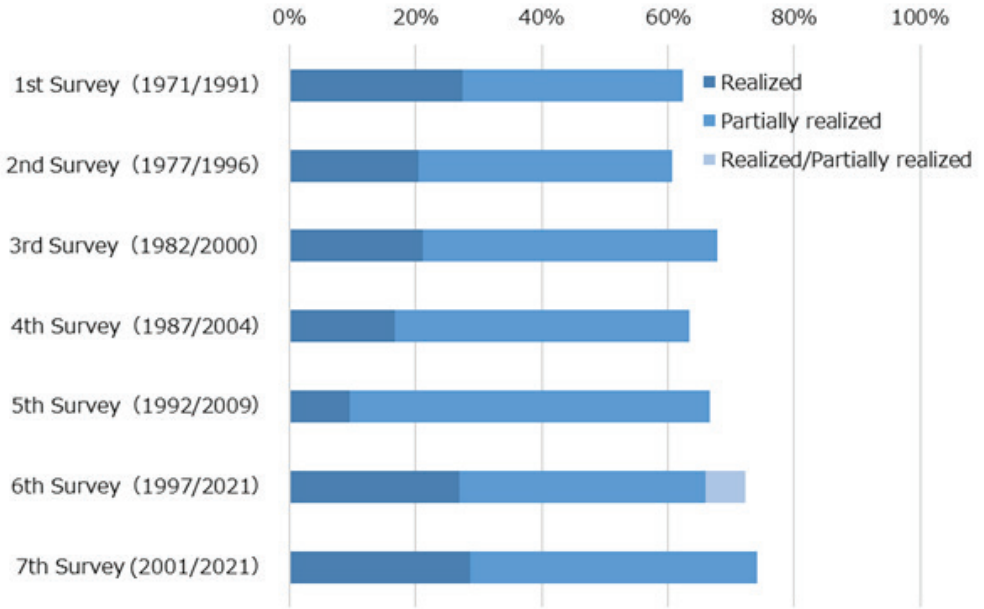

Figure 1. Proportion of Topics Realized 20 Years After Each Survey Round[10].

10 In parentheses, year of report publication/year of evaluation. Evaluations were done about 20 years after the survey was conducted, targeting topics that were expected to be realized by the time of evaluation.

The 11th Survey

The 11th Survey aimed to translate emerging S&T and societal signals into an integrated picture of a desirable future and actionable policy implications (NISTEP, 2019). Compared with earlier surveys, three developments are particularly notable: the formalization of horizon scanning as a standalone component; deeper integration of societal visions with S&T outlooks through scenario work; and the introduction of data-driven cross-cutting analyses.

First, in this Survey, horizon scanning was established as an independent survey component and expanded in both scope and sources[11]. It systematically combined quantitative and qualitative evidence—ranging from bibliometrics and public funding themes to strategies and plans, parliamentary records, research press releases, expert judgment, and domestic/international foresight reports. The outputs were used upstream to inform agenda-setting for both visioning and the Delphi survey.

Second, the Survey broadened and diversified visioning to examine Japan's desired societal state in 2050. Core workshops brought together participants from industry, academia, and government, including the humanities and social sciences, S&T fields, and S&T administration. In addition, parallel sessions with overseas foresight experts and regional workshops in Japan were conducted to incorporate diverse perspectives. The process generated 50 societal visions, later synthesized into four values: Humanity, Inclusion, Sustainability, and Curiosity.

Third, the 11th survey extended its analytical reach by applying AI-enabled Natural Language Processing—specifically, embedding-based distributed representations—and hierarchical clustering analysis to identify cross-disciplinary "fusion" areas. By clustering Delphi topics based on textual similarity across the full topic set, eight convergent areas spanning, for example, social issue–oriented technologies, foundational measurement domains, and Earth and environment themes were identified. Policy needs were then assessed using responses to representative topics (Omoe et al., 2020).

Finally, Scenario development functioned as the integrative layer linking visions and the Delphi results. Setting 2040 as a practical target year, visions were mapped along two axes (tangible–intangible; individual–society) and refined through joint workshops involving visioning participants and the Delphi subcommittee members. Expert interviews then consolidated key considerations for the S&T–society

11 This development also reflected broader domestic and international trends: horizon scanning began to gain visibility in foresight practice from the mid-2000s, and by the 2010s, many organizations had established dedicated units and projects.

nexus, culminating in the summary vision of "a flexible society through the revitalization and rethinking of humanity."

Ad hoc surveys for urgent and targeted policy needs

COVID-19

Soon after the 11th Survey was published in November 2019, the global COVID-19 pandemic substantially reshaped social conditions and people's behaviors and values, with likely implications for the future direction of S&T. In response, NISTEP conducted a follow-up study to capture potential shifts in the outlook for S&T since the 11th Survey (NISTEP, 2021). This exercise was intended to signal possible changes, not to revise the 11th Survey's results.

Overall, the follow-up suggested a widening gap: near-term topics were expected to accelerate, while longer-terms ones were projected to be further delayed. The strongest acceleration was in topics related to work / working styles and health-crisis management, whereas delays were anticipated in space and deep-sea development and energy conversion. The results also highlighted the growing importance of everyday-life topics (especially work practices) and health-crisis preparedness and response.

Carbon neutrality

With greenhouse gas mitigation having become a global imperative, Japan has set a 2050 carbon-neutrality target. In response, NISTEP conducted a foresight study on fundamental S&T for carbon neutrality, covering both S&T pathways and related societal issues (including behavior and system change) (Gamo et al., 2024). The study used a simplified version of the S&T Foresight Survey, developing S&T topics in three areas (Materials/Devices/Processes, Agriculture/Food/Fisheries/Biotechnology, and ICT/Analytical Services) alongside social topics on technology acceptance and institutional change. Based on a literature review and interviews with 30 experts, it produced 60 topics in total (41 S&T and 19 social).

Unlike the traditional two-round Delphi design, this survey was conducted via a single online survey rating each topic's importance, international competitiveness, Japan's global standing, and required measures. Responses were obtained from 790 participants (mainly through the NISTEP expert network). Topics related to electric vehicles and broader energy-system transformation were consistently rated highly across categories (Figure 2).

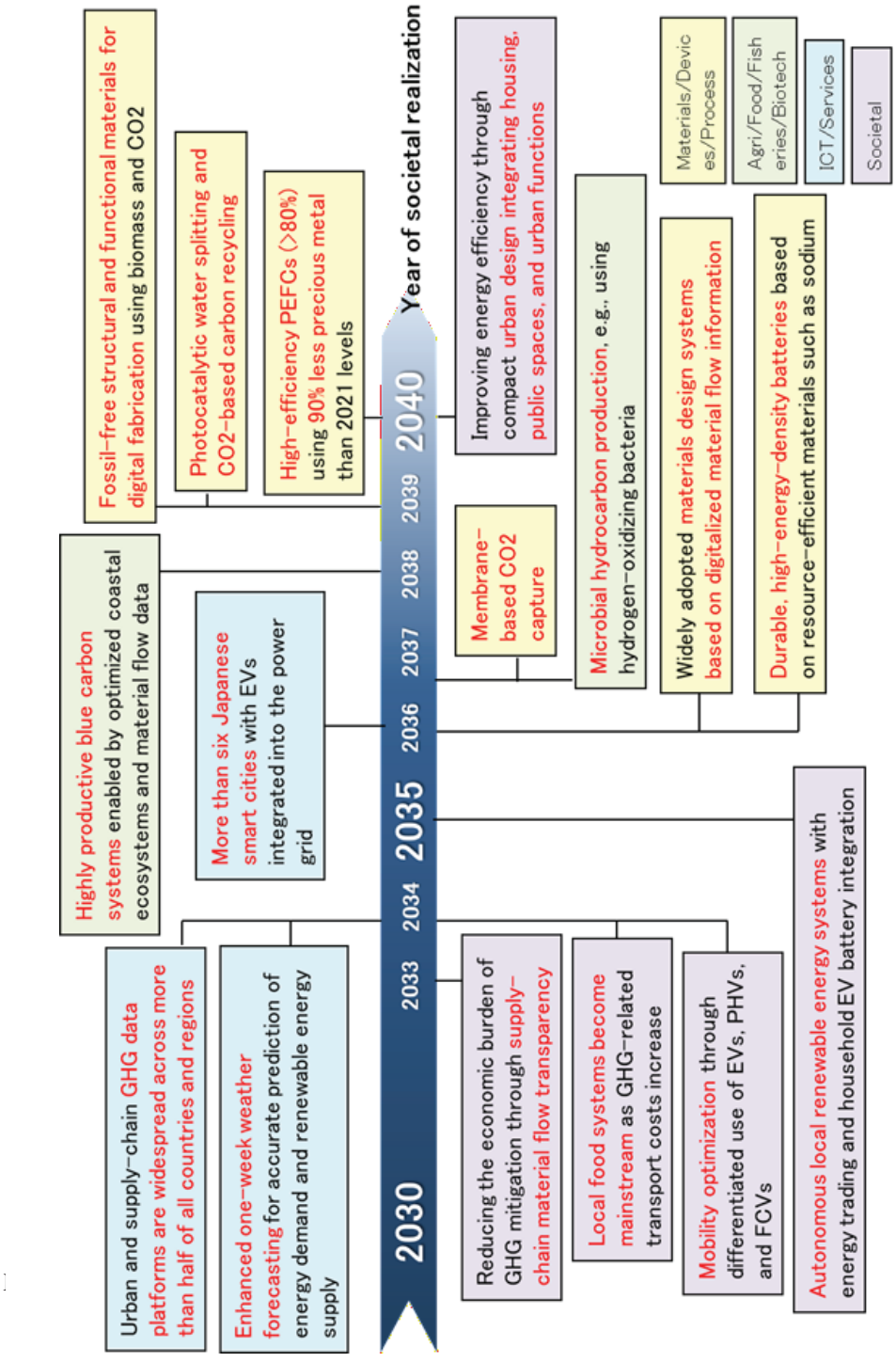

Figure 2. Top topics by field in terms of importance (excerpt) and their projected years of societal realization for carbon neutrality[12].

12 The realization year shown in the figure represents the median (50th percentile). For each topic, responses typically span approximately 4–6 years earlier and later, yielding an overall interquartile range (25th–75th percentile) of about 8–12 years.

The 12th Survey

The 12th Survey, looking toward 2045–2055, builds on the 11th Survey's architecture but is distinguished by a clear shift toward direct public engagement. Whereas earlier rounds only rarely treated citizens as direct participants, the 12th Survey positioned citizen input, especially from younger generations, as a primary source for articulating societal values and desirable futures (visioning), and then used those outputs to shape subsequent analytical components.

Horizon scanning was strengthened through repeated inputs from the NISTEP S&T expert network (approximately 1,600 experts), collected through three online survey rounds conducted from 2020 to 2023, complemented by reviews of domestic and international foresight and trend reports. In addition to AI and robotics—particularly generative AI—the scanning process surfaced substantial signals related to environmental transitions, including carbon neutrality, and these outputs informed Delphi topic selection.

The most consequential change was in visioning (NISTEP, 2023) and scenarios (NISTEP, 2026a), where the Survey moved beyond expert-only deliberation to incorporate citizen surveys and citizen workshops as core instruments. By explicitly foregrounding the perspectives of younger participants, the visioning process synthesized findings from workshops, interviews, and citizen questionnaires into six visions (24 sub-visions): Inclusive and altruistic; Fearless prosperity; Nature and culture harmony; Dynamic and challenging; Autonomous and democratic; Adaptable society.

The Delphi survey retained the field-based structure (836 topics across eight fields) while more explicitly introducing cross-cutting the social issue field (NISTEP, 2025). Guided by the visioning results, six issue areas were defined (spanning diversity and inclusion, sustainable regions, new ways of learning and working, trusted socio-economic systems, well-being and S&T, and global challenges) and 49 new topics were developed.

Finally, scenario development was designed as a co-creation process to explore societal visions, explicitly anchored in citizen and youth visions. Under the four themes (bonds, oasis, lightning, voyages), multi-stakeholder workshops, including expert workshops and a citizen workshop, were conducted alongside interviews, facilitating dialogue across fields, industries, and generations. Policymakers also participated in the process, and policy dialogues were conducted before and after workshops. Together, these activities culminated in the 2050 societal vision of "Post-Boundary Convivial World: Living with Diverse Beings and Multiple Selves." The overall process of the 12th Survey is summarized in NISTEP (2026b).

Conclusion

This chapter traced how the S&T Foresight Surveys—first published in 1971 and conducted approximately every five years—have evolved from an expert-centered, Delphi-based forecasting exercise into a broader framework that increasingly integrates societal perspectives. The significance of the Surveys lies in the combination of continuity, adaptation and its linkages with policy.

Continuity and adaptation

Over its 50-year history, the Surveys have maintained several defining features: a broad coverage of S&T fields, large-scale participation from industry, academia, and government, and a methodological backbone that has supported continuity.

No single factor can fully explain this extraordinary continuity, but several factors appear to have contributed. First, the continuity of the institutional setting seems to have been important. Responsibility for organising the Surveys was transferred from a policy division to NISTEP, a policy research institute within a ministry that is relatively insulated from shifts in policy priorities. Although NISTEP has undergone several internal organizational changes, a dedicated unit or centre responsible for foresight has continued to exist. Continuity has also been supported by the institutional stability of MEXT, which has not undergone major restructuring since the central government reorganization in 2001.

More broadly, the cultural importance attached to continuity in Japanese society may also have played a role. Tendencies such as respect for precedent and reluctance to pursue change are sometimes criticized as weaknesses, but they may also reflect a social and cultural environment in which continuity is highly valued.

At the same time, while the long-running Delphi-based core has continued to provide a stable expert-based time series, successive Surveys have gradually adapted to the changing relationships between S&T and society. New methods and types of participants have been incorporated, broadening the Survey into an analytical framework that extends beyond a primarily forecast-oriented design. Major recent inflection points include the 11th Survey's full incorporation of horizon scanning, and the 12th Survey's stronger emphasis on direct engagement with citizens and youth.

This combination of continuity and adaptation has also enabled ad-hoc extensions when urgent issues have emerged, such as COVID-19 and carbon neutrality, without abandoning comparability across Surveys. The accumulated archive also supports historical verification through follow up evaluations: by examining how expectations have shifted over decades, "future knowledge" becomes retrospectively testable.

Policy linkages

The relationship between the Surveys and policymaking has varied over time, but the linkage can be observed through both formal and informal channels. The main contribution lies not in directly determining policy choices, but in providing a structured and shared knowledge base for policymaking. Survey results have been referenced in policy documents and they have informed agenda-setting and discussions on future visions. Frequent informal requests from ministries and policymakers, although rarely documented, have also constituted an important part of the Survey's policy influences.

A major turning point in the relationship came around the mid-1990s and early 2000s. Before that, the Surveys primarily served as a forum in which stakeholders could engage in discussions from a long-term perspective. By contrast, following the introduction of the S&T Basic Plan in 1996, the Survey cycle itself came to be structured more clearly with the Basic Plan cycle in mind. In particular, the 8th and 9th Surveys marked the period when the coordination with the government bodies responsible for the Basic Plan was at its strongest. The Surveys were implemented with funding from the Cabinet Office and significant influence on the formulation of sectoral strategies.

Thereafter, the direct link between the Surveys and the Basic Plan appears to have weakened in relative terms. However, this should be understood not simply as a retreat, but rather as a restructuring of the relationship in response to changes in the policy environment. As the focus of the Basic Plan itself shifted, and as sectoral strategies increasingly came to be formulated outside the framework of the Basic Plan, the roles expected of the Surveys also changed. As a result, while the Surveys continue to provide input to the Basic Plan, their contribution has expanded beyond it to a broader range of other policy areas.

Remaining issues and future expectations

Looking ahead, as the S&T–society nexus grows more complex and uncertain, a central challenge is balancing professional expertise with societal knowledge and values, and integrating technological trajectories with normative questions about desirable futures. Dissemination is also an important challenge: outputs are large and heterogeneous, so stronger syntheses and outreach will be needed for broader use in education, industry, research, and civil society. The five-year cycle is increasingly strained by rapid technological and social change, requiring greater timeliness and flexibility while preserving continuity and breadth. Finally, the major methodological challenge ahead is how to use AI effectively across the foresight process, from horizon scanning and Delphi topic development to survey

implementation, text analysis, and synthesis—while foregrounding human and societal values and enabling productive collaboration with human experts rather than displacing essential judgment and responsibility.

Acknowledgements

We would like to express our sincere gratitude to all those who have collaborated with NISTEP in various ways at different stages of the S&T Foresight Surveys over the past 50 years, including the many survey respondents and workshop participants across the surveys up to the 12th. We also wish to thank all the staff members involved in the Surveys over the years, whose dedication and efforts have sustained the surveys and made them a valuable asset for long-term policymaking and for future generations, despite their sometimes uncertain position in the policy process. We are also grateful to the anonymous reviewers for their valuable comments and to the editorial team for their excellent support in preparing this chapter.

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EUROPE

Iryna Gerasymenko
MSc, MA
Founding Director
The Centre for Futures and Technology Innovations (FUTX)

Olena Sushyi
Doctor of Sciences,
Head of Department,
Institute for Social and Political Psychology

7 INSTITUTIONAL LANDSCAPE AND PRACTICES OF FUTURES STUDIES AND FORESIGHT IN UKRAINE

Abstract

This chapter presents the actors, approaches and practices of futures studies and foresight in Ukraine. It maps and introduces the diverse network of stakeholders operating across public and private sectors, providing an overview of their activities, alongside several illustrative practical cases and distinct approaches. This article synthesizes findings from a review of academic research, reports and publications, complemented by perceptions and insights gathered from decision-makers, researchers, practitioners, and educators in Ukraine through interviews and an expert survey.

Keywords: Ukraine, strategic foresight, futures studies, forecasting, resilience, foresight in rebuilding, post-war recovery

Анотація

У цій главі представлено основних гравців у сфері досліджень майбутнього й стратегічного передбачення в Україні, їх підходи та практики. Дослідження змальовує розмаїту мережу суб'єктів, що діють у публічному та приватному секторах, а також містить огляд їхньої діяльності, доповнений ілюстративними прикладами та описом унікальних підходів.

Стаття узагальнює результати огляду наукових досліджень, звітів і публікацій, а також думки та бачення, отримані від посадовців, науковців, практиків і освітян України в під час інтерв'ю та експертного опитування.

Ключові слова: Україна, стратегічне передбачення, футурологія, прогнозування, резилентність, форсайт у відбудові, післявоєнне відновлення

Introduction

> *"Our past has been irreversibly and utterly destroyed by this war. It […] continues to be destroyed, because while we are here talking about the future, the war continues. […] The strategy of waiting out the present as a forced pause is wrong; the notion of the future as an opportunity to simply return everything to how it was is wrong. A future as a deferred version of the past is an illusion. The future will consist of us – as we are, as we will remain, as we will be able to be."*
>
> Serhiy Zhadan[1], Munich Security Conference, 2026

Ukraine faces profound uncertainty. Ongoing war, geopolitical instability, and the imperative of post-war reconstruction have created conditions that demand more than reactive policymaking. In this complex environment, characterized by what some futures scholars call 'postnormalcy' (Sardar & Sweeney, 2016; Sukhorolskyi, 2022a), the ability to anticipate, identify emerging challenges and opportunities, and strategically prepare for multiple possible future trajectories has become essential.

Future-oriented planning in a context of ongoing war and an uncertain timeline for its resolution remains inherently constrained, as the conflict has reshaped both collective and individual temporal horizons. This, in turn, elevates the importance of rigorous scenario work. While such scenarios do not offer prescriptive pathways from war to peace, they provide analytically grounded insights into plausible trajectories, while highlighting potential obstacles and structural risks that may delay recovery or undermine the prospects for sustainable peace (Sushyi, 2026).

Against this backdrop, foresight is increasingly recognized across political, academic, and civil society domains as a tool not only for strategic planning and policy development, but also for supporting societal resilience and post-war recovery.

This chapter begins with an overview of actors operating at different levels across public and private sectors, mapping and introducing diverse stakeholders from parliament, government, academia, civil society, and industry, alongside a brief overview of their activities and several illustrative case studies and distinct approaches. With this, we offer a first bird's-eye view of futures research and foresight in Ukraine. Next, the paradox of futures thinking in wartime is explored through the lens of Futures Triangle, examining how Ukrainian actors withstand current challenges, maintain resilience, and prepare for a post-war recovery to build a secure and prosperous future. We conclude with observations on next steps and possible directions for future research.

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1 Serhiy Zhadan is a contemporary award-winning Ukrainian poet, novelist, and civic activist.

This chapter synthesizes findings from literature, complemented by perceptions and insights gathered from decision-makers, researchers, practitioners, and educators in Ukraine. We used three main sources of information. First, a structured search of the Web of Science resulted in 38 publications across five queries: authors with Ukrainian affiliation in four selected journals (Futures, Foresight, Journal of Futures Studies, and Technological Forecasting and Social Change), keyword "Ukraine" in the same journals, keywords "futures studies", "foresight", "social forecasting", and "Ukraine". Second, over a hundred reports, publications, and articles were identified through organizational websites, professional referrals, and social and professional networks[2]. Third, the review of secondary sources was supplemented by an online survey with 15 responses from academics, experts and practitioners, alongside an interview with policymakers.

It is also important to acknowledge the cultural and linguistic particularities that shape how futures work is conceptualized and practised in Ukraine. During Soviet times, against the backdrop of 'scientific communism' theory, only a single 'correct' forecast of a 'bright future' achieved through 'planned economy' was permitted. In post-Soviet times, the development of futures studies has been hampered by seeking predictions ('peredbachennya') that guess future events, rather than warnings ('poperedzhennya') that help weigh the consequences of management decisions. Consequently, the existing centres of analysis and forecasting resorted to common prophecies rather than attempting to solve the tasks of scientific research into future problematics (Horbatenko, 2010; Sushyi, 2023).

Beyond that, the Ukrainian language lacks direct single-word equivalents for the terms, resulting in overlapping meanings: '*peredbachennia*' (prophecy/foresight/anticipation), '*prohnozuvannia*' (forecasting/foresight), '*vyperedzhennia*' (anticipation/excelling), '*poperedzhennia*' (anticipation/warning), alongside using the borrowed terms '*forsait*' (foresight) and '*antytsypatsiia*' (anticipation). Moreover, the (post-)Soviet scientific tradition has gravitated towards philosophical-methodological reflection on ontological and epistemological implications, resulting in a predominantly philosophical vision of social forecasting in socio-humanitarian cognition, whereas Western traditions emphasize methodology as concrete methods and techniques for solving specific problems (Sushyi, 2023). Thus, a shared glossary is a necessary foundation for the field's further development.

2 The sources identified through both the database search and the wider scan were compiled into a separate bibliographic catalogue, available at https://doi.org/10.5281/zenodo.19441733

Parliamentary foresight

The Verkhovna Rada of Ukraine (VRU) is the sole legislative body[3]. Its internal structure comprises formal bodies (party factions, deputy groups, official committees, and temporary special commissions), alongside voluntary inter-faction unions (IFU), and the Secretariat[4]. While each Member of Parliament (MP) can belong to only one committee, they may also establish and join voluntary unions and participate in special temporary commissions.

The VRU has seen several attempts to create specialized futures bodies. The first initiative was launched in the 1990s by Volodymyr Storizhko, then Chairman of the Commission on Science and Public Education. In cooperation with the UK Parliament, a special technological forecasting programme was developed, leading to the establishment of dedicated departments on forecasting at the National Academy of Sciences of Ukraine and the Kyiv Polytechnic Institute. The first temporary Commission of the Future was established in 2003 under the leadership of MP Ihor Yukhnovskyi[5]. It only operated for its one-year mandate and prepared the Development Strategy for Ukraine, subsequently approved by the VRU. The second temporary Commission of the Future was established in 2015 within the VRU Committee on Science and Education, initiated by MPs Oleksiy Skrypnyk, Lilia Hrynevych and Ivan Kyrylenko[6]. It aimed to identify science and technology priorities, develop evidence-based forecasts for national and regional programmes, and facilitate participatory dialogue on Ukraine's future. It, too, operated for only a year, organizing a series of participatory events and one parliamentary hearing.

Unlike its short-lived predecessors, the futures-oriented work launched in 2020 by MP Oleksii Zhmerenetskyi and MP Viktoriya Podgorna has achieved greater longevity and impact. Their sustained leadership, engagement and advocacy have helped advance the institutionalization of foresight and the integration of long-term considerations into legislative work. Since its founding, the IFU has partnered with local and international organizations to build the institutional and legislative framework for integrating foresight across all levels of governance and strategic planning, embedding future generations' needs in state policy and advancing anticipatory governance.

In 2021, MPs led an exploration of global foresight practices in the public sec-

3 Ukraine's Constitution, Section VI

4 Regulated by Laws 116/95-BP (1995), 1861-VI (2010), and 400-IX (2019).

5 Resolution No. 655-IV on April 3, 2003

6 Resolution No. 353-VIII on April 22, 2015

tor, summarized in a handbook for Ukrainian policymakers (Kylymnyk et al., 2021). Then, in 2022, they initiated and chaired the IFU "Strategic Foresight of Ukraine". In 2024, following their advocacy, a Foresight Sector was established within the Research Service of the VRU. Its latest projects include a scientific concept for foresight application in parliament (2024), regular foresight overviews for policymakers (2024–2025), and a participatory foresight on business development in the context of European integration (2025).

A Working Group on Legal Regulation of Strategic Planning and Policies for Future Generations was established in 2024 under the VRU Committees on Digital Transformation and Economic Development. Chaired by the IFU leadership and comprising MPs, public officials, international organizations, and invited experts, the group works to build an effective national system of strategic planning and anticipatory governance, prepare amendments to strategic planning legislation, draft legislation on future generations, and identify strategic goals for Ukraine's post-war recovery, democratization, digital and green transition, and EU integration.

In 2025, the IFU launched preparation of national mechanisms to implement the UN's Pact for the Future and Declaration on Future Generations. A further strategic priority of the IFU is to lay the foundations for a dedicated Parliamentary Committee of the Future in the next convocation, ensuring institutional continuity.

Since its establishment, the IFU has led two large-scale participatory foresight studies. The first, "Scenarios: Ukraine 2040" (Baylon et al, 2023), was launched shortly after the full-scale Russian invasion, at the request of the First Deputy Head of the VRU, to support the development of the National Recovery and Development Strategy and stress-testing of recovery policies. It was supported by UNDP and the UK Parliament's APPG. The second, "Russia's Futures until 2040: Impact on the Futures of Ukraine and Europe" (Gerasymenko et al., 2025), was conducted together with VRU's Foresight Sector. Beyond conventional tools, the IFU has piloted several innovative instruments during these studies.

A ForesightBot, developed for Viber and Telegram, served as a citizen engagement tool, gathering collective intelligence to inform scenario development. Through surveys and polls addressing uncertainties, visions, hopes, fears, and perceived responsibility for Ukraine's future, the bot supported horizon scanning and scenario validation. Over 1,000 people from across Ukraine have contributed their perspectives.

An interactive digital Future Signals Radar (Figure 1) was created following horizon and environmental scanning within the "Ukraine: Scenarios 2040". The radar features 160 signals of change, with the potential to shape the future of Ukraine, which were gathered by 23 experts of the Futures Intelligence Team, with support

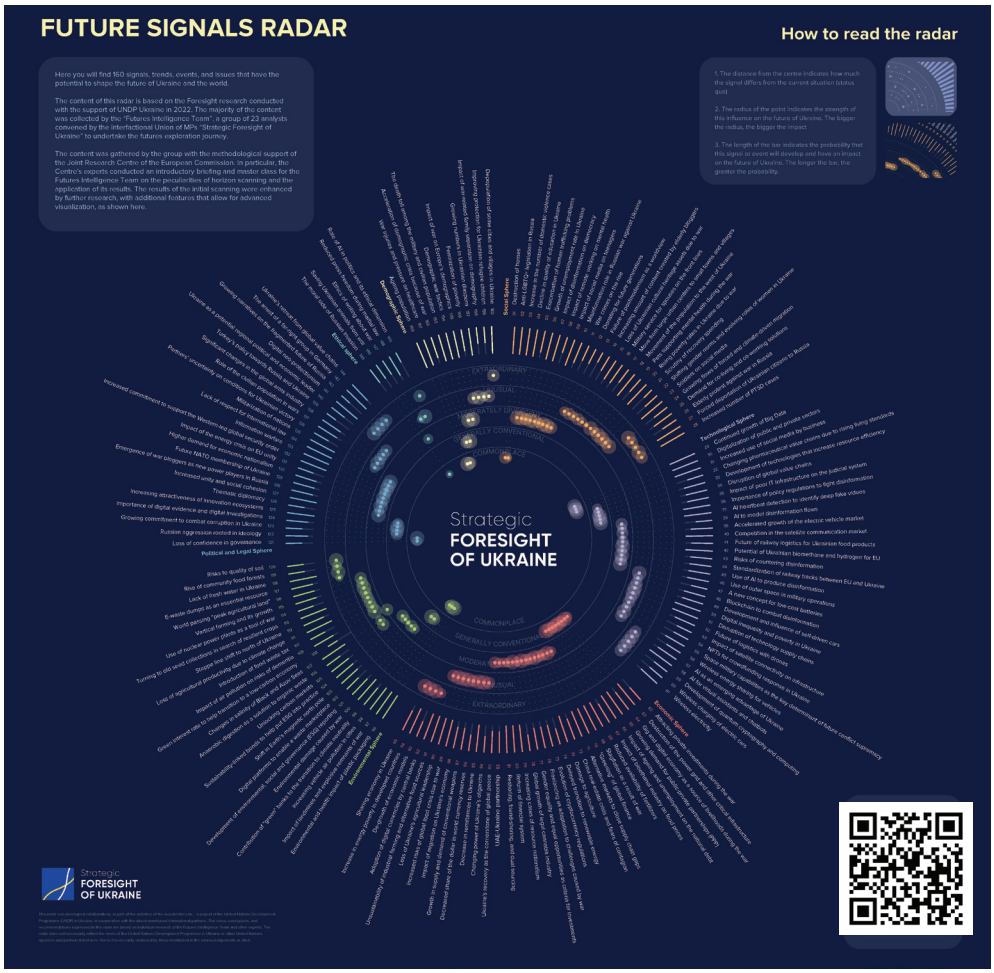

Figure 1. Future Signals Radar, Ukraine 2040, IFU "Strategic Foresight of Ukraine" (2022). With permission from IFU. Full image available at https://doi.org/10.5281/zenodo.20607194.

from UNDP and engaged foresight experts. Entries are mapped across STEEPED[7] categories and four dimensions (scan hit type, timeframe, newness, and novelty) and visualized using three metrics: distance from the centre (divergence from current context), circle radius (potential impact), and bar size (perceived plausibility).

A multi-agent AI model was piloted in 2024 to gather and analyse signals during horizon scanning. The system comprised a Scout agent to search data sources, Synthesizer, Verifier and Analyst agents to clean, organize and synthesize information following predefined instructions and classifications, and a Research Architect coordinating their work.

7 STEEPED: social, technological, economic, environmental, political and legal, ethical, and demographic

Government foresight

Executive bodies in Ukraine include the Cabinet of Ministers (CMU)[8], presidential state agencies, separate central offices and commissions, and local state administrations. The Constitution provides the primary foundation for national development programmes. The Law "On state forecasting and development of programmes for economic and social development of Ukraine"[9] defines the system for developing, adopting, and executing strategic documents. Beyond this foundational legislation, forecasting and planning are governed by a complex web of sector-specific laws and bylaws. These span financial and budgetary planning[10], targeted state programmes for economic, scientific, social, cultural and environmental development[11], the activities of the CMU[12] and central authorities[13], regional development[14], and national security and defence[15]. Recognizing the flaws in the current system, the Government adopted a comprehensive reform concept for the national strategic planning system to be implemented in 2025–2028[16]. The reform aims to create a harmonized system of national long-term planning, goal-setting, implementation, and digital monitoring. Under the approved concept, the national system will comprise inter-connected tiers of strategic documents covering socio-economic development, regional policy, and national security and defence, supplemented by a 30-year Vision for the Future of Ukraine. The system will be informed by national and EU integration priorities, international treaties, and the SDGs. The outline of key strategic planning actors and their roles are outlined in Table 1.

In 2025, the CMU also approved a Draft Law on priority directions for scientific, scientific-technical, and innovation activity[17]. Once adopted in the second reading, it will make foresight studies mandatory for defining national strategic priorities in STI.

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8 Ukraine's Constitution, Section VI

9 Law No. 1602-III on March 23, 2000

10 Budget Code of Ukraine, Law No. 2456-VI on July 8, 2010

11 Law No. 1621-IV on March 18, 2004

12 Law No. 794-VII on February 27, 2014

13 Law No. 3166-VI on March 17, 2011

14 Law No. 156-VIII on February 5, 2015

15 Laws No. 1932-XII on December 6, 1991; No. 3543-XII on October 21, 1993; No. 2469-VIII on June 21, 2018

16 On approval of the Concept of the National Strategic Planning System (CMU Order No. 853-p dated 13.08.2025)

17 Draft Law No. 13629 on August 15, 2025 [adopted in the first reading in November 2025]

Table 1. Key strategic planning actors and their roles in the National Strategic Planning System (mapped as per CMU concept, 2025).

Strategic document	**PoU**	**VRU**	**CMU**	**MoE**	**MoF**	**MCTD**	**MoD**	**CEB**	**SIC**
Vision for Ukraine's Future (30 yr)		R+A	C	C	C	C	C	C	
Strategy for National Development (14 yr)		A	R + E	R	C	C	C	C	
Sectoral/Cross-sectoral Strategies (7 yr)			A	R + E	R + E	R + E	C	R + E	C
National Regional Development Strategy and Regional Strategies (7 yr)			A	C	C	R	C	C	
National Security Strategy	A		C	C	C	C	R	C	
CMU Programme (term in office)		A+I	R	C	C	C	C	C	
Economic and Social Forecast (4 yrs)			A	R	C	C		C	
Budget Declaration (3 yrs)		C	R	C	R	C	C	C	
Public Investment Plan (3 yrs)			R	R		C	C	C	R + A
Strategic Plans of CEB (3-7 yrs)			A	R + E	R + E	R + E	R + E	R + E	
State Budget (1 yr)		A+I	R + A	C	R	C	C	C	
Government Priority Action Plan (1 yr)			A	C	C	C	C	C	

Abbreviations: R – responsible A – accountable (approver) C – contributes E – executes I – informed	PoU – President of Ukraine VRU – Verkhovna Rada CMU – Cabinet of Ministers MoE – Ministry of Economy, Agriculture and Environment MoF – Ministry of Finance MCTD –Ministry for Communities and Territories Development MoD – Ministry of Defence CEB - other Central Executive Bodies SIC - Strategic Investment Council

Futures research

Alongside state-led initiatives, which provide the most direct link between future-oriented research and the machinery of government, a network of scientific and educational institutions underpins these efforts across sectors.

The National Academy of Sciences (NAS) of Ukraine

The NAS and its constituent units conduct research in support of national strategic planning across a variety of themes:

- economic forecasting and quantitative modelling, post-war industrial and sustainable development (the Institute of Economics and Forecasting);
- strategic development of Ukraine's industrial base and its intersection with national security and energy security (the Institute of Industrial Economics);
- science policy and priority directions for science and technology, including a large-scale study "Ukrainian science and technology foresight: strategic priority directions and prospects for the development of science and technology" in 2024 (the Dobrov Institute for Scientific and Technological Potential and Science History Studies);
- regional policy, international cooperation, and socio-economic recovery (the Dolishniy Institute of Regional Research);
- demographic changes and studies on social transformations, migration, human development, and the future of work, including long-range demographic projections extending to a 2100 (Mykhailo Ptoukha Institute for Demography and Life Quality Research);
- the intersection of environmental sustainability and economic development (the Institute of Market and Economic-Ecological Research);
- systemic analysis, modelling, and interdisciplinary problem-solving (the Committee for System Analysis under the Presidium of NAS).

Gennady Dobrov (1929–1989), who founded one of these institutes in the 1960s, following the account of Eleonora Barbieri Masini (2001), was a member of the World Federation of Futures Studies and organized a futures studies school in Kyiv. He was among the very few Soviet scientists included in international directories of futures researchers in the 1970s–1980s and was the first in the Soviet Union to address forecasting methods in scientific research as early as 1964 (Rindzevičiūtė, 2016, p. 61). Interestingly, in the fifty years leading to 2022, he was the only Ukrainian author identified across four major international foresight journals (from Dobrov & Smirnov, 1972 to Sukhorolskyi, 2022b).

The National Academy of Educational Sciences (NAES) of Ukraine

The Institute for Social and Political Psychology of the NAES conducts research in social and political psychology, spanning theoretical foundations, analysis of social situations, mass consciousness, political participation, media influence, and social forecasting.

Most recently, the Institute completed two sequential research programmes on the psychology of social forecasting. The first (2020–2022) established theoretical and methodological foundations for psychological approaches to social forecasting (Sushyi et al., 2023). The second (2023–2025) validated their effectiveness and explored their integrative potential in socio-psychological forecasting of social dynamics (Sushyi, 2025).

The scholars of the Institute have contributed two distinct approaches to social forecasting. Valeria Zhovtianska proposed a five-factor model of social development as a psychological approach to forecasting macrosocial processes. The model rests on the premise that the individual is the sole real agent of social change within its society and, therefore, social development is directly determined by the mental life of each societal member (Zhovtianska, 2021; 2023). The model comprises factors allowing forecasting society's developmental trajectories: 1) ideas of the desired state of society; 2) locus of control in the political sphere; 3) level of political competence; 4) resources available, and 5) size of the social group (Zhovtianska, 2021). Olena Sushyi has proposed a new societal paradigm for social forecasting that treats society as a living system (Sushyi, 2025) and has at its core the integral matrix of social forecasting combining two analytical perspectives: a macrosocial systemic perspective grounded in the concept of societal crisis (Sushyi, 2019) and a psychosocial systemic perspective grounded in the concept of societal dynamics of trauma (Sushyi, 2023). This integral matrix enables operationalization of complex societal dynamics, supporting scenario modelling of the social situation across short- and medium-term timeframes (Sushyi, 2026).

The National Academy of Agrarian Sciences (NAAS) of Ukraine

The Institute of Agrarian Economics under the NAAS develops scientific foundations for agrarian policy, land reform, and investment management. Recent futures work includes financial capacity strategy for Ukrainian agricultural sector (Radchenko et al., 2020) and forecasting the investment attractiveness of post-war rural green tourism (Kulyk et al., 2025).

State analytical centres and scientific institutions

The National Institute for Strategic Studies, under the President of Ukraine, provides strategic analysis and policy recommendations on national security to the President and the National Security and Defence Council.

The Ukrainian Institute of Scientific and Technical Expertise and Information (UkrISTEI), a state scientific institution under the Ministry of Education and Science (MES), monitors global technological trends and provides systematic Science, Technology and Innovation (STI) analysis. Its work includes long-term STI priorities development; foresight on science and technology for the SDGs (Pysarenko et al., 2020), and STI roadmap to achieve SDGs (Pysarenko et al., 2023); analysis of critical technologies in armament and military equipment through expert surveys and patent analysis (Pysarenko & Kvasha, 2022), and sectoral forecasts on waste, transport, and military shipbuilding.

The Institute for the Modernization of Educational Content, under MES, conducts fundamental and applied research in support of state educational programmes. A recent example is the national foresight study "Ukraine 2035: Human Capital and Labor Market", addressing brain drain and skills shortages in Ukraine (Veretiuk et al, 2022).

Ukraine's security and defence sector is supported by the Central Research Institute of Armament and Military Equipment of the Armed Forces of Ukraine, the Central Scientific and Research Institute of the AFU, the State Scientific Research Institute of Aviation under the Ministry of Defence, and Hetman Petro Sahaidachnyi National Ground Forces Academy. Their recent work focuses primarily on technology foresight and its impact assessment.

Universities

The most prominent body of work comes from Igor Sikorsky Kyiv Polytechnic Institute and its constituent units – the Institute for Applied System Analysis, the World Data Center for Geoinformatics and Sustainable Development, the Institute of Advanced Defence Technologies, and the Information and Analytical Situation Center. It holds the longest tradition of futures-oriented research applying computational intelligence, and conducts forecasting and foresight on the issues of economy, energy and environment, defence and security, sustainable development, education, and development of methodologies for scenario modelling, morphological analysis, and complex systems analysis (2007–2025).

Lviv Polytechnic National University advances qualitative and interpretative futures research spanning the foundations of futures studies (Sukhorolskyi, 2021),

applied sectoral foresight, national futures (Sukhorolskyi, 2022b), governance (Turchyn et al., 2020), and migration policy (Blikhar et al., 2025).

A distinct tradition of social forecasting has been developed at Zaporizhzhia National University. It offers courses in scenario planning and social forecasting, and has hosted the annual conference "Social Forecasting and Designing the Future" since 2010. Its scholars have contributed works on socio-political design (Butchenko, 2020), strategic social forecasting (Volovyk et al., 2015), and original geopolitical analysis methodologies[18].

Other universities apply foresight episodically, with one or two publications from affiliated scholars. Many are multi-institutional, though collaborations tend to be *ad hoc*. Themes are summarized in Table 2.

Table 2. Matrix of futures research themes in Ukrainian higher educational institutions.

HEI \ Theme	Democratization and governance	Economy and business	Futures studies and foresight	Health	Human capital and migration	Energy	Environment	Population and society	Reconstruction and recovery	Science and technology	Security and defense	Sustainable development
Banking University		■										
Borys Grinchenko Kyiv Metropolitan University	■											
Khmelnytskyi National University		■				■			■			
KROK University			■									
Kyiv National University of Culture and Arts		■							■			
Kyiv School of Economics		■										
Kyiv University of Culture		■							■			
Lesya Ukrainka Volyn National University		■										
Lutsk National Technical University		■										
Lviv Polytechnic National University	■	■	■					■	■		■	
Lviv State University of Internal Affairs								■			■	
Lviv University of Trade and Economics		■						■	■			
Mariupol State University	■											
National Institute for Strategic Studies						■						■
Igor Sikorsky Kyiv Polytechnic Institute	■	■	■		■	■	■	■	■	■	■	■
National University of Kyiv-Mohyla Academy		■										
National University of Life & Environmental Sciences		■							■			
Odesa Medical National University				■								
Odesa National Polytechnic University		■										
Odesa State Agrarian University		■										
Petro Mohyla Black Sea State University		■										
Podillia State University		■										
Pryazovskyi State Technical University		■										
State University of Trade and Economics		■				■			■			
Sumy State University		■				■						■
Taras Shevchenko National University	■	■				■						■
UCU Business School		■										
University of Customs and Finance		■										
V.N. Karazin Kharkiv National University								■				■
Vasyl Stefanyk Precarpathian National University		■				■			■			
Zaporizhzhia National University			■									

18 Copyright registration certificates for two scientific works by Lepska N. and Lepskyi M.: "Programme of Geopolitical Research: Method of Analysing the Geopolitical Game in Conflicts and Negotiations (MA2GCN)" No. 128093 (2024), and in co-authorship with Kudinov I., "Programme of Geopolitical Research: The GSP-Space Method" No. 85424 (2019).

Community foresight

A number of analytical and civic institutions engage in futures-oriented research and practice. The organizations include the Association of Innovative and Digital Education, the Association of Social Forecasting, the Centre for Futures and Technology Innovations, the Coalition of Business Communities for the Modernization of Ukraine, Foresight: Institute for Political Economy, the Frontier Institute, Kyiv Foresight Foundation, Sahaidachnyi Security Centre, the Scientific Society "Ukrainian School of Archetypes," Theory-U Community of Practice, the Ukrainian Cluster Alliance, and the Ukrainian Institute for the Future, among others. However, the absence of a formal professional network makes it difficult to identify all active players.

Community and industry futures initiatives reveal a distinct approach that prioritizes stakeholder mobilization and agency-building, positioning participants as strategic actors rather than passive recipients of insights. In some instances, the emphasis is less on methodological rigour than on creating space to think about the futures, act on shared visions, and shape one's own destinies. Key project themes include business and entrepreneurship, digital economy, EU integration, and national foresight.

Some projects stand out for their unconventional approaches. A land reform study in 2017 employed an "art-smart-media" method, where the "smart" element comprised foresight workshops while the "art" element involved creating sculptures, paintings, photo, and video intended to subjectivise nature and position land as a participant in the conversation rather than an object of regulation. Similarly, the Crimea 2050 foresight session in 2021 placed strong emphasis on agency and locus of control of Ukrainian and Crimean Tatar people, positioning them at the core of the scenario matrix.

Beyond project-based initiatives, some organizations sustain continuous futures-oriented work. One example is the Scientific Society 'Ukrainian School of Archetypes', which addresses public administration issues through archetypes of the collective unconscious and monitors long-term psychosocial shifts in society, using original methods.

The futures thinking paradox

This section illustrates the complexity of futures thinking in a country at war, as an exploratory mapping of the field begins to reveal. The snapshot is drawing on ongoing research of one of the authors. The discussion is based on data from survey responses and corpus literature and analysed applying a Futures Triangle

framework (Inayatullah, 2023) to explore three dimensions: barriers and legacy (weights), current tendencies and change drivers (pushes), and visions and aspirations (pulls) for the future (Figure 2). The 'voices of the future' in introductions are from public social media of the Behind Blue Eyes project[19].

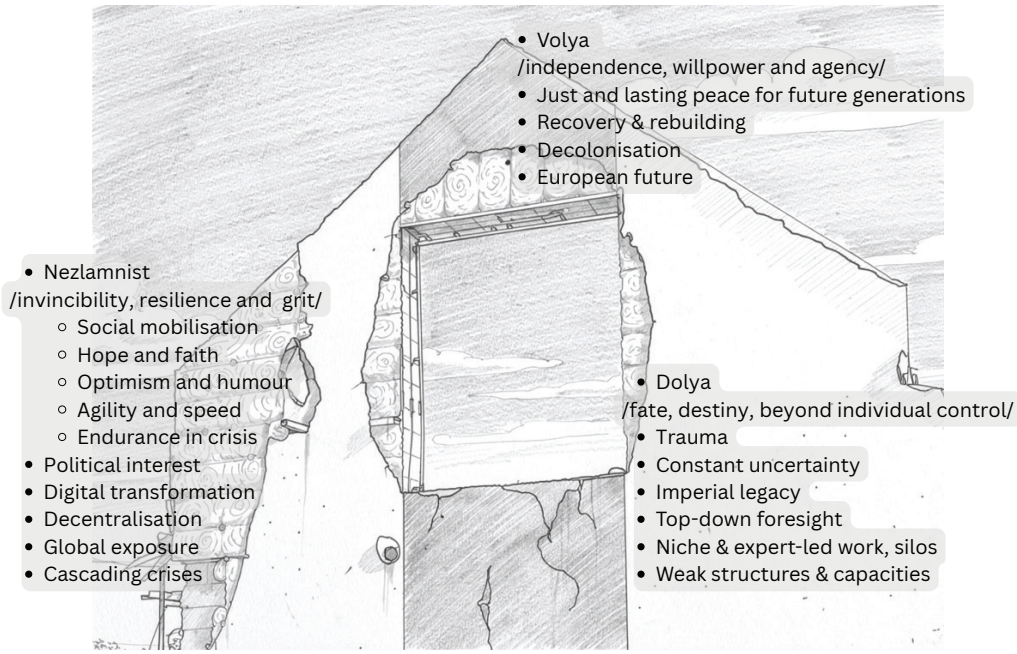

Figure 2. Futures Triangle (work in progress). Illustration credit: Iryna Gerasymenko. Photo edited with Sketchify.

Weight

> *"It feels like marble: before the war everything was bright, and now everything is dark."*
>
> — Ania, 9 years old, Velyka Oleksandrivka, Kherson oblast (Behind Blue Eyes project)

Some barriers for the development of the field, which recurred with consistency both in the survey responses and the literature, were the fragmentation of strategic work, the short-termism linked to political cycles, low institutionalization, the expectation for prophecy over possibilities, lack of resources, and limited knowledge exchange in the field. The foresight actors are highly distributed and do not yet form an ecosystem in its essence of an 'interconnected system'.

19 The Behind Blue Eyes is a charitable art project, which documents children's daily lives in the liberated and frontline villages of Ukraine looking "at the war and its aftermath through the eyes of the future". For more information on their work and how to donate to help children cope with a war trauma, visit: https://theblueyedproject.com/en

With a few exceptions, the work is predominantly expert-led and top-down. Research is often produced by technical specialists or expert groups, and delivered to commissioning institutions rather than co-created with diverse stakeholders. The existing tradition privileges quantifiable, expert-validated outputs over participatory or deliberative processes, sensemaking, or collective intelligence. One respondent coined it as an "internal distrust of participatory decision-making methods". Several practitioners noted being the only ones familiar with these methods in their environment, illustrating not only the isolation of practitioners but the degree to which foresight and futures studies remain an expert enclave.

Still, one particularly heavy weight is trauma. The consequences of the current one are yet to be unveiled, but the scholars (Sushyi, 2022; 2023; Sukhorolskyi, 2022) argue that the turbulence and traumatic experiences of the 20th century—the Holodomor, the Soviet terror of the 1930s, the Second World War—still continue to have an impact. One illustrative example shared in the survey is the "participants' fear of the future".

The currently identified research does not yet allow for reliable generalizations regarding the overall impact of war trauma on futures consciousness in Ukraine. However, studies are starting to reveal the negative toll of the proximity to a war zone (Senyk et al., 2022), exposure to active hostilities (Lazurenko et al. 2023), permanent uncertainty and the chaos of relocation (Danylova et al., 2022), trauma, stigma, and survivor's guilt (Udovyk & M-Domènech, 2024) on the ability to imagine longer-time horizons and on the sense of agency over one's own futures. Simultaneously, new research documents the therapeutic power of the participatory foresight process (ibid, 2024) and the positive correlation between a longer time perspective and more optimistic outlooks, psychological resistance to disinformation, and higher trust (Slyusarevskyy & Chunikhina, 2025).

The practitioners themselves are not outside this reality. Futures methods require them to be imaginative and engage with possible long-term trajectories. This is demanding under normal conditions and substantially more so under acute stress.

As one expert described: "I can write about futures. But I cannot feel them".

Push

> *"The most useful skill in life is to live."*
>
> — Mykola, 9 years old, Kukhra, Sumy oblast (Behind Blue Eyes project)

The full-scale Russian invasion in February 2022 created an urgent demand for anticipatory capacity that no reform agenda had previously managed to generate. Several practitioners noted unprecedented openness to futures methods among

those who previously dismissed long-term thinking. Between 2022 and 2025, the Ukrainian foresight system likely achieved more institutional milestones than in the preceding decades, including new institutions in the Verkhovna Rada and prospective legislation.

Research on Ukrainian businesses also illustrates this. Opatska et al. (2024), interviewing owners and managers of Ukrainian businesses, found that the full-scale invasion was perceived as an ontological shock, even by those who had lived through the 2014 invasion of Crimea and Donbas. At the same time, while their planning horizon shrank from years to hours, they did not abandon long-term thinking. Hopeful visions related to rebuilding and recovery transformed into coping mechanisms and a source of hope through "future-renewal narratives" for the teams.

On one hand, this resonates with what Polak wrote about the transformative power of the Images of the Future. Yet, it also resonates with the indigenous Ukrainian cultural concept of *nezlamnist*, which one may translate as indomitability, unbreakability, or resilience, and it is all of these. *Nezlamnist* is a deep-rooted constancy, the ability to withstand with agility, speed, and clarity of mind, while remaining faithful to one's values, sustaining hope, humour, and mutual support at the point where, by any reasonable measure, one should have stopped.

It is what holds our future open, despite the fear and fate that should have closed it.

Pull

"I would want a superpower — to change people's thoughts from worse to better."

— Matvii, 11 years old, Velyka Oleksandrivka, Kherson oblast
(Behind Blue Eyes project)

Ukraine's choice of a European future and its EU candidate status, granted in 2022, constitute an important institutional pull. Beyond emerging foresight projects that address EU integration directly, this also opens new possibilities for the exchange of practices at various levels and engagement with European foresight networks.

Another distinct pull is the vision for rebuilding and recovery. Alongside this are aspirations for a more institutionalized approach to foresight and futures studies in Ukraine: a permanent Committee for the Future in VRU, foresight offices within ministries, study programmes in futures studies, and democratizing futures knowledge.

Yet, all of these visions are ultimately underpinned by the fundamental aspiration for a just and lasting peace, and *volya*.

Volya is another indigenous cultural concept with a manifold meaning. First, it signifies the willpower to act with determination, endure, and direct your energy towards your goal.

> *"The power of volya is when someone stabs you in the back — and you keep going."*
>
> — Sofiia, 14 years old from Pavlivka, Mykolaiv oblast (Behind Blue Eyes project)

One may argue that in this sense it sounds like *nezlamnist*, but there is a difference: *nezlamnist* keeps you standing, and *volya* makes you take the next step forward. In addition, it conveys a desire, an aspiration and agency to choose your own path and direction for the future. Lastly, it means liberty, freedom, and independence as a state of being.

Petro Sukhorolskyi (2022b), in his article on Russian aggression against Ukraine, recalls a "cherry orchard by the house", a dream and a metaphor of a private, peaceful existence that no one can intrude upon, famously depicted by the Ukrainian author Taras Shevchenko. This is a Ukrainian utopia of survival, home and dignity, free from imperial influence, with a just and lasting peace for future generations.

When, despite all the odds, people continue living, hoping, trying, rebuilding, thinking about the future, and taking agency to construct it, it is also to leave this better, dreamed-of world for our children.

The paradox

> *"If you judge by today's standards, the future might not exist — but it will."*
>
> — David, 11 years old, Velyka Oleksandrivka, Kherson oblast (Behind Blue Eyes project)

As this review shows, the field is evolving across several streams and approaches. While currently disconnected, there is a genuine effort to build stronger institutions and a visible determination to think about future generations, even when (or because) the present is on fire. One survey respondent aptly described working in Ukrainian conditions as "uncertainty =)", with the emoticon conveying that *nezlamnist* and a rueful humour that no formal report can truly capture.

Currently, the largest body of work in Ukraine remains confined to predictive and planning frames, with occasional scenaric, visionary foresight, and rare instances of a critical one. Minkkinen et al. (2019, p. 10) hypothesize that "highly turbu-

lent times may demand critical and transformative outlooks". Yet, these times also seem to hinder the capacities, demand, and resources for such thinking. This leaves us with a difficult paradox: the people most in need of transformative foresight might be the least equipped to engage with it.

However, this only holds if we "judge by today's standards". As our children find the willpower and the strength to choose joy amid the rubble and refuse to bow to fate (Figure 3), so should we. No change is beyond reach when people collectively decide that their future is no longer a matter of fate (*dolya*), but an act of will (*volya*).

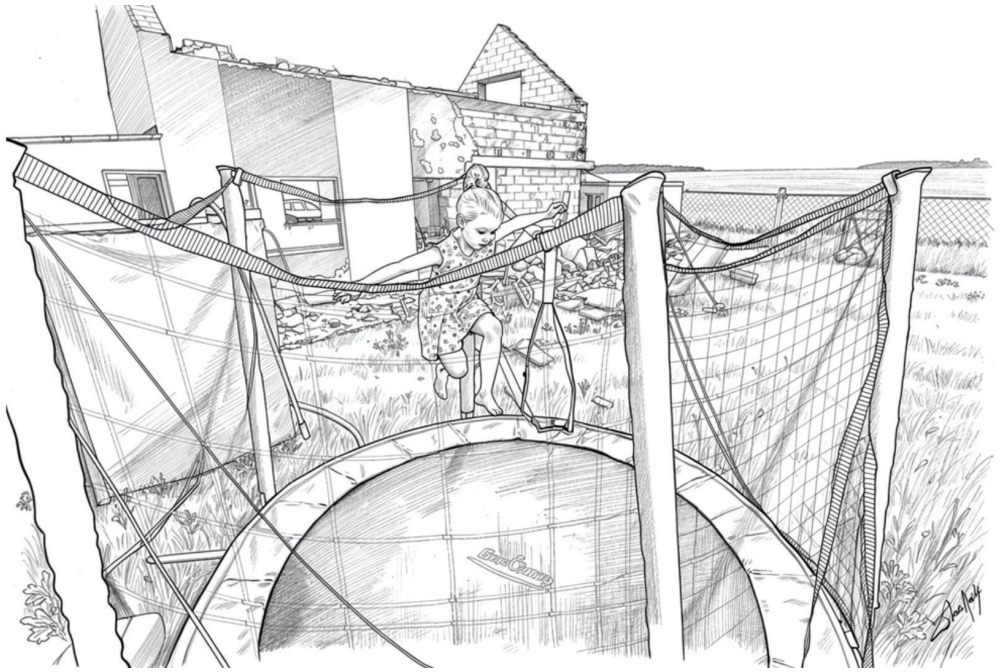

Figure 3. Six-year-old Nastia chooses joy as she plays on a trampoline in the orchard by her home, reduced to a shell by Russian invaders. The family has since rebuilt the house. Kyiv oblast, 2022. Illustration credit: Iryna Gerasymenko. Photo edited with Sketchify.

Limitations

While aiming to provide a bird's-eye view, this chapter is not exhaustive and cannot cover all the dimensions of analysis due to several limitations.

First, there was no systematic map of the actors in the field and their knowledge outputs in Ukraine, as highlighted also recently (Polovynchak, 2025). Hence, the authors had to gather materials through a combination of channels: public

documents, searches in thematic journals, organizational websites, a survey, and personal connections. The lack of a unified terminology in Ukrainian may have prevented us from finding certain projects or materials. Some of the papers and foresight outputs were inaccessible due to restricted publicity, finite operational periods, and unavailability of websites presenting project results following completion and exhaustion of funds, or had no availability in digital format.

Second, the adverse operational environment caused by Russia's ongoing war of aggression against Ukraine made it difficult to reach or obtain responses from potential respondents, whose views could have further enriched the material. The survey sample does not allow us to generalize across the entire field.

Lastly, this study was conducted without funding and, thus, an extensive analysis and evaluation of the field remains an aspiration for further dedicated research.

Conclusions

Our brief overview of the institutional landscape and practices of futures research and foresight in Ukraine suggests that, despite its strategic importance, this field remains highly fragmented. It consists of dispersed clusters that are at times competing, at times mutually indifferent, and in some cases largely invisible to the broader public.

We assume that the integration of these actors into a consolidated professional community is hindered, on the one hand, by a largely unarticulated scepticism and a somewhat dismissive societal attitude towards such an intangible domain as "the future." On the other hand, this is reinforced by the lack of dedicated funding, which effectively confines this strategically important and promising direction to a marginal position.

Institutionally, this situation has given rise to a relatively closed, quasi-clan structure shaped primarily by funding sources—state or business—whose implicit hierarchies are, to some extent, reflected in the logic of our review. In addition, the growing tendency to impose a "marketing-oriented" approach in the field of fundamental futures research—prioritizing short-term, monetizable outputs such as concrete forecasts or decision-making toolkits—constrains the development of more foundational academic inquiry. At the same time, the ongoing advances in ICT, the expansion of social and academic networks, the increased academic mobility, and the availability of grant support are gradually enhancing the visibility of this field and amplifying its voices.

Evidence suggests that such research has potential to transition from a niche activity to a fundamental pillar of strategic decision-making across all sectors. The respondents increasingly emphasized that foresight should become a habitual practice within both government and business to navigate persistent uncertainty.

Lastly, our observations suggest several promising directions for the development of the field: further evaluation of the foresight system to identify gaps, capacity building and futures literacy development, democratizing knowledge, and foresight community building. Furthermore, we must examine the role of foresight in rebuilding, including for therapy and social cohesion. What remains is to build bridges and align efforts towards the shared goal of shaping a common future.

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Éva Hideg

PhD, Doctor at HAS, Professor Emerita
Corvinus University of Budapest
Hungarian Academy of Sciences

Judit Gáspár

PhD, Associate Professor,
Decision Sciences Department,
Institute of Operations and
Decision Sciences,
Corvinus University of Budapest

András Márton

PhD, Assistant Professor,
Department of Sustainability
Management, Institute of
Sustainable Development,
Corvinus University of Budapest

8 THE 50-YEAR HISTORY OF ACADEMIC FUTURES STUDIES IN HUNGARY

Abstract

Fifty years ago, in 1976, the Hungarian Academy of Sciences (HAS) recognized futures research as an independent scientific discipline. This chapter examines the antecedents, key stages, and characteristic features of the 50-year history of futures in Hungary. Presenting each stage, it aims to provide a comprehensive overview of the specific social and science policy environment, its changes, and its internationally recognized theoretical and methodological developments. In Hungary, the early years of futures research – the late 1960s – coincided with a reform that was rare under socialism: the new economic mechanism. Embedded in this environment, the renewal of national economic planning was linked to the start of research into the theoretical and methodological foundations of futures research and the development of a complex vision for Hungary in 2000. Futures research underwent rapid development in the 1970s and 1980s and appeared on the international scientific scene, and after this it was referred to as 'futures studies'. Its development was characterized by a clear distinction between forecasting and futures studies, the delineation of their relationship, and the emergence of futures studies as both a basic and applied discipline. After the regime change in 1989, futures studies in Hungary embarked on a path of rapid renewal. The most important realization was that, in a democratic society, the future orientation of institutions and people is decisive in shaping the future. Since the mid-2010s, especially following COVID-19, theoretical and methodological research and the practical implementation of integrated and participatory foresight activities have been flourishing.

Keywords: futures field, forecasting, futures studies, foresight, Hungary

Absztrakt

Ötven évvel ezelőtt, 1976-ban a Magyar Tudományos Akadémia (MTA) független tudományos tudományágként ismerte el a jövőkutatást. Ez a tanulmány a magyarországi jövőkutatás 50 éves történetének előzményeivel, legfontosabb szakaszaival és jellemzőivel foglalkozik. Célja az, hogy áttekintést nyújtson a konkrét társadalmi és tudományos politikai környezetről, annak változásairól, valamint nemzetközileg elismert elméleti és módszertani fejleményeiről és azok fényében mutassa be az egyes időszakok hazai jövőkutatásának fő jellemzőit. A jövőkutatás korai évei – az 1960-as évek végén – egybeestek egy olyan, az új gazdasági mechanizmusnak nevezett reformmal, amely a szocializmus idején nem volt túl gyakori. Ebben a környezetben a népgazdasági tervezés megújulása összekapcsolódott a jövőkutatás elméleti és módszertani alapjairól szóló kutatások megkezdésével, valamint egy összetett magyarországi jövőkép kidolgozásával 2000-re vonatkozóan. A hazai jövőkutatás kutatás az 1970-es és 1980-as években gyors fejlődésen ment keresztül, és a nemzetközi tudományos színtéren is megjelent. Megkülönböztette a prognosztikát és a nagy távlatú komplex jövőkutatást és feltárta azok közötti kapcsolatokat, valamint meghatározta a jövőkutatásnak mint alap és alkalmazott tudomány művelésének jellemzőit. Az 1989-es rezsimváltás után a magyarországi jövőkutatásba gyors és jelentős megújulás zajlott le. A legfontosabb felismerés az volt, hogy egy demokratikus társadalomban az intézmények és emberek jövőorientáltsága döntő jelentőségű a jövő alakításában és ezt meg kell valósítani a jövőkutatás módszertanának fejlesztésében is. A 2010-es évek közepétől óta, különösen a COVID-2019 után, virágzik az előretekintésen alapuló elméleti és módszertani jövőkutatás, valamint az integrált és részvételi előretekintő tevékenységek gyakorlati megvalósítása.

Kulcsszavak: jövőkutatás, előrejelzés, jövőtanulmányok, előretekintés, Magyarország

Introduction

Fifty years ago, in 1976, the Hungarian Academy of Sciences (HAS) recognized futures studies (FS) named futures research[1] as an independent discipline and established the Futures Research Committee within the HAS. This chapter examines the antecedents, key stages, and characteristic features of FS over the past 50 years. By presenting each stage, it aims to provide a comprehensive overview of the specific social and scientific policy environment, its changes, the internationally recognized theoretical and methodological developments in Hungarian FS, the disciplinary connections of Hungarian FS, and its role in shaping the future.

The circumstances surrounding the recognition of futures studies (FS) as an independent academic discipline

The Futures Research Committee was established within HAS IX, Department of Economics and Law Sciences, with the aim of helping to establish and develop the discipline in Hungary and providing a regular forum for scientific exchange.

Scientific recognition had been facilitated by the reform movement that began in 1968, organized around a new economic mechanism, and by the policy of international détente between East and West that began in the 1970s. The reform of existing socialism in Hungary was primarily limited to economic reforms and their scientific underpinnings, which is why it was able to promote the long-term development of economics and the scientific foundations of socialist planning. The policy of détente helped overcome the ideological conflicts between Marxist prognostics and bourgeois futurology that had been inherited from earlier times in the countries of the socialist camp. This enabled greater access to the futures literature of developed countries.

As a precursor to scientific development, it is essential to mention the development of the first national vision for the future in 1970 – titled Hungary in 2000 – which was carried out by a university research group of young researchers led by Professor Géza Kovács within the Department of National Economy Planning at the Karl Marx University of Economics[2] (Kovács, 1970). This visionary research

1 Until the paradigm shift in the Hungarian FS in the 1990s, the prevalent approach was to make predictions and forecasts for a single future. Therefore, we intentionally call it "futures research" in the first half of the chapter and change to "futures studies" (FS) from the section "New paradigms and research trends in the mid-to-late 2010s" onwards.

2 The legal predecessor of the Karl Marx University of Economics is the current Corvinus University of Budapest.

project was linked to the establishment of long-term planning and was based on combining quantitative trend analyses with qualitative expert opinions, like the works exploring the future carried out in the United States in the 1960s with a view to exploring the year 2000 (Kahn & Wiener, 1967). It is largely thanks to this research that FS gained recognition as an independent discipline within the HAS.

It is worth noting that Hungarian futures research had its own journal, Prognosztika (Prognostics in English), from the 1970s onwards. Initially published by the Scientific Society of Organization and Management, it later collaborated with the Futures Research Committee and the Institute for Research Organization of HAS. Although it initially focused on economic prognostics and forecasting as futures research became an independent discipline, Prognosztika increasingly served to publish theoretical and methodological issues of futures research in a broad sense. Unfortunately, the journal was only published until the mid-1980s due to organizational changes and the deepening economic crisis. These favourable starting conditions, however, laid the foundation for the rapid development of futures research as a scientific discipline.

The 50-year development of domestic FS can be divided into three phases, starting from its official recognition as a scientific discipline to the present day. The first phase lasted until the early 1990s, while the second phase lasted until the mid-to-late 2010s. The third phase began with the COVID-19 pandemic.[3]

The development of the discipline until the 1990s

During this initial phase, workshops for futures research were established, along with institutional networks for preparing and applying forecasting and visioning to the future. Theoretical and methodological research in futures research was conducted by research groups mainly operating within universities and research institutes, which were regularly supported by the HAS from its own budget. The preparation of forecasts and visions for the future was coordinated by the Futures Research Committee, which played a major role in organizing working relationships with the National Planning Office and ministries.

3 Other research dealing with the history of Hungarian FS manages historical processing in a different, often broader context. All literature published to date agrees on the division into phases and that the first two phases lasted until around the middle to end of the 2010s (Hideg et al., 2014; Novaky, 2017; Nováky & Kristóf, 2022; 2025). However, there are significant differences between recent literature and committee discussions regarding the emerging characteristics of the third phase. See also the section titled 'After COVID-19.'

During these years, a practice of interrelated and mutually reinforcing theoretical-methodological and practical research developed. This was since futures research, as a positivist science, examined the objective possibilities of future developments as a real process and sought to find and elaborate on probable futures. The theoretical and methodological foundations and methods necessary for this were tested by the National Planning Office and various ministries through current tasks of forecasting and visioning. The close connection between the theoretical-methodological and practical aspects of futures research was made possible by the fact that futures research defined itself as an external circle of socialist planning and a tool for strengthening its scientific foundations (Kovács, 1970). At the time, it was thought that futures research consisted of two closely related areas: on the one hand, it made forecasts with the aim of exploring development trends in specific areas of the future, and on the other hand, it created complex visions of the future for the purpose of developing a system of long-term socio-economic and technical development goals. The latter area was called long-term complex FS to distinguish it from forecasting (Kovács, 1979).

Within the framework of methodological and method application research, the processes of forecasting and vision building were systematized, the applicable methods were described in a detailed and reproducible manner, and the theoretical and methodological issues of the reliability testing of futures research products were elaborated (Besenyei et al., 1977; 1982). As a result, futures research as a science came into line with international standards in the field. Thus, it became a multidisciplinary science striving for interdisciplinarity, which quickly developed into a widely practiced field.

The development of specialized and multidisciplinary forecasts and complex visions of the future (forecasts, forward-looking studies, and future images for Hungary) became commonplace in response to the needs of domestic planning and policy practice. Among these, the following are particularly noteworthy: forecasts that took global models into account and provide forward-looking projections of domestic development opportunities; forecasts concerning the development of natural resources, environmental protection, energy, scientific and technical development, agriculture, economy, and society (health, population, housing, urbanization, crime, etc.). The basic principle of all forward-looking work was that trend analyses should be linked to the objective and scientifically well-founded expectations of experts and practitioners working in the relevant fields. These regular studies, conducted by futures researchers, then became the subject of national futures research conferences organized by the Futures Research Committee of HAS.

The culmination of this phase was the publishing of a futures research textbook, Jövőkutatás, which clearly summarized the essence of futures research as a science,

its main characteristics, the range of methods to be used, and the most frequently used methods in futures research, furthermore, the evaluation of the reliability of futures research (Hideg et al., 1992).

During this period, Hungarian futures research had stronger external ties with the socialist countries of the time (Poland, Czechoslovakia, East Germany, Bulgaria, Romania, the Soviet Union), all members of the Council for Mutual Economic Assistance (COMECON). Hungarian futures research also participated in the development of the methodological basis for joint forecasting in the 1980s within COMECON's Working Committee for Prognostics of Scientific and Technological Development. Hungary's participation in the establishment and work of the World Futures Studies Federation (WFSF) represented an opening towards the developed world. Particularly noteworthy in this context was the organization of a European regional expert consultation and a WFSF world conference in 1987 and 1990, respectively, with the participation of members of the Futures Research Committee of HAS.

When futures research in Hungary was first established, the researchers were mainly economists, philosophers, historians, statisticians, and experts in various fields of scientific forecasting. This explains why futures research was understood as a positivist science and was classified as a field of economics. On the positive side, the multidisciplinary composition of futurists, based on their original training, was advantageous for the application of the discipline. Learning about and comparing scientific approaches across different fields helped lay the foundations for interdisciplinary thinking in the positivist discipline of futures research. It should be noted that there has been no change in this domestic classification of disciplines since then, even though FS no longer resembles this positivist science classified under economics.

New paradigms and research trends until the mid-to-late 2010s

The second phase of Hungarian FS demonstrates that it functioned as a mature science. This means that futures research, which had previously been based on a single paradigm, underwent a paradigm shift, accompanied by the emergence and cultivation of new paradigms, and is now named FS onwards. Initially, the term 'Hungarian futures research' meant that futures research as an independent discipline must deal with the future that will be realized. This field of research must become interdisciplinary. Futures research is not the same as scientific prediction, but it must study the future in its multifactorial, dynamic interrelations.

Long-term complex futures research refers to the need to look ahead over a longer period, whereas futures research aims to explore the different types of relationships (social, economic, technical, ecological, etc.) and their interactions. It is named long-range complex futures studies in the international literature. (Meadows et al. 1972; Somet, 2009; Hughes 2019.)

Foresight means that the new discipline does not have to deal directly with the future that will be realized, but rather with how people, social groups, and institutions think about and shape their ideas about the future in the present, and with the methodological help that futures research can provide in this process. Although Hungarian futurists embraced the English terms 'FS' and foresight for this new scientific approach in international publications, the Hungarian term "jövőkutatás" for the new kind of futures research remained unchanged.

Changing paradigms in Hungarian FS

The renewal of Hungarian FS was facilitated by the 1989 regime change and the simultaneously ongoing paradigm debates in international FS. The regime change led to the collapse of the institutional system that had ensured the practical application of futures research. However, the transforming socio-political institutional system was no longer interested in forecasts and visions of the future, as the main actions of the regime change were aimed at establishing a multi-party democracy and a market economy without the National Planning Office. The following economic crisis led to the elimination of large domestic companies or their transfer to foreign ownership, while small and medium-sized enterprises showed little sign of life. At the same time, International FS also underwent a process of self-examination, which made it increasingly clear that scientific FS cannot undertake to predict the probable future; therefore, it must change its scientific basis and connect with efforts aimed at the revolutionary renewal of scientific thinking, especially in the social sciences. These circumstances, acting in concert, stimulated debates about the meaning of the future and the tasks of FS in the new context, as well as the exploration of new possibilities for renewal.

By the mid-2000s, Hungarian FS had also begun to interpret the future that exists in the present through the lens of research, recognizing the importance of dynamic interrelationships among the past, present, and future, the future orientation of future-shaping actors, and the need to study them. It became clear that we must break with the positivist paradigm of futures research and instead view the future in FS as a multi-actor social process of shaping the future. For this reason, we do not search for the future – the future that will come into reality – in the traditional sense, but rather study how social actors can shape their own future.

In this spirit, Hungarian FS turned towards new directions. As early as the mid-1990s, researchers began to assess the future orientation of various future-shaping groups and the Hungarian population's attitude towards the future. The first and pioneering results of this research were published in Futures in 1994 (Nováky et al., 1994). Researchers then examined the relationship between different age groups of young people and the future, exploring the expectations of secondary school students, their parents, and their teachers regarding the education system and the possible future of education and vocational training. These expectations were incorporated into a vocational training foresight. Continuing along this path, studies (Hideg, 1996–2014) assessed the attitudes of large domestic companies as well as small and medium-sized enterprises operating in the service sector towards the future. However, these various research results on future-shaping needs and expectations had not been put to practical use, because even large domestic companies that were still operating were not prepared to shape their future, while small and medium-sized enterprises could not afford to engage futures specialists to address their future due to a lack of resources. Although future-oriented studies were unable to shape practice, they did significantly contribute to the domestic futures researchers' understanding of the need for a paradigm shift and of one of its emerging directions, turning towards critical FS and foresight.

During this period, Hungarian futurists were engaged in several new theoretical research topics. Besides future orientation and foresight issues – which embody the essence of post-normal and critical FS – these new topics included the applicability of evolutionary thinking (approaches, modelling), the recognition of the chaotic nature of different processes (also social ones), and ways to modernize the theoretical and methodological foundations of FS. This research provided a good basis for Hungarian futures researchers to gain proficiency in the approaches and methods of evolutionary FS. The theoretical and methodological research led to Hungarian FS taking the lead in researching FS paradigms (Hideg, 2002) and analysing the main characteristics of international FS as well as the circumstances of paradigm shifts along these paradigms. The first comprehensive book on this topic was written by the Hungarian futurist Éva Hideg (2015).

Between 1996 and 2009, outstanding opportunities emerged for practical FS. In 1996 and 1997, the first foresight project concerning the future of vocational training was conducted in Hungary (Hideg & Nováky, 1998). Following this, a second foresight case, focusing on regional vocational examination centres, was conducted in 2006 (Bartus et al., 2007). In 1999–2000, a technology foresight study was conducted within the framework of the OMFB (National Committee for Technology Development) as part of the TEP Programme 2000 (Bitó, 2000; Havas, 2003). This research, which explored domestic technological develop-

ment and its possible complex future scenarios, looked ahead to 2050, adapting the most advanced foresight practices of the time. Another similarly exceptional opportunity emerged from 2007 to 2009, when the Council for Economy and Society commissioned the preparation of future scenarios for Hungary by 2025 (Nováky, 2010). This futures study was prepared with the involvement of various stakeholder groups, and members of the Futures Research Committee at HAS were active participants in the project's steering committee. The president of the organising and steering committee, Erzsébet Nováky, was also president of the Futures Research Committee. Unfortunately, these were not followed by further foresight or FS activities commissioned by users.

In the years following the change of regime, the opportunity to develop foresight studies or future scenarios in response to practical needs was either lost or arose only occasionally; however, theoretical and methodological research continued making steady progress. Until 2014, it was possible to apply for basic research projects in the field of FS under the National Scientific Research Fund (OTKA), when it was replaced by a more differentiated application system, the National Research, Development and Innovation Fund (NFKI).

In the years following the millennium, Hungarian FS strengthened its presence and role in the WFSF. As a result, the FS team at the Budapest University of Economic Sciences and Public Administration (now Corvinus University of Budapest) ran a Summer School of WFSF between 1999 and 2004 and organized a WFSF world conference in 2005, both in Budapest (Balázs & Gáspár, 2010).

The growing strength of domestic theoretical and methodological research, as well as its presence in international FS literature and the work of the WSFS, resulted in a large team of Hungarian futurists becoming involved in the COST A22[4] action (Foresight Methodologies – Exploring New Ways to Explore the Future) (2004–2007) and the accompanying international discourse. As a result, Hungarian FS and its results became visible and known in the European knowledge space.[5] This further increased the international presence of Hungarian FS, which, in addition to publications in high-quality futures journals, also significantly increased the active participation in international research projects (Nováky & Kristóf, 2022).

Despite these international successes, it has not been possible to renew the connection between domestic FS and domestic practice. Practice-oriented research in the field of FS has primarily focused on sustainability, corporate foresight, the

4 https://www.cost.eu/actions/A22

5 The Hungarian team published 3 chapters in books made in the framework of COST A22. (See Alács, 2013; Kristóf, 2013; Hideg et al., 2013).

renewal of the healthcare system, the future of higher education, agrarian and bankruptcy forecasting, scenario building, backcasting, and technology foresight. Significant methodological and foresight organizational experience has been accumulated in evolutionary and learning algorithms, interactivity, stakeholder participation, online methods, and futures workshops, as well as in the development of learning processes for project participants.

From Forecasting Critique to Participatory, Value-Driven Practice

As critiques matured, Hungarian FS deepened conceptually in terms of time, strategy, and path creation. Rather than treating the future as an external object to be predicted, researchers reconceived strategy as a practice that creates futures. The work on how strategy research interprets time and future reframes organizations as anticipatory agents (Gáspár, 2015), and path creation needs to consider historically conditioned constraints and opportunities (Gáspár, 2011).

Building on the earlier multi-level methodological experiment (Havas, 2008), participatory backcasting was used to co-create plural visions of the university, translating desirable futures into sequenced, actionable pathways that engage faculty, students, and administrators (Pataki et al., 2018). The Hungarian contribution is its normative, value-driven application of participatory methods—especially backcasting and participatory systems mapping (Köves et al., 2013; 2021). In parallel, systems mapping clarified feedback and leverage points for sustainable consumption, demonstrating how different framings reshape policy learning (Kiss et al., 2018).

In the second half of the 2010s, Hungarian FS began to participate in major international projects. Hungarian futurists primarily collaborated with the Visegrad countries[6], but they also appeared in other international projects. Noteworthy among these was their participation in the Millennium Project, which involved forecasting the future development of the SOFI (State of the Future Index) and developing concepts for advancing the UN governance system.

Structural reorganization began at the HAS in the early 2010s. As a result, the number of committees was significantly reduced by merging the smaller units. Thus, in 2012, the Futures Research Committee was transformed into the Statistical and Futures Research Scientific Committee, within which the Futures Research Scientific Subcommittee continued to operate as an independent subcom-

6 The Visegrád Group (also, the Visegrád Four or the V4) is a cultural and political alliance of four Central European countries: the Czech Republic, Hungary, Poland, and Slovakia.

mittee. In 2003, the nationally organized FS conferences had been replaced by annual statistical and FS conferences linked to the annual conference series of the Hungarian Science Festival, organized by HAS. All of these are held publicly in front of a large audience, promoting domestic science and Hungarian FS.

In the absence of an independent domestic FS journal, this period of development was characterized by the publication of Hungarian-language studies by domestic futurists in the form of booklets. Three series were published by the predecessors of today's Corvinus University of Budapest, as the research group there was the strongest in organizing this field of science and financing publications (Hideg, 1996–2014 and 1998-2014; Nováky & Kristóf, 2003–2006).

During this period of uprising, the old pathways to becoming futurist continued to operate, but representatives of new scientific fields, such as psychologists, sociologists, computer scientists, ecologists, biologists, geneticists, etc. also became interested in FS. A new source of talent emerged in the form of young researchers graduating from various PhD programs, who contributed significantly to FS's achievements during this flourishing period, both through their approach and their choice of topics. This renewed human-researcher quality has since then already contributed greatly to the strengthening of the interdisciplinary nature of FS and the establishment of new paradigms in the cultivation of FS in Hungary.

After COVID-19

The pandemic created an artificial dividing line in the development of domestic FS. Following the pandemic, the trends in scientific development that had already been emerging continued to gain strength. One such trend was integrated FS, the paradigm-shifting aspects of which had already appeared in theoretical and methodological literature in the mid-2010s (Hideg, 2013). The essence of this idea and approach lies in the completion of the co-evolutionary approach and the integrated use of interconnected methods in both theoretical and methodological thinking, as well as in practical research projects. This has resulted in the relative separation of theoretical and practical foresight (the latter also known as foresight or integrated foresight), but also in the recognition of their interrelated development. There is a growing recognition among Hungarian futurists that cultivating foresight as a praxis activity has become an independent profession. Its main task is to develop the futures methodology and to organize and manage the complex processes of exploring possible and/or desirable futures for practical future shaping. This means that professional futurists must be able to collaborate with researchers and practitioners across diverse fields.

In the 2020s, the development of integral FS and foresight has shed light on yet another aspect of integration: that integration into large research projects may be a new and increasingly widespread practice in the application of FS and foresight. This began in 2017–2018 with a complex future exploration of the possible futures for Hungary in 2050 as an independent research unit in a large-scale ecological restoration project in Hungary (Hideg et al., 2019).

Hungary's regional engagement was evident in the cross-border foresight on the future of business in the Visegrad region, incorporating national insights into Central European dialogues (Sacio-Szymańska et al., 2016; Gáspár et al., 2023). Hungarian researchers have participated in further Visegrad Fund projects focusing on the post-pandemic recovery and sustainable pathways of the Visegrad countries[7], as well as forecasting key factors influencing climate change in the region[8].

More recently, Hungarian futurists have been involved in the international research project MAPS[9], which started in 2024, aided by Horizon Europe Research and Innovation Programme, as well as in a new COST Action programme, FOGOS[10], on the futures-oriented governance of outer space. Apparently, Hungarian integrated FS and foresight seek to connect with more dimensions of sustainability and degrowth, the informatization of healthcare, or the development of innovation activities.

New research topics in Hungarian integrated FS and foresight include addressing metamodern challenges and developing responses to them, researching and developing futures literacy (Meskó, 2024 & 2025), and the use of AI in integrated FS and foresight practice.

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7 Post pandemic recovery in the V4 region, https://4cf.pl/visegrad2030

8 Forecasting Factors Influence on Climate Change as a Part of Sustainable Development Goals, https://wsb.edu.pl/forecasting-factors-influence-on-climate-change-as-a-part-of-sustainable-development-goals

9 Models, Assessment, and Policies for Sustainability (MAPS), https://mapsresearch.eu

10 Futures-oriented Governance of Outer Space: Towards Peace, Equity, and Environmental Integrity (FOGOS), https://www.cost.eu/actions/CA23118

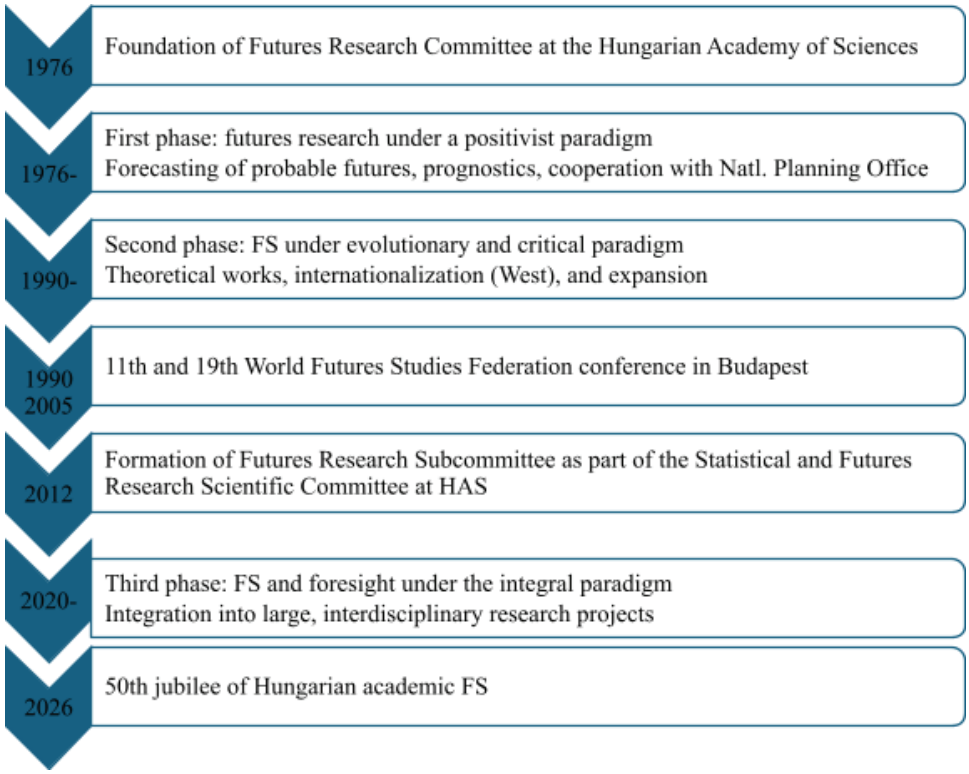

Figure 1. Timeline of Hungarian FS.

Summary

The 50-year history of Hungarian academic futures research and later FS has been characterized by both major upswings and major setbacks. The three phases are connected by the fact that, from the very beginning, Hungarian futurists sought to see futures research, and further, FS and foresight recognized as an interdisciplinary discipline, which can crosscut and systematize the results of different fields of science according to the logic of its own research goals, tasks, and methodology. The first phase, the era of futures research, lasting from the mid-1970s until the 1990s, was marked by balanced and vigorous development, as the development of theoretical and methodological foundations proceeded in tandem with practical, future-oriented research. During these 15 years, a positivist and successful discipline of futures research emerged, which became institutionally embedded in the social practices of the time. The following phase, which began with the change of regime, was marked by a search for new research directions, a paradigmatic renewal of futures research, and the emergence of FS, and the not entirely successful quest for a place for practical FS. This second phase yielded outstanding results in terms of international presence and recognition; however, numerous

obstacles hindered the practical application of these new findings in Hungary. The post-COVID-19 period has brought two new development trends. One is the strengthening of integrated FS in terms of co-evolutionary theory, methodology, and practice, and the other is the development of an online integrated foresight process organization based on broad participation and online solution.

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Peer-reviewed Chapter

Yuna Lee
PhD, Research Fellow
University College London
Seoul National University

Ian Miles
DSocSci, Emeritus Professor
Alliance Manchester Business School
University of Manchester

9 THE UK NATIONAL FORESIGHT PROGRAMME – AND BEYOND

Abstract

This chapter examines the evolution of the United Kingdom's national Foresight Programme (FP) as a case study in anticipatory governance, tracing how a state-led foresight system has adapted across three institutional cycles since 1993 in response to shifting political, economic, and epistemic contexts. Drawing on primary documentation and secondary literature, it argues that the FP's development has been shaped not only by methodological learning but also by political pressures, austerity, and successive crises, including Brexit and the COVID-19 pandemic. In particular, the COVID-19 pandemic exposed structural limitations in long-term preparedness and anticipatory capacity, leaving important lessons for strengthening foresight and linking it more substantively to decision-making processes. Finally, it outlines current efforts to embed anticipatory capacity more systematically across Whitehall, and points to challenges and opportunities associated with AI and institutional fragmentation.

Keywords: Strategic Foresight, UK Foresight Programme, National Foresight, STI Policy, risk management, COVID-19 pandemic

Evolution through three cycles and beyond

National foresight programmes occupy a distinctive space in the landscape of anticipatory governance, sitting at the intersection of scientific advice, strategic planning, and political decision-making (Miles, 2010; SOIF, 2021). The UK's Foresight Programme (FP), established in 1994, is among the longest-running and most-studied examples of a government-led national foresight system. This chapter provides a historically grounded institutional account of the FP's evolution, organized around three "generational" cycles, and situates it within the broader UK foresight ecosystem. It argues that the FP's trajectory has been shaped as much by changing political contexts, including austerity, Brexit, and COVID-19, as by deliberate methodological development. Table 1 synthesizes the chapter's core analytical contribution: a comparative overview of the FP's evolution across the three cycles, mapping changes in methods, participation, and outputs. Subsequent sections use this framework to interpret the political and institutional dynamics shaping each stage. The chapter focuses primarily on the government-led FP, while Section 3 briefly addresses the foresight activity beyond the Programme. This focus is significant because the FP has been the only institutionalized mechanism with sustained access to the UK's central policy machinery.

Since its establishment in 1994, the Programme has applied a variety of approaches to assessing long-term opportunities and challenges confronting the UK, particularly in relation to science, technology and innovation (STI). To understand this trajectory, the FP needs to be situated within its broader historical context. The UK's post-war economic difficulties – sluggish productivity, poor industrial relations, and a persistent gap between research excellence and commercial application – provided the backdrop against which successive governments sought to harness STI more strategically (Coates, 1994; Gamble, 1994; Wilson, 1963). The "microelectronics revolution" reaffirmed the significance of STI: in response to Japan's ambitious "5th Generation" plans, the UK government funded the large-scale Alvey programme (1984–1990) of R&D on new information technology (Oakley & Owen, 1989). As Prime Minister, Margaret Thatcher had opposed the state 'picking winners' but following her resignation in 1990, the policy environment became more receptive to strategic planning (Gamble, 1994). The frequent failure to translate the UK's considerable strengths in scientific research into commercial and social success led to the establishment of the Office of Science and Technology (OST) in 1992. This dedicated unit within the UK's central government bureaucracy, commonly referred to as Whitehall, was tasked with promoting excellence in STI, and leading government efforts to apply it to economic and social ends (OST, 1993).

Table 1. A schematic illustration of the evolution of UK foresight.

	Cycle 1	Cycle 2	Cycle 3.0 : Initially	Cycle 3.1 : post–2012
Time Frame	1993–1999	1999–2002	2002 (April)–c2011	c2012–Present
Prime Minister(s)	Mayer – Blair	Blair	Blair – Brown – Cameron	Cameron – May – Johnson – Sunak – Starmer
Lead Government	DES – DTI (1995)	DTI	DTI-DIUS (2007) – BIS (2009)	BEIS (2016) – DSIT (2023)
Central advisory and analytical body	OST	OST	OST – CSI (2006) – GOS (2007)	GOS
	* Changes in the lead government department and associated agencies are primarily driven by Machinery of Government (MoG) reforms, which reflect the reshaping, restructuring and reallocation of responsibilities across government departments.			
Main Rationale	S & T Priorities	Business & Social dialogues	Anticipating policy relevant change and risk	
Main Targets	Initially, scientists and research funding agencies; Laterly, also the business agencies	Several actors across government, business, the research world and society	In Government at a political level, supported by very senior members of the civil service	sector participation including civil Trying to expand public and private societies and academia
Coverage	Mix of sectoral and technological areas spanning. Most of private sectors and some public sectors	Mix of sectoral and themes areas. Even wider coverage than the first cycle	Focused topic areas of interest to government ministries	
Standard	Standing sectoral panels	Sectoral and Thematic panels with methodologies	Rolling Projects, with broadly similar methodologies	Succession of Projects, experimenting with different methodologies
Participants	Each panel had c20 regular participants, drawn from civil service, academia and industry	Probably fewer participants overall, but from a broader range of industry stakeholders	Mainly members of relevant government agencies, with support from academic and industry experts	
Methods	Delphi survey and workshops used across the FP, with bespoke methods by the individual panels	Scenarios and consultation documents, Website for dissemination and interaction	Wider methods including scenario, persona, simulation, games, Delphi, workshops	
Outputs	Panel reports, Delphi results, priorities and recommendations	Panel & Task force reports, web-based publications	Various Types of outputs and it also affected by the character and stysle of (GCSA's) leaderships. Project reports including the state of science reviews, scenatios, workshop results, academic papers	

The first cycle (1993–1999): From setting STI priorities to wiring up the innovation system

The 1993 White Paper *Realising Our Potential* (OST, 1993) aimed at a fundamental reform of national STI policy. The first comprehensive review of its kind in over two decades, it asserted that the country could regain economic competitiveness by a closer integration of R&D and industrial and societal needs (Waldegrave, 1993; Miles, 2010). The White Paper led to the official launch of the UK national FP in 1994, to be managed by the OST. The FP was initially presented as primarily aiming to identify STI priorities (Georghiou, 1996) in order to gather and distribute knowledge about STI opportunities, especially those supporting "wealth creation" (OST, 1993; Martin & Johnston, 1999). It was recognized early on that simply funding the most promising areas of R&D was insufficient – foresight conversations and recommendations were to help "wire up" the disjointed national innovation system (Martin & Johnston, 1999).

The FP was led by a Steering Group, overseeing 16 "sectoral" panels, including transport, health, energy, and even leisure and lifestyle. Each panel comprised experts from industry, academia, and government. Panels could commission consultancy work, visit facilities, and organize seminars with expert informants. Meetings were held in different locations, exploring how issues varied around the UK (Georghiou, 1996; Miles, 2010). Within a standardized format of questions, each panel devised its own version of a two-round Delphi survey. Panels identified key sources of expert knowledge from whom to elicit opinions as to future developments concerning key topics, especially concerning future developments in priority areas of STI. Approximately 10,000 individuals ultimately provided their opinions concerning when important things might happen and with what likely impacts on wealth creation and quality of life, UK capabilities, barriers, and needs for collaboration (Georghiou, 1996; Martin & Johnston, 1999). To establish their set of Delphi topics, panels engaged in detailed discussions about future prospects leading to mutual learning across members (Miles, 2010).

The Steering Committee reviewed the panel reports, and its overview discussed STI issues and opportunities and highlighted a number of priority areas for R&D. This, along with the individual panel reports, drew much attention – not only from industry. Hundreds of millions of pounds of Research Council expenditure were aligned with the main priorities. The scale, detail and systematic nature of the UK FP made its conclusions influential in the formulation of key lines of work in the EU's Framework Programme. (Martin & Johnston, 1999; Miles, 2010)

The EU subsequently built foresight into the formulation of its major STI programmes. Participants, panel members, and users of the FP were generally very

positive about it, but there were some criticisms. The Delphi results were of less use to individual panels than intended, since the work of survey development took considerable time and effort, and the survey was then distributed by mail and completed manually, taking months for results to be available for panels. Other criticisms suggested that there was an overemphasis on industrial needs – was the FP ignoring critical public services as well as the broader and environmental social implications of STI? Was the sectoral nature of panels leading to neglect of interdisciplinary issues? (Georghiou, 1996; Miles, 2010)

The second cycle (1999–2002): Societal and business dialogue

After a long period of Conservative dominance, the Labour Party came to power in 1997. The Blair government supported the FP and wished to continue its activity, though many of the civil servants now experienced in foresight approaches had moved on (Keenan & Miles, 2008). A second FP cycle was instituted, aiming to place less emphasis on forecasting STI, and more on the holistic consideration of societal issues. A wider foresight culture was to be fostered through more engagement with small and medium-sized enterprises and the voluntary sector. There would be no core Delphi survey (Keenan & Miles, 2008). Instead, a "Knowledge Pool" was to help structure and integrate panel work, via a web-based platform; new technology would facilitate public dialogue and store foresight intelligence. This ambition was thwarted by structural and institutional barriers (Keenan & Miles, 2008). How could a state-run site effectively integrate the diversity of issues, perspectives, and approaches arising from the many different groups comprising the FP; manage "off-message" inputs from the wider public; resolve issues of intellectual property concerning posted material?

This "second cycle" of the FP was terminated prematurely, under a new Government Chief Scientific Adviser (GCSA), Sir David King (2000-2007), who provided independent scientific advice to the UK government. In 2001, the criticism led to a rapid review of its work, which concluded that its objectives were too diffuse, its reports lacked novelty and analytical rigour, and it was insufficiently flexible for accommodating emerging issues. The OST itself had been moved from the Cabinet Office (CO) to a specific ministry, the Department of Trade and Industry (DTI), in 1995. This was more a matter of political in-fighting among members of the Conservative government than a result of strategic reasoning, though it did, in principle, align STI policy more with economic goals. But, by attempting to be overly inclusive, the FP may have lost its institutional 'ownership' within the OST. (Keenan & Miles, 2008)

Under the Blair government, the CO established its own Performance and Inno-

vation Unit[1] (PIU; late 1990s–early 2000s) to address longer-term strategic challenges. This suggests some separation of STI and other strategy concerns in the civil service. The PIU commissioned a report from the Henley Centre for Forecasting, a leading "futures" consulting firm, on best practices in futures research and on strategic foresight activities of other countries and major corporations and institutions (Miles et al., 2008). Following this, in 2002, a new central strategy body, the Prime Minister's Strategy Unit[2] (PMSU), was established to provide in-depth strategic advice and policy analysis on key government priorities and report directly to the PM (Rutter, 2010). The PMSU was dissolved by the Cameron administration in 2010. Critics have suggested that its approach to cross-governmental long-term strategy remained overly linear and its overall effectiveness limited (Rutter, 2010; Hallsworth & Rutter, 2011; SOIF, 2021).

Also in 2002, the UK experienced a major outbreak of foot-and-mouth disease (FMD) in farm livestock. The FMD Science Group, led by the GCSA, employed scientific methodologies – such as epidemiological modelling and real-time forecasting of disease spread – to inform the policy response (Ferguson et al., 2001; Keeling et al., 2001). There was much debate over the inflexible recommendations derived from modelling, and about vaccination as an alternative approach (Kitching et al., 2005). The Ministry of Agriculture was suspected of favouring large farmers and neglecting rural tourism and countryside recreation (these activities were largely prohibited). Senior figures concluded that better crisis response mechanisms required more contingency planning, early warning systems, and research capacity (Royal Society, 2002).

PM Tony Blair, persuaded of the value of evidence-based policymaking in the face of complex and contested crises, publicly endorsed this as a national priority in his April 2002 "Science Matters" speech to the Royal Society, the main organization of elite scientists (Blair, 2002). Blair stressed the role of science in dealing with emergencies such as climate change and health crises, and in seizing opportunities in areas such as biotechnology, nanotechnology, and digital technologies. The termination of the second "inward-looking" cycle of the FP and the launch of its "in-depth" third cycle were part of a shift toward more systematic use of expertise and evidence in strategy and risk management (Keenan & Miles, 2008).

1 Performance and Innovation Unit: https://publications.parliament.uk/pa/cm200102/cmselect/cmpubadm/262/2071103.htm

2 The PMSU's foresight function (p. 19): https://publications.parliament.uk/pa/cm200607/cmselect/cmpubadm/123/123i.pdf

The third cycle (2002–2011): Rolling projects with broader methodologies

The third cycle of the FP placed greater emphasis on supporting 'joined-up policymaking' in areas involving STI. Its aim was to better network government departments, with less ambition to 'wire up' the economy's innovation system (Georghiou et al., 2007). The FP remained under the management of GO-Science (GOS) (formerly OST), led by the GCSA, who was direct advisor to the PM and Cabinet Secretary.

The FP was reoriented around successive 'high-impact' rolling projects. Typically, three to four projects would run concurrently, with two new projects to start and two older projects to conclude each year (Keenan & Miles, 2008). These foresight projects, including Cognitive Systems (2003), Flood and Coastal Defence (2004), Exploiting the Electromagnetic Spectrum (2004), and Cyber Trust and Crime Prevention (2004), would ideally take 2 years to complete, with a follow-up assessment a year later. They shared a fairly loose methodological framework, beginning with a horizon scanning "state of the science" review, and going on to scenario analysis and in some cases modelling (Miles & Keenan, 2003).

Project themes and long-term strategic research priorities were determined in regular weekly meetings of the GCSA, departmental CSAs, and relevant civil servants. Lead government department(s), sponsors and commissioners were identified for promising projects. Critically, projects were only undertaken if there was sponsorship from at least one government department, committing a senior figure to engage with the work throughout the project. Overall project leadership was typically shared between the GCSA and a senior member of the lead government department. The Project Advisory Groups comprised experts and stakeholders from academia and industry, alongside members of relevant government departments. Project implementation is primarily led and commissioned by well-respected academic or industrial scientists. This reconfiguration was intended to support the dissemination of foresight insights across the Whitehall system, thus supporting policy co-ordination. GOS (2020)[3] presented the third cycle of the FP as a more integrated and strategic approach, whose remit encompassed cross-sectoral and long-term societal challenges, not just technology-centred outlooks. These included risks as well as opportunities; topics like drugs, flooding, and obesity were among those where a deep dive was undertaken (GOS, 2020).

3 "…our mission has been helping the UK Government use scientific evidence to think strategically about the future…": https://foresightprojects.blog.gov.uk/2020/02/04/25-years-of-foresight-time-to-reconnect-with-old-friends-and-reflect

An evaluation study was commissioned, covering the first 8 projects and focusing on the value of the work for the activities of intended users of the projects. Interviewees were, in general, very positive, typically seeing the FP process as valuable, providing new configurations of knowledge, and illuminating important topics that had lacked systematic long-term analysis. Most of the projects had substantially informed policy formulation; often leading to new networks and further research. Notably, the Flood and Coastal Defence project was regarded as the most successful project. Its work on flood risks across the country – with many maps and illustrations – attracted much interest from construction and insurance industries, as well as from a range of government departments. Its messages were soon reinforced by a succession of severe flooding events in the UK. While many policy measures (e.g. governance as to location and design of infrastructure) will only bear results over the long-term, some fairly immediate impacts were evident; for instance, benefits were gained from increasing availability of emergency lifeboats across regions. In contrast, the Brain Science, Addiction and Drugs project was far less successful in terms of policy influence. One reason was that the Minister heading up the sponsoring department changed twice during the project's lifetime, leading to a problem of "ownership" and the understanding of the work. However, the scientific assessment of drug use was – and remains – also extremely politically contentious in the UK (Miles, 2010).

Another element of the third cycle FP was the establishment of a Horizon Scanning Centre (HSC), under GCSA leadership, to systematically detect weak signals and emerging trends across technological, political, and social domains, and inform departmental and cross-departmental decision-making with its insights. This undertook regular cross-government strategy scans and provided coaching to spread good practice across Whitehall (Keenan & Miles, 2008). Beyond horizon scanning in the strict sense, the HSC also contributed to broader government processes of technology priority-setting. A notable example is the Coalition government's 'Eight Great Technologies' initiative (2012), where the HSC helped generate a long list of candidates, drawing on assessments of national research strengths, industrial capability, skills and infrastructure, and considerations of risk, opportunity and timeliness (Willetts, 2013). This case illustrates how foresight-like analytical work can inform strategic technology choices even when not formally labelled as 'foresight'.

A third-generation Evolution: Beyond the third cycle

There has been much change in its activities since the "Great Recession", the global financial crisis (GFC) in 2008. In the wake of this crisis, in 2010, the UK government changed hands again, first to a Conservative-Liberal Democrat coalition and then to a Conservative-led government. These new regimes embarked upon "austerity" policies, attempting to restrict public service expenditure and reduce the size of the civil service. Ongoing foresight projects continued, but the series of rolling projects was disrupted. Without any official announcement of a new cycle of the FP, the rate at which 2-year long projects were commissioned slowed down, their succession was less regular, and projects have often not followed the methodological framework previously established. Arguably, the last project to have followed that framework was "The Future of Manufacturing" (GOS, 2013).

This shift in the FP came despite the Parliamentary Public Administration Select Committee (PASC) stating in 2007 that successive "administrations have increased the capacity of government to undertake strategic thinking, which is now carried out more systematically than before. In particular, we commend the work of the FP, which is recognized as a world leader in its field…" (House of Commons PASC, 2007, p. 3). The FP's reorientations seem to reflect less its performance and more the changes in economic and geopolitical environments and in the interests and priorities of successive GCSAs and governments. Austerity policies were introduced in the wake of the financial crisis, with one element being to curb the "overexpansion of the state" and reduce civil service numbers – including GOS. This pattern illustrates a structural vulnerability in institutionalized foresight: its capacity depends on sustained political and administrative investment that is inherently vulnerable to ideological shifts toward state contraction. The UK case suggests that foresight infrastructure, once dismantled or fragmented, is slow to reconstitute – with consequences that may only become visible during subsequent crises.

A succession of crises followed. From 2014, preparations were underway for the 2016 referendum on Brexit. Pro-Brexit populist campaigning had often dismissed "expert" (Clarke & Newman, 2017) arguments that Brexit would damage the economy and have multiple political costs, reflecting a broader scepticism towards expertise as inherently elitist and a perception that evidence-based policy may stand in tension with popular will. With austerity causing hardship in poorer communities, and the EU and immigration being convenient targets of blame, a small majority vote was in favour of withdrawal. But with no specification of how

Brexit might be carried out, negotiations became a major source of political turmoil. The growing complexity and mounting administrative and policy challenges of the process even led to increases in civil service staffing.

No sooner had PM Boris Johnson's government proclaimed (inaccurately) that a complete deal had been reached, than the COVID-19 pandemic emerged. The institutional strains and pressures surrounding and following Brexit and the pandemic provided stark real-time tests of the UK's foresight capabilities (IfG, 2025a). Early in the third cycle, one FP project had actually focused on global pandemics (GOS, 2006). It clearly warned of the likelihood of future pandemics and may well have helped mobilize support for the R&D that underpinned the rapid development both of tests and of new types of vaccine (GOS, 2006). These developments, rather than the hand-held electronic multi-disease identification device foreseen in the study, played vital roles in suppressing the pandemic. But the UK experienced massive shortcomings in Personal Protective Equipment (PPE) and other necessities for health services and their workforces to cope with a pandemic (House of Commons Public Accounts Committee, 2020). A series of specialized pandemic preparedness exercises during the 2010s had pointed to the need to stockpile PPE; but these were disregarded by austerity-oriented politicians (IfG, 2025a). Insurance against risks can appear to be an inefficient use of funds, until the risks actually materialize.

During the pandemic, policymakers demanded immediate scientific advice on issues related to epidemiology, public health, as well as vaccine development and distribution. The introduction of unprecedented restrictions on social activities required communication with the public. Substantial responsibility fell on the Scientific Advisory Group for Emergencies (SAGE, established in 2010), while devolved governments across the UK had to develop their own advisory systems (IfG, 2020). Like the FP, SAGE is overseen by the GCSA, who ensures direct scientific input into policymaking (House of Commons STC, 2021, p. 14–18). SAGE primarily focused on immediate concerns, particularly public compliance with restrictive orders aimed at limiting disease transmission, and with potential impacts on children of limited education and socialization (Haddon et al., 2020). There was controversy around its work, and the quality and range of social scientific inputs (House of Commons STC, 2021, p. 37–44).

In 2022, the government established a more integrated 'Joint Data and Analysis Centre[4] (JDAC)' within the CO, to enable the government to anticipate developments, opportunities, and challenges and act accordingly through foresight anal-

4 Joint Data Analysis Centre (JDAC) : https://www.gov.uk/government/groups/joint-data-analysis-centre-jdac

ysis (CO, n.d.; IfG, 2025b). This includes a substantial team examining National Security Risk Assessment issues and datasets, and others working alongside GOS on foresight across Whitehall, and on international comparative analysis, data science and resilience planning (IfG, 2025b). The HSC, meanwhile, has been absorbed into the GOS Emerging Technologies team, which offers training and resources to civil servants (Lee, 2025).

The 2020s have thus witnessed the FP becoming increasingly oriented towards supporting a policy infrastructure that can encompass longer-term perspectives. There are still projects such as *Future of the Subsurface* (2024b), and at the time of writing, *Health Resilience to Long-Term Crises*. Alongside these, there is much effort on training and supporting departmental strategic planning initiatives, with documentation and organization of both specific and cross-departmental foresight initiatives. Useful guides and handbooks (GOS, 2024c), largely prepared by specialized futures consultancy organizations, have been published. The FP retains a role as a source of expertise and documentation, while seeking to support a wider ecosystem of capabilities across the UK government (GOS, 2020).

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Foresight beyond the Foresight Programme

Nearly all government departments currently carry out long-term analyses aligned with their departmental visions and core missions, facilitated by a Futures or a Foresight team operating directly under the CSA (Lee, 2025). Such activities may not always be labelled as "foresight". Thus DEFRA, the Department for Environment, Food & Rural Affairs, with wide-ranging responsibilities for ecological matters, food and agriculture, and the like, is highly engaged in analyses of climate change and associated risks and sponsors a great deal of forecasting work on topics

such as water management. These are often labelled simply as horizon scanning.

Another government department, the Ministry of Defence (MoD), has its own think-tank, the Development, Concepts and Doctrine Centre (DCDC, now named Defence Futures) (Lee, 2025). The first edition of its Global Strategic Trends (GST) was published in 2002, with updates produced every 4 or 5 years. The latest major edition is *Global Strategic Trends*: *Out to 2055*[5] (DCDC, 2024). Long-term strategic analysis in the MoD predates the FP and is rooted in a distinct institutional tradition that goes well beyond STI, encompassing the future operating environment, including changes in military capabilities, alliance structures, and deterrence strategies. Defence Futures contributes to the formulation of defence strategy and doctrine through scenario development and conceptual analysis of long-term security trends, while the Defence Science and Technology Laboratory (DSTL) maintains and advances core STI capabilities considered essential to retain within government. These defence and security activities emphasize strategic preparedness and conceptual coherence, rather than policy options. They primarily focus on structuring plausible worst cases of national security threats, and the design of requisite response capabilities. The GST reports synthesize the long-term implications of geopolitical competition and power shifts, socio-technological change, and climate and resource pressures, for the future security environment. They present multiple plausible futures, rather than a single most likely trajectory, and the aim is to provide a strategic frame of reference preventing defence policy and planning from becoming overdependent on any one set of assumptions (Lee, 2025).

The UK is composed of four countries. England, the largest, is exceptional in not possessing its own parliament. Foresight in the devolved administrations has tended to focus less on STI, where such policy instruments as major R&D funding, are largely a UK-level responsibility (Keenan & Miles, 2008). When foresight does address technology, it interprets UK-level work in line with regional socioeconomic circumstances and policy autonomy. Scotland's Futures Forum[6], established in 2005 as a parliamentary futures think-tank, aims to promote strategic thinking beyond the five-year electoral cycle. Scotland has mobilized foresight around public service reform, social inequality, and transitions towards a sustainable economy. Wales has emphasized long-term social and environmental objectives, policy coherence, and intergenerational equity.

5 Global Strategic Trends: Out to 2055 (2024): https://assets.publishing.service.gov.uk/media/669923bda3c2a28abb50d236/GST_7_Bite_size_web.pdf

6 https://scotlandfutureforum.org/about

The Well-being of Future Generations (Wales) Act 2015[7] requires public bodies to consider long-term impacts and embed foresight into sustainable development governance (Welsh Government, n.d.). This world-first legislation gained international recognition, inspiring the global adoption of the *Declaration on Future Generations* at the UN Summit of the Future in September 2024 (UN, 2024). Northern Ireland, though lacking a comparable statutory foresight framework, undertakes strategic planning through sectoral initiatives such as Matrix, the Northern Ireland Science Industry Panel, whose STI forward-looking reports cover topics such as AI and employment (Matrix, n.d.).

Large corporations in the UK, as elsewhere, maintain their own corporate foresight activities. There is an active consultancy scene in the area, and while the Henley Centre for Forecasting has disappeared, several newer organizations are highly active, some contributing to the FP's projects, handbooks and guides. Various academic researchers have been active in facilitating, disseminating and practicing foresight, though previous centres of expertise at Sussex and Manchester have largely moved on to innovation studies and sustainability research. There remains little by way of graduate training in the field. Tools such as road mapping and scenarios are developed and used by university groups at Cambridge, Oxford, and elsewhere, in applications such as corporate strategy and risk management. Numerous researchers examine topics such as the social implications of technological change, AI and the Internet in particular, and the climate crisis, and typically undertake long-term analyses from their disciplinary points of view.

Conclusions

This review of the UK FP's three-cycle history reveals several structural patterns of wider significance for anticipatory governance. First, both foresight capacity and the actual use of this capacity are politically contingent. Transitions of government have brought reorientation in the FP's aims, methods, and institutional location. A foresight infrastructure has become institutionally embedded but remains dependent on political champions. Second, crises function as both stress tests and catalysts. The FMD outbreak, Brexit, and COVID-19 exposed gaps in the anticipatory capacity, while also creating momentum for institutional renewal (e.g. SAGE, JDAC). Third, the tension between breadth and depth, specifically between 'wiring up the innovation system' and providing targeted, policy-relevant intelligence, continues to shape the FP, and especially its orientation toward ca-

7 Well-being of Future Generations (Wales) Act 2015: https://futuregenerations.wales/discover/about-future-generations-commissioner/future-generations-act-2015/

pacity-building across Whitehall. Embedding foresight as a sustained and integral component of policymaking, rather than as an episodic or advisory activity, remains a central challenge.

The FP, and foresight practice more generally, continue to evolve. So does discussion of how to better mobilize foresight in UK policymaking. Thus, in 2024, parliamentarians responsible for oversight of government strategy published "Promoting national strategy: How select committee scrutiny can improve strategic thinking in Whitehall" (HCLC, 2024). This concluded that the UK's system of foresight was improving but needed further development. Stressing that "it is vital that resources for foresight are protected and enhanced", the strategy argued that "futures work" still need to be better "connected to the implementation of strategy" (HCLC, 2024). The JDAC framework largely follows the HCLC's proposals for how responsibility for this should be handled in the CO. So far, JDAC has had rather a low profile.

A longstanding challenge for the FP has been integrating its adaptive, long-term thinking into policy processes, rendering foresight more than optional background intelligence (Miles, 2010; Lee, 2025). Deeper alignment between foresight activities and departmental priorities will continue to require sustained engagement with senior policymakers. Initiatives such as JDAC aim to encourage departments to integrate foresight more fully into policy processes and timelines. Their effectiveness will depend on continued institutional support and uptake.

The effectiveness of engagement and the value of foresight activities should be assessed over longer periods. Regular five-year reviews could examine the continuing relevance or lack thereof of ongoing foresight outputs. Some past initiatives merit reiteration, thus the Brief Guide to Futures Thinking and Foresight (2025) and the MOD's GST series have both been updated. The wider STI horizon scanning, including the Technology and Innovation Futures reviews launched in 2010 and updated in 2012 and 2017 (GOS, 2010; 2012; 2017), should be renewed in some form, and there is also a need for a broader and more substantive review of the UK's STI system. New and more tightly focused projects could often adopt the standard practice of the third FP cycle, reflecting changing demands and securing departmental sponsorship. In terms of broader institutional change, there is also scope for strengthening links between central and devolved governance. Given increased regional (and city-level) devolution and uneven STI capabilities, subnational perspectives deserve greater attention. The UK could share lessons with other countries here.

Finally, AI and new media are of course subjects for foresight analysis, and one important initiative here is the AI Security Institute, founded in 2023, whose

outputs, such as the Frontier Al Trends Report (2025), examine the implications of future AI developments for security and public safety. This is risk-oriented work. But these technologies also present opportunities for foresight practice. AI is already being used to support horizon scanning, scenario modelling, and stakeholder deliberation (WEF/OECD, 2025; IfG, 2025b). It provides a kind of automated expertise – fast and fluent, though fallible. Its use requires critical human oversight, and there are dangers of so-called cognitive offloading as users fail to develop their own deep understanding of the substance that AI appears to master. In the face of challenges to traditional foresight practice by AI-based studies, including those developed and deployed from overseas, sustained effort will be required to foster social learning and deliberation. Social media do, of course, allow for wide participation in discussions. The challenge here is that controversy and misinformation can be amplified, potentially subverting evidence-based policy-making. Finding ways of using the new tools to enhance, rather than undermine, inclusive and deliberative processes will be essential, if foresight is to retain and increase its relevance and effectiveness in the complex landscapes of the future.

Abbreviations

CMPS:	Centre for Management and Policy Studies
CO:	Cabinet Office
CSA:	Chief Scientific Adviser
DCDC:	Development, Concepts and Doctrine Centre
DEFRA:	Department for Environ ment, Food & Rural Affairs
DSTL:	Defence Science and Tech nology Laboratory
DTI:	Department of Trade and Industry
GFC:	global financial crisis
GST:	Global Strategic Trends
HCLC:	House of Commons Liaison Committee
HSC:	Horizon Scanning Centre
IfG:	Institute for Government
FMD:	foot-and-mouth disease
FP:	Foresight Programme
GCSA:	Government Chief Scientific Adviser
GOS:	GO-Science
JDAC:	Joint Data and Analysis Centre
MoD:	Ministry of Defence
OST:	Office of Science and Technology
PASC:	Public Administration Select Committee
PIU:	Performance and Innovation Unit
PM:	Prime Minister
PMSU:	Prime Minister's Strategy Unit
SAGE:	Scientific Advisory Group for Emergencies
STI:	science, technology and innovation

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Patrick van der Duin
PhD
Foresight & Innovation Management
Co-Editor-in-Chief, Futures

10 THE MODERN HISTORY OF FORESIGHT IN THE NETHERLANDS

Abstract

The modern history of foresight in the Netherlands is the result of a complex interplay of economic, political, administrative, cultural, and physical factors. The limited size of the open economy, the low-lying polder landscape that makes 'natural engineering' both possible and necessary, as well as the consensus-oriented decentralized political culture are all relevant. The modern history of foresight in the Netherlands is largely in line with that of other Western European countries, but the general institutionalization has had a different pace, and the academic institutionalization requires improvement.

Keywords: foresight, history, the Netherlands, institutionalization, social engineering

Samenvatting

De moderne geschiedenis van toekomstonderzoek in Nederland is het resultaat van een complex samenspel van economische, politieke, bestuurlijke, culturele en fysieke factoren. De beperkte omvang van de open economie, het laaggelegen polderlandschap dat 'natuurlijke maakbaarheid' zowel mogelijk als noodzakelijk maakt, en de consensusgerichte gedecentraliseerde politieke cultuur zijn daarbij allemaal relevant. De moderne geschiedenis van toekomstonderzoek in Nederland is grotendeels in lijn is met die van andere West-Europese landen, maar de algemene institutionalisering had een ander tempo en de academische institutionalisering vereist verbetering.

Introduction

The German poet Heinrich Heine (1797–1856) once said: "If the flood comes, I will go to the Netherlands, because there everything will happen fifty years later." Fortunately, the Dutch have now gained some experience with foresight. This chapter is about the type and role of foresight in the Netherlands since the Second World War. The focus is on the Dutch government and its advisory councils and planning agencies.

First, I will describe the modern history of foresight in the Netherlands and then I will provide a number of historiographies of foresight which I then will apply to the Dutch situation. Next, I will discuss which contextual factors were relevant in the historical development of Dutch foresight. The period 1945–2025 is chosen because this was the first time that there was 'serious' or methodical foresight and also because it was an important historical turning point for the shift from predicting to 'choosing' and 'building' futures (Di Zio et al., 2023). I will also take into account Western (modern) histories of foresight, because in my own work as a foresight researcher and practitioner I also work within this tradition.

Unfortunately, looking to the future has been given many different names throughout history because it is not conducive to its image. Mathematicians, for example, do not change the name of their field regularly. I have chosen to use the term 'foresight' here because it is widely used and it encompasses the approach to and the process of looking to the future. Futures research and futures studies are also good candidates, but futures literacy (FL) and anticipation are not, because FL mainly relates to the personal level and anticipation is new but not significantly different from foresight.[1]

The history of foresight in the Netherlands: persons and organisations

The founding father of Dutch foresight in the 1950s and 60s was Fred Polak (1907-1985), and he was also prominent internationally (together with Wendel

1 There are also different terms for foresight in the Dutch language. The most commonly used term is 'toekomstonderzoek' which can be translated as 'futures research' although the word 'toekomst' refers to one future. The term 'toekomstverkenningen' ('explorations of the future') is also popular, as well as 'toekomststudies' ('futures studies'). Because the Dutch have little problems with adopting words from other language areas, terms such as 'trendwatching', 'futures literacy', and 'futurism' are also used. 'Toekomst', the Dutch word for 'future', is a conjugation of the verb 'toekomen' which can be translated into many different English words: to arrive, be due to, or to receive. This suggests that the future has an active tone in Dutch.

Bell, Johan Galtung, Eleanora Masini, Richard Slaughter, and Jim Dator). Polak's book 'Prognostics' (1971) is generally regarded as one of the first textbooks and scientific treatises on foresight. Another well-known work is 'The image of the future' (1973, translated from Dutch by Elise Boulding) in which Polak draws attention to the importance of a (hopeful) future as the engine of the historical development of humanity and its civilization. A country or people that is not concerned with the future will not experience a future (Van Vught, 1986). Although somewhat tautological, Polak stated that future visions are not (or, need to be) utopian fantasies, but can have a real political and social impact.

Polak also applied foresight in practice and was director of the Netherlands Bureau for Economic Policy Analysis (CPB) from 1955 to 1957 and the successor of Jan Tinbergen[2]. Polak was also the founder of TELEAC (a TV channel focused on education) and of BEWETON ('Bevordering Wetenschappelijk Toekomstonderzoek'), a foundation that aimed to establish foresight as a scientific discipline. After his death, the funds from this foundation were transferred to the 'Stichting Toekomstbeeld der Techniek' (STT, "Netherlands Study Centre for Technology Trends"), which has been and still is very important to foresight in the Netherlands.

Another internationally renowned Dutch foresight expert was sociologist Bart van Steenbergen (1940–2013), who obtained his doctorate on a study of post-materialist society (Van Steenbergen, 1983a) and frequently published about 'sociology by design' (Van Steenbergen, 1983b). Later, he became an endowed professor of foresight at Nyenrode University, the only private university in the Netherlands. Van Steenbergen was co-editor of an extensive three-volume Dutch-language handbook on the theory and practice of foresight (Kreykamp et al., 1972)[3]. He was an inspired futures researcher who was always committed to the field and did not hide his opinion about it. In 1985, during the inaugural lecture of Frans van Vught, who was appointed as professor of foresight at the University of Twente, Van Steenbergen asked why Van Vught would become professor of foresight when he stated that foresight was not a science. A completely justified remark, in my view, because Van Vught unjustly narrowed foresight to predicting the future.

A third well-known futures researcher was Kees van der Heijden (1948–2023), who was active in business (Shell) and academia (Strathclyde Business School, Oxford University). At Strathclyde, he founded the Centre for Scenario Planning and Futures Studies (CSPFS). Van der Heijden was a pioneer in scenario thinking and his magnum opus was 'Scenarios. The art of strategic conversation' (van der Heijden, 1996) that sold more than 30,000 copies worldwide. In this book, he

2 Winner of the first Nobel Prize for Economics in 1969.

3 Fred Polak was a member of the editorial board of this handbook.

established a clear link between scenarios as possible future narratives, 'business ideas' in organizations, and the systemic nature of scenarios, thereby positioning scenarios in the external environment of an organization. Van der Heijden clearly fits in with the 'intuitive logic school' of scenarios by regarding scenarios mainly as fictional backgrounds against which strategists can converse about possible futures and how to strategically relate to those.

Another prominent futures researcher was Paul Rademaker (1942–2015), who was trained as a philosopher, started his career at Philips, was a long-time BE-WETON professor at the University of Twente (1992–2002), and was also appointed at Maastricht University and the University of Amsterdam. In a sense, Rademaker was a typical futures researcher: he had both a strong methodical and philosophical side and was an experienced foresight practitioner. Rademaker was chairman of the Dutch branch of the 'Club of Rome' (where Jan Tinbergen was also a prominent member). In 1975, he established the 'Network Toekomstverkenningen' (NTV), which still exists as an interesting foresight think tank, staffed by (former) civil servants, consultants, and other foresight practitioners.

Two other well-known Dutch futures researchers are Wim de Ridder (professor 2022–2015) and Jan Schoonenboom (professor 1989–1995). They were also endowed professors, at the University of Twente and Wageningen University, respectively. De Ridder was director of the economic bureau of a Dutch bank and, for a long time, director of the 'Stichting Maatschappij en Onderneming', an economic and foresight think tank. De Ridder fits well into the box of the futurologist and has often pointed to the exponential growth of technology. Schoonenboom, again, worked at the Scientific Council for Government Policy (WRR), an important government think tank that frequently carries out foresight studies. When the WRR was founded in the early 1970s, an extensive future study was carried out on Dutch society in 2005. This publication was evaluated in 2006 with Schoonenboom as one of the editors (Van der Duin et al., 2006). Schoonenboom had a keen eye for the methodical side of foresight and he also attached great importance to advisory councils and planning agencies being given the space to develop future visions that did not perpetuate existing government policy but went against it. According to him, this was an essential characteristic of a democracy.

Of course, there are other professional foresight experts in the Netherlands. BE-WETON and STT have funded several foresight professorships, such as Theo de Vries (Twente University), Marijn Janssen (TU Delft), Marieke Martens (TU Eindhoven), Vincent Marchau (Radboud University), and Roland Ortt (Erasmus University). Marjolijn van Asselt was a professor at Maastricht University and Martijn van der Steen is professor of 'Strategy and Future' at Erasmus. There are

also associate foresight professors at universities of applied sciences: Tessa Cramer lecturer ('Designing the Future', Fontys University) and Loes Damhof ('Futures Literacy', Hanze University).

This list shows that there is a lot of academic interest and activity in the Dutch foresight field. But the positions are temporary, so institutionalizing foresight at Dutch universities is limited. Therefore, the continuity of academically institutionalized foresight leaves much to be desired, which is unfortunate because its unit of analysis (i.e., futures) requires it not to be a temporary exercise but needs continuous scientific attention.

There is more continuous foresight activity at the planning agencies and advisory boards of the Dutch government (Van der Duin & Snijders, 2018), such as the Central Planning Bureau (CPB), the Social and Cultural Planning Bureau (SCP), and the Scientific Council for Governmental Policy (WRR). In general, their foresight studies inform, advise, and inspire government policy (Van der Duin & Snijders, 2024). The CPB has since its inception clearly changed its content and foresight process. Initially, these were mainly economic projections, but they now produce broader foresight studies by including social factors. The title of the CPB biography is illustrative: 'From planning to scanning' (Passenier, 1994). The WRR is also very active in the field of foresight, for example, a few years ago, under the leadership of Van Asselt, it published an extensive study on the methodical side of foresight and its connections with government policy (Van Asselt et al., 2010). More generally, Salewski (2012) examined the use of scenarios in physical planning and design by advisory councils and the planning agencies on spatial planning in the Netherlands between 1970 and 2000. Regarding the use of scenarios, Salewski (p. 308) sees a lot of ambiguity "…between science and art, between the rational and the imaginary, between analysis and synthesis". This makes it difficult to communicate scenarios to people outside the production team of the scenarios. Regarding the development of planning between 1970 and 2000, Salewski states (ibid.): "Over the years (...), a broad shift in planning took place: from the probable to the present, from the makeable to the imaginable, and from the normative to the narrative."

Already in the 1980s, the aforementioned Van Vught published a paper with seven trends in Dutch 'futures research' for the period 1960–1980 (Van Doorn & Van Vught, 1983, pp. 514–515) about the use and users of foresight and the methodologies:

1. It is policy-relevant because it is scientifically based, (is) part of an integrated policy process, reduces uncertainty, and (is) (therefore) useful for civil servants.

2. It is in line with international developments, insofar as after the period 1960-70, there was a shift from mainly normative to a mix of exploratory and normative methods.

3. Compared to the U.S. and Germany, (in the Netherlands,) there is less interest in techniques such as brainstorming and Delphi.

4. Civil servants are mainly interested in simple and easy-to-apply methods.

5. It has become more integrative in terms of its relationship with economic sectors, types of forecasting, and of the techniques used.

6. The time horizons vary by subject, sometimes they get longer and sometimes they get shorter.

7. The 'hypnotic' attention to the year 2000 has disappeared and has given way to the establishment of time horizons that depend on the subject or the sector.

To conclude, I devote special attention to a detailed description of the modern history of foresight in the Netherlands by Erik van de Linde (2010), who was a director of STT and a foresight practitioner at RAND Europe. Van de Linde distinguishes five periods in which social circumstances are the distinguishing factors:

1. Reconstruction (1945–1960)

2. Economic growth and social criticism (1960s)

3. The rise of environmental pollution thinking (1970s)

4. The welfare state under pressure (1980–1995)

5. Sustainable development (1995 and beyond)

Van de Linde argues that in the first period, the quantitative, econometric approach to the future, as propagated by Jan Tinbergen of the CPB, was the dominant force, although an 'integrative approach' was also preached by Dutch sociologists. In this period, foresight was mainly in the service of promoting economic growth. Slowly, the institutionalization of government planning began, which led to the broadening of the subject of foresight studies.

The second period was not significantly different from the first: planning was still the dominant concept, and the ‘engineering’ of society was widely adhered to. Optimism was increasing, even leading to a belief in progress, and technology became more important. Foresight was further broadened by including possible development directions and qualitative visions of the future.

The third period was strongly characterized by 'Limits to growth' by the Club of Rome which functioned as a "wake-up call for the realization that the national economy is not as malleable" (Van de Linde, 2010, p. 165) as was assumed in advance. During this period, many planning agencies and advisory councils were established, culminating in the WRR.

In the fourth period, the welfare state was retracing its steps, and foresight in the Netherlands focused more on questions such as what we know for sure and what could happen, and less on what will happen. The establishment of the 'Rathenau Instituut' was the result of the increasing attention to 'technology assessment'. In the Netherlands, more attention was also paid to the future of our environment, specifically by the foresight studies by the RIVM (National Institute for Public Health and the Environment).

According to Van de Linde, the fifth period emphasizes sustainability. And even though this in itself is not a pleasant subject, there has been some optimism in this period because of the 'new economy'–although, at the beginning of this period, it also became clear how bad our environment and earth really are doing. In this period, foresight in the Netherlands has continued to develop, as evidenced, among other things, in the form of large-scale collaboration between several planning agencies to jointly create future scenarios for government policy. Van de Linde (2010, p. 175) concludes: "Nowadays, exploring the future as an exercise is internalized in governments at all levels, in organizations and in companies."

Histories of foresight

Although looking to the future is the core business of futures researchers, they cannot refrain from looking at history. In the following, I present a short overview of various studies of the modern history of foresight.

Gordon et al. (2020) make a distinction between five phases:

1. Phase 1 (1969–1979): integrating technology forecasting into planning processes.

2. Phase 2 (1980–1989): involving stakeholders in forecasting to map the increasing social uncertainty.

3. Phase 3 (1990–1999): linking future-scanning to strategy and innovation, and the emergence of the scenario method.

4. Phase 4 (2000–2009): the emergence of roadmaps for both markets and technologies.

5. Phase 5: (2010–2019): corporate foresight becomes an integral part of the organization.

Gordon et al. emphasize the development of various methodologies, whereby this development slowly transitions into how the application of methodologies becomes part of both strategic and organizational processes. In my view, the first four phases are, historically speaking, fairly accurate. Phase 5, however, is a somewhat ideal image because integrating foresight into the strategy and the organization is still a more than laudable goal but has not yet been accomplished. Gordon et al. (2020) base their modern historiography on an overview and analysis of articles on corporate foresight that have been published over the past 50 years in Technological Forecasting & Social Change.

Son (2015), again, makes a division into three historical phases:

1. 1945–1960s: Scientific inquiry and rationalization of the futures: foresight was carried out on the basis of scientific methodologies ('a science of forecasting') with which knowledge about the future was considered professional, and alternative futures were also (increasingly) systematically explored.

2. 1970s–1980s: The global institution and industrialization of the futures: foresight became a global activity, shaped by global institutions and multinational corporations, and had their impact on foresight activities in individual countries. In this period, we also witnessed the development of normative futures and the scenario methodology.

3. 1990s–the present: The neoliberal view and fragmentation of the futures: uncertainty as a core concept in a 'risk society' and a fragmentation of the field in which there is a 'lack of disciplinary consensus' and the link between futures and 'futurists' is becoming increasingly loose.

Kristóf's (2024) historical overview begins in 1910. The first phase runs from 1910 to 1940 in which it appears that American sociologists such as Gilfillan and Ogburn took the lead and wanted to provide society and politics with knowledge about the quantitative state of society and what developments were going on, without extrapolating them. Even then, alternative scenarios were used (p. 2). Kristóf refers to the American political scientist Lasswell, who wrote about the 'developmental construct' approach in which possible and probable futures were examined in relation to existing policy, so that alternative policies could be determined with which desirable futures could be realized. Kristóf argues that after World War II, in the 1950s and 1960s, the professionalization of foresight began and that in this period scenarios were used for the first time, although forecasting was still the dominant method. After this, foresight continued to develop (or frag-

ment) in different directions, contexts, and geographies.

In the 1970s, foresight became globalized by focusing on global societal issues. It often used a normative premise and, at the same time, foresight was increasingly applied by commercial organizations. In the 1980s and 1990s, the foresight profession matured increasingly, which was mainly expressed in "the embodiment of a global institutional system" (p. 5). During these two decades, the attention for methodical development and the incorporation of ethical, moral, and cultural values were also growing, to such an extent that, according to Kristóf: "the field of futures studies was well established" (p. 5). Regarding the current century, Kristóf argues that foresight has moved away from its academic character to more application-oriented and that post-normal, 'metamodal', and integrative approaches have spread in the discipline. He refers to the rise of 'anticipation' and 'futures literacy'. (Kristóf, 2024)

Two bibliometric overviews of foresight journals by Singh et al. (2020) and Di Zio et al. (2023) also provide some historical insights. Singh et al. (2020) conclude that the foresight field has grown strongly in terms of the number of publications, number of citations, and the attention of other scientific domains, such as engineering, sustainability, and energy. More and more developing countries are also engaged in foresight, and it appears that foresight has close ties with innovation, technological development, diffusion, decision-making, and technological transition. Di Zio et al. (2023) draw the following conclusions:

1. The number of scientific publications has increased significantly over the past 32 years.

2. The number of topics is very diverse, ranging from different methodologies to substantive topics such as innovation, sustainability, AI, big data, and digital transformation.

3. Geographically, most publications come from the U.S.A., China, and the U.K., followed by authors from Australia, the Netherlands, France, Germany, and Italy.

The modern history of foresight can also be linked to that of other management disciplines. Chaskel et al. (2011) show that the evolution of strategic planning (and R&D) consists of five phases: 1) technology push, 2) market pull, 3) portfolio view, link R&D and strategy, 4) technology and business integration, 5) R&D network, and finally, 6) high complexity projects. In this, we roughly see the development of foresight as aimed at predicting technology into an activity that has societal complexity as its subject.

A coarser and longer classification has been done by Linstone (2002), who looks at corporate planning and forecasting by using the concept of 'waves'. Linstone states there are five (techno-economic) waves that last an average of 55 years, consisting of a boom, decline, growth, and then another boom. The phases relevant to this chapter are four and five, which start around the Second World War and end in 2024. According to Linstone, these phases mainly revolve around the shift from oil and gas to sustainable energy, the realization of (organizational) network linkages, and the introduction of process innovations with the help of IT so that production processes and organizations become more efficient and flexible. Linstone argues that the type of technology (e.g., space, military, life sciences) determines the direction of technological forecasting and assessment, and that the upward and downward waves are also linked to whether corporate planning (and thus foresight) is popular or not.

Cummings and Daellenbach (2009) describe a more direct link between strategy and foresight, describing distinguish three phases: 1) 1960s: 'strategy as a noun', where companies make decisions in the present that are aimed at achieving targets in the future, 2) 'strategy as a verb', where practices and processes from the past create patterns that determine the present and the future, and 3) 'strategy as adjective or adverb', where future requirements or goals give rise to activities in the present.

Perhaps the most direct link between the development of different management disciplines and foresight is by Van der Duin and Stavleu (2006, p. 40).

Table 1. The parallel development of marketing, strategy, innovation, and foresight.

	Marketing	*Strategy*	*Innovation*	*Foresight*
1950–1960	Production	Planning	Technology push	Technology forecasting
1960–1970	Product	Emergingt	Market pull	Technology assessment
1970–1980	Sales	Positioning	Parallel innovation processes	Explorative
1980–1990	Customers	Core competences	Innovation networks	Foresight
1990–present	Societal marketing	Sustainable competitive advantage	Innovation systems	Systemic foresight

to assume that, given that foresight is not an end in itself but an input for decisions in the field of marketing, strategy, and innovation, it needed to adapt to the changes in these management disciplines.

Another way to interpret the modern history of foresight is by using the classification by Van de Ven and Poole (1995) of organizational changes that distinguishes four forms: 1) life cycle, 2) evolution, 3) dialectics, and 4) teleology. My thoughts on their classification is the following:

1. I think that life cycle is partly a correct way to describe the modern history of foresight. Many histories just described above consist of various phases, although they are not so discreetly different from each other, which makes it quite coincidental that new phases often seem to lie on the border of a certain decade. In addition, the cyclical nature of the life cycle does not seem to be entirely applicable, although it is true that the modern history of foresight shows that there are phases in which foresight grows and phases in which it is heavily attacked (Cummings & Daellenbach, 2009).

2. I think evolution is partly an apt metaphor to describe the modern history of foresight. The environment of foresight has a major influence on foresight, such as sudden events (e.g., '9/11') or the availability of new knowledge and technology (e.g., AI). At the same time, it is difficult to distinguish competitive forces in this field. The mentioned fragmentation of the field can be interpreted as variation that is characteristic of evolutionary thinking, but it has not led to a certain dominance of one method or one approach.

3. I think dialectics is partly applicable to the modern history of foresight. There is undeniably a clear change and progress in the foresight profession as expressed in the increase in both scientific articles and the number of practitioners and users. The dynamics of different historical phases are partly explained by the criticism of principles and practices of foresight in a former phase and the reaction to those. This criticism announces and shapes a new phase. For example, the poor results with predictions were a clear reason to start exploring the future. Yet the diversity (fragmentation) in each historical phase is too great to characterize the succession of the different phases as thesis and antithesis into (a) synthesis.

4. I think teleology is partly applicable to the modern history of foresight. History does have clear phases (the various historiographies show this) but, at the same time, it is not a linear or cyclical development. It is difficult to see a certain end goal in the modern history of foresight because this would also suggest a kind of end point to time. Given the open nature of 'the' future (the

unit of analysis of foresight) this is difficult to imagine, despite all kinds of eschatological visions of the future.

Thus, all four forms of change are partly applicable as an abstract description of the modern history of foresight, and together they form a functional explanation of the development of foresight.

To conclude, the various modern foresight histories show three 'common threads':

1. A shift from predicting the future, often linked to a normative approach, to a more exploratory approach. At the same time, there is talk of a methodical fragmentation, which means that nowadays these different approaches coexist and are applied in different societal, business, and organizational contexts. Foresight, therefore, clearly fits in with the contingency theory. (Donaldson, 2001; Van der Duin, 2009)

2. A professionalization of the field, as evidenced not only by the methodical development but also by its institutionalization (industry associations, consultancy firms, government institutes, university research groups), the emergence and growth of scientific journals (e.g., Futures and Technological Forecasting & Social Change), and the emergence of a separate professional community that can be called 'futurists' (Cramer, 2020).

3. A shift to a more practical approach to foresight rather than a primarily academic exercise. The term 'foresight' also relates to the notion that doing a future study is just as important as the outcome of it, the practical application of foresight in decision-making, and the (general) added value of foresight for organizations (Rohrbeck & Kum, 2018).

The history of foresight in the Netherlands: an interpretation

Now the question is to what extent the modern histories of foresight relate to those of the Netherlands. First of all, the three common threads.

1. The Dutch history of foresight also shows a shift from predicting the future to exploring the future. The prediction tradition was very strong for a long time, which can be explained by the strong econometric influence. Jan Tinbergen was the founder of this discipline and because of the CPB, which played (and still plays) an important role in advising the government, this (econometric based) quantitative predictive approach was quite strong. It was only in the 1970s that the future approach shifted to an exploratory approach, obviously

inspired by the scenario method developed by Shell (which was then partly a Dutch company). The CPB did not escape this influence, either, and increasingly started to apply the scenario method without stating which scenario predicted the future the best.

2. In the Netherlands, too, we see a clear professionalization of foresight, although it may have taken place somewhat more evenly than in other Western European countries. A possible explanation is that the system of planning agencies and advisory councils that provide strategic advice to the government on political issues was implemented fairly quickly. This could also explain why Dutch politics has not had a 'Minister for the Future' or similar political bodies.

3. In the Netherlands, too, there is currently a large and diverse sector of foresight practitioners and trend watchers, trend researchers, and futurologists who frequently provide both governments and companies with future 'knowledge'. The times are over when such expertise and skills were not taken seriously enough. Nevertheless, it remains doubtful what its concrete and economic added value is for strategic decision-makers (i.e., the 'buyers' and 'customers' of foresight), although it apparently fulfils a growing need. A large part of the growth of foresight can also be attributed to market researchers who have started to focus more on longer-term issues and opportunities and have been able to develop in this direction relatively easily from their 'trusted' expertise and market position.

Then the four organizational changes.

1. Life cycle: the phases outlined in the various modern histories also seem to apply to the Dutch situation. Van de Linde's (2010) historical overview shows this beautifully and rightly. I do think that the difference between peaks and troughs in the 'popularity' of foresight is relatively limited because the growth of foresight has also been gradual (see above).

2. Evolution: there is no doubt that the context of foresight influences its development. At the same time, it is precisely this contextualization of Dutch foresight that has not led to a certain method being dominant in a certain period, but rather to the coexistence of several methods.

3. Dialectic: even for a dialectical interpretation, the differences and contradictions between the phases in the Netherlands are not great enough. It seems more like a portfolio of methodologies has gradually emerged that can be expected to continue to be diversified in the future.

4. Teleology: this type of development seems to be the least applicable to the Dutch situation. In line with the previous three types, it is hard to imagine that the Dutch history of foresight is moving towards a certain endpoint. Also, in view of the growing practice of foresight in the Netherlands, it can also be said that, in this respect, the "future is open but not empty" (Adam & Groves, 2007).

Concluding remarks

The Dutch history of foresight is reasonably in line with that of the broader (Western European) history. The growth of foresight (scientific activity and numbers of practitioners), the transition from prediction to exploration, and the institutionalization of the discipline is quite similar. Only the pace of institutionalization (more gradual) and academic institutionalization (less continuous) is different in the Netherlands.

Foresight takes place within a societal context. Regarding the Netherlands, its political culture is strongly based on consultation and consensus. The so-called 'poldermodel' (Hemerijck & Visser, 1997) is intended to bring different stakeholders together to jointly bridge ideological differences and arrive at workable solutions to shared social problems. Having a shared future vision can play an important role in this political-administrative consultation process. The 'poldermodel' is indeed not intended to settle all kinds of operational and tactical issues but strategic ones, and that makes the Dutch government and its ‘stakeholders’ susceptible to foresight.

A related factor is the so-called 'malleability' of Dutch society (‘social engineering’), which largely stems from the fact that during the three decades after the Second World War, Dutch society was a 'pillarized' society (Lijphart, 1992). This means that Dutch citizens lived in separate, societal 'pillars' with their own organisations for education, politics, media, trade unions, sports, and culture. There were Catholic, Protestant, socialist, and liberal pillars, which made for a very orderly society that lent itself well to planning and forecasting and thus considerably simplified government policy. The end of the 1960s and the 1970s threw a spanner in the works because social emancipation broke through and there was much less talk of a shared future. Postmodern social trends in the 1980s and 1990s did the rest of the work, fragmenting Dutch society and making foresight more relevant to map out the resulting diversity of possible visions of the future and wishes for the future.

A third factor has to do with the natural characteristics of the Netherlands. The absence of hills and mountains ensures that the Dutch landscape is easy to 'engi-

neer'. That's why René Descartes once said: "God made the earth, but the Dutch made the Netherlands." Because the reclamation of new land was a joint undertaking, it was also necessary to discuss in advance who would get which part of that land and what should be done with it. This explains the rise of the mentioned 'poldermodel' as a consultation structure and the desire and need to look ahead. Physical planning is not possible without shared future images.

Although this chapter is not about the level of future orientation of the Dutch, it is interesting to note that the cultural factor plays a stimulating role in this. Dutch sociologist Hofstede (1991) developed a framework that is used to compare cultures on various dimensions of which one is 'risk uncertainty (or avoidance)', defined as: "...the extent to which the members of a culture feel threatened by uncertain or unknown situations; this feeling is expressed, among other things, in nervous tension and in the need for predictability." Compared to other countries (n=53), a survey showed that the Netherlands is just below the average (last 35). Later, Hofstede (1995) added another factor that is even more relevant for the future, 'long-term orientation', scoring '67' for the Netherlands? on it (scale short-term–long-term: 1-100). This means that the Dutch have a pragmatic attitude towards the future, they adapt easily to changing traditions, and they have a strong tendency to save and invest. And although, admittingly, there is no such thing as 'Dutch foresight', we could conclude that Heinrich Heine is no longer right.

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INTERNATIONAL NETWORKS

Peer-reviewed Chapter

Mara di Berardo
PhD, consultant
Communications Director and Italy Node Co-Chair
The Millennium Project

11 FORESIGHT EUROPE NETWORK: history, leadership, and future directions

Abstract

The Foresight Europe Network (FEN) is a community of institutions and individuals advancing futures thinking and foresight across Europe as tools for strategy and policy. Founded in 2014, it was created to unify diverse approaches across countries, sectors, and governance levels. Guided by the vision "Foresight for better Europe", inspired by the 15th Forum on Europe Declaration, FEN links European perspectives with global initiatives and promotes foresight in policymaking to foster resilience, innovation, and sustainability. Today, it is an open platform connecting around 350 researchers, practitioners, institutions, and citizens shaping Europe's long-term future.

This chapter examines the evolution of FEN from 2014 to the present, and identifies three interrelated dimensions–governance, strategic priorities, and practices–as keys to understanding the network's development. The findings show that FEN is evolving through a dynamic interplay between these dimensions. Governance provides continuity through a decentralized and trust-based structure, while successive presidencies introduce shifting strategic priorities that reflect both internal leadership dynamics and broader contextual influences. Practices act as a mediating layer, translating strategic orientations into concrete forms of collaboration, learning, and engagement, while enabling adaptation. Overall, the chapter shows how informal, volunteer-based networks can sustain collaboration, remain resilient, and evolve over time, while balancing continuity and change as well as facing the structural challenges inherent to informal organizations.

Keywords: Foresight Europe Network, European foresight, Futures thinking, Knowledge sharing, Futures of Europe

Introduction

The Foresight Europe Network (FEN) is a dynamic community of around 350 organizations and individuals engaged in foresight across Europe, from newcomers to well-established foresight experts. Launched in 2014, FEN has evolved into an open and inclusive platform committed to advancing futures thinking and foresight in strategic and policy contexts.

This chapter explores how the Foresight Europe Network (FEN) has evolved over time as a network-level entity (Provan et al., 2007), and what this case reveals about the functioning and development of informal networks (Powell, 1990) in foresight. In particular, it addresses the following research question: *how do governance arrangements, strategic priorities, and organizational practices interact and evolve over time in an informal, volunteer-based foresight network, and how does this interplay shape its development?*

Section 1 presents the research design, data collection, sources, and analytical framework guiding the study. Section 2 traces the origins of FEN and its previous initiatives. Section 3 illustrates how the network functions, focusing on its governance arrangements and operating principles. Sections 4 and 5 provide a longitudinal overview of FEN presidencies, structured around their strategic priorities and around practices such as meetings, projects, and tools. Section 6 proposes a conceptual model of the network evolution, analysing the co-evolutionary dynamic between governance, priorities, and practices. The conclusion reflects on FEN's main challenges and potential future trajectories.

Research design and methodology

This section outlines the research design, including research approach, data collection and sources, and analytical framework.

Research approach

The object of analysis in this study is FEN as a network-level entity, focusing on relational and network variables and their impact on the collective functioning and evolution of the network. FEN is analysed through a qualitative case study approach (Yin, 2003) based on documentary reconstruction, key informant engagement, and iterative triangulation of multiple data sources. Each presidency is treated as a temporal case, combining multiple sources of evidence to reconstruct a coherent longitudinal narrative of the network's development.

Given the absence of a prior systematic historical account, the study also involves a substantial process of empirical reconstruction. Much of FEN tacit organiza-

tional knowledge (Polanyi, 1966) is embedded in slides, event materials, personal archives, and individual knowledge rather than in structured records, and has largely been transmitted across presidencies through meetings, exchanges, and presentations.

Analytically, the study adopts an inductive qualitative approach informed by grounded theory principles (Glaser & Strauss, 1967). The analysis involved an initial open coding phase, in which recurring concepts and themes were identified across the dataset. This was followed by a more focused coding process, in which relationships between themes were explored and progressively grouped into higher-level categories. Throughout the analysis, a constant comparative approach was applied, whereby data from different sources and time periods were iteratively compared to refine emerging interpretations and ensure consistency. Rather than applying predefined categories, the analytical framework emerged from the data through this iterative process.

Data collection and sources

The analysis draws on a wide range of sources. Data were not only consulted but actively identified, collected, and curated through a systematic reconstruction process. The reconstruction relied on materials provided by key informants, such as internal and personal drives, or collected from online traces in websites and mailing lists through targeted searches. The activity produced a structured qualitative database integrating internal and external materials into a coherent empirical base.

The process included direct email and message exchanges, follow-up questions, and material requests addressed to all former and current FEN presidents and vice-presidents (7), key pre-FEN actors (2), and some FEN members (4) for further material. FEN Presidents can be interpreted as key informants, individuals who are asked to speak about the collective context to which they belong, because they are considered particularly knowledgeable about its functioning, history, and dynamics. In this study, the presidents acted as institutional memory holders of the network, fulfilling what Fabbris (1991) describes as anthropological and cultural witnesses, community representatives, informants, and forecasters, as they contributed to reconstructing FEN's past, explaining its present, and reflecting on its future development[1]. These iterative and semi-structured exchanges[2] pro-

1 It must be underlined that while the FEN presidents provide valuable insights as key informants due to their institutional memory and governance role, their perspectives reflect leadership viewpoints situated within the network's coordination structure and do not constitute a fully representative account of all members' experiences.

2 The exchanges took place from June 2025 to February 2026.

vided contextual explanations, clarifications, and additional materials to be cross-checked against other sources. In total, dozens of iterative exchanges occurred.

Data analysis and conceptual framework

The resulting dataset (Table 1) comprises 162 qualitative items organized into distinct categories of materials. Internal documents (19) include emails, letters, and organizational records shared directly for the study, distinct from iterative exchanges with key informants mentioned above. Presentations (68) consist of slides and visual materials used by members to communicate during events. Programs and invitations (3) provide evidence of how activities were organized and framed over time. Publications (25) include research-based and professional outputs relevant to FEN's development. Reports and minutes (12) document discussions, decisions, and outcomes of meetings. Videos (9) capture recorded sessions and practical interactions within the network. Webliography (6) and website (20) materials reflect publicly available information on initiatives, projects, and ongoing activities.

Table 1. Dataset.

Type of data	Total
Internal documents	19
Presentations	68
Programs and invitations	3
Publications	25
Reports and minutes	12
Videos	9
Webliography	6
Websites	20
Total	162

The iterative examination of the assembled dataset led to the identification of three core analytical categories: governance, strategic priorities, and practices. The analysis is structured around these interrelated categories, which provide a lens to interpret the evolution of FEN over time. Governance captures the network's structural and organizational arrangements, including the informal leadership model, troika system, and membership processes. Strategic priorities refer to the goals, thematic focuses, and forward-looking initiatives of each presidency. Practices encompass the operational routines and collaborative activities that

define the network's daily functioning, including meetings, workshops, mailing exchange, project collaborations, and other forms of member engagement. By combining these categories, the analysis provides a longitudinal and practice-oriented understanding of FEN, showing how its structure, routines, and strategic choices collectively shaped the network's evolution. Table 2 summarizes FEN's evolution across presidencies.

Origins and foundation

The European Millennium Project Nodes Initiative (EuMPI) was co-founded on July 18, 2003 during The Millennium Project (MP)[3] Planning Committee meeting in San Francisco, and built on the Bled Strategic Forum on Europe as well[4]. With an informal chairmanship by Philippe Destatte, President of The Destree Institute, EuMPI was officially launched on November 21, 2003, at the European Parliament in Brussels.

EuMPI aimed at strengthening collaboration among European foresight actors and creating a more structured European presence on the global stage. It played an active role within both MP and the European Regional Foresight College (ERFC), contributing to publications and high-level foresight events, and co-organizing ERFC-EuMPI joint meetings and activities.

ERFC was founded on April 1, 2004. Chaired by Destatte until 2012 and by Ibon Zugasti, director of Prospektier, during the 2012–2014 transition, it aimed at building a community of practice that could support regional actors by sharing foresight methodologies, experiences, and knowledge.

ERFC focused on drafting a foresight glossary[5] in collaboration with EuMPI and organized events to foster exchange and innovation in the field. These included a dozen seminars in Paris, residential seminars in Étiolles (2005–2007), European conferences, contributions to foresight summer courses in Lille, and study visits on regional foresight practices in San Sebastian in 2009, in Genval in 2011, and in Ljubljana in 2012. Outcomes[6] from these activities were illustrated during the ERCF-EuMPI joint meeting in Warsaw in 2013, laying the groundwork for a coherent European foresight network.

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3 The Millennium Project: https://www.millennium-project.org/. Last retrieved on November 10, 2025.

4 Bled Strategic Forum: https://www.bledstrategicforum.org/. Last retrieved on November 10, 2025.

5 Partially published in Destatte & Durance (2008).

6 See Cutsen et al. (2013) for further references.

Table 2. FEN's evolution across presidencies.

Year	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Phase	Origins and foundation	Consolidation and development		Expansion and inclusion		Consolidation and institutional linkage		Digital consolidation and network visibility		Network activation		Reorientation and participatory innovation		Intersectional and inclusive futures	
Presidency	EuMPI / ERFC network	Blaž Golob, Cornelia Daheim, Ibon Zugasti		Cornelia Daheim, Anna Sacio-Szymanska, Blaž Golob		Anna Sacio-Szymańska, Epaminondas Christofilopoulos, Cornelia Daheim		Epaminondas Christofilopoulos, Nicolas Balcom Raleigh, Anna Sacio-Szymańska		Nicolas Balcom Raleigh, Lena Tünkers, Epaminondas Christofilopoulos		Lena Tünkers, Thays Prado, Nicolas Balcom Raleigh		Thays Prado, TBD, Lena Tünkers	
Strategic priorities	Initial visioning and conceptual groundwork	Institutional consolidation and definition of a shared European foresight vision		Network expansion, thematic diversification, and external collaboration		Consilidation of the network identity, and EU foresight policy engagement.		Strengthening digital coordination, network visibility, and engagement with European and global foresight communities		Strengthening community engagement and expanding peerlearning formats.		Reframing network identity, informal engagement, and participatory experimentation		Strengthening Inclusive and intersectional foresight, with emphasis on social justice, participation, and diverse voices	
Meetings	March 25, 2014, Brussels (EuMPI/ ERFC) October 25, 2014, Paris (EuMPI/ ERFC)	June 12-13, 2015, Turku (FFRC) November 24-25, 2015, Zagreb (Zagreb Dev. Agency)	March 15-16, 2016, San Sebastián (CIDEU) September 29-30, 2016, Starachowice (Institute for Sust. Tech.) October 8-9, 2016, Ljubljana (GFS Institute)	June 1314, 2017, Turku (FFRC) November 9, 2017, Florence (beFORE)	May 16, 2018, Berlin (Freie University) June 12, 2018, Tampere (FFRC)	May 29-30, 2019, Warsaw (Institute for Sust. Tech) November 26, 2019, Pisa (beFORE)	November 26, 2020, Online	June 7, 2021, Online (FFRC) October 29, 2021, Berlin (WFSF)	June 15, 2022, Online (FFRC)	June 16, 2023, Online (FFRC)	June 12, 2024, Turku (FFRC)	May 16, 2025, Vienna (Futures4 Europe) September 11, 2025, Online	TBD	TBD	TBD
Projects	Joint initiative from EuMPI & ERFC eGovernance in the Danube Region (2014)	eGovernance for the Danube Region (2015) beFORE-Project initiation (2016) Early EU project scouting		beFORE-Project (core) Teach the Future collaboration Pilots: Student / university cooperation with FU Berlin		beFORE-Project closure (2019) C&A Foundation Study (2019) Dialogue with EC (2020)		Collaboration with #OurFutures (20212022) Post-COVID recovery scenarios (V4/EU 2030). FEN statement against war		FEN Demo-Hour serie Global Futures Society membership European Foresight Statbook concept (2023)		FEN Exchange series Thematic workshop on Gender Equality (2025) Engagement with EC		TBD	TBD
Tools	FEN structure/ governance	Website & logo Mailing list		Migration to Google Groups mailing list Slack attempt		Pilot: virtual meeting (2020)		Appointment of a Communication Officer Structured member registration and GDPRcompliant database update		Improved website & social media communication LinkedIn Page Member database update		Rebranding process (ongoing) WhatsApp community		TBD	TBD
Members	15	20		150		170		260		350		350		TBD	

During the ERFC General Assembly on May 9, 2012 in Brussels, ERFC and EuMPI decided to combine efforts to strengthen their network. They shared the ambition to create a unified European foresight initiative, integrating approaches and operating effectively across countries, sectors, and levels of governance.

FEN's vision was anchored at the 15th Forum on Europe, held on March 25, 2014, at the European Parliament in Brussels. The forum gathered over 50 participants from 19 countries to discuss development, challenges, and a long-term vision for Europe beyond 2020. Participants explicitly endorsed a permanent foresight platform to coordinate strategic thinking across sectors and regions in Europe. The 15th Forum on Europe Declaration (Golob et al., 2014) emphasized that a foresight approach should be regularly applied in EU policymaking throughout the 2014–2020 programming period to design alternative long-term scenarios, shared visions of future development, and effective implementation strategies. This vision was solidified at the strategic ERFC-EuMP meeting, held in Paris at UNESCO on October 25, 2014, within the Anticipatory Governance Workshop. Joined by around 12 participants, it formally marked the first FEN meeting, where ERFC and EuMPI reflected on their shared legacy, articulated FEN's long-term vision, strategic priorities, governance model, and practices, and ran the first FEN Presidency election.

FEN structure and governance

FEN is a purpose-oriented network (Kapucu & Hu, 2020), established to advance futures thinking and foresight across Europe by connecting professionals, supporting collaborative projects, engaging in international events, and sharing knowledge on the role of foresight in promoting democratic governance and sustainable development. Its overarching goal is to promote foresight within European regions, building a shared community of skills, concepts, methods, and practices, and contributing to collective learning.

FEN pursues three core objectives:

- Community and collaboration to encourage cooperation, knowledge sharing, and professional development;
- Awareness and understanding of the importance of foresight, and strengthening its integration into European policymaking and governance;
- Action and impact to initiate and support foresight projects addressing key societal challenges.

Being a member of FEN provides access to an open network of foresight practitioners across Europe. Members receive invitations to open FEN meetings to engage with like-minded professionals, shape the network's activities, and collaborate on joint projects. FEN operates as a horizontal and collaborative network (Müller, 2022), with a flexible structure and no formal organization, membership fees, and barriers to entry. Administrative overhead and legal complications are minimal, allowing members to join without formal restrictions. FEN's work is voluntary.

Initially, FEN was composed of MP Nodes and institutional members, but the network has evolved into a more diverse and inclusive community over time. Today, it includes around 350 individual experts, consultants, researchers, and practitioners from different countries and sectors.

FEN applies a form of internal, non-mediated, participant-governed network governance (Provan & Kenis, 2007). This informal, volunteer-based structure is grounded in trust and peer coordination, aligning with the community capacity building model (Milward & Provan, 2006).

FEN's leadership follows a 2-year informal succession model in the form of a rotating troika (or triumvirate), consisting of the current President with the past and future presidents as vice-presidents. Together, they name the next future president, usually after discussions and interviews. The troika leadership ensures continuity and renewal without a dedicated external administrative organization. Because there is no fixed membership list, formal voting is impractical, and the president has the final say[7]. In the selection, experience with the network, past contributions, and ability to bring new perspectives, energy, and complementary skills are considered. Members are informed of the process and may suggest or volunteer as candidates. Diversity, in terms of gender, geography, generation, and foresight approaches, is emphasized, along with principles of continuity, flexibility, and trust.

Strategic priorities

In 2014, the FEN foundational phase was characterized by initial visioning and conceptual groundwork, as the idea of a European foresight network began to take shape through collaboration between existing initiatives. 2015–2016 marked a phase of consolidation and development. Blaž Golob (Slovenia), Director of the

7 The first election, however, was decided by a show of hands among participants at the 2014 Paris meeting, after which the leadership formally accepted the nomination.

GFS Institute and leading figure in smart city and foresight initiatives in Southeast Europe, was joined by outgoing President Zugasti (Spain) and by future President Cornelia Daheim (Germany), a well-established foresight consultant and founder of Future Impacts. This phase, based on the foundational vision "Foresight for better Europe", focused on institutional consolidation and on defining FEN as a stable European foresight platform. At the end of the period, FEN included around 20 members.

In 2017–2018, Daheim, bringing expertise in foresight projects across industries and policy fields, led a phase of expansion and inclusion, supported by Vice Presidents Golob and Sacio-Szymańska (Poland), at the time senior researcher at the Institute for Sustainable Technologies. Daheim's vision was to provide an open and inclusive community for all those interested in foresight across Europe, by fostering opportunities to meet, learn, and exchange, strengthening outreach and communication to broaden the base, and promoting EU projects. The main strategic pillars were the future of work and cities, younger generations, foresight capacity building, and global challenges and governance. At the end of the period, FEN counted around 150 members.

The 2019–2020 period was characterized by consolidation and institutional linkage. The presidency was led by Sacio-Szymańska, who brought both academic rigor and practical insight, supported by Vice-Presidents Daheim and Epaminondas Christofilopoulos (Greece), holder of UNESCO Chair in Futures Research. This presidency was characterized by the consolidation of the network identity and EU foresight policy engagement. Membership reached about 170.

The 2021–2022 period was characterized by digital consolidation and network visibility. Christophilopoulos brought a cross-continental perspective, strengthening FEN's links to global foresight ecosystems. Vice-Presidents for the period were Sacio-Szymańska and Nicolas Balcom Raleigh (Finland), Co-Chair of the UNESCO Chair on Learning for Transformation and Planetary Futures. In 2021, FEN appointed its first Communication Officer, Mara Di Berardo (Italy), MP Communications Director, bringing a strong background in futures studies, communication, and project management to date. The vision was to make FEN a well-known foresight network in the rapidly growing European community, emphasizing inclusivity, practical collaboration, and visibility for emerging voices. Membership reached about 260.

In 2023–2024, FEN focused on network activation, by strengthening community engagement and expanding peer-learning formats. Balcom Raleigh brought a thoughtful and inclusive vision to FEN. He was joined by Vice Presidents Christophilopoulos and Lena Tünkers (Switzerland), futures literacy and participatory

facilitator and process designer. Balcom Raleigh envisioned FEN as a decentralized, self-organizing, yet vibrant meeting point for Europe's foresight community, reflecting the belief that "FEN is its members!". The main objective was to create opportunities to meet and know each other. By the end of 2024, FEN included around 350 individuals.

The 2025–2026 period has been characterized by reorientation and participatory innovation, aimed at reframing the network's identity, fostering informal engagement, and experimenting with participatory formats. The presidency is led by Lena Tünkers, who brings a distinctive blend of futures literacy and experience design. Vice Presidents are Balcom Raleigh and Thays Prado (Portugal), founder of Feminist Futures. The Presidency is committed to using futures thinking to expand perspective, imagination, and agency. Tünkers envisions FEN as a collaborative and imaginative space, an informal, low-barrier network where members can easily exchange ideas, learn, and co-create, and encourages them to see FEN as their own. FEN counted around 350 members as of December, 2025.

The 2027–2028 period is expected to focus on intersectional and inclusive foresight, with an emphasis on social justice, participation, and diverse voices. Thays Prado as the next president will bring extensive experience in feminist foresight, storytelling, and gender equality. Prado will be supported by future Vice President Lena Tünkers, while the next future President remains to be announced. Looking ahead, Prado's vision for FEN is to foster conversations about Europe's most pressing social issues in an inclusive, solution-oriented, and participatory manner. She envisions FEN members broadening their understanding of social justice and human rights applied to foresight via consistent knowledge sharing, valuing both lived experiences and academic or professional backgrounds. Prado aims to collectively explore creative ways for FEN to center the voices of those disproportionately affected by key drivers of change, such as climate change, migration, conflict, erosion of rights, and rapid technological acceleration, including women, queer people, migrants, and racialized communities. She seeks to make FEN a more welcoming space for these communities to participate actively in discussions that can inform better policy and decision-making across the continent.

Overall, strategic priorities evolve incrementally across presidencies, reflecting both leadership agency and adaptation to external contexts.

Organizational practices and activities

This section provides an overview of FEN practices across presidencies, showing how strategic orientations were implemented. FEN usually holds one or two meetings annually at European locations and/or online, often aligned with international events and hosting guest speakers on specific topics. Additionally, FEN supports thematic workshops, training sessions, and pilot projects. FEN also manages communication and community-building initiatives to strengthen engagement and visibility, such as an active mailing list for exchange, a website with resources and events, and social media channels to share and collaborate. These practices not only sustain day-to-day interaction, but also function as a mediating layer through which strategic priorities are enacted.

Consolidation and development

The initial phase of FEN was characterized by the effort to establish a distinct visual identity and a stable cooperation model within the European foresight landscape. In 2015, the first meeting was held in Turku on June 12–13, within the Futures conference by the Finland Futures Research Center (FFRC). The governing board, joined by around 18 participants, including a delegation of the City of Belgrade, presented FEN's vision and mission, the new website and logo, and FEN's strategy and development. FEN met again on November 24–25, 2015 within the Zagreb Forum. The FEN Nodes presented their activities and projects, and evaluated the MP's 15 global challenges[8]. They agreed to strengthen the cooperation within the network in relation to upcoming EU funding calls, and to develop a toolkit for foresight capacity building and leadership.

On March, 15–16, 2016, FEN met in San Sebastián within the Future of Cities Conference by CIDEU. Around 18 participants presented their initiatives. Jerome Glenn illustrated a study on the future of work and technology[9], Sirkka Heinonen introduced the 2017 Futures Conference, Anna Sacio-Szymańska shared EU calls and the forthcoming Future Engineering conference, Daheim shared potential cooperation with other organizations, and Golob illustrated the 2016 plan. On September 29–30, 2016, the Institute for Sustainable Technologies hosted a FEN-led session on Interdependencies between foresight and innovation management[10] within the 3rd Future Engineering Conference in Starachowice. Around 50 participants were introduced to the eleven best foresight practices by representatives

8 Included in Glenn & Florescu (2024).

9 Reported in Glenn (2019).

10 Included in Sacio-Szymańska et al. (2016).

of EU countries. FEN met again in Ljubljana on October 8–9, 2016, within the Ljubljana Forum on the Future of Cities organized by the GFS Institute. Around 15 participants presented activities and projects, including Jerome Glenn on MP's studies and Enric Bas on EU 2020 SFRI group, and elected the next president.

During this period, FEN also initiated its first collaborative projects. Between 2014–2015, FEN supported the eGovernance for the Danube Region project as a continuation of the Center for eGovernance Development project[11]. In 2016, FEN partners launched beFORE, Becoming Future-ORiented Entrepreneurs in universities and companies, a project co-funded by the Erasmus+ Knowledge Alliance scheme[12] (beFORE, 2019). A first mailing list for members was created and expanded, the FEN logo and website[13] developed, initial collaboration with foresight conferences piloted, and scanning for joint projects and funding initiated. The website homepage (Figure 1) is designed to immediately convey FEN's mission and active role within the European foresight community, showcasing upcoming events.

Figure 1. FEN website homepage. Design by Andrea Plavljanić (Plava Studio) and GFS Institute.

11 The project also organized a conference in Ljubljana on February 20, 2015, including FEN's members.

12 The beFORE project focused on identifying key competences that future-oriented entrepreneurs should possess, and developed an online Futures Literacy course for students, academics, and entrepreneurs

13 The initiative was launched and is still funded to date by the GFS Institute.

The FEN logo (Figure 2) symbolizes interconnectedness, forward-looking perspectives, and the collaborative nature of foresight.

Figure 2. FEN logo. Design by Andrea Plavljanić (Plava Studio) and GFS Institute.

Expansion and inclusion

Between 2017 and 2018, the network's practices shifted towards expanding the member base and diversifying the thematic areas of engagement. In 2017, the first meeting took place in Turku, on June 13 and 14, within the FFRC Futures Conference, and was joined by about 40 participants. Daheim introduced new members and plans, and Sacio-Szymańska presented the beFORE project. Members discussed FEN benefits and contributions. Zugasti and Daheim introduced past and future activities on the future of cities, Sacio-Szymańska and Osmo Kuusi presented potential collaborative projects, Erica Bol introduced Teach the Future, and thematic presentations on foresight practices and a workshop on the future of work[14] were realized. On November 9, 2017, FEN met in Florence within the beFORE project, joined by around 30 people. Daheim illustrated FEN's activities, and Alessandro Guadagni introduced ValueDo, the hosting institution. A keynote by Emanuele Fabbri highlighted foresight for regional innovation and Industry 4.0 policies. Daheim gave an update on FEN strategic directions; Zugasti reported on MP ongoing activities; Sacio-Szymańska shared the beFORE developments; Simone Di Zio discussed how to combine quantitative and qualitative foresight methods; and thematic workshops reflected FEN's strategic priorities.

On May, 16, 2018, FEN met in Berlin at the Freie Universität, in cooperation with the university's Futures Studies programme. The session, facilitated by Da-

14 The results of the workshop are included in Glenn (2019).

heim, Christian Schoon, and Jonas Korn with several FU students, was joined by around 40 participants and focused on gaming and experiential foresight approaches. Presentations were held by Laurent Bontoux on the EU JRC Scenario Exploration System Game, by Daheim on FEN's updates and the Future Disruptions Board Game, by Yannis Angelis on narrative approaches to scenarios[15], by Sacio-Szymańska on beFORE advancements, and by Nadezhda Gaponenko on monitoring global challenges. On June 12, 2018, FEN met in Tampere within the FFRC Futures Conference including FEN-led sessions[16]. During the meeting with around 15 participants, Daheim illustrated a project proposal on the future of global governance by Burkhard Auffermann, Glenn discussed recent MP activities, and working sessions explored global governance, urban futures, and potential joint initiatives.

During the period, cooperation with other networks, such as the Association of Professional Futurists (APF) and the World Futures Studies Federation (WFSF), was investigated, and co-creative processes for identifying priorities and project opportunities were explored. This period also saw a modernization of communication tools to support a growing community. A simplified procedure for joining the network was introduced, with a new mailing list[17] transitioning to Google Groups for better archiving and exchange. A pilot of Slack was also implemented for more dynamic forms of online collaboration.

Consolidation and institutional linkage

The 2019–2020 period marked a dual transition: the establishment of high-level institutional dialogues with European bodies and the forced rapid shift towards virtual collaboration. FEN met on May 29–30, 2019 in Warsaw within the Future Engineering conference by the Institute for Sustainable Technology, including FEN contributions. The meeting, with around 40 participants, hosted roundtable discussions on FEN strategy, operations, and agency, and FEN–Teach the Future collaboration. On November 26, 2019, FEN gathered at the University of Pisa within the beFORE final conference. Around 50 participants reviewed FEN's priorities, discussing futures literacy, piloting a Futures Literacy Theatre Lab with Irianna Lianaki Dedou, evaluating nudge theory to enhance Delphi method consistency[18] with Di Zio and effective scenario communication with Heinonen, joining sessions on Foresight Europe 2034, and sharing outcomes and next steps.

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15 See Angelis (2017) for further references.

16 E.g., European Perspectives on the Future of Work and Personas in Foresight and City Futures.

17 The new mailing list has been supported by 4CF The Futures Literacy Company to date.

18 See Di Zio & Gordon (2024) for further references.

On November 26, 2020, FEN convened virtually for the first time due to the COVID pandemic. The event, joined by 47 practitioners, included a historical overview of FEN, recent activities, and future plans. A keynote speech by Dimitri Lorenzani highlighted the 2020 Strategic Foresight Report (EC, 2020). Members presented foresight topics and activities, followed by interactive sessions on scenarios for Europe 2034, drivers of change, and trends. The final session provided contributions from José Cordeiro on the death of death[19], Glenn on COVID-19 Scenarios[20] and the ongoing study on "Anticipatory Governance: ANI to AGI"[21], and Héctor Casanueva on the EC's Strategic Foresight Report 2020.

In June 2020, FEN had established a constructive dialogue with the EC on integrating foresight into EU policymaking through letters to President Ursula von der Leyen and exchanges with Vice-President Maroš Šefčovič, offering support to the Conference on the Future of Europe and other areas. The beFORE project, ending in 2019, involved ten leading partners from Italy, Poland, Spain, and Germany, and three associated networks. The C&A Foundation also commissioned a study on the Future of Sustainability in the Fashion Industry to Future Impacts in collaboration with FEN and others[22].

Digital consolidation and network visibility

FEN's practices evolved to stabilize hybrid and virtual formats, ensuring continuous visibility and a clear position on geopolitical crises. In 2021, FEN met virtually on June 7[23], as a pre-event of the FFRC Futures Conference in Turku. About 35 participants joined the agenda, including opening remarks, keynote presentations by experts, and small group discussions to improve futures studies. On October 29, 2021, about 50 participants joined the meeting in Berlin within the 24th WFSF Conference. Marco Carreira Silva addressed how futures literacy can drive systems change and climate action, and Wendy Schultz and Christophilopoulos conducted interactive sessions on #OurFutures and long-termism.

On June 15, 2022, FEN met online as a pre-event of the FFRC Futures Conference. With around 50 participants, the meeting focused on the participatory project "#OurFutures" by Bohl, and on a discussion on post-COVID recovery in

19 See Cordeiro & Wood (2023) for further references.

20 See MP Covid Scenarios Team (2020) for further references.

21 See MP (2023), High-Level Expert Panel on AGI (2025), Glenn (2025), and Glenn & Florescu (2024) for further references.

22 The study explored how far the industry of fashion is from achieving net-positive sustainability, what opportunities and barriers lie ahead, and which pathways may be emerging. See Daheim et al. (2019) for further references.

23 See Di Berardo et al. (2021a); (2021b) for further references.

V4 and EU in 2030 by Sacio-Szymańska[24].

With their statement on the war in Ukraine on March 3, 2022, FEN's leadership condemned the invasion and the armed conflict launched by Russia and called on FEN members to use foresight to imagine peaceful and sustainable pathways for the future. This phase also saw a formalization of the membership management. A new registration process, joined by 65 people, clarified how members can register, update information, leave, and manage website listings, ensuring EU GDPR regulations compliance. The email address *info@feneu.org* was managed centrally by the communication officer, and the website was revitalized to provide regular updates, increasing FEN's visibility on other platforms too.

Network activation

The 2023–2024 cycle focused on re-activating the network through direct engagement in global initiatives and the introduction of decentralized peer-to-peer learning formats. The first meeting in 2023 was held online on June 16, as a side session of the FFRC Futures Conference. Around 15 people joined the event, opened by the President. After a short introduction by Di Berardo, participants explored Europe's perspective on the MP's 15 Global Challenges through breakout groups, and discussed FEN's network initiatives and opportunities to answer EC JRC Framework Tenders.

FEN met again on June 12, 2024 in Turku, preceding the FFRC Futures Conference and joined by around 40 participants. The agenda included an icebreaker with Sitra's Cards of Hope[25], presentations on the Eye of Europe[26] and Futures4Europe[27] by Radu Gheorghiu and Bianca Dragomir, updates by Zugasti on the MP study on the "Transition from ANI to AGI", a session on Parliamentary/National Committees for the Future by Sofi Kurki[28], and group discussions.

In 2023, FEN became a member of the Global Futures Society, co-funded by the Dubai Future Foundation (DFF), MP, and APF in the same year. A new series of 11 FEN Demo-Hour online meetings brought members together to share and learn from each other foresight approaches, methods, and tools. A European Foresight Statbook, including a survey on key economic indicators, was pro-

24 The results of the study are reported in Jagaciak et al. (2022).

25 Cards of Hope by Sitra: https://www.sitra.fi/en/publication/cards-of-hope/. Last retrieved on November 10, 2025.

26 Eye of Europe: https://www.futures4europe.eu/project/Eye_of_Europe_6ft5d. Last retrieved on November 10, 2025.

27 Futures4Europe: https://www.futures4europe.eu/. Last retrieved on November 10, 2025.

28 See Kurki (2021) for further references.

posed. Regular updates through the website and mailing list helped the members stay informed, and an updated member list on the website included new fields (LinkedIn and bio URLs). The official FEN LinkedIn page, launched by Tünkers who appointed Balcom Raleigh (November, 2023) and Di Berardo (end of January, 2024) as co-admin, quickly grew from 17 followers by the end of 2023 to 537 (+520) by the end of 2024.

Reorientation and participatory innovation

The current trajectory (2025–2026 cycle) reflects a shift towards more inclusive and creative foresight practices, accompanied by a strategic rebranding to enhance the network's relevance in a changing policy environment. The first 2025 gathering took place on May 16, in Vienna, within the Futures4Europe conference. The session "Pasts and Futures of European Foresight Producing Collective Intelligence", joined by around 35 participants, featured contributions from Zugasti on the MP as a collective intelligence network and Eva Buchinger on forms of participatory constellation work in European foresight. Art and body-based practices fostered intergenerational collective intelligence. A FEN Catch-Up & Welcome meeting took place online on September 11, 2025, joined by around 30 participants, who received updates on FEN's rebranding process and new communication channels, and brainstormed FEN contributions, benefits, and topics of interest.

The presidency re-engaged with the EC in July 2025, reaching out to Commissioner Glenn Micallef's Cabinet to explore collaboration on strategic foresight and participatory approaches[29]. The exchange culminated with an exploratory meeting discussing future opportunities to be defined in 2026.

On June 5, 2025, Future Impacts and FEN coordinated an online foresight workshop titled "Around the World in 15 Global Challenges: Exploring the Future of Gender Equality in Europe"[30] with around 25 participants. FEN also launched a new series called FEN Exchanges in November, 2025 to foster peer-to-peer learning and dialogue[31]. These monthly one-hour online sessions offer an open space to connect, share, and explore key topics shaping the futures of Europe[32].

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29 During this process, FEN registered in the EU Transparency Register (TR No. 5322924101111-92), enabling the network to participate officially in meetings with the Commission.

30 Reported in Di Berardo et al. (2025) and in the Future Impacts's website (https://future-impacts.de).

31 Although FEN leadership initially intended to continue the Demo-Hour format from the previous presidency, the initiative was not pursued by the FEN members.

32 The first session "Security, War, & Geopolitics" on November 13, 2025, was joined by around 15 people. The second meeting "AI, Tech & Digital Futures" on December 11, 2025, was joined by 19 people.

Initiated in late 2025, a crowdfunding-supported rebranding process for FEN is currently underway. Following the insights collected through a Summer 2025 survey, this process is intended to introduce a new website and logo to give a fresh, modern feel. In parallel, FEN's digital presence has grown: a new WhatsApp community, launched in September 2025, reached 45 members by December 11, 2025, while the official FEN LinkedIn page grew to 977 (+440) followers by the same date.

Building on this trajectory, the next presidency is expected to further strengthen participatory foresight approaches and storytelling-based methods, continuing the network's gradual shift towards more inclusive, collaborative, and practice-oriented forms of engagement.

A co-evolutionary model

Beyond their descriptive role, the three analytical categories identified in this study capture a dynamic underlying the evolution of the network. The findings suggest that FEN has developed through a process of co-evolution among these dimensions. Governance provides continuity, offering a minimal structural backbone that ensures stability across leadership cycles despite the absence of formal arrangements. The strategic priorities introduce directionality, reflecting both the visions of successive presidencies and broader contextual influences. The practices operate as a mediating layer, translating these orientations into concrete forms of collaboration, interaction, and knowledge exchange.

The analysis further shows that the practices evolve in close relation to the network's embeddedness within the broader European foresight ecosystem. Over time, FEN has strengthened its connections with key events, institutions, and global initiatives, maintaining an active presence within a wider landscape of foresight activities. This embeddedness supports a continuity of exchange while reinforcing the network's visibility and relevance. At the same time, the evolution of practices reveals a growing adaptive capacity. The integration of digital tools and hybrid formats has expanded opportunities for participation and continuity, while preserving the importance of in-person interaction for trust-building and deeper engagement. Rather than shifting abruptly, strategic priorities are progressively reconfigured across presidencies, moving from initial phases of consolidation and vision-building towards greater diversification, stronger engagement, and more structured forms of collaboration. In more recent phases, this trajectory has been complemented by the increasing emphasis on participatory approaches and experimental practices. This suggests that change in informal networks is cumulative

and path-dependent, shaped by the interaction between leadership dynamics and contextual opportunities.

Taken together, these dimensions constitute a processual mechanism through which the network adapts while maintaining coherence. This can be interpreted as a simple conceptual model of network evolution, where stability (governance), directionality (strategic priorities), and enactment (practices) jointly shape the trajectory of an informal network, as shown in Figure 3.

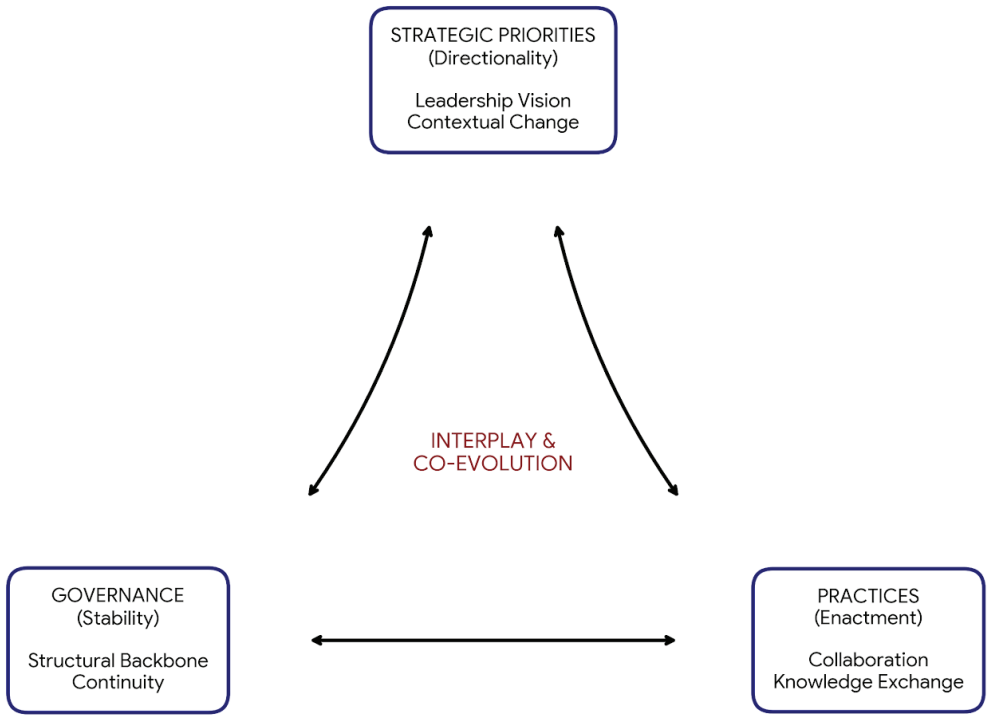

Figure 3. Conceptual model of the evolution of FEN.

From a broader analytical perspective, the case of FEN highlights several patterns relevant to foresight networks and interorganizational collaboration. Informal and decentralized governance arrangements can sustain continuity when supported by trust-based leadership and rotating coordination mechanisms. Strategic priorities tend to evolve incrementally, reflecting ongoing alignment between internal dynamics and external pressures. Practices play a central mediating role, enabling the translation of strategic orientations into shared experiences of collaboration, learning, and engagement. Finally, the combination of physical and digital interaction formats enhances both resilience and scalability in volunteer-based networks.

Overall, the case contributes to understanding how informal, volunteer-based networks can sustain collaboration, foster knowledge exchange, and evolve over time without formal institutionalization. By remaining embedded in broader policy and foresight ecosystems, FEN leverages social capital and trust (Putnam, 2000) to function as a participant-governed network (Provan & Kenis, 2007), validating the strength of weak ties (Granovetter, 1973) as a decentralized engine for innovation.

Conclusions

This chapter set out to examine how governance, strategic priorities, and practices co-evolve over time in an informal foresight network, revealing how these networks function and develop within the European context. The case of FEN, guided by its three core pillars of community building, knowledge sharing, and collaborative foresight and supported by voluntary and service-oriented leadership and a member-driven logic, shows that its evolution is not driven by formal institutionalization, but by a dynamic interplay between stable governance arrangements, shifting strategic orientations, and evolving practices.

At the same time, the analysis highlights a set of structural challenges inherent to informal, volunteer-based networks. Core functions such as communication infrastructure, administrative coordination, and membership management rely on limited voluntary resources, constraining the network's capacity for sustained outreach and operational support. As the community expands, additional tensions emerge between maintaining flexibility and ensuring coordination, visibility, and inclusiveness in decision-making processes, including leadership selection.

Looking ahead, FEN faces a common tension observed in informal networks between institutionalization and adaptability. The question of whether and how to formalize certain aspects of the network remains open. While greater formalization could support stability, resource mobilization, and institutional recognition, it may also risk reducing the flexibility and openness that constitute key strengths of the network. Ultimately, the case suggests that the long-term sustainability of informal foresight networks depends less on formal structures than on their ability to maintain a balance between continuity and change, stability and openness, coordination and participation. FEN's member-driven culture, grounded in collaboration and shared learning, represents a critical asset in this regard. As such, the network can be seen as a living laboratory for exploring how diverse foresight practices contribute to dialogue, collective intelligence, and policymaking in Europe.

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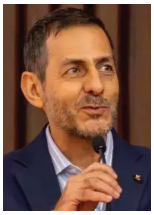
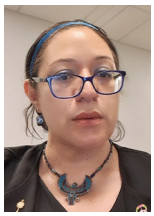


Guillermo Gándara
Executive Director
the Ibero-American Foresight Network



Karelys Abarca
Communications Director
the Ibero-American Foresight Network (RIBER)

12 A DECADE OF RIBER IN STRATEGIC FORESIGHT FOR REGIONAL CHALLENGES, SCENARIOS, AND TRANSFORMATIVE ACTIONS: Towards Latin America 2050

Abstract

The Ibero-American Foresight Network (RIBER, Red Iberoamericana de Prospectiva) represents one of the most significant regional collaborations in futures exploration in the region. Founded in 2015, RIBER has evolved from a structured, node-based model to a fully open network, becoming the largest Spanish-speaking foresight network in the world, with over 200 members from 20 countries. This chapter traces the network's institutional evolution through three phases of development, examining how RIBER has navigated organizational challenges, adapted to global disruptions such as the COVID-19 pandemic, and maintained its commitment to advancing foresight thinking throughout the Ibero-American region. The chapter also highlights the network's collective knowledge-producing effort, the volume Latin America 2050: Challenges, Scenarios, and Actions, as an example of RIBER's capacity for methodologically systematic, regionally grounded foresight. Finally, the chapter reflects on RIBER's contributions to the field and the challenges and opportunities that will shape its second decade of activity.

Keywords: Foresight networks, Latin America, futures studies, strategic foresight, regional governance

Resumen

La Red Iberoamericana de Prospectiva (RIBER) representa una de las experiencias de articulación regional más significativas en Exploraciones de Futuros en Iberoamérica. Fundada en 2015, RIBER ha evolucionado desde un modelo estructurado basado en nodos a una red totalmente abierta, convirtiéndose en la red de prospectiva hispanohablante más grande del mundo, con más de 200 miembros en 20 países. Este capítulo traza la evolución institucional de la red a lo largo de tres fases de desarrollo, examinando cómo RIBER ha sorteado desafíos organizacionales, se ha adaptado a disrupciones globales como la pandemia de COVID-19 y ha mantenido su compromiso con el avance del pensamiento prospectivo en toda la región iberoamericana. El capítulo también destaca el esfuerzo colectivo de producción de conocimiento más ambicioso de la red, el volumen América Latina 2050: Desafíos, Escenarios y Acciones, como un ejemplo de la capacidad de RIBER para una prospectiva metodológicamente rigurosa y con base regional. Finalmente, el capítulo reflexiona sobre las contribuciones de RIBER al campo y los desafíos y oportunidades que darán forma a su segunda década de actividad.

Introduction

Futures Studies and Strategic Foresight have acquired growing relevance in Latin America during recent decades, in a context characterized by uncertainty, systemic complexity, and profound social, technological, environmental, and political transformations. Facing these challenges, the articulation of regional communities of practice has been key to consolidating anticipatory capacities, developing literature, sharing methodologies, and strengthening dialogue amongst academia, private sector, public sector, and civil society.

In this framework emerges the Ibero-American Foresight Network (RIBER, Red Iberoamericana de Prospectiva), an initiative that since 2015 has sought to articulate actors from different Ibero-American countries interested in Futures Thinking and Strategic Foresight. RIBER transcends the traditional academic network model, configuring itself as a hybrid community integrating researchers, professionals, students, educators, decision-makers, and futures practitioners, with strong university anchoring and regional vocation.

This chapter offers a historical and analytical reconstruction of RIBER, identifying its development stages, organizational transformations, and contribution to the field of Strategic Foresight and Futures Studies in Iberoamerica, closing with the publication of 'Latin America 2050: Challenges, Scenarios and Actions' (Olavarrieta et al., 2024).

RIBER: Trajectory and institutional evolution

Conceptual framework: Foresight, networks, and future governance

Foresight can be understood as a set of approaches, methods, and practices orientated towards exploring possible, probable, and desirable futures, to inform strategic decisions in the present. Authors such as Godet (2006), Godet and Durance (2011), Inayatullah (2008; 2013), and Voros (2003) have highlighted the systemic, participatory, and normative character of contemporary foresight. From an organizational perspective, knowledge networks play a central role in the diffusion and co-production of foresight knowledge. Networks allow overcoming fragmented national approaches, favouring collective learning, interdisciplinarity, and the construction of shared visions of the future. In this sense, RIBER can be analysed as a regional epistemic network with its own adaptive governance dynamics.

Gestation and foundation (2014–2015)

RIBER was conceived in 2014 in Boca Chica, Dominican Republic, within the context of Millennium Project activities. The Millennium Project (MP) operates through national nodes that produce foresight knowledge on global challenges, known as the Global Challenges. Thus, RIBER was formally born in 2015 in Santo Domingo, Dominican Republic, from The Global Democracy and Development Foundation (Funglode), convening directors of Ibero-American MP nodes, and various prospectivists and futurists from the region.

The creation of RIBER was a response to the need to strengthen an Ibero-American identity within this global ecosystem, recognizing the historical, cultural, and socioeconomic particularities of the region. RIBER initially adopted a structure of nodes per country with a board of directors organized by functions (presidency, vice-presidency, secretary, treasurer, and vocal member), facilitating regional coordination. José Luis Cordeiro, as founding president, played a central role in this foundational stage, promoting the network's international visibility and its articulation with global foresight initiatives.

Consolidation through annual meetings (2016–2019)

RIBER is characterized by its annual in-person meetings, predominantly held on Latin American university campuses—a strategic decision that reinforces the foresight-academia link and promotes the formation of new generations of futurists.

The meetings held in Cali in 2016, Monterrey in 2017 and Santa Cruz de la Sierra in 2018 at Universidad del Valle, Tecmilenio—Tecnológico de Monterrey, and Franz Tamayo University (UNIFRANZ), respectively, consolidated an active regional community, enabling methodological exchange, research presentation, and discussion of regional challenges, as well as the formulation of joint projects. The meeting scheduled for Guayaquil in 2019 had to be suspended due to technical reasons and political instability, anticipating a period of in-person discontinuity.

Resilience and digital adaptation (2020–2023)

The 2020–2023 period was marked by the COVID-19 pandemic, which forced RIBER to virtualize its activities. Far from signifying stagnation, this period allowed expanding geographical participation, reducing access barriers, and experimenting with new interaction formats. Additionally, during this period, the writing of the book 'Latin America 2050: Challenges, Scenarios and Actions' was completed with the participation of 25 authors from 10 countries in the region.

Virtual meetings, seminars, and online activities strengthened network cohesion and evidenced RIBER's capacity for adaptation in contexts of high uncertainty—coherent with the very principles of foresight. From that crisis, online courses and diplomas were also created with the collaboration of researchers from different countries.

Organizational redesign: Towards an open network (2024)

A key turning point for RIBER's future occurred in 2024, during the meeting held at Tecnológico de Monterrey, Mexico. Here, the decision was made to transition from the national nodes' model towards an open network, not restricted to territorial structures, and with governance based on areas of influence. A Board of Directors was formed with specific responsibilities: Executive Direction (Guillermo Gándara), Communications (Karelys Abarca), International Affairs (Verónica Agreda), Strategic Projects (Marcelo Ramírez), and Research and Studies (Marco Moreno). This organizational redesign reflects a more horizontal, flexible, and results-orientated logic.

During the year prior to the Monterrey meeting, work was done by thematic committees in the network's reengineering process. As a result of this process, the statutes, vision, mission, and strategic objectives were modified and the values were created as shown in Tables 1–3. The website (www.riber.lat) and social networks for RIBER were also created.

Thus, RIBER is a public interest organization, non-profit, pluralistic, non-parti-

Table 1. RIBER's vision and mission (RIBER, 2024).

Element	Description
Vision	Leading foresight network and regional and international reference for futures exploration in Ibero-America, recognized for its capacity to generate innovative knowledge, influence public and private policies, articulating globally and synergistically dissemination, research, and training initiatives in Futures Studies and Strategic Foresight.
Mission	Network with a humanistic and holistic perspective that contributes to wellbeing, sustainable development, and the dissemination of knowledge and applications of Futures Studies and Strategic Foresight in political, economic, social, scientific, cultural, territorial, environmental, and innovation spheres, for anticipatory governance of Ibero-America.

Table 2. RIBER's strategic objectives (RIBER, 2024).

No.	Description
1	Foster regional collaboration through platforms and forums for collaboration, exchange, and co-creation of knowledge and best practices in Futures Studies and Strategic Foresight amongst Ibero-American countries.
2	Disseminate and promote the study and application of Futures Studies in its various approaches and Strategic Foresight tools.
3	Facilitate interaction amongst foresight professionals, policy makers, academics, and students of the discipline.
4	Develop a community of competencies, concepts, methods, and practices in Futures Studies in its various approaches and Strategic Foresight.
5	Contribute to collective learning of regional actors in developing their foresight competencies, providing them with references of best existing practices in the region and internationally.
6	Influence public and private policies by providing foresight-based recommendations to policy makers in member countries.

Table 3. RIBER's core values (RIBER, 2024).

Value	Description
Perseverance	Our longevity and continuity motivate us to continue looking towards the long term.
Open Network	We are guided by openness to the diversity of positions and opinions with freedom of conscience and mutual respect.
Integration and Collective Effort	We function as a think tank and believe in collaborative work that fosters synergy and a sum of efforts in support of the discipline.
Proactive Drive	We are motivated by curiosity, analytical and proactive capabilities, and a shared interest in bequeathing a better world and contributing to overcoming global challenges.
Collective Vision	We are united and driven by a common aspiration to build a better Ibero-America.
Multidisciplinarity	The diversity of actors and knowledge that characterizes us enhances the conceptual and methodological support for the exploration of futures and the facilitation practices that promote their co-creation.
Friendship	The time we spend getting to know each other, our camaraderie, and constant communication strengthen our human relationships, making us a more empathetic and collaborative network.
Innovation	With a solid foundation and ongoing academic updates, we aim to be a more professional and forward-thinking network.

san, and open to the voluntary participation of Ibero-American individuals and institutions interested in Futures Studies and Strategic Foresight. It seeks to contribute to wellbeing, sustainable development, and the dissemination of knowledge and applications of Futures Studies and Strategic Foresight in political, economic, social, scientific, cultural, territorial, environmental, and innovation spheres, for the anticipatory governance of Ibero-America. This transformation process has allowed RIBER to become the world's largest Spanish-speaking network, with more than 200 associated members from 20 countries in the Ibero-American region, in addition to RIBER's friends from other regions of the world.

New cycle: The institutionalization of futures congresses (2025–)

From 2025, RIBER initiated a new cycle with the institutionalization of its Futures Congress. A RIBER Futures Congress aims to serve as a meeting point for its associated members and the general community to share their experiences and research in futures exploration for Ibero-America, enrich their knowledge, and foster professional and personal collaborations, as well as disseminate the state of the art of the discipline in the host countries and the region's community. The RIBER Futures Congress is conceptualized as a local and international forum for intergenerational and intersectoral dialogue on current and future challenges for Ibero-America and the host country and region, as well as their possibilities and opportunities to build our desired futures towards 2050.

In September 2025, the 10th Anniversary was celebrated with the RIBER Futures Congress El Salvador 2025 at Universidad Centroamericana José Simeón Cañas, where we also reflected on El Salvador's future towards 2050. The Congress results are presented in Gándara (2025). The next RIBER Futures Congress Chile 2026 will be hosted by Universidad de Chile, reaffirming the network's historical commitment to Latin American universities. These congresses seek to expand the network's impact, strengthen its academic legitimacy, and position foresight as a key tool for designing futures in the region.

Latin America 2050: Regional foresight in action

The capacity of RIBER to articulate communities and produce regional foresight knowledge is paradigmatically exemplified in the collective work 'Latin America 2050', a project that materializes the network's vision, methodology, and scope (Olavarrieta et al., 2024).

Genesis and purpose

'Latin America 2050: Challenges, Scenarios and Actions', coordinated by Concepción Olavarrieta, Guillermo Gándara and Jorge Mattar, represents one of the most ambitious and systematic strategic foresight efforts undertaken for Latin America in recent years. The work seeks to promote thinking about the possible horizons our region faces and foster an innovative ecosystem that transforms present reality towards a more promising future for coming generations.

The book establishes three fundamental objectives that guide its structure and content: i) Promote awareness and culture of anticipation in the Latin American community about how to confront or mitigate threats and take advantage of opportunities that could arise towards 2050, democratizing foresight thinking beyond specialized academic or governmental circles; ii) Foster better public policies and projects by encouraging better design and implementation of public policies as well as private and social projects that help recognize the importance of creating better future options, seeking not only to describe possible futures but to actively influence present decisions that will construct them; and iii) Promote collective analysis and reflection on the present and future that serve as inspiration and platform for us to jointly make Latin America the region we desire, underscoring the collaborative and participatory character of the foresight exercise.

Methodology and analytical structure

The book is presented as a practical tool that brings to life the 15 global challenges of the Millennium Development Goals, delving into how these challenges manifest themselves today in Latin America, how they might evolve towards 2050, and what can be done to address them. The research focuses on the consolidated methodology of the Foresight Process proposed by Gándara (2024) in combination with the analysis of the 15 Millennium Development Goals. This methodology stands out for its analysis of key factors for the future; the generation of future hypotheses, where for each key factor multiple hypotheses are developed about how it might evolve; and the holistic analysis of the 48 key factors with their 144 hypotheses to construct internally coherent scenarios. Finally, a humanized narrative, which combines real protagonists with fictional but realistic ones, allows for the exploration of the human and experiential dimensions of futures envisioned with soul, and not just with macroeconomic indicators.

The 15 regional challenges

The first section of the book presents a detailed analysis of 15 critical challenges (Table 4), each developed by recognized specialists from different countries in the region. This diversity of voices and national perspectives enriches the analysis and avoids homogenized visions that ignore Latin American heterogeneity.

Table 4. The 15 challenges for Latin America towards 2050 (Olavarrieta et al., 2024).

Challenge	Authors (Country)	Focus	Key Factors
1. Sustainable Development and Climate Change	Jorge Mattar (Mexico), Daniel Perrotti (Argentina)	How Latin America, being one of the most vulnerable regions to climate change, must radically transform its development models to achieve sustainability without sacrificing legitimate aspirations for economic growth	Deforestation; production and consumption patterns and waste disposal; mobility and air quality in cities
2. Water Resources Management	Juan Carlos Castro (Peru)	Latin America possesses approximately one-third of the planet's renewable water resources but faces severe paradoxes: general abundance with local scarcity, growing contamination, and conflicts over water access	Water availability and population/productive activities access to water (quantity, quality, and timeliness); response to climate change effects on water resources; water resources governance
3. Population Dynamics	Guillermo Gándara (Mexico)	How the region will transition from young to an ageing population, effects of massive migrations (intra-regional and international), and urban consolidation with megacities concentrating resources and problems	Demographic transition; migration; urbanization
4. Political Indifference and Institutional Weakening	Cintia Smith (Argentina), Melissa Ramírez (Mexico)	Crisis of democratic legitimacy in the region, where democratic institutions are formally maintained but citizen disaffection grows and governability weakens	Distrust towards democracy; promotion of participatory processes; open government; institutional weakness
5. Long-term Global Policies	Yezid Soler (Colombia)	The region's historical difficulty in maintaining State policies that transcend political cycles, and how this discontinuity prevents accumulating capacities and results	Nature and orientation of public policies; participation of social actors in design, execution, monitoring and evaluation; rule of law and public policy exercise
6. Global ICT Convergence	Gabino Ayarza (Panama), Gregorio Urriola (Panama), Carlos William Mera (Colombia)	How the digital divide (between countries, within countries, and between generations) severely conditions development possibilities in the digital economy era	Public-private partnerships to promote new technologies; evolution of ICT utilization; population and productive sector access to ICTs: tele-health, tele-education, and tele-work
7. Poverty-Wealth Gap	Luis Mauricio Cuervo (Colombia)	Latin America as the planet's most unequal region, exploring whether technological and economic trends will widen or reduce these gaps	Economic growth, investment, and employment; progressivity/regressivity of State public policies; innovation and technological change

Challenge	Authors (Country)	Focus	Key Factors
8. New and Emerging Disease Threats	Carlos Dabdoub (Bolivia), Guillermo González (Colombia)	The COVID-19 pandemic brutally revealed Latin American health systems' fragilities, projecting how to prepare for future health crises	Public health expenditure; biotechnology at the service of health; personalized medicine; role of robotics in medicine
9. Education Facing Technological Revolution 4.0	Javier Medina (Colombia), Andrés Valencia (Colombia)	How to transform educational systems designed for the 20th century to prepare 21st-century citizens in contexts of accelerated technological transformation	Regenerative education for a common future; inequality gaps, inclusion and exclusion in access and quality; educational policies; institutional weakness
10. Conflict and Peacebuilding	Carlos Sarti (Guatemala), Yiem Ataucusi (Peru)	The multiple violences crossing the region (political, criminal, social, gender-based) and possibilities of building sustainable peace	Historical-cultural and social conflicts; main social conflicts: agrarian, political, socio-environmental, ethnocultural; peace-building
11. Women's Empowerment	Karelys Abarca (Venezuela)	Advances and setbacks in gender equity, recognizing that Latin America has had important female leadership, but deep structural gaps persist	Public policy to reduce gender inequality in technological education; deceleration of women's participation in labour market; gender violence; political empowerment
12. Transnational Organized Crime	Concepción Olavarrieta (Mexico), Jorge Mattar (Mexico)	How transnational organized crime has penetrated Latin American institutions, economies, and societies, and necessary strategies to combat it	Criminal connivance; resilience against TOC; Latin American ecosystem projects for social prevention
13. Energy Model and Electromobility Challenges	Karelys Abarca (Venezuela), José Luis Cordeiro (Venezuela)	Inevitable energy transition towards renewables and how Latin America, with abundant natural resources for clean energies, can strategically position itself	GHG emissions; towards a new energy model; electromobility
14. Science in Latin America	Martín Puchet (Uruguay), Gabriela Dutrénit (Uruguay)	Historical regional scientific-technological underdevelopment and paths to strengthen innovation ecosystems	Governance and trends in experimental research and development expenditure; priority knowledge thematic areas for the region; STI systems and their reform
15. Public Ethics	Oscar Diego Bautista (Mexico)	How endemic corruption erodes institutions, economic development, and social cohesion, raising the need to recover public ethics	State policy; corruption vs. trust and credibility in executive, legislative, and judicial powers; ethical State, ethics for citizenship, and regional ethics networks

Three scenarios towards 2050

The second section presents three contrasting scenarios constructed from holistic analysis of the 48 key factors identified in the 15 challenges, with their 144 future hypotheses. This Morphological Analysis methodology ensures internal coherence in each scenario (Gándara et al., 2024).

Scenario 1: 'Devastated Latin America: Crucible of tyranny, oppression, migration, and solastalgia'

Authored by Guillermo Gándara (Mexico), this scenario draws a future where the worst aspects of current trends materialize without effective counterweights. The term 'solastalgia' (distress caused by environmental change) captures the psychological dimension of a regional collapse. The scenario uses a powerful narrative strategy: it tells the story through eight young Latin Americans from different countries: Natalia (18, La Paz, Bolivia), Luis (19, Punta Cana, Dominican Republic), Mariana (20, Querétaro, Mexico), Gael (18, San José, Costa Rica), Antay (15, Tignamar, Chile), Lucía (14, Armenia, Colombia), Renzo (13, Tamshiyacu, Peru), and Tainara (16, Belo Horizonte, Brazil).

Scenario 2: 'Flowers in the desert: Crucible of achievements and challenges in Latin America 2050'

In this intermediate scenario, Cristian Hernández (Ecuador) and Joshua Hurtado (Mexico) visualize a future of 'lights and shadows' where significant advances are achieved in some areas whilst problems persist or worsen in others. The title 'flowers in the desert' captures this idea of resilience and partial achievements in difficult contexts. This scenario represents the trend projection if current dynamics continue without dramatic positive or negative changes.

Scenario 3: 'Latin America great crucible for humanity: New alliances and ecosystems'

In this aspirational scenario, Concepción Olavarrieta (Mexico) and Jorge Mattar (Mexico) propose a future where Latin America leverages its comparative advantages (biodiversity, natural resources, cultural diversity, demographic youth) to position itself as a global leader in sustainability, social innovation, and new development models.

Transformative rector projects

The final section proposes transformative projects that could propel the region towards the desirable scenario. These projects must be transformative, inclusive, sustainable, investment catalysts, long-term goals, evaluation programme; and

permanent monitoring. This formulation of characteristics seeks to avoid projects becoming declarations of intentions without effective implementation—a historical problem of regional planning.

Contributions and projection of RIBER

Contributions to Latin American foresight

Over its first decade, RIBER has made a series of significant and interconnected contributions to the field of futures studies and strategic foresight in the Ibero-American region. These contributions operate at multiple levels—epistemic, institutional, and societal—and collectively constitute a distinctive legacy. In terms of visibility and agenda-setting, RIBER has been instrumental in positioning foresight in Latin America's public, academic, and policy agendas. By convening practitioners, scholars, and decision-makers under a shared intellectual framework, the network has helped to legitimize futures thinking as a discipline worthy of sustained institutional attention. Its annual congresses and publications have served as reference points for national and regional debates about long-term challenges. In the domain of capacity building, RIBER has trained new generations of futurists through conferences, workshops, seminars, and congresses. The network's university anchoring has been particularly important here: by working through academic institutions across the region, RIBER seeks to integrate futures thinking and foresight into curricula, research agendas, and institutional practices that extend well beyond the network itself.

In terms of knowledge production, RIBER has generated a growing body of regional foresight literature, including the collective volume Latin America 2050 as its most visible output, and the Spanish translation of the State of the Future 20.0 from the Millennium Project (Glenn et al., 2025). Beyond this flagship work, the network has facilitated collaborative research projects, working papers, and methodological contributions that have enriched the global foresight literature with distinctively Latin American perspectives. For example, the results of the 2025 Futures Congress were published in the book "Unimos talentos, conectamos ideas, creamos futuros (We unite talents, we connect ideas, we create futures) (Gándara, 2025).

Methodologically, RIBER has contributed to the adaptation and contextualization of global foresight methods—including scenario planning, morphological analysis, and causal layered analysis—to Latin American realities and the Spanish translation of the Futures Research Methodology — Version 3.0 from the Millennium Project. This localization of methodology is a significant intellectual

contribution, as it resists the uncritical importation of frameworks developed in different socioeconomic and cultural contexts.

Finally, through networking and inter-institutional connection, RIBER has built bridges between local agendas and global debates, helping to integrate Latin American voices into international foresight conversations whilst ensuring that global perspectives are translated into regionally relevant terms.

Lessons on the governance of knowledge networks

RIBER's trajectory offers important insights on the adaptive governance of regional epistemic communities. Several principles have emerged from its experience that may be relevant to other knowledge networks operating in complex, resource-constrained environments.

The transition from a hierarchical node structure to an open network model reflects the principle that organizational structures must evolve with their contexts and member needs. Rigidity in governance design can become an obstacle to growth and inclusion; conversely, well-managed structural transitions can unlock significant new energy and participation. RIBER's decision to restructure in 2024 was preceded by a thorough process of internal deliberation through thematic committees, underscoring that successful governance reform requires both strategic vision and inclusive process.

The pandemic experience demonstrated that crises can serve as catalysts for positive organizational innovation. RIBER's forced virtualization led to expanded geographic participation and the development of new collaborative practices that persisted beyond the immediate crisis. This capacity for adaptive resilience—enacting in practice the anticipatory principles that the network promotes in theory—is perhaps one of RIBER's most instructive qualities.

The network's sustained university anchoring has provided legitimacy, infrastructure, and mechanisms for intergenerational renewal. This strategic choice reflects an understanding that knowledge networks in developing regional contexts require institutional hosts capable of providing continuity beyond the lifecycle of any individual project or leadership cohort.

Finally, the RIBER experience illustrates the importance of strategic patience in network building. A decade was required to consolidate the network's identity, governance structures, and regional influence. This timeframe is consistent with research on the development of epistemic communities and knowledge networks and serves as a useful benchmark for those designing similar initiatives.

Future challenges and opportunities

As RIBER enters its second decade, it faces a complex horizon of both opportunities and structural challenges. Addressing these honestly is essential to the network's continued relevance and vitality.

On the opportunity side, the demand for foresight capabilities in Latin America is growing rapidly. Governments, businesses, international organizations, and civil society actors increasingly recognize the limitations of short-term planning in the face of compounding crises—from climate change and technological disruption to democratic instability and demographic shifts. RIBER is well positioned to meet this demand, given its decade of accumulated expertise, its methodological resources, and its extensive membership network.

The expansion of the global Spanish-speaking foresight community also represents a significant opportunity. RIBER's status as the world's largest Spanish-language foresight network gives it unique convening power and the potential to serve as a bridge between Ibero-American foresight practitioners and international institutions. Strategic partnerships with them could amplify the network's impact and help to connect its work with policy processes at the regional and global levels.

The institutionalization of the RIBER Futures Congress creates a new and potentially high-impact platform for intergenerational dialogue and cross-sector exchange. If developed successfully, this format could become a significant annual gathering in the global foresight calendar, attracting participation from well beyond the immediate membership and generating outputs that influence public discourse across the region.

There is also significant potential for RIBER members to participate in the various postgraduate programs currently offered and in the new programs offered at universities in the region, which would simultaneously strengthen their capacity-building mission.

On the challenge side, financial sustainability remains a pressing concern. RIBER has historically operated on a largely voluntary basis, relying on the goodwill of member institutions for hosting and administrative support. As the network grows and its ambitions expand, the absence of stable, diversified funding could constrain its capacity to deliver on its strategic objectives. Developing a sustainable funding model—one that reduces dependence on any single source whilst maintaining the network's independence and pluralism—is among the most important strategic tasks facing RIBER's leadership.

Managing cohesion and shared identity within an increasingly large and geo-

graphically dispersed membership also presents challenges. As the network grows from a tight-knit community into a broader association, the social bonds and informal norms that have historically maintained cohesion may come under strain. Deliberate investment in community-building practices, clear communication of shared values, and mechanisms for member voice and accountability will be essential to preserving the network's collective identity.

The balance between academic rigour and practical relevance is a perennial tension for knowledge networks working at the interface of scholarship and policy. RIBER must continue to produce work of genuine intellectual quality whilst ensuring that its outputs are accessible and actionable for non-specialist audiences. The Latin America 2050 project illustrates one successful approach to this challenge, combining methodological rigour with narrative accessibility; sustaining and replicating this balance across future projects will require ongoing strategic attention.

Measuring and demonstrating impact beyond traditional outputs—publications, events, membership numbers—is increasingly important for maintaining credibility with funders and institutional partners. RIBER would benefit from developing a more systematic approach to monitoring and communicating its real-world influence on policy processes, professional practice, and public discourse. This might include longitudinal tracking of how network outputs are used, case studies of foresight-informed decision-making in member countries, and investment in evaluative research.

Finally, the political environment in Latin America poses structural risks. Democratic backsliding, polarization, and the weakening of democratic institutions in several countries create a less favourable context for the long-term, collaborative, and pluralistic thinking that RIBER embodies. The network must develop strategies to maintain its independence and institutional integrity in contexts of political turbulence, while constructively addressing the governance challenges that make foresight increasingly necessary.

Towards a vision for RIBER's second decade

Looking ahead, a significant contribution from RIBER could be to model what genuine anticipatory governance looks like at the regional level, not only through the production of new 2050 country reports, but also through the development of communities of practice capable of generating sustained collective intelligence in service of fairer and more sustainable futures. This requires deepening the network's commitment to inclusion—incorporating young voices, underrepresented countries, and non-academic professionals—while maintaining

the methodological and ethical standards that have distinguished its work.

The network's evolution from a small gathering of Millennium Project node coordinators to the region's pre-eminent foresight community is a story of patient, principled institution-building. Its second decade will test whether that foundation is strong enough to support a more ambitious role: not merely a network for futures thinkers, but a genuine infrastructure for anticipatory thinking across Ibero-American society.

Conclusions

In a world marked by uncertainty and complexity, initiatives like RIBER are fundamental to foster long-term thinking, collective anticipation, and the construction of more just and sustainable futures for Latin America. The network exemplifies how regional cooperation in futures studies can transcend rhetoric to produce tangible outcomes—from capacity building to collective publications that influence policy debates.

The project and publication 'Latin America 2050: Challenges, Scenarios and Actions' represents the materialization of RIBER's mission and capabilities. The work demonstrates that Latin American foresight can achieve both rigour and relevance, combining sophisticated methodologies with accessible narratives that humanize futures. The three scenarios—catastrophic, possible, and desirable—serve as powerful tools for strategic conversations, avoiding both paralysing pessimism and naive optimism.

The book leaves floating a clear and urgent question: What kind of Latin America do we want and what are we willing to do to build it? Will we have the collective will, shared vision, and necessary persistence to materialize our capacities into concrete reality? The answers will determine which scenarios Natalia, Luis, Mariana, Gael, Antay, Lucía, Renzo, Tainara, and the millions of Latin Americans will inhabit in 2050, evaluating the decisions we make today.

The Latin America Region in 2050 will not be the result of grand proclamations nor of heroic individual wills. It will be the emergent consequence of millions of daily decisions in classrooms, offices, parliaments, companies, and communities, made (or not made) in the coming years. RIBER, through its decade of work, has guided the path, but does not walk it for us. It shows us possible futures but does not construct them automatically. It provides us conceptual tools but is not a substitute for political will and citizen action.

As the network enters its second decade, its commitment to open governance, university collaboration, and futures congresses positions it to continue as a vital space for anticipatory thinking in Ibero-America. The challenge ahead is not merely institutional survival, but deepening impact—ensuring that foresight becomes embedded in decision-making processes across sectors and scales, from local communities to regional policies.

In an era demanding long-term thinking more than ever, RIBER stands as a testament to what regional collaboration can achieve when guided by shared values, methodological rigour, and genuine commitment to building better futures for all Ibero-Americans.

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LIST OF AUTHORS

Karelys Abarca

Karelys Abarca is the Communications Director of the Ibero-American Foresight Network. She is an economist, graduated from the Central University of Venezuela, and has a Master's in Management and Public Policy from the Faculty of Physical and Mathematical Sciences at the University of Chile. Karelys is a consultant at the Economic Commission for Latin America and the Caribbean (ECLAC) as well as a visiting professor and researcher at the Faculty of Government of the University of Chile and at the Central University of Chile. She is a Founding Member of the Ibero-American Foresight Network.

Muhammad Alaraby

An award-winning Arab Egyptian researcher specializing in strategic foresight and international security. He is currently the Head of the Strategic Foresight Program at the Future for Advanced Research and Studies (FARAS) in Abu Dhabi and serves as the Editor-in-Chief of Trending Events magazine. Previously, he was a Senior Researcher at the Bibliotheca Alexandrina's Centre for Strategic Studies. Muhammad holds a master's degree in Global Affairs (with a focus on International Security) from the American University in Cairo (AUC), completed his undergraduate studies in Political Science at Cairo University and the Free University of Berlin, and is currently pursuing a postgraduate diploma in International Affairs, specializing in espionage and surveillance, at King's College London. In 2019, he joined the Cairo School for Liberal Arts and Sciences, facilitating courses and study labs on critical futures studies and future politics.

A prolific contributor to his field, Muhammad was part of the AUC research team for the World Bank-sponsored project *Building for Peace: Reconstruction for Security, Sustainable Peace and Equity in MENA*. He also co-edited the AUC's Centennial Project, *Almostaqbal: The Middle East Looking Forward*, and recently edited Sean McFate's *Armed Politics: Lectures in War and Strategic Foresight*. In recognition of his work, he received the 2022 Arab Youth Award from ALECSO's Arab Institute for Research and Studies for his influential study, *Foreseeing Arab*

Futures: Issues, Trends, and Scenarios. He is an Africa Expert at the International Team for the Studies of Security (ITSS), Verona and a co-founder of the Arab Futures Society. His current research focuses on urban futures, conflict and urbanity in the Middle East, and the intersection of technology and future politics.

Paola Aceituno O.

Paola Aceituno O. holds a PhD in Management, a Master's degree in Management Sciences from the University of Santiago de Chile, and a Master's degree in Political Science, as well as a postdoctoral qualification from the Faculty of Economic Sciences of the University of Buenos Aires, Argentina.

Specialist in Strategic Foresight for decision-making. Academic and researcher at the Technological University of the State of Chile (UTEM), and Director of the Prospectiva Chile Center for Studies, dedicated to research on trends, complex scenarios, foresight, and anticipation for planning in public and private management. Editor of the Scientific Journal of Political and Strategic Studies (UTEM). She is affiliated as a consultant with the Latin American and Caribbean Institute for Economic and Social Planning (ILPES) of the Economic Commission for Latin America and the Caribbean (ECLAC), and is co-founder of the Chilean Council for Foresight and Strategy. She also coordinated the working group on institutional frameworks for the bill drafted by the Committee on the Future, Science, Technology, Knowledge, and Innovation of the Chilean Senate, aimed at establishing a framework for prospective and anticipatory governance within the Chilean State.

Affiliated with the University Institute for Research in Latin American Studies at the University of Alcalá, Spain; the Research Group on Foresight and Strategic Thinking at Universidad del Valle, Colombia (COLCIENCIAS); and the Center for Research in Public Administration (CIAP) at the University of Buenos Aires.

Mara Di Berardo

Mara Di Berardo is Communications Director and Italy Node Co-Chair of The Millennium Project, Communication Officer of the Foresight Europe Network, Communication Officer at the Department of Political and Social Sciences at the University of Bologna, and consultant for research and public bodies and social organizations. She has been a research fellow and technologist in Communication and Project Management at the National Research Council of Italy and she holds a PhD in Cultures, Languages, and Politics of Communication and a degree in Communication Sciences.

Shermon Cruz

Shermon Cruz is a futurist, academic, researcher and consultant working across government, education, civil society, and industry in the Philippines and the Global South. He is Chief Futurist at the Center for Engaged Foresight, Chair of The Millennium Project Philippines Node, UNESCO Chair on Anticipatory Governance and Regenerative Cities at Northwestern University, Founding Chair of the Global South Futures Community, and a PhD Candidate at the University of the Sunshine Coast, Australia. He formerly served as Chair of the Association of Professional Futurists and is currently an adjunct faculty at the Asian Institute of Management and fellow of the Philippine Public Safety Academy. Shermon develops culturally grounded approaches to strategic foresight, participatory futures, and anticipatory governance, with a focus on translating futures inquiry into sustained organizational and societal practice.

Hidenori Gamo

Hidenori Gamo is a Visiting Researcher at the Center for S&T Foresight and Indicators, the National Institute of Science and Technology Policy (NISTEP), Japan. His interests are in understanding and clarifying key features of making innovation happen in the industrial world. He holds a Ph.D. in engineering (Kyoto University).

Guillermo Gándara

Guillermo Gándara is Executive Director of the Ibero-American Foresight Network, President of the Mexican Node of the Millennium Project, Professor, researcher, and expert consultant in methodologies for studying futures. Guillermo is passionate about sustainability and the planet's terrestrial and marine ecosystems. He has 35 years of experience working from academia with civil society organizations, government, and businesses on the design and construction of futures. Guillermo has authored nine books on foresight methodology, mexican & latinamerican foresight, environmental foresight, and urban foresight. He immerses himself in the metaverse by designing and implementing virtual reality resources for educational innovation and the teaching of foresight. Guillermo is a founding member of the Ibero-American Foresight Network and Mexican Networks of Futures, and a member of the Millennium Project, the World Future Studies Federation, the World Future Society–Mexico, the International Society for Development and Sustainability, the Mexican Council on Foreign Relations (COMEXI), the Latin American Studies Association (LASA), the Alica Biosphere Foundation, and the Constellation of Futurists.

Judit Gáspár

Judit Gáspár, PhD is associate professor and Head of the Decision Sciences Department at the Corvinus University of Budapest, lecturing on Decision-Making Skills, Decision Techniques, with research interest in decision-making, strategy-as-practice, foresight, participatory and reflexive methodologies. Judit is involved in research programmes such as Enhancing Responsible Research and Innovation Through Curricula in Higher Education; Ecological Horizon Scanning: Hungary 2050; Mobilising Corporate Foresight Potential among V4 Countries, Community Engaged Research and Learning (CERL), Models, Assessment, and Policies for Sustainability (MAPS). She is a founding member of Corvinus Science Shop to support service learning and community-based research activities. Trained facilitator of Social Dreaming and Social Photo Matrix, methodologies that focus on the psycho- and socio-analytic study of organizations/systems.

Iryna Gerasymenko

MSc (Econ) Iryna Gerasymenko is a sustainable development and innovation specialist and foresight practitioner with almost two decades of experience working with the public and private sector. She currently serves as Innovation Ecosystem Assessment Consultant for Ukraine to the BOOST project of UNDP, Board Member and Community Lead of AImful Ry, and Founding Director of the Centre for Futures and Technology Innovations LLC (FUTX). She has worked with the Inter-Factional Union "Strategic Foresight of Ukraine" of the Ukrainian Parliament as Futures Intelligence Team Expert (2022) and Futures Research Consultant (2024–2025). Previously, she led initiatives and projects with UNDP in Ukraine (2015–2024) on entrepreneurship, sustainable development, and early recovery in conflict-affected regions, and was International Expert on EU Market Access for UNDP Tajikistan (2025). She interned at the Finland Futures Research Centre (FFRC) in 2025. Iryna holds an MSc (Econ) from Kyiv National Economic University and an MA (Hum) from Taras Shevchenko National University of Kyiv, and is currently pursuing another degree in Futures Studies at the University of Turku. Her research interests include impact entrepreneurship, innovation ecosystems, emerging technologies, foresight in rebuilding, the decolonization of foresight, and anticipatory governance.

Sirkka Heinonen

Dr. Sirkka Heinonen has been with Finland Futures Research Centre (FFRC), University of Turku as professor of Futures Studies since 2007, now as Professor Emerita. Previously she was Chief Research Scientist at VTT Technical Research Centre of Finland. She holds a PhD degree from Helsinki University, and has 40 years of research and teaching experience in futures studies, especially technology foresight and innovations, communities, and renewable energy. She is a Member of the Club of Rome, Co-Chair of the Helsinki Node of the Millennium Project, Guest Professor at the University of Science and Technology of China, Member of the Academy of Technical Sciences, and Honorary Member of the Finnish Society for Futures

Studies, and of Futures Finland. She is Director of the FFRC Helsinki Office and a member of the board of editors for six scientific futures journals.

Éva Hideg

Professor Éva Hideg is a futurist and professor emerita. She has a PhD and doctoral degree at the Hungarian Academy of Sciences (HAS) in futures studies. She is a member of the Scientific Committee for Statistics and Futures Research at HAS and member of the non-academic representative of General Assembly at HAS. Her main research fields are paradigms in the futures field, the application of foresight, and integral futures in different issues.

Yuko Ito

Yuko Ito has been the Senior Research Fellow at the National Institute of Science and Technology Policy (NISTEP) since 2002, on a variety of research programs in ST foresight, research trend analysis in emerging fields, and the analysis of specialized personnel in the engineering field, etc. Ito received a Ph.D. in Pharmaceutical sciences from Chiba University, Japan in 1992. Prior to joining NISTEP, she studied as a molecular biologist at public research institutes both in Japan and the United States.

Yutaro Kurogi

Yutaro Kurogi received his Ph.D. from Kumamoto University, where he conducted research in biology, with a particular focus on molecular genetics. He is currently working on science and technology foresight at the Center for S&T Foresight and Indicators, the National Institute of Science and Technology Policy (NISTEP), Japan.

Yuna Lee

Dr. Yuna Lee is a political scientist, historian, and Science Fellow specializing in Science, Technology, and Innovation (STI) governance, with a particular focus on artificial intelligence, strategy, and sustainable futures. She holds a PhD in Political

Science: Strategic Foresight in Government & Policymaking from University College London. She was also selected as a Science Fellow by the Ministry of Science and ICT (MSIT) in the Republic of Korea, as one of its Science and Technology Talent. Previously, she was a Visiting Scholar at the Yale School of Management, where she conducted research on strategic foresight in the U.S. government and the international policy landscape. Her research interests include future strategy, particularly statecraft and science diplomacy, crisis management, and anticipatory governance. Dr. Lee is currently contributing to publications on national foresight systems and AI adoption in policymaking, while also preparing the publications derived from her doctoral thesis.

András Márton

András Márton is assistant professor at the Department of Sustainability Management as part of the Institute of Sustainable Development, Corvinus University of Budapest, Hungary. His main fields of research are sustainable development, renewable energies, future orientation of decision makers, electromobility, strategic foresight, financial forecasting, strategic planning and management. He has experience in national and international projects (e.g., Ecological Horizon Scanning: Hungary 2050, RE-ACT – Self-reflection tools for smart universities acting regionally, post-Covid sustainable pathways for the V4 countries).

Ian Miles

Ian Miles is an Emeritus Professor at the Manchester Institute of Innovation Research, Alliance Manchester Business School, University of Manchester. His research includes the social and economic implications of technological change, the social shaping of technologies, evaluation of research programmes, and foresight methods and practice. He has numerous publications, many of them open-source. He began researching futures studies in the Science Policy Research Unit (University of Sussex) in the 1970s; was facilitator to a Panel of the UK Foresight Programme in the 1990s, and a member of teams

evaluating later stages of this programme, and the Colombian Foresight Programme, in later decades. Recent international collaborations have included the United Nations Industrial Development Organization (UNIDO)—on technology foresight for promoting a circular economy); the UN Commission on Trade and Development (UNCTAD)—on synergies between technology assessment and foresight; and the International Labour Organisation (ILO)—on productivity, and on sustainable futures in Central Asia.

Yasuhiro Ogura

Yasuhiro Ogura is a Senior Research Fellow at the National Institute of Science and Technology Policy (NISTEP), Japan. He is engaged in government foresight activity for science, technology, and innovation policies in Japan after getting a Ph.D. in Global Environmental Studies at Kyoto University.

Asako Okamura

Asako Okamura is a Senior Research Fellow at the Center for S&T Foresight and Indicators, National Institute of Science and Technology Policy (NISTEP), Japan. Her research focuses on science, technology, and innovation policy, particularly foresight practices and the relationship between science and society.

Hazel Salminen

Hazel Salminen is Secretary General of the Finnish Society of Futures Studies and a member of the Futura journal editorial board. She also facilitates futures workshops and lectures on futures studies and foresight, e.g. at the University of Turku / Finland Futures Academy and the Sivis Study Centre. Earlier, Hazel has worked as project researcher at the Finland Futures Research Centre and as project manager and futures expert for the Citizen Forum's foresight project Kohti tulevaa. She holds an MSc in Human Geography (University of Helsinki), with a minor in Futures Studies, and a vocational degree in economic administration. Hazel specializes in creative, col-

laborative, and embodied methods, combining futures work with improvisational theatre, and is currently a member of the professional group Improvisationsteater Stjärnfall.

Olena Sushyi

Dr. Olena Sushyi (PhD, Doctor of Sciences in Public Administration) conducts interdisciplinary research at the intersection of philosophy, political science, and social and political psychology. She has developed original theoretical frameworks, such as the societal paradigm and integral methodology for social forecasting; the concepts of societal crisis and societal dynamics of trauma; the social situation criterial-parametric model; the socio-cultural paradigm of public administration; as well as the concept of psychosocial culture in this area. For over a decade, her work has involved leading fundamental research projects, among them Psychological Approaches to Forecasting Social Processes (2020–2022), as well as serving as author and chief researcher for Psychological Foundations of Forecasting Scenarios of Development of the Social Situation in Ukraine (2023–2025) at the Institute for Social and Political Psychology (ISPP), NAES of Ukraine. She has been a visiting fellow at the University of Sydney, the University of Vienna, and Friedrich Schiller University of Jena. Dr. Sushyi has authored over 150 publications in the fields of social forecasting, public administration, crisis management, and nation- and state-building, including books such as Psychosocial Culture of Public Administration (2012), The Ukrainian Nation: The Art of Creation—The Philosophy of Destruction (2020), and Psychology in Forecasting Social Processes (2023, editor). Her scientific interests encompass the social, political, and psychological aspects of nation- and state-building, the psychology of mass consciousness, political psychology, social forecasting, and peacebuilding.

Patrick van der Duin

Patrick van der Duin is an experienced researcher, consultant and teacher in futures studies and innovation management. He holds a PhD in foresight ('Qualitative Futures Research

for Innovation', 2006, Delft University) and has worked at Delft University of Technology and Fontys University of Applied Sciences, as well as in industry roles at KPN Research and the 'Stichting Toekomstbeeld der Techniek' (Netherlands' Study Centre for Technology Trends). Currently, he is self-employed at 'Foresight & Innovation Management'. His work spans foresight, strategy, and technology-driven projects with government and private sectors. Patrick has published extensively, contributing to journals and books on foresight and innovation, and serves as Co-Editor-in-Chief for 'Futures: for the interdisciplinary study of futures, visioning, anticipation and foresight'.

Tero Villman

Doctoral Researcher Tero Villman works as a Development Manager at the Finland Futures Research Centre, University of Turku. His work includes futures research projects, collaborative strategic foresight engagements with organizations, development of foresight services and tools, and teaching. Within the futures field, his research themes have varied from mobility, industry and manufacturing, organizational and corporate foresight, scientific research and education, vocational education, and capability development to visioning and societal transformations. Previously, he worked in the IT sector for over a decade leading, facilitating and implementing different kinds of development and change initiatives for various industries. He holds a Master of Social Sciences degree in Futures Studies from the University of Turku and a Master of Science (Economics) degree in Information Systems Science from the University of Jyväskylä.

Yoshiko Yokoo

Yoshiko Yokoo is an affiliated fellow at the Center for S&T Foresight and Indicators, National Institute of Science and Technology Policy (NISTEP), Japan. She has been involved in foresight activities since the seventh S&T Foresight in 2001. Her research focuses on foresight for S&T policy making and its evaluation.

Our World of Futures Studies as a Mosaic, Part 2 continues the aim of bringing together approaches and applications of futures studies and foresight from different parts of the world, appreciating and learning from such various contexts. As a mosaic of collected works from around the world, complementing those published in Part 1, this book does not aim to define what futures studies or foresight is. It simply continues building a mosaic of perceptions and understandings to further illuminate how varied histories, traditions, methodologies, and practices have shaped futures studies and foresight in and across various regions, communities, cultures, networks and professional contexts.

The contributions explore the evolution, diverse intellectual lineages, structures, communities of practice, and forward-looking orientations shaping futures studies and foresight around the world. In this second part, a new emphasis is placed on how language and culture affects how we think, understand and speak about the future. This is because it directly contributes to how futures are being constructed and communicated, even though frequently unnoticed. Altogether, the publication emphasises reflective and inspirational insights that underscore the richness and diversity inherent in the field and support learning from the different contexts.

This publication is intended for all those interested in gaining a broader and deeper understanding of futures studies, its evolution and how it is currently conducted in different settings, as well as different perspectives impacting and relating to it.

"This is a truly impressive mosaic. The editors have curated a collection that demonstrates the breadth and the depth of our field today. By mapping the unique trajectories of futures studies from Egypt to the Philippines, from Hungary to Chile, this volume reveals the vitality of foresight as it adapts and takes root in diverse political and cultural soils. What I learned from reading the book is that the volume convincingly shows that the field continues to be pluralistic and layered. This is essential reading, a vital contribution that advances the field."

- Sohail Inayatullah
UNESCO Chair in Futures Studies
Sejahtera Centre for Sustainability and Humanity
Professor, Tamkang University, Taiwan
Editor, Journal of Futures Studies

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