



Foresight Research on African Innovation: Pathways and Signposts to Scenarios for 2035

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Contents

Authors.....	3
Abstract	3
Keywords.....	4
Acknowledgements	4
I. Introduction	4
II. Building the Scenarios Published in 2013	5
A. Methodological Underpinning	5
B. Client Dimension	6
C. Contextual and Transactional Environments.....	6
D. Purpose.....	7
E. Process	7
III. Revisiting the 2013 Scenarios in 2024.....	9
A. Monitoring, Evaluation, and Learning (MEL) from Scenarios	9
B. Participation in IDRC Peer-learning Foresight Session.....	11
C. Engagement at UN Summit of the Future	11
D. Convening the Signposting to Future Scenarios Workshop	13
IV. Tracking Outcomes from Scenario Use	14
V. Potential Value Co-creation with Scenario Actors.....	15
VI. Wind-tunnelling IP Responses to Climate Change	16
A. CAP on IP for Climate Action Project.....	16
B. Wind-tunnelling Foresight Method	17
References	17

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Abstract

In the period 2010-13, the Open AIR network conducted a strategic foresight research exercise that explored possible future scenarios for innovation, intellectual property (IP) and knowledge governance on the African continent. That research produced three distinct scenarios for African innovation in 2035: one that would be driven by high technology; a second emphasising informal innovation; and a third grounded in Indigenous knowledge systems. Open AIR's foresight research was distinctive because, among other things, the scenarios were client-agnostic, i.e., constructed for public-interest research rather than any specific client or organisation. Since 2013, these scenarios have guided an international, interdisciplinary research agenda and influenced engagements with innovation policy and regulation. In 2024, at the halfway point on the path to 2035, Open AIR undertook a project, Signposting to Future Scenarios, which sought to revisit and update the network's foresight work. This Working Paper sets out the details of the original scenario-building process of 2010-13, describes the activities of the 2024 Signposting to Future Scenarios project, and provides reflections, generated during the 2024 project, on: tracking outcomes from scenario use; generating potential value through co-creation with scenario actors; and wind-tunnelling IP responses to climate change. The reflective workshop and Working Paper jointly comprise, to our knowledge, a unique example

of long-term monitoring, evaluation, and learning from strategic foresight work done more than a decade earlier.

Keywords

innovation, Africa, foresight research, futures, scenarios, wind-tunnelling, climate change, intellectual property (IP)

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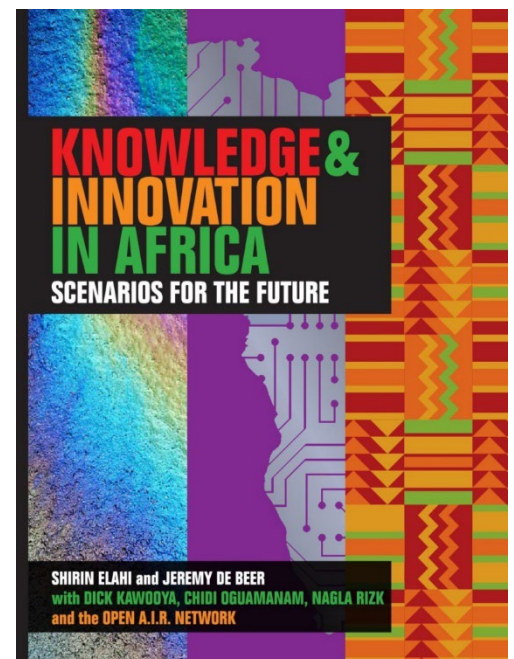
This working paper was developed under the auspices of the Open African Innovation Research (Open AIR) network, a partnership among the University of Ottawa, the University of Cape Town, the University of Johannesburg, Strathmore University in Nairobi, the Nigerian Institute of Advanced Legal Studies, and The American University in Cairo. The paper draws on findings from a project supported by a grant (109875-002) from the International Development Research Centre (IDRC) and a grant (895-2024-0072) from the Social Sciences and Humanities Research Council (SSHRC). Assistance with finalisation of this paper was provided by Open AIR PhD researchers Alemshet (Alex) Addisalem at the University of Ottawa and Ngonidzaishe (Nate) Gotora at the University of Cape Town.

I. Introduction

The Open African Innovation Research (Open AIR) network's publication, in 2013, of its scenarios research report, *Knowledge and Innovation in Africa: Scenarios for the Future*, challenged prevailing assumptions and biases about the future of innovation and knowledge governance across the continent (Open AIR, 2013). The scenarios presented in the publication—**Wireless Engagement**, **Informal the New Normal**, **Sincerely Africa**—were the result of a multi-year process, between 2010 and 2013, involving extensive research, numerous workshops, and significant stakeholder engagement. This foresight exercise culminated in three distinct, plausible futures for Africa in 2035, aimed at fostering strategic thinking around knowledge governance (including intellectual property (IP) protections), innovation, and related policy.

The year 2024 marked the halfway point between the 2013 scenarios report and the year 2035 in which the scenarios were set. That halfway point provided an opportunity to revisit the initial foresight work and to reflect on the relevance of the original scenarios, including the drivers of change that had been identified over a decade earlier. The timing of this reflection coincided with a UN summit convened to chart a path for global cooperation beyond the Sustainable Development Goals (SDGs). This international event, as well as the International Development Research Centre's (IDRC's) foresight scoping initiatives (IDRC, 2023, 2024a, 2024b, 2025), created a fertile environment for renewed dialogue on future-oriented research.

Open AIR capitalised on this moment by undertaking a set of strategic activities in 2024, through the Signposting to Future Scenarios project, which were designed to synthesise and advance the network's foresight practices. These activities included participating in, and presenting to, an IDRC peer-learning event



2013 scenarios publication

on foresight research; participating in the UN Summit for the Future; and convening a three-day Open AIR **Signposting for Future Scenarios Workshop**.

This Working Paper describes the development of the scenarios in the period 2010-13, sets out the key activities and outcomes of the 2024 Signposting to Future Scenarios project, and provides reflections on:

- tracking outcomes from scenario use;
- potential value co-creation with scenario actors; and
- wind-tunnelling IP responses to climate change.

II. Building the Scenarios Published in 2013

In the period 2010-13, Open AIR network members conducted empirical research studies in African innovation contexts, and these findings fed into, *inter alia*, the parallel research process focused on foresighting. The core outputs from this period were the 2013 scenarios compendium, *Knowledge and Innovation in Africa: Scenarios for the Future* (Open AIR, 2013), and a 2014 companion volume, *Innovation and Intellectual Property: Collaborative Dynamics in Africa* (de Beer et al., 2014). This Working Paper is grounded in the reflections process undertaken in 2024 in relation to the 2013 scenarios report.

There are many forms of foresight, each with its own purposes and outputs, but in the case of Open AIR, the decision was made that the level of complexity and uncertainty inherent in IP and development made scenarios the foresight methodology of choice (Cordova-Pozo & Rouwette, 2023). From the very start of the project, the scenarios focused on two overarching research questions that were at the core of Open AIR's research and engagement objectives:

- How can open collaborative innovation help knowledge-based businesses scale up and seize the new opportunities of a global knowledge economy?
- Which knowledge governance policies will best ensure that the social and economic benefits of innovation are shared inclusively?

The resulting foresight journey was slow-paced and iterative, involving numerous African and non-African participants, both directly and indirectly.

A. Methodological Underpinning

There are many different methodologies for scenario-building. Open AIR's 2010-13 method was based on the Shell–Global Business Network (GBN) scenario approach that now dominates scenario development in many countries. Shell originated non-military scenario-building. After a Shell scenario planner, Peter Schwartz, published *The Art of the Long View* (Schwartz, 1991), and formed the GBN with colleagues, this approach was popularised. Shell's "intuitive logics", combined with the deductive GBN matrix, soon became the default scenario technique (Bishop, 2007; Oliveira et al., 2018). The GBN matrix is based on two dimensions, or polarities, of uncertainty—with four cells representing, alternatively, four combinations of the poles of the two uncertainties, each of which contains a kernel or logic of a plausible future. Each kernel is then elaborated into a complete story or other presentation, and the implications for the focal issue or decision are discussed.

In addition to its popularity, another reason for choosing the Shell–GBN approach was that Open AIR's lead for its 2010-13 foresight work, this paper's second-listed author Shirin Elahi, had served as lead researcher on two Shell global scenario-building projects: the RiskWorld scenarios (Wilkinson et al., 2003) and the UNAIDS AIDS in Africa scenarios (UNAIDS, 2005). Elahi subsequently led development of the European Patent

Office (EPO) scenarios that were published in 2007 (EPO, 2007), and later the UNFPA scenarios (UNFPA, 2023). The Shell–GBN approach has subsequently been further refined and crystallised as the Oxford Scenario Planning Approach (OSPA) (Ramirez & Wilkinson, 2016), which is taught as the Oxford Scenarios Programme by the University of Oxford’s Said Business School.

B. Client Dimension

The Oxford Scenarios Programme defines scenarios as “a small set of MANUFACTURED possible future contexts OF something FOR someone FOR a purpose WITH a pre-specified use interface & actual USE” (Ramirez, 2024). They are built for someone—with the someone almost invariably being the client. The challenge this represents is that of self-interest, i.e., the tendency for scenarios to be built as bespoke tools for those with access to resources for the purposes of strategic planning. When scenario-builders are all part of a relatively homogenous client organisation, or one with a clear mission, their thinking almost invariably reflects the organisation’s particular aspirations for, and assumptions about, the future. Sometimes organisations use their scenarios for enlightened self-interest, attempting to share key insights with other stakeholders.

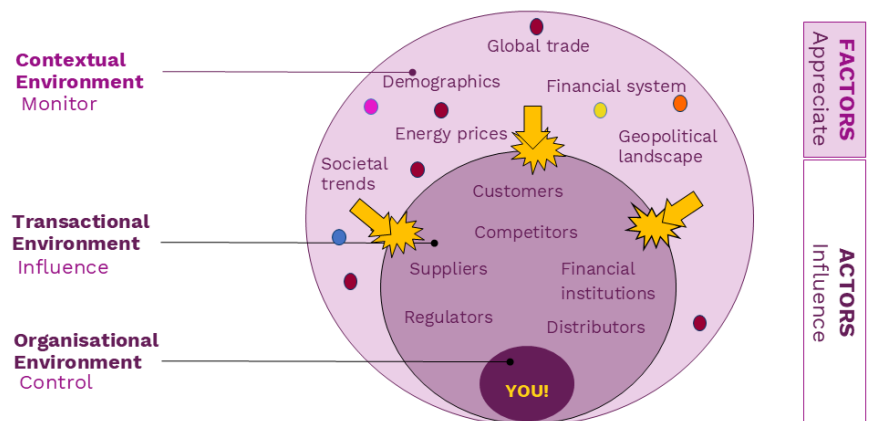
The client dimension represents a critical difference between the Shell–GBN–OSPA method and the Open AIR approach. Open AIR took a continent-wide perspective and assumed numerous and diverse potential clients. Multiple-stakeholder engagement was conceived as a critical element, in order to encourage strategic conversation and to seek insights from a diverse range of entities and individuals affected by innovation and knowledge governance—as well as from boundary partners capable of influencing policy, regulation and practice. Eight key constituents were identified:

- innovators, creators and entrepreneurs, including individuals and companies;
- business groups such as chambers of commerce and industry associations;
- national, regional and international law-makers and policymakers;
- issue leaders, such as politicians, judges, professors, and practitioners;
- scientific/cultural research and development funding bodies;
- university researchers, administrators and technology transfer officials;
- rights-holders, including collective rights management organisations; and
- representatives of Indigenous communities.

C. Contextual and Transactional Environments

It has been argued that organisations operate in a “transactional environment”, which is the most immediate part of their “contextual environment” and is where they have the greatest potential to exert influence (Emery & Trist, 1965; Jaroucheh et al., 2011; Ramirez, 2024; Trist, 1981). The transactional environment is where interaction with other players takes place. These interactions create a dynamic, reflexive reality where players are able to influence others and, in turn,

Contextual and transactional environments



Sources: Adapted from van der Heijden (1993, p. 155) and Ramirez and Wilkinson (2016, p. 12, Fig 1.2)

are influenced by the actions of those others. This arena, sometimes described as the “playing field”, tends to be the major and often the sole focus of organisational strategy.

At the same time, the broader contextual environment, beyond the transactional environment, also has significant influence on the activities of the actors in the transactional environment, albeit indirectly. This contextual environment is critical because it is here that the driving forces and key uncertainties evolve, beyond the control of any one actor. These contextual factors are sometimes explored using the PESTEL framework, which analyses political, economic, social, technological, environmental and legal (PESTEL) factors to assess external influences on an organisation or industry (Cordova-Pozo & Rouwette, 2023). In foresight scenario-building, PESTEL analysis helps identify key drivers of change—an identification process that is central to constructing future scenarios. Moreover, as the world has become increasingly interconnected, it becomes ever more important to recognise the critical interdependencies and dynamic interactions across the PESTEL structure that affect the transactional and contextual environments.

D. Purpose

Scenario-building can have many purposes, but to paraphrase the work of Vickers (1965), the three main categories are:

- **Sense-making**, i.e., understanding how the contextual environment might affect the roles and relations in the transactional environment;
- **Bridge-building**, i.e., understanding how the norms and values of the actor might shape or should be aligned within the contextual environment; and
- **Strategising**, i.e., understanding what actions could or should be taken by the actor in the transactional environment.

The main focus of Open AIR work in the 2010-13 period (in both its empirical and foresight research) was on the first of the three Vickers (1965) categories: sense-making. Open AIR sought to explore the intersection of openness, innovation, development and IP, with a primary purpose to uncover new insights about the balance between control over, and access to, knowledge. Open AIR sought to resolve a problem at the heart of IP and innovation policy: how to reconcile tensions between appropriation and access, between excluding and sharing, and between competing and collaborating.

The sheer scale of ambition of the Open AIR network, and the number of discrete strands of its research inquiries, meant that the second Vickers (1965) category, “bridge-building”, was also integral. In fact, it can be argued that iterative sense-making and bridge-building, as both routinely undertaken by the network, have been central to the Open AIR’s evolution and increased scale.

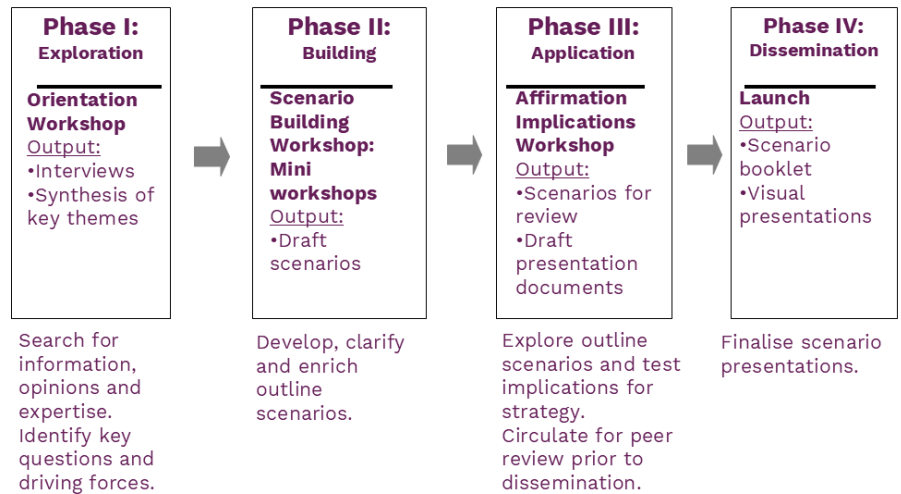
E. Process

Open AIR’s scenario-building process from 2010 to 2013 followed the same phases as those deployed in the aforementioned UNAIDS and EPO foresight exercises—both of which were also ambitious with a global focus, wide scope, and myriad potential complexities and contradictions. The four main phases were:

- exploration;
- building and detailing;
- application; and
- dissemination.

Each phase involved many participants in order to reflect the necessary cognitive and geographic diversity of input. The scenario-builders converged from across Africa and beyond to participate in 10 different scenario-building workshops. For the first year, the question uppermost in everyone’s minds was: Which forces are most likely to be drivers of change, pushing evolution of knowledge, innovation and IP in Africa between now and 2035? From this question, a set of key themes emerged, each with its own sub-themes.

The scenario process: Open AIR



Sources: Adapted from Shell-GBN approach, UNAIDS (2005), and EPO (2007)

Once the themes were well understood, it was possible to start the process of ranking their levels of uncertainty and importance. It took almost a full year of research before the scenario-builders were ready to move from exploration into building mode. At a workshop in Nairobi in 2012, the builders identified two critical uncertainties with which to create their 2x2 matrices. Between 20 and 30 different 2x2 matrices were generated, each representing a potential scenario “snippet”. Many of these snippets overlapped, but as the group worked through their creations and distilled their “logics”, a set of five potential plausible scenarios emerged, each sufficiently distinct to warrant further investigation. The scenario-builders then continued to talk, consult and think about the potential list, evaluating both within each scenario and across the set. Within each scenario, three critical criteria were assessed, namely:

- Is this particular scenario plausible?
- Is this particular scenario relevant to open innovation, development and IP?
- Is this particular scenario sufficiently challenging to the worldviews and mindsets of those who would be engaging with the scenario?

Once this task had been undertaken, the scenario-builders looked at the set as a whole. The value of developing scenarios lies in the entire set. Within the set, each scenario must be clearly distinct. Distinctness is critical if the scenarios are to be useable, i.e., each scenario must represent a distinct combination of worldview, trade-offs and



Nairobi workshop participants, 2012

intuitive logic. To be useable the scenarios must also create a cognitive shorthand that is understood by the group and is, thus, suitable for strategising. Three distinct scenarios emerged:

- **Wireless Engagement:** a world where enterprises are interconnected with the global, service-oriented economy and young business leaders from a vocal middle class and citizens hold governments accountable;
- **Informal the New Normal:** a world where dynamic informalities cross societies, and ideas recombine within social networks built on interpersonal trust, triggering innovations adapted to relentless change; and
- **Sincerely Africa:** a world where communities reinterpret traditional knowledge systems, and sustainably manage biological resource riches, in response to global instabilities and external pressures.

Undertaking the necessary deep research into each of the scenarios required three groups, one for each scenario. Each group chose a scenario “champion”, who liaised with the other groups and with the foresight director and the project’s principal investigator, who held the overview. The three champions deepened their expertise in their scenario’s particular domains. There were numerous interactions between all parties in order to flesh out the full extent of each scenario and the implications it represented for knowledge generation, management and governance (including use of IP protections); and for economic, social and environmental development.

After another workshop on “affirmation implications”, where the scenario champions sought approval and insights from their colleagues, the communications process began. The scenarios were launched in 2013 in the compendium report, *Knowledge and Innovation in Africa: Scenarios for the Future*, which was written to engage with a wider audience (Open AIR, 2013). Integral to the publication design were graphical illustrations for policymakers—graphics that synthesise and illustrate the three scenarios, their driving forces, their modes of innovation, and their knowledge governance approaches.

III. Revisiting the 2013 Scenarios in 2024

A. Monitoring, Evaluation, and Learning (MEL) from Scenarios

In consultation with the IDRC’s foresight group and other experts, Open AIR sought, as an initial activity in the 2024 Signposting to Future Scenarios project, to review, take stock of, and synthesise existing work on, foresight by the IDRC, its partners, and its grantees (Duggan & Reilly-King, 2023; IDRC, n.d.-a, n.d.-b, 2023, 2024a, 2024b; Reilly-King et al., 2024; SOIF, 2022). Also as part of the preparatory activities, so as to lay a solid methodological basis for the workshop, Open AIR conducted a desk analysis of existing scenarios methods and how they have been used.

Of particular interest was whether—and, if so, how—organisations using scenarios may have monitored, evaluated, and learned from the exercise or outcomes of foresight research. One hypothesis was that MEL might be relatively more difficult with scenarios research than other research methods and interventions, due to the inherently long time horizon over which outcomes and benefits of the research might become

apparent (Ahadian et al., Reilly-King et al., 2024; RIA, 2025; Saritas, 2018; Thümmel et al., 2025). While many modes of “developmental evaluation” are complex and challenging (Patton, 2010; Saner et al., 2019), the above-mentioned outcomes of scenarios research—sense-making, bridge-building, and strategising—are especially hard to assess during the timeframe within which scenarios projects are typically completed. While precursor projects to Open AIR used techniques such as “outcome mapping” (Earl et al., 2001) for MEL when embarking on the scenarios research between 2010 and 2013, admittedly little thought was given to long-term assessment of outcomes. Looking back in 2024, Open AIR sought to understand whether other foresight researchers had similar or different experiences.

There is a rich body of literature on foresight exercises conducted in Africa (Chibwe et al., 2024; deGrassi, 2007; Descheemaeker et al., 2024; Du Plessis, 2016), with the original exercises coming from extractive-industry sectors, as exemplified by the work of multinational oil and gas company Shell. The stated purpose, for Shell, was not to predict the future, but rather to enable managers to “reperceive” the landscape by enabling them to consider a variety scenarios that challenged conventional assumptions about how the future might unfold (Wack, 1985). Shell sought to enable decision-makers to consider alternative trajectories shaped by political, economic, and technological disruptions (Bentham, 2014; Cornelius et al., 2005; Curry, 2022).

One notable example is Shell’s 1992 Mont Fleur scenarios for South Africa, built by Shell’s Adam Kahane to explore the question: How will the South African transition go, and will the country succeed in “taking off” after the release of Nelson Mandela? A year later, in 1993, a joint Nobel Peace Prize was awarded to Nelson Mandela and FW de Klerk for “their work for the peaceful termination of the apartheid regime, and for laying the foundations for a new democratic South Africa” (The Nobel Peace Prize, n.d.). Multinational mining company Anglo American subsequently built another set of scenarios with the assistance of Shell’s team, entitled the “High Road” and “Low Road” (Galer, 2004). Scenario-building has since become a frequent feature in South African planning (Indlulamithi, 2018). Ngwenya and Simatele (2024) demonstrate the application of scenario-based climate adaptation strategies to predict drought and extreme weather patterns in the country’s Western Cape Province.

In East Africa, the Society for International Development (SID) has been an active force in scenario-building, producing a series of State of East Africa Reports that have enabled East African policy actors and stakeholders to imagine the future. In 2000, the Institute of Economic Affairs (IEA-Kenya) and SID collaborated to produce Kenyan scenarios, published as *Kenya at the Crossroads: Scenarios for our Future* (IEA-Kenya & SID, 2000). In early 2008, during Kenyan post-election violence, the fact that the unrest had already been envisioned in 2000 as a potential scenario may have helped the authorities in the efforts to contain the violence and regain stability.

While we were able to identify numerous uses of foresight research in the African context, our consultations and literature review did not identify a tradition of medium/long-term monitoring, evaluation and learning (MEL) exercises focused on outputs and outcomes from foresight research.

B. Participation in IDRC Peer-learning Foresight Session

In August 2024, Open AIR participated in, and presented at, a session of the IDRC’s peer-learning series on foresight. The series is a core element of IDRC’s efforts to build foresight capacity within its organisational processes. Designed to foster long-term strategic thinking, the series provides a collaborative platform for IDRC staff and invited experts to explore foresight methodologies and their applications in research for development. The session Open AIR participated in, at IDRC headquarters in Ottawa, was entitled “Revolutionary and Transformative Foresight–Visioning, Back-casting, and What Transformation Means”. At the session, Open AIR’s Jeremy de Beer, the first-listed author of this paper, presented Open AIR’s foresight work in Africa, specifically the development of the 2013 *Knowledge and Innovation in Africa: Scenarios for the Future* publication, as a case study. De Beer highlighted the innovative foresight tools employed in this exercise, including scenario-building, epistemic reflection, and signposting, which allowed Open AIR to navigate complex socio-political and technological futures. Another case study was presented by Tanja Hichert, a foresight practitioner and project leader at the Centre for Sustainability Transitions at South Africa’s Stellenbosch University, who shared her work on research for development (R4D) transformation and futures literacy in African contexts.

Based on the case study presentations, session participants reflected on the transformative potential of visioning and back-casting, and how these methods could be adapted for IDRC’s ongoing initiatives. Participants discussed the relevance of foresight for IDRC’s Strategic Planning Cycle and its long-term Strategy 2040 vision. For Open AIR, the session also served as an opportunity to gather feedback from IDRC stakeholders, and some of the inputs were later integrated into the agenda for Open AIR’s Signposting to Future Scenarios Workshop that was convened the following month.

C. Engagement at UN Summit of the Future

Open AIR sent two delegates (de Beer and Elahi, the first- and second-listed authors of this paper) to participate in the UN Summit of the Future, convened at UN Headquarters in New York in September 2024.



UN Summit of the Future, New York, Sept. 2024

The purpose of the Summit was to convene a conversation that would result in a global vision for 2045, the centenary of the founding of the UN. The message was clear: “The world is at a precipice” (UN, 2024a), with humankind facing many transnational challenges, as well as existential risks, alongside the opportunities represented by advances in science and technology. Although the impacts of this will affect everywhere in our interdependent, interconnected and multipolar world, the international cooperation necessary to address this has become increasingly elusive in a world of growing distrust: “This is a moment in history where we face a pivotal choice as a global community – breakthrough or breakdown [...]

We must come together and make a conscious and collective choice to change course” (UN, 2024a).

The Summit discussed three interrelated documents: the Pact for the Future and its two annexes, the Global Digital Compact and a Declaration on Future Generations. All three documents were adopted (UN, 2024b). The Pact for the Future is an outcome-oriented document, setting the path towards “a world in which well-

being, security and dignity and a healthy planet are assured for all humanity” (UN, 2024b). It sets out 56 actions, each an ambitious commitment. These actions are arranged around five themes, namely: sustainable development and financing for development; international peace and security; science, technology and innovation and digital cooperation; youth and future generations; and transforming global governance.

The Global Digital Compact identifies digitalisation as the means to “turbocharge development” (UN, 2024b) and sets out five objectives necessary to achieve this. These are to: close all digital divides and accelerate progress across the sustainable development goals; expand inclusion in and benefits from the digital economy for all; foster an inclusive, open, safe and secure digital space that respects, protects and promotes human rights; advance responsible, equitable and interoperable data governance approaches; and enhance international governance of artificial intelligence for the benefit of humanity (UN, 2024b). The Declaration on Future Generations acknowledges that “the decisions, actions and inactions of present generations have an intergenerational multiplier effect” and resolves “to ensure that present generations act with responsibility towards safeguarding the needs and interests of future generations” (UN, 2024b). The Declaration sets out 32 guiding principles, commitments and actions.

The Summit was open to any interested stakeholders and representatives of organisations whose work was relevant to the shaping and/or implementation of the Pact for the Future. To attend, both de Beer and Elahi had to apply for the limited places available for in-person participation. They applied successfully as representatives of Open AIR, setting out its achievements on issues of IP and inclusive innovation, and its active engagement with UN agencies including but not limited to the World Intellectual Property Organisation (WIPO), the UN Economic Commission for Africa (UNECA), and the UN Population Fund (UNFPA). De Beer and Elahi attended both the Summit and the two Action Days that preceded it.



UN Summit of the Future

The UN Summit provided “deep dive” insights that proved extremely useful during the subsequent Open AIR Signposting to Future Scenarios Workshop (see next sub-section). In addition to the learning that occurred at the UN Summit, the scenarios work that led to Open AIR’s attendance at the Summit created a “calling card” that convened new strategic conversations (van der Heijden, 1993). At the Summit, introductions were made to the new WIPO Director-General and the WIPO Senior Counsellor on the Future of Intellectual Property, with the possibility raised of collaborations on scenarios work. (This led to a productive follow-up meeting, virtually, by Open AIR with WIPO’s Senior Counsellor leading the organisation’s work on the future of IP, in October 2024, arranged by WIPO’s Assistant Director-General.) An introduction was also made to the Head of Foresight and Futures and the Coordinator of Developmental Results in the Programme Division at UNFPA. UNFPA has used foresight to accelerate its development programmes across many countries, including Burundi, Egypt, Mauritania, Sierra Leone and Togo. UNFPA expressed interest in sharing learnings with, and possibly collaborating with, Open AIR, and because its foresight unit is moving from New York to Nairobi, there will be additional impetus to do so.

D. Convening the Signposting to Future Scenarios Workshop



Signposting to Future Scenarios Workshop, Sept. 2024, in Wakefield, Québec

The Signposting to Future Scenarios Workshop served as a platform for revisiting Open AIR’s 2013 scenarios and reflecting on developments at the halfway mark towards the year 2035 that is the focus of the scenarios. The invitation-only workshop took place over three days in late September 2024 in Wakefield, Québec.

The workshop convened 20 participants, selected to represent a balance between people involved in the original scenarios work and others from or adjacent to the Open AIR network and its funders. There was a significant presence of members from the African diaspora based in North America, alongside attendees from the African continent.

The workshop pursued the following objectives:

- reflect on the original scenarios to assess their impact and continued relevance;
- analyse current trends and validate or update the key drivers of change identified in 2013;
- identify ongoing pathways to the future, considering how the current context aligns with or diverges from the original foresight work;
- discuss emerging challenges and opportunities, particularly those unforeseen at the time the scenarios were developed; and
- improve Open AIR’s approach to foresighting by incorporating lessons learnt into future scenario construction and future Open AIR research.



Signposting to Future Scenarios Workshop

The remaining three sections of this paper provide reflections, generated by the work of 2024, on:

- tracking outcomes from scenario use;
- potential value co-creation with scenario actors; and
- wind-tunnelling the future of IP climate action.

IV. Tracking Outcomes from Scenario Use

To date, use of the Open AIR scenarios has not been systematically tracked or measured. To our knowledge, this is typical. We did not find any relevant published literature on methods or practices to monitor, evaluate, or learn from the outcomes of foresight research. One hypothesis for this lacuna relates to the organisations typically funding and conducting strategic foresight. Granting agencies or other public-sector funders normally support projects operating on timelines not amenable to long-term evaluation or retrospection. That is, by the time long-term evaluation would be feasible, projects have ended, funding has run out, and researchers may have moved on. Private-sector organisations doing strategic foresight may have the incentive and resources to evaluate past investments, but are unlikely to publish or promote their reflections. Another explanation could be inherent in the method itself and in the interests of foresight researchers/practitioners: those doing foresight are typically focused on the future not the past. When the time might be ripe for retrospection, those with the expertise to monitor, learn from, and evaluate prior work may already be grappling with new developments or looking forward to new future scenarios.

Members of the Open AIR network involved in creating the three scenarios for *Knowledge and Innovation in Africa* were, however, willing and able to look backward at past work. Several factors made this retrospection possible. One, the original foresight research was not conducted under the auspices of a single project, researcher, or organisation. The research was conducted by a network, whose constitutive researchers changed at the periphery but which remained relatively stable at its core. The core group of researchers continued their active collaborations after the strategic foresight. Indeed, the sense-making, bridge-building, and strategising benefits of building scenarios might suggest that the continuity and strength of Open AIR researchers' collaboration is at least *partly* because of the 2010-2013 foresight work. Two, retrospection was possible because the network's core funders, including the IDRC and the Social Sciences and Humanities Research Council (SSHRC), continued to invest in a decade of further research building on the Open AIR scenarios. And IDRC, in particular, was willing and able to financially support and participate in the signposting project in 2024.

In that context, participants in the Signposting to Future Scenarios Workshop undertook to answer the following questions:

- What were the different ways in which the Open AIR scenarios were used initially/ later?
- Who used them, and how?
- What was the purpose, and what was the result?

It was found that the uses were primarily two-fold. One set of uses focused on provision of a systemic overview of the terrain in which the researchers were working, which enabled them to identify underattended public-interest research areas (a source of inspiration that had been used in multiple ways). A second series of uses were within academia and policymaking.

Users were located in both the Global South and North and included not only Open AIR researchers that were familiar with the contents, but also wider academic groups, civil society researchers, policymakers and international organisations, such as WIPO, which had come into contact with the work. The results had been reflected in validation of work, policymaking such as informing policy outcomes and crafting regulation and identification of further research projects.

Scenarios function as a set, and building them offers unique opportunities to undertake three iterative processes identified by Vickers (1965), namely sense-making, bridge-building and strategising. To date, the Open AIR network has focused explicitly on the first process, which has led to benefits in terms of the second (see “value co-creation” discussion in next section). Looking to the future, Open AIR can benefit from more systematically invest in the second and third processes.

Looking ahead, Open AIR may explore opportunities to enhance its foresight work by engaging with existing research initiatives and networks that are actively advancing futures research in Africa and beyond. Several IDRC-supported projects are focused on applying foresight methodologies to development challenges, with an emphasis on sustainability, complex systems, and transformative change. For example, collaborative efforts led by researchers at Stellenbosch University in South Africa and the University of Sussex in the UK examine how foresight can help address key uncertainties in development research. These initiatives are mapping challenges in research-for-development contexts and exploring methods to foster more inclusive and sustainable futures. Leveraging insights from these initiatives can help Open AIR refine its own foresight practices, while Open AIR contributes its experience with scenario-building and strategic thinking with respect to African innovation and knowledge governance.

Signposting to Future Scenarios Workshop participants agreed that use of the scenarios should, going forward, be more systematically tracked as part of the Open AIR’s participatory monitoring, evaluation, and learning (PMEL) activities.

V. Potential Value Co-creation with Scenario Actors

At the Signposting to Future Scenarios Workshop, participants split into three groups—one for each of the three scenarios published in 2013—and explored what value Open AIR could potentially co-create with a key actor linked to the scenario. Each of the three scenario groups identified a different key actor and different conceptions of value.

For the **Wireless Engagement** scenario, it was determined that the focus of Open AIR value co-creation can be on “big tech”, or, if members of that constituency were inaccessible, to explore the possibilities of engagement with small tech, with telcos, or with a regulator as facilitator or enabler. Value elements prioritised by the key actors in this scenario were determined to be power (money), influence, and access to those who are disconnected.

For **Informal the New Normal**, it was found that the Open AIR network offers the potential for governments to tap into the wealth of expertise in the Open AIR network regarding informal innovation and informal approaches to knowledge governance. Governments can use Open AIR’s position as a neutral party to identify inaccessible actors and knowledge, with the aim of regulating/supporting informal-sector livelihoods fairly and efficiently through, inter alia, provision of basic infrastructure that supports informal-sector economic growth.

For **Sincerely Africa**, where Indigenous African systems and ecosystems grapple with the realities of resource degradation, it was determined that the Open AIR network offers legitimacy, representation and advocacy about the silent crisis that is likely to carry catastrophic longer-term consequences. With respect to a key actor, it was determined that Natural Justice, one of the participant NGOs at the first scenarios workshop in Cape Town in 2011, is an actor that might be able to work with Open AIR to create the enabling environment for action.

VI. Wind-tunnelling IP Responses to Climate Change

One outcome of the Signposting to Future Scenarios Workshop was the realisation of the ongoing utility of Open AIR’s 2013 scenarios in guiding future research. It became evident that the scenarios, initially constructed to explore alternative futures for IP and knowledge governance in Africa by 2035, still provided a useful framework for addressing emerging challenges, particularly at the intersection of IP and climate action. It was determined that the scenarios could serve not only as conceptual guides but also as practical, iterative tools for structuring future research.

Accordingly, a decision was taken to incorporate the scenarios into the grant proposal (of October 2024) to the SSHRC for a new seven-year project. The Signposting project and workshop took place at a pivotal stage in the SSHRC’s “Partnership Grant” competition process. Open AIR researchers were successful at Stage 1 of that competition, meaning a preliminary application for funding was shortlisted earlier in 2024 with an invitation extended to submit a full application by late 2024. With co-funding from both SSHRC and IDRC, researchers were able consider in detail whether and, if so, how the earlier scenarios research might continue to be useful.

In part because of this exercise, Open AIR’s full application was approved for funding in mid-2025, as the Canada-Africa Partnership on IP for Climate Action (the CAP on IP for Climate Action) (Open AIR, n.d.).

A. CAP on IP for Climate Action Project

Within the CAP on IP for Climate Action project, the scenarios will be transformed into intellectual laboratories for testing regulatory responses and strategies under varying future conditions. The original scenarios—representing futures driven by high technology, informal innovation, and Indigenous knowledge—offer distinct contexts against which new regulatory approaches can be tested.

Workshop participants identified key elements of the scenarios that remain relevant for future-oriented research, while also recognising opportunities to refine and expand the scenarios in light of current trends. The scenarios can serve as adaptable tools for iterative exploration of complex, long-term policy questions.



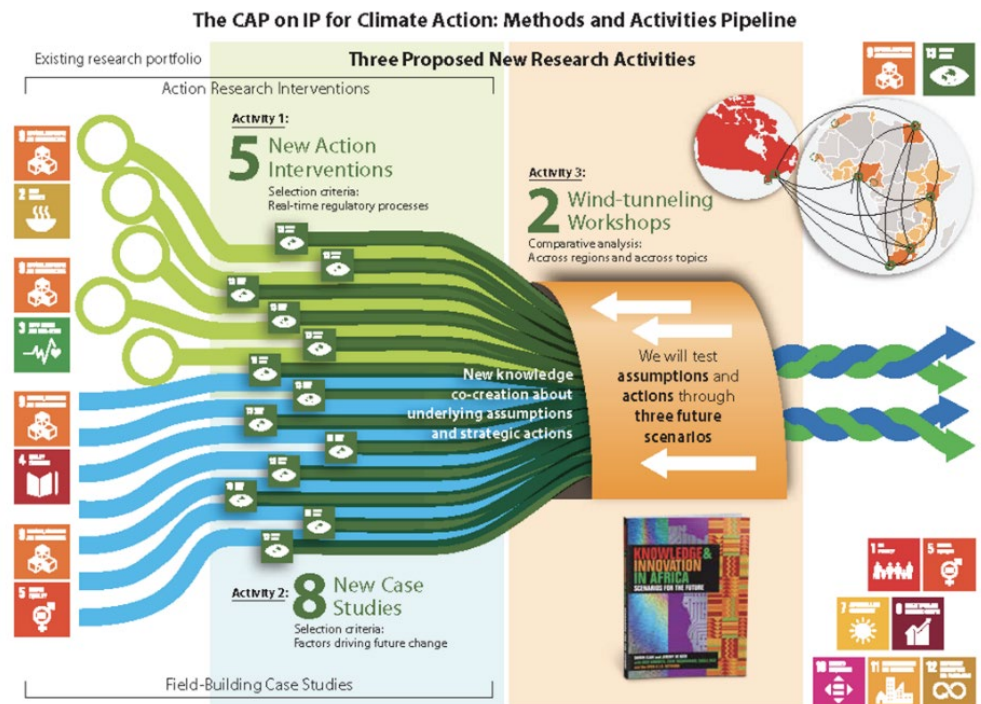
**Canada-Africa
Partnership on
Intellectual
Property
for Climate Action**



B. Wind-tunnelling Foresight Method

As decided at the Signposting to Future Scenarios Workshop, the CAP on IP for Climate Action project will incorporate a wind-tunnelling foresight evaluation method, which will entail testing IP and climate policy responses by simulating how they would perform under different future scenarios.

As seen in the figure (right), wind-tunnelling workshops will play a prominent role in the methods and activities of pursued by the CAP on IP for Climate Action project.



The UN Development Programme's Independent Evaluation Office (IOE) describes wind-tunneling foresight evaluation as a technique that:

tests the recommendations, resilience of strategies or plans against a variety of future scenarios to assess their robustness and adaptability. In evaluation, wind tunneling can help ensure that plans are not only feasible in one predicted future but across a range of potential futures, helping drafting adaptable and robust recommendations. (IEO, n.d.)

Through incorporation of wind-tunnelling, Open AIR's scenario-building work will move beyond theoretical reflection to become an applied research and evaluation method capable of generating actionable insights. Rather than treating the scenarios as static representations of possible futures, they will serve, in the CAP on IP for Climate Action project, as dynamic tools that can evolve over time and be used iteratively. This approach ensures that the scenarios continue to provide value as the research landscape changes, enabling Open AIR to remain agile in addressing new challenges and opportunities.

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