

Futures and Foresight as Tools for Global Health

UNU-IIGH Working Paper,
December 2021

Copyright © 2021 United Nations University International Institute for Global Health, [Creative Commons Attribution-NonCommercial-ShareAlike 3.0 IGO \(CC BY-NC-SA 3.0 IGO\)](#).

Suggested citation: United Nations University - International Institute for Global Health (2021). "Futures and foresight as tools for global health".

DOI: 10.37941/RR/2021/5

Acknowledgements

This working paper was prepared by Emma Rhule, with additional research contributions from Inês Campos Ruas and writing and editing contributions from Tiffany Nassiri-Ansari.

Other reports in this series include:

- [Future Healthcare of Malaysia](#) (2020)
- [Futures of Gender and Global Health 2030](#) (2022)
- [Enabling Environments to Advance Gender Equality in Health](#) (2023)

For more information on this topic or other related UNU-IIGH projects, please contact Emma Rhule: rhule@unu.edu.

United Nations University – International Institute for Global Health (UNU-IIGH), Kuala Lumpur, Malaysia is the designated UN think tank on global health, serving as a policy translation hub for UN member states, agencies and programmes.



UNITED NATIONS
UNIVERSITY

UNU-IIGH

International Institute
for Global Health

FUTURES & FORESIGHT AS TOOLS FOR GLOBAL HEALTH

December 2021



FUTURES & FORESIGHT AS TOOLS FOR GLOBAL HEALTH

A UNU-IIGH WORKING PAPER | DECEMBER 2021

Humanity faces many ‘wicked’ problems, from the climate crisis and global pandemics to growing social inequality. In contrast to ‘tame’ problems, which are “definable, separable, and may have solutions that are findable”, [1] ‘wicked’ problems are characterised as ones that are subjective and hard to clearly define, have complex interactions with other issues, and are resistant to solving — “at best, they are only re-solved”. [1]

The complex and systemic nature of these challenges, compounded by highly dynamic and uncertain times, has led to criticisms of traditional policy-making processes and their ability to adequately address contemporary policy issues. [2] Critiques often centre on the short-term focus of the decisions being made, which is blamed on the time-bound nature of political appointments and the need to appeal to the voting public. Furthermore, concerns have been voiced about a lack of inter-generational fairness and the failure to adequately represent the interests of children and future generations, with calls to embed a ‘future generations test’ into all policies and for “the principle of safeguarding the interests of future generations [to] be woven into every level of our decision-making”. [3]

Incorporating futures-orientated thinking, methodologies, and practices into policy- and decision-making processes is one way to address these limitations. Many terms are used to refer to this approach, often interchangeably, and definitions vary. For the purpose of this paper, ‘Futures’ is defined as “a broad academic and professional field”, and ‘Foresight’ as an approach to thinking “systematically about the future to inform decision-making today”. [4] ‘Futures’ will be referred to in the plural to emphasise that there are many possible and alternative futures rather than a single future, whilst ‘foresight’ and ‘strategic foresight’ will be used synonymously.

Futures and foresight have been adopted by many actors, including the military, [5] corporate entities, [6] and non-profit organisations, [7] as a tool for rethinking how we approach problems, diversify perspectives, and promote action. One such example is the 2030 Agenda, which has foresight at its heart. [8] Born out of the United Nations Conference on Sustainable Development in Rio de Janeiro in 2012 and adopted in January 2016 as the successor to the Millennium Development Goals, the designers of the 2030 Agenda and the accompanying 17 sustainable development goals (SDGs) set out a bold and aspirational vision of a future world. In response, many Member States have initiated or expanded national foresight capacity and conducted national collective visioning exercises. [9] Within the health sector, futures and foresight have been used to inform disease-specific [10,11] and national public health programming [12] across various geographic and economic contexts. [13–17]

Benefits of integrating futures and foresight include:

An opportunity to break out of the constraints, perceived or actual, of the present: Futures and foresight call for a medium- to long-term time horizon which goes beyond typical five-year strategic planning intervals. This call to imagine a future state creates space for policymakers and influencers to identify and prepare for new opportunities, fosters divergent thinking, and spurs the development of innovative solutions.

A diversified evidence base for decision-making: With its emphasis on broad stakeholder engagement and the integration of varied forms of evidence to undertake collective visioning, foresight approaches can strengthen long-term capacities for ongoing participatory evidence-informed policy.

The development of agile and adaptive policy environments: Combining structured approaches to issue interrogation with an embrace of creativity and ambiguity contributes to the development of anticipatory governance capacities and 'future-ready' policies which can adjust quickly to changing conditions.

Despite these benefits and pockets of use, the uptake of futures and foresight has generally been underrepresented across the health sector. [18] Many of the approaches and policy recommendations used to deliver on SDG3, good health and well-being, are normative in approach and are failing to deliver the results required to achieve significant and sustainable change. This working paper documents our exploration of futures thinking and foresight approaches as potential tools for our institution and others within the global health space to produce 'future-ready' policy recommendations for improved health and well-being.

What are futures and foresight?

A futures-orientated approach builds on the assumption that the future is still being created and thus can be actively shaped or even constructed; futures thinking is a mindset as much as a field of study or practice. It asks practitioners to step outside what is known and imagine a world beyond current constraints (Figure 1). As such, it is not about predicting futures based on current trajectories and trends but instead embarking on a journey to envisage a diversity of futures ranging from the plausible to the probable, the desirable to the depressing. In doing so, individuals and organisations set themselves on a path towards adopting new ways of thinking about the future and harnessing those insights to move beyond reactive decision-making to proactive anticipation and adaptation. [19,20]

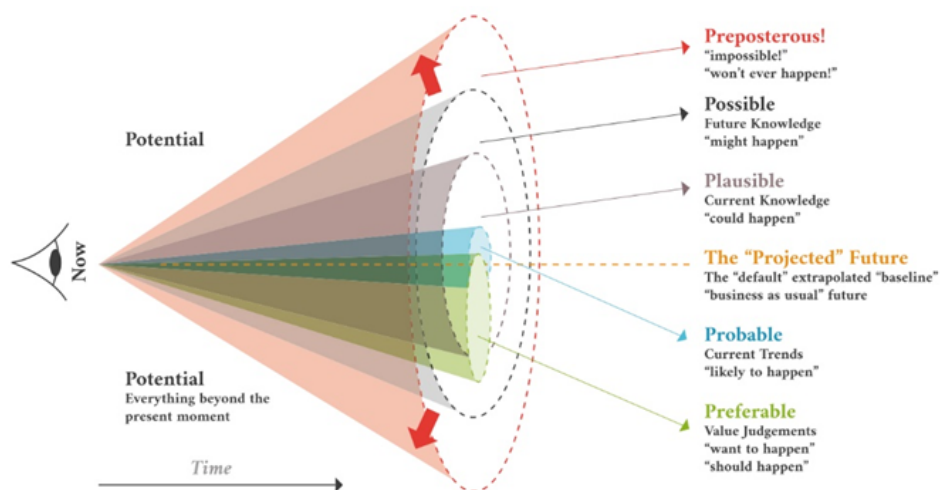


Figure 1: The Futures Cone is a visual tool to prompt the visioning of different future scenarios. Illustration from the UNDP Foresight Manual – Empowered Futures for the 2030 Agenda. [19]

Medium- to long-term time horizons are a key feature of foresight approaches and one of the major ways they differ from usual strategic or policy planning; foresight seeks to ‘innovate the present, by using the future’. To do so, it focuses not on what the world could look like in two or three years but in 10, 30, or even 50 years and beyond. [21] Whilst traditional planning processes start from the present and extrapolate forward, foresight approaches start by exploring a range of futures and working backwards. One advantage of moving in this direction, particularly in a highly dynamic world, is that uncertainty is ‘built in’ as opposed to the assumption that current trends will continue. It is important to note that the longer end of this range presents unusual time horizons for many organisations and exceeds most political cycles. [22] Meaningful integration of futures approaches requires planning and embedding ongoing and ad hoc strategic foresight processes.

There are four key components to a foresight approach:

Understand the building blocks of the future: Whilst no one can predict the future, there are elements of the past and present that we can identify, interrogate, and integrate along our journey into the unknown.

Understand how these connect at a systems level: Building blocks of the future do not operate in isolation. By understanding how they function systemically, we can understand what may shape our futures.

Develop and explore alternative futures: ‘Wicked’ problems are unpredictable in occurrence, nature, and impact. Similarly, windows of (positive) change may open at any moment and drastically shift trajectories. Foresight approaches can help envision and explore a diversity of futures.

Develop pathways between the present and potential futures: Foresight does not end with visioning. It requires working backwards from insights to inform the development, iteration, and implementation of actions today to enable us to realise desired or avoid disowned futures.

Many methods used in foresight are not unique to this approach; for instance, conducting literature reviews, running expert panels, or holding participatory workshops are second nature for many researchers and policy practitioners (Box 1). What is different about foresight is the content of interest, the time horizon, and how insights are translated into action.

Box 1: Popper's Foresight Diamond – a mapping of foresight methods

Popper's 'Foresight Diamond' (Figure 2) is a mapping of tools commonly used by foresight practitioners, many of which are familiar to those in research and policy- and decision-making contexts. The four points of the diamond represent the main knowledge source: creativity, evidence, expertise, and interaction. Popper describes creativity-based methods as a mix of original and imaginative thinking, relying heavily on the inventiveness of very skilled individuals or inspiration from collective brainstorming, whilst evidence-based methods contribute data representing the current state of understanding for analysis. On the horizontal axis, expertise-based methods rely on the skill and knowledge of individuals in a particular area or subject. However, expertise gains from interactions across domains and in democratic societies, legitimacy often requires participatory and inclusive 'bottom-up' activities; interaction-based methods facilitate this.

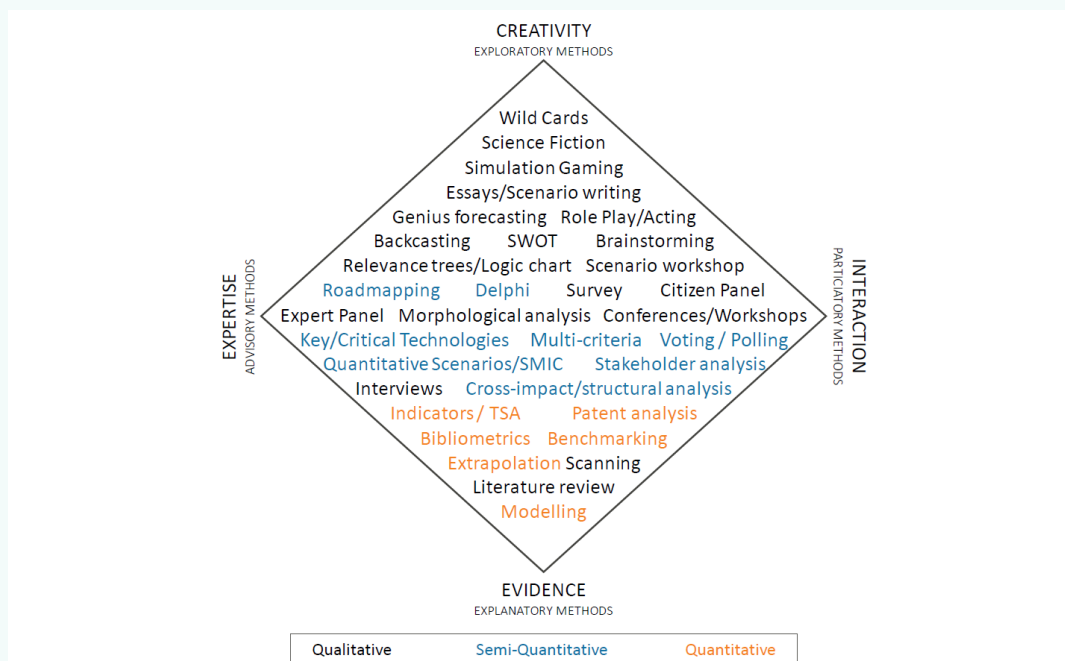


Figure 2: Popper's Foresight Diamond maps 33 common foresight methodologies. See also the related Futures Diamond, which maps an expanded list of 44 methods. [29]

Foresight is about more than adopting a single tool. Instead, its utility lies in the combination of tools and how they work together to achieve a particular end goal. Popper advocates charting a path through the diamond, pulling together qualitative, quantitative, and semi-quantitative elements to provide a multipronged assessment of the topic under exploration. Many public health research disciplines that prospectively forecast and model, such as epidemiology and health econometrics, [23] rely heavily on quantitative methods; quantitative data is also privileged by many decision makers in the push for evidence-based or -informed policy. [24-26] However, an appreciation of the value to be gained from mixed method approaches that incorporate qualitative tools and the integration of creative and narrative processes continues to grow [27,28] and foresight approaches can contribute to this shift.

Futures and global health: From research to policy and practice

Global health challenges are well suited to integrating a foresight approach because they are concerned with health conditions, structures, or issues that exist or persist over long periods of time. They also require multidisciplinary, cross-sectoral, and multi-stakeholder engagement and address issues requiring a cross-government and whole-of-society approach to health. As such, with their ability to contribute to improved “health systems and interventions and preparations for future public health incidents”, [30] the uptake of futures and foresight methods is growing.

Scenario-based methods have been highlighted as being particularly valuable to the health sector. [14,31] A scenario is “a story with plausible cause and effect links that connects a future condition with the present while illustrating key decisions, events, and consequences throughout the narrative”. [32] Scenario planning comprises several stages: identifying forces, referred to as drivers, that will shape the future; analysing the ways these drivers can interact; imagining a variety of resultant futures and interrogating the assumptions that underlie those futures; and then using these ‘visions of the future’ to conceive anticipatory strategies. [33] This process of combining ‘robust facts with imaginative projections of future developments and interlinkages’ [34] lends itself well to problems that cannot be solved in current and/or dynamic contexts, where the input of a broad range of perspectives beyond ‘traditional experts’ is key, and where ideologically misaligned interests need to come together – all accurate descriptions of the current state of global health (Box 2).

Despite documented successes of foresight for health programming and policy-making, it is not yet common practice in global health. [35] Some of the challenges lie in initiating foresight activities, whilst others exist further downstream, including in formulating and implementing recommendations. For the value of foresight to be realised within the global health sector, there must be an effort to translate foresight into the language of decision-makers and for implementers to build capacity not only to shift mindsets and generate insights but to take action. The COVID-19 pandemic provides a clear example of an ‘insight-action’ gap: A pandemic of this type had been predicted [36] and some national governments had conducted scenario-based planning exercises, [37,38] but recommendations were either ignored or inadequately implemented. [39,40]

Box 2: Uses of futures and foresight for global public health

In 2010, Brazil's Oswaldo Cruz Foundation (Fiocruz) ran the first round of Brasil Saúde Amanhã (Brazil Health Tomorrow). [15] With a 20-year time horizon, visioning exercises explored five themes, including organisation and management of the health system, the health workforce, and national health financing. A second round in 2015 took a deep dive into health financing and the broader macroeconomics for health, access to services, including geospatial provision, and specific aspects of the health workforce, including nursing. For both rounds, the themes were selected to align with Brazil's broader development framework, and a cooperation agenda was established with the Institute of Applied Economic Research (Instituto de Pesquisa Econômica Aplicada, IPEA), the government department responsible for economic research to inform planning and policy-making, an important step in ensuring that insights could be actioned. Similarly, provincial administrations in South Africa, [41] national governments in the Netherlands, [35] and regional entities, including the European Union [30] have conducted foresight exercises to inform their health policies.

With their focus on generating collective visions and narratives, scenario-based foresight practices are a useful tool for engaging a broad range of stakeholders, many of whom may sit outside of the traditional definitions of 'health experts'. In Vietnam, Nguyen and colleagues employed scenario planning as an action-research tool to engage with community members on existing sanitation and hygiene challenges in their commune and systemically address associated (re-)emerging infectious diseases. Over a series of workshops, they co-created best and worst-case scenarios, each with associated 'solutions', and assigned roles for groups within the community. They also sought to equip community members with a different mental model and logical steps for approaching other issues within their community. [42] Whilst scenario construction alone is rarely sufficient for strategy design, it can support evidence-informed decision-making as part of a larger process to generate alternative futures. Scenarios have been used to address a broad range of topics, including specific diseases, the pharmaceutical industry and drug regulation, human resources for health, and digital health. [14]

The full value of futures lies not merely in the exercise of visioning but in converting insight into action by integrating foresight throughout the policy lifecycle, from developing and implementing new, 'future-ready' policies to iterating and adapting existing ones (Figure 3). Anticipatory governance, the "systematic embedding and application of strategic foresight throughout the entire governance architecture, including policy analysis, engagement, and decision-making" [43] is one way to do so. It provides a facilitating environment to interrogate the embedded assumptions within policy processes, supports decision-making by stress-testing policy options, and assists with adapting to the speed and significance of change across the policy landscape.

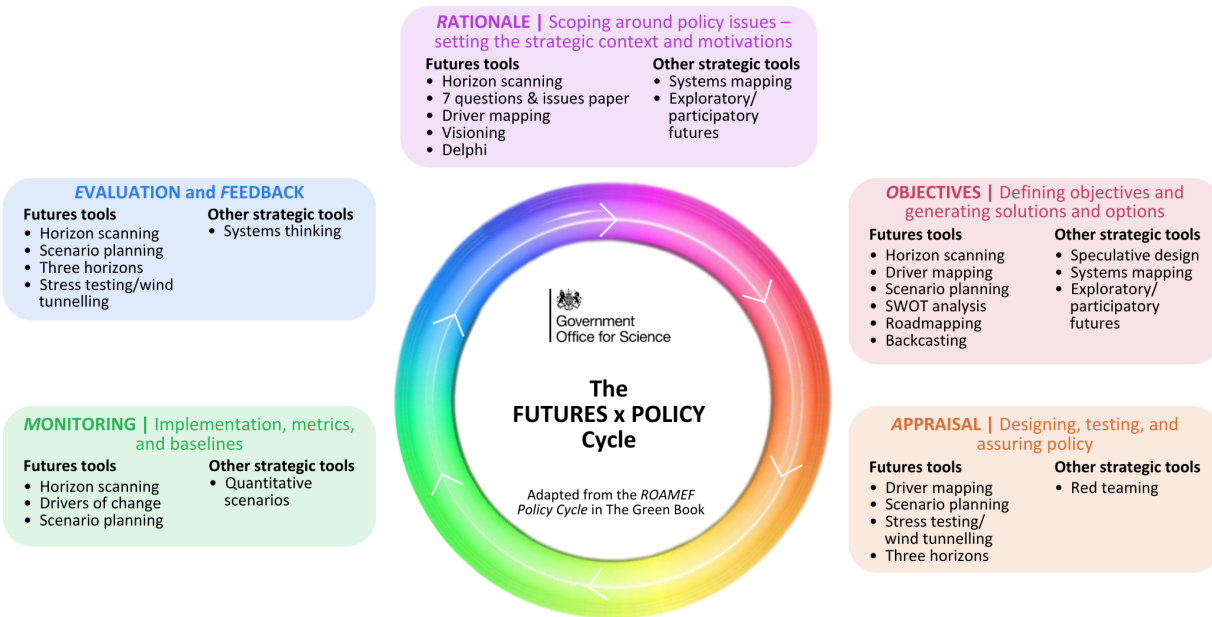


Figure 3: An adaptation of the FUTURES x POLICY cycle, [46] a map of futures methodologies overlaid on the ROAMEF policy cycle [47] developed by the UK Government Office for Science Futures team based on feedback from Futures practitioners and policymakers across government on which futures tools they use in policy-making.

We all have a stake in our futures; anticipatory governance is thus strengthened by the democratising nature of citizen participation. By including a variety of stakeholders in foresight exercises, bias towards futures that only represent a subset of individuals is minimised. To do so, it is imperative to look beyond traditional notions of ‘expertise’ and ensure citizen participation and multigenerational voices. Participatory futures leverage the power of the many to identify weak signals of change, foster the co-creation of contextually relevant inclusive futures, and catalyse distributed experimentation and innovation. [44,45]

What does this mean for the global health sector?

In an uncertain world navigating increasingly complex threats, experts and governments must reflect on how traditional policy-making, with its short-term and single-issue focus, falls short of the solutions we desperately need. [9] The COVID-19 pandemic brought into stark relief the devastating domino effect each sector can visit upon its neighbours during crises. Futures and foresight offer an opportunity to identify the intersections between drivers of change and how separate sectors can come together to shape a variety of potential realities. This is crucial as visions of health and well-being for all will remain out of reach if we fail to consider the need for climate justice to ensure continued access to clean water and nutrition, economic justice for continued shelter and safety, and social justice to preserve mental well-being and happiness.

We conclude this exploration of the potential value of futures and foresight within the global health sector with three recommendations to support sustained, critical, and holistic applications of futures thinking and foresight approaches.

1. Cultivate 'pracademics'.

A 'pracademic' is someone who is both an academic and an active practitioner in their subject area. Global health actors looking to develop their futures and foresight skills should take time to learn from adjacent fields with established foresight practices. Furthermore, they should combine gaining familiarity with the literature – both grey and peer-reviewed with first-hand practical experience. Short introductory workshops, both overview and methodology specific, would be valuable; however, individuals and institutions alike must be given time to embed the practice into the work that they are doing. This must also be supported by a broader culture that recognises that the initial learning curve may lead to extended project timelines.

At both the institutional and sectoral levels, internal scepticism for the introduction of a new methodology may hinder uptake and integration, placing pressure on budding practitioners and precluding the creation of an enabling environment in which people can learn, fail, and iterate. Additionally, innovation fatigue, bureaucratic structures that struggle to accommodate non-standard reporting methods, and challenges with monitoring and evaluation may also hinder the ability to demonstrate the utility of future-ready recommendations. Time and support should be given to engage with established foresight practitioners, build proficiency, and sustain interest to facilitate the integration of foresight approaches within global health.

2. Implement futures and foresight critically.

In adopting a futures mindset and integrating foresight approaches, we should embrace a positive mindset but engage critically. From the practitioners' perspective, are we ensuring the prioritisation of values, such as respect for a diversity of opinions, contextualised solutions, and the advancement of equity through our selection and use of methodologies? From an academic perspective, are we engaging not only with pieces advocating the benefits of futures but also with literature discussing the limitations? For example, Vollmar and colleagues discuss the challenges of scenarios for an evidence-based sector, particularly evidence-informed policy, due to the lack of a codified way of implementing scenarios and thus reporting on them. [14]

As we embark on this foresight journey, we recommend embedding processes to document and reflect, developing communities of practice within and between organisations, and incorporating indicators into project monitoring and evaluation frameworks.

3. Integrate foresight as part of a 'jigsaw puzzle' approach.

Futures and foresight strengthen, rather than supersede, existing tools and should be viewed as one of many interlocking jigsaw pieces which work together to make the whole greater than the sum of its parts. One example of incorporating a futures mindset and foresight approaches into a larger puzzle comes from the UN Secretary-General's 2021 report 'Our Common Agenda', [48] which outlines a series of proposals to reignite momentum for the SDGs and strengthen global governance.

A futures mindset and foresight approaches are not 'silver bullets'. The most value will be derived through adopting a 'jigsaw puzzle' approach that integrates existing research capacities with futures and foresight, systems thinking, and design thinking [49] to develop, deploy, and iterate policies.

Futures and foresight are integral to the UN's desired transformation into an organisation that can anticipate emerging threats, plan for more uncertainties, and take preventive action to build a better, more equal, and inclusive world. The Secretary General's report explicitly outlines a role for strategic foresight as part of a 'Quintet of Change'. [48] The quintet presents strategic foresight as one piece of the puzzle, working towards a 'United Nations 2.0' alongside data, analysis, and communications; innovation and digital transformation; performance and results orientation; and behavioural science for improved communications, innovative ideas, anticipatory governance, continuous improvement, and increased effectiveness. Strategic foresight and futures programmes are now established in multiple UN agencies, including UNDP, [50] UNESCO, [51] UNICEF, [52] and WHO, [53] with the aim of enabling anticipatory action and facilitating forward-looking policies. UNU is no exception, having incubated and hosted The Millennium Project, which connects futurists around the world to improve global foresight, from 1996 to 2006. [54,55]

At UNU-IIGH, we will be looking to build on UNU's futures legacy as we integrate a futures approach to our work, collaborate with and learn from other actors in health and adjacent spaces, and incorporate short-, medium-, and long-term foci into policy recommendations to catalyse sustainable improvements towards health and well-being for all.

References

- 1 Rittel H, Webber M. Dilemmas in a General Theory of Planning. *Policy Sci.* 1973;4(2):155–69.
- 2 Mueller B. Why public policies fail: Policymaking under complexity. *EconomiA.* 2020;21(2):311–23.
- 3 Bird J. Lord Bird: We must shift from short-term thinking and incorporate a future generations test into policy-making. [Internet]. Politics Home. 2020. Available from: <https://www.politicshome.com/thehouse/article/we-must-shift-from-shortterm-thinking-and-incorporate-a-future-generations-test-into-policy-making>
- 4 Conway M. Foresight: an introduction. 2015;43.
- 5 Zalman A. Maximizing the Power of Strategic Foresight. *Jt Force Q.* 2019;95(4th Quarter):14–21.
- 6 Foresight HQ Team. The Mont Fleur Scenarios (Adam Kahane/ Shell, 1992) [Internet]. Foresight HQ. 1992 Available from: <https://foresight-hq.com/the-mont-fleur-scenarios-adam-kahane-shell-1992/?lang=en>
- 7 Krishnan A. Futures and Organisational Transformation [Internet]. Medium. 2018. Available from: <https://aarathi-krishnan.medium.com/futures-and-organisational-transformation-33fd9a8ec94>
- 8 UN General Assembly. Transforming our world: the 2030 Agenda for Sustainable Development [Internet]. New York: United Nations; 2015 Oct p. 16–7. Report No.: A/RES/70/1. Available from: <https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf>
- 9 Tully C. Foresight, the SDGs and international innovations around political governance [Internet]. 2017 p. 9. Available from: <https://soif.org.uk/app/uploads/2019/07/Cat-Tully-ISA-2017.pdf>
- 10 Butland B, Jebb S, Kopelman P, McPherson K, Thomas S, Mardell J, et al. Tackling obesities: future choices-project report. Vol. 10. Citeseer; 2007.
- 11 Dewe P, Kompier M. Mental capital and wellbeing: making the most of ourselves in the 21st century: wellbeing and work: future challenges. 2008.
- 12 Schoemaker CG, van Loon J, Achterberg PW, van den Berg M, Harbers MM, den Hertog FRJ, et al. The Public Health Status and Foresight report 2014: Four normative perspectives on a healthier Netherlands in 2040. *Health Policy.* 2019;123(3):252–9.
- 13 Department: Science and Innovation. Foresight Reports [Internet]. The National Research and Technology Foresight Project. 2000. Available from: <https://www.dst.gov.za/index.php/resource-center/reports/foresight-reports>
- 14 Vollmar HC, Ostermann T, Redaelli M. Using the scenario method in the context of health and health care—a scoping review. *BMC Med Res Methodol.* 2015;15(1):1–10.
- 15 Gadelha P, Noronha J. Thinking and Building the Future: Health Tomorrow (Pensar e construir o futuro: Saúde Amanhã). <http://www.ipea.gov.br> [Internet]. 2016. Available from: <https://repositorio.ipea.gov.br/handle/11058/7087>
- 16 Bank AD. Futures Thinking in Asia and the Pacific: Why Foresight Matters for Policy Makers [Internet]. Asian Development Bank; 2020. Available from: <https://www.adb.org/publications/futures-thinking-asia-pacific-policy-makers>
- 17 Center for Strategic Futures. Foresight [Internet]. Singapore. Available from: <https://www.strategygroup.gov.sg/media-centre/publications/foresight>
- 18 Keenan M, Popper R. Comparing foresight “style” in six world regions. Butter M, Brandes F, Keenan M, Popper R, editors. *Foresight.* 2008;10(6):16–38.
- 19 UNDP GCPSE. Foresight Manual - Empowered Futures for the 2030 Agenda [Internet]. Available from: <https://www.undp.org/publications/foresight-manual-empowered-futures>
- 20 UNDP GCPSE. Foresight The Manual [Internet]. Available from: <https://coursehero.com/file/58849854/GCPSE-ForesightManual-onlinepdf/>
- 21 Brier DJ. Marking the future: a review of time horizons. *Futures.* 2005;37(8):833–48.
- 22 Berkhout F, Hertin J. Foresight futures scenarios: Developing and applying a participative strategic planning tool. *Greener Manag Int.* 2002;2002:37–52.
- 23 Wepner B, Giesecke S. Drivers, trends and scenarios for the future of health in Europe. Impressions from the FRESHER project. *Eur J Futur Res.* 2018;6(1):2.

References

- 24 Cairney P, Oliver K. Evidence-based policymaking is not like evidence-based medicine, so how far should you go to bridge the divide between evidence and policy? *Health Res Policy Syst.* 2017;15(1):35.
- 25 Test, Learn, Adapt: Developing Public Policy with Randomised Controlled Trials [Internet]. Available from: <https://www.bi.team/publications/test-learn-adapt-developing-public-policy-with-randomised-controlled-trials/>
- 26 Natow R. How do policymakers perceive qualitative research? [Internet]. *Evidence & Policy Blog.* 2021. Available from: <https://evidenceandpolicyblog.co.uk/2021/04/07/how-do-policymakers-perceive-qualitative-research/>
- 27 De Allegri M, Sieleunou I, Abiuro GA, Ridde V. How far is mixed methods research in the field of health policy and systems in Africa? A scoping review. *Health Policy Plan.* 2018;33(3):445–55.
- 28 Ford TN, Goger A. The value of qualitative data for advancing equity in policy [Internet]. *Brookings.* 2021. Available from: <https://www.brookings.edu/research/value-of-qualitative-data-for-advancing-equity-in-policy/>
- 29 Popper R. The Diamond | Futures Diamond [Internet]. 2011. Available from: <https://www.futuresdiamond.com/the-diamond>
- 30 Alvarenga A, Bana e Costa CA, Borrell C, Ferreira PL, Freitas Â, Freitas L, et al. Scenarios for population health inequalities in 2030 in Europe: the EURO-HEALTHY project experience. *Int J Equity Health* [Internet]. 2019;18. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6593570/>
- 31 Masum H, Ranck J, Singer PA. Five promising methods for health foresight. *Foresight.* 2010;12(1):54–66.
- 32 Glenn JC, Gordon TJ, editors. *Futures Research Methodology — Version 3.0.* 3.0. The Millennium Project; 2009. 1300 p.
- 33 Scoblic JP. Learning from the Future. *Harvard Business Review* [Internet]. 2020. Available from: <https://hbr.org/2020/07/learning-from-the-future>
- 34 Grabtchak A. Scenarios: Looking for Alternatives [Internet]. *Future Proof.* 2021. Available from: <https://www.futuresplatform.com/blog/scenarios-looking-for-alternatives>
- 35 Verschuuren M, Hilderink HBM, Vonk RAA. The Dutch Public Health Foresight Study 2018: an example of a comprehensive foresight exercise. *Eur J Public Health.* 2019;30(1):30–5.
- 36 Inayatullah S, Black P. Neither A Black Swan Nor A Zombie Apocalypse: The Futures Of A World With The Covid-19 Coronavirus [Internet]. *Journal of Futures Studies.* 2020. Available from: <https://jfsdigital.org/2020/03/18/neither-a-black-swan-nor-a-zombie-apocalypse-the-futures-of-a-world-with-the-covid-19-coronavirus/>
- 37 Leigh Day. Eleven pandemic simulation exercises were staged between 2015-19 | Leigh Day [Internet]. Available from: <https://www.leighday.co.uk/news/news/2021-news/eleven-pandemic-simulation-exercises-were-staged-between-2015-19/>
- 38 BBK. LÜKEX 07 [Internet]. BBK. 2019. Available from: <https://www.bbk.bund.de/DE/Themen/Krisenmanagement/LUEKEX/documents/art-luekex07.html>
- 39 Pegg D, Booth R, Conn D. Revealed: the secret report that gave ministers warning of care home coronavirus crisis. *The Guardian* [Internet]. 2020. Available from: <https://www.theguardian.com/world/2020/may/07/revealed-the-secret-report-that-gave-ministers-warning-of-care-home-coronavirus-crisis>
- 40 Pegg D. What was Exercise Cygnus and what did it find? *The Guardian* [Internet]. 2020. Available from: <https://www.theguardian.com/world/2020/may/07/what-was-exercise-cygnus-and-what-did-it-find>
- 41 Western Cape Government Health. 2020: The future of health care in the Western Cape [Internet]. *Western Cape Government Health;* 2011. Available from: https://www.westerncape.gov.za/other/2011/12/healthcare_2020_-_9_december_2020.pdf
- 42 Nguyen V, Nguyen-Viet H, Pham-Duc P, Wiese M. Scenario planning for community development in Vietnam: a new tool for integrated health approaches? *Glob Health Action.* 2014 Dec 1;7(1):24482.
- 43 OECD. *Strategic Foresight for Better Policies - Building Effective Governance in the Face of Uncertain Futures* [Internet]. 2019. Available from: <https://www.oecd.org/strategic-foresight/ourwork/Strategic%20Foresight%20for%20Better%20Policies.pdf>

References

- 44 Ramos J, Sweeney JA, Peach K, Smith L. Our futures: by the people, for the people. 2019.
- 45 Ramos J, Uusikyla I, Nguyen LT. Anticipatory Governance — A Primer | United Nations Development Programme [Internet]. UNDP. Available from: <https://www.undp.org/vietnam/blog/anticipatory-governance-primer>
- 46 Future proof policy: A guide to using foresight in policy making - Futures, Foresight and Horizon Scanning [Internet]. 2021. Available from: <https://foresightprojects.blog.gov.uk/2021/10/19/future-proof-policy-a-guide-to-using-foresight-in-policy-making/>
- 47 HM Treasury. The Green Book: appraisal and evaluation in central government [Internet]. GOV.UK. 2020. Available from: <https://www.gov.uk/government/publications/the-green-book-appraisal-and-evaluation-in-central-government/the-green-book-2020>
- 48 Secretary-General UN. Our common agenda: Report of the Secretary-General. U N. 2021;63.
- 49 Systems, Futures & Design Thinking: Sustainability Workshops in Hong Kong [Internet]. Rachel Jetel. 2017. Available from: <https://www.racheljetel.com/recent-projects/2017/7/26/systems-futures-design-thinking-sustainability-workshops-in-hong-kong>
- 50 UNDP. Foresight and futures | United Nations Development Programme [Internet]. Available from: <https://www.undp.org/tag/foresight-and-futures>
- 51 UNESCO. Futures Literacy [Internet]. UNESCO. 2019. Available from: <https://en.unesco.org/futuresliteracy/about>
- 52 Cocco-Klein S, Haj-Ahmad, J, King-Guffey CA, King K, Lummis B, McDonald K, et al. Adolescents Shaping Their Future: A Foresight Toolkit [Internet]. Oleinik Y, Roy H, editors. UNICEF; 2016. Available from: <https://participationpool.eu/wp-content/uploads/2020/05/UNICEF-2016-Adolescents-Shaping-Their-Future-A-Foresight-Toolkit.pdf>
- 53 WHO Foresight: Monitoring emerging technologies and building futures-thinking [Internet]. Available from: <https://www.who.int/activities/who-foresight---monitoring-emerging-technologies-and-building-futures-thinking>
- 54 The Millennium Project: History [Internet]. The Millennium Project. Available from: <https://www.millennium-project.org/about-us/history/>
- 55 The Millennium Project: Publications - State of the Future [Internet]. The Millennium Project. Available from: <https://www.millennium-project.org/publications-2-3/>

Acknowledgements

This working paper was prepared by Emma Rhule, with additional research contributions from Inês Campos Ruas and writing and editing contributions from Tiffany Nassiri-Ansari. For more information on this topic or other related UNU-IIGH projects, please contact Emma Rhule: rhule@unu.edu

Suggested citation: United Nations University - International Institute for Global Health (2021). "Futures and foresight as tools for global health". DOI: 10.37941/RR/2021/5