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ARTICLE

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Transformative foresight for diverse futures: the Seeds of Good Anthropocenes initiative

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Abstract

Motivation: Foresight methods are increasingly recognized as essential for decision-making in complex environments, particularly within development and research settings. As foresight methods continue to gain prominence for decision-making, their application in these settings grows. Funders and policy-makers can benefit from the experience of transformative foresight practitioners and researchers who are skilled in designing novel ways to envision alternative and diverse development futures.

Purpose: The Seeds of Good Anthropocenes (SoGA) initiative has experimented with transformative foresight since its inception in 2016. We position SoGA within the framework of Minkkinen et al. (2019); we present its transformative capacity through participatory visioning; and we explore how foresight methods can shape strategic development options.

Approach and methods: We draw lessons from how SoGA, used extensively in various contexts around the world, has introduced experimental transformative foresight to deal with diversity and complexity. We describe the transformative foresight processes in detail.

Findings: SoGA exemplifies how transformative foresight can support policy and change initiatives by providing participants, planners, and decision-makers with opportunities to reinforce the collaborative and transformative objectives of their policy and convening practices. Such engagement not only deepens the strategic impact of policies, it also encourages a more inclusive and participatory approach to policy development, aligning with broader goals for sustainable and impactful change.

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KEYWORDS
transformative foresight, complexity, Seeds of Good Anthropocenes, diverse perspectives, positive narratives, co-creation proces

1 | INTRODUCTION

As governments and multilateral entities strive to translate the ambitious 2030 Agenda into tangible outcomes in the face of the challenges posed by a "convergence of crises" (Homer-Dixon et al., 2015), the existing paradigm of "development" may not be suitable for the future or even for the present (Chaturvedi et al., 2021). The literature addressing the convergence of crises or the "polycrisis" (Lawrence et al., 2022) recognizes that human impacts are linked to environmental shifts that have the potential to trigger critical planetary thresholds (Crutzen, 2002; Scheffer et al., 2009; Syvitski et al., 2020). These shifts carry irreversible social consequences, worsened by inequalities, resource disparities, and disconnection from nature (Hamann et al., 2018). The interconnected dynamics of climate change, economic turbulence, international conflicts, widening inequality, diminishing trust, and faltering democracy collectively cast doubt on the long-standing conventional paradigms that have been used to conceptualize the notion of "development" built on the exploitation of nature, relentless production and consumption, and the privatization of shared resources (Büchs et al., 2011).

A thorough re-evaluation of decision-making, strategic planning, and policy design becomes essential, particularly as low- and middle-income countries navigate post-pandemic recovery and climate change mitigation (Pereira et al., 2020; Walker et al., 2020). Reflecting more deeply, policy-makers and funders increasingly recognize the potential for foresight approaches to transcend mere predictions, offering a richer understanding of the dynamics that are crafting tomorrow's realities (Minkkinen et al., 2019; Vervoort & Gupta, 2018; Vervoort et al., 2023). Foresight, also generally referred to as the capacity to engage in "futures thinking" (Cork et al., 2023), is the competency and practice of futures studies (Shallowe et al., 2020) and the capacity to think systematically about the future to inform change processes and decision-making today (Conway, 2015).

In this article, we report on the transformative foresight process of the Seeds of Good Anthropocenes (SoGA) initiative[1] (Bennett et al., 2016; Seeds of Good Anthropocenes, 2023). This approach has been recognized by funders and foresight practitioners as an effective means for participants to create positive and diverse future scenarios, yielding innovative responses to challenges posed by the polycrisis. Such scenarios are useful in fostering more positive and context-sensitive outcomes, and in informing more just and diverse development policy pathways (Tuckey et al., 2023).

Our contribution is threefold: first, we situate the SoGA initiative within the transformative foresight framework as informed by Minkkinen et al. (2019); second, we demonstrate the transformative potential of the SoGA initiative through its integration of foresight methods in facilitated participatory visioning processes; and third, we provide insights into how foresight methods can foster alternative strategic options for development policy work. We propose that the SoGA initiative offers considerable potential benefits for decision-makers due to its adaptability to diverse contexts, which facilitates the formulation of solutions tailored to specific local challenges. The insights gained through the SoGA initiative could effectively enhance policy responsiveness and refine development strategies to better meet a diverse set of needs and contexts.

[1]A detailed description of the SoGA process is available online (https://goodanthropocenes.net; https://www0.sun.ac.za/cst/publication/generating-visions-of-good-anthropocenes-the-manoa-mash-up-scenarios-methodology/) and described in several publications (Bennett et al., 2016; Hamann et al., 2020; Hichert et al., 2019; Pereira et al., 2018a, 2018b, 2019, 2023; Raudsepp-Hearne et al., 2020; van Velden et al., 2023).

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1.1 | The complexity of transformative change

Approaches rooted in complexity theory emphasize the non-linear nature of events and phenomena, challenging the notion that future outcomes can be predicted solely from past and present conditions (Arthur, 2021; Holland, 1995). In considering transformative change, it is crucial to plan for the effects of feedback loops within complex systems, which can unpredictably amplify or mitigate various outcomes. Acknowledging the emergence of multiple potential futures, each shaped by diverse factors with varying probabilities, is vital for effective system management.

Understanding the non-linear and unpredictable nature of complex systems provides a foundational basis for exploring the diverse origins and impacts of transformative change processes as these vary widely. Some views suggest that they result from intentional actions by individuals or groups, while others see them as outcomes of broader sociopolitical and economic forces, or as a result of social mobilization (Feola, 2015; Patterson et al., 2017; Vervoort et al., 2024). External influences like climate change can also initiate transformations that, despite being human-influenced, are not controlled by any single entity. In social-ecological systems research, "transformation" refers to significant structural changes within both systems and societies (Moore et al., 2014). Meadows (1999) illustrates that transformations can manifest at different scales—from adjustments in the stocks and flows that maintain systems to deep shifts in the underlying paradigms that dictate how systems are understood and interpreted (Leach et al., 2012; Vervoort et al., 2024).

Recognizing the complexity of change processes reveals the limitations of traditional linear planning methods, as these struggle to address the dynamic interactions within complex systems (Preiser, et al., 2018; Schlüter et al., 2019). Foresight methodologies, focusing on anticipation, offer effective frameworks to manage these complexities, enabling better handling of transformation processes that are marked by uncertainty and unforeseen outcomes (Peterson et al., 2003).

1.2 | Transformative foresight: The art of crafting imaginative future narratives

In the discipline of futures studies and foresight, the notion of "transformation" denotes a very specific typology in the array of foresight approaches and their methods. In particular, "transformative foresight" is a very specific form of foresight practice that uses a diverse set of foresight methods with the aim of developing "novel paths in the present with indeterminate outcomes" (Minkkinen et al., 2019, p. 5). Transformative foresight has emerged out of the European strand of futures research. In his seminal work on the history of futures studies, Curry (2021a) reminds us that the history of futures as a practice differentiated between two strands of scenarios practice and the methods associated with them. One strand encompasses the North American positivist research tradition, which starts with RAND in 1946, encompasses the Department of Defense research, then traces through to the Hudson Institute in the 1960s, Shell in the 1970s, and Global Business Network (GBN) in the 1990s. In contrast, the European strand is associated with philosophy and social science research. The latter entails *visioning*—initially linked with philosophical and ethical questions regarding how to reconstruct Europe after the Second World War—and incorporates the work of Gaston Berger in France (Cornish, 1977), Johann Galtung and Robert Jungk's *Mankind 2000* (Galtung & Jungk, 1969), and the peace-building work of Warren Ziegler and Elise Boulding (Schultz, 1995). This European strand culminates in a rich array of innovation and re-energized futures thinking, e.g., integral futures (Slaughter, 1998), causal layered analysis (Inayatullah, 2004), the anticipation school (Poli, 2010, 2011), three horizons (Sharpe, 2013), Mānoa scenario building and visioning (Schultz, 2015), and the connected work on the Seeds of the Good Anthropocene (Pereira et al., 2018), as well as emerging design and experiential futures methods.

Synergizing the diverse approaches emerging from various strands of futures research, Minkkinen et al. (2019) aptly argue that the field of foresight approaches is not a monolith, but rather comprises numerous practical and functional methods and approaches. To provide clarity on how foresight approaches are used, Minkkinen

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et al. (2019) developed a typology of six foresight frames based on different dimensions of agency and function that can be derived from the level of perceived unpredictability (Figure 1, *x-axis)* and the envisioned level of pursued change (Figure 1, *y-axis).*

The six frames—"predictive, planning, scenaric, visionary, critical, and transformative"—represent distinct typologies of foresight methods, each defined by varying assumptions and approaches that can be applied across different actors within a foresight system (Minkkinen et al., 2019, p. 1). The transformative foresight frame, as depicted in the illustration, is characterized by its engagement with "open systems" marked by a high degree of perceived unpredictability and emphasizes a pursuit of "normative influencing."

The criteria used to delineate the foresight frames are based on the dimensions of the Futures Consciousness model (Ahvenharju et al., 2018), which are: (1) time perspective; (2) agency beliefs; (3) openness to alternatives; (4) system perception; and (5) concern for others. The "perceived unpredictability" dimension combines aspects of openness and systems perception from the Futures Consciousness model, while the "pursued change" dimension combines elements of agency beliefs and concern for others. According to Minkkinen et al. (2019), this dimension is not solely about high or low levels of agency and concern for others; rather, it involves actively driving change towards a future that is significantly different from the current status quo.

Compared to other types of futures thinking, a transformative foresight frame encompasses a view of preferable futures (Amara, 1981), lived futures (Groves, 2017), is novelty oriented (Miller, 2018), with time as emergent and indeterminate (Selin, 2006), is complexity oriented, and critical (Mannermaa, 1991). It searches for evolutionary pathways and invention of novelty with *unpredictable consequences* (Minkkinen et al., 2019). As such, transformative foresight methods not only reveal what drives change but also uncover the cascading consequences of these interlinked drivers. Using techniques like Future Wheels (Bengston, 2016) and Three Horizons (Sharpe, 2013) in a transformative framework allows us to dive into the deeper drivers of change and envision potential trajectories. Hence, the transformative capability of foresight approaches stems from their ability to tap into humanity's innate capacity to imagine futures that *do not yet exist*. This involves crafting narratives that combine tacit knowledge of lived experiences, deep disciplinary or thematic expertise, and creative imagination (Moore et al., 2020). As Vervoort et al. (2024) argue: "Those seeking to change societies imagine better futures to achieve, unwanted futures to avoid, and often both. Observing or experiencing novel ways of existence or action that were previously unconsidered can, in turn, spark fresh imaginative potentials" (Raudsepp-Hearne et al., 2020).

In the next section, we discuss one specific transformative foresight approach that has been used in the Seeds of Good Anthropocenes (SoGA) initiative.

2 | THE SOGA INITIATIVE: TRANSFORMATIVE FORESIGHT PRACTICE IN ACTION

Since its inception in 2016, the SoGA initiative has exemplified transformative foresight in action by developing positive visions for the future, known as "good Anthropocenes" (Bennet et al., 2016; Hamann et al., 2020; Pereira et al., 2018). The SoGA initiative integrates a multifaceted approach to transformative visioning, using a combination of innovative foresight methodologies. It draws from empirical case studies and adapts various foresight techniques, including Schultz's Mānoa scenario building (Schultz, 2015) and Sharpe's Three Horizons (Sharpe et al., 2016), which is also used for strategic backcasting. These methods are complemented by role play and storytelling to deepen engagement and explore future possibilities (Hichert et al., 2019). Known by various names such as *Mānoa Mash-up*, *Seeds to Scenarios*, and *Seeds Visioning* (Hamann et al., 2020; Pereira et al., 2018; van Velden et al., 2023), the initiative harnesses grassroots initiatives and technological innovations to develop interactive, participatory scenario processes while fostering a rich dialogue around sustainable development and alternative futures. This approach reflects a commitment to transformative foresight as it explores emerging

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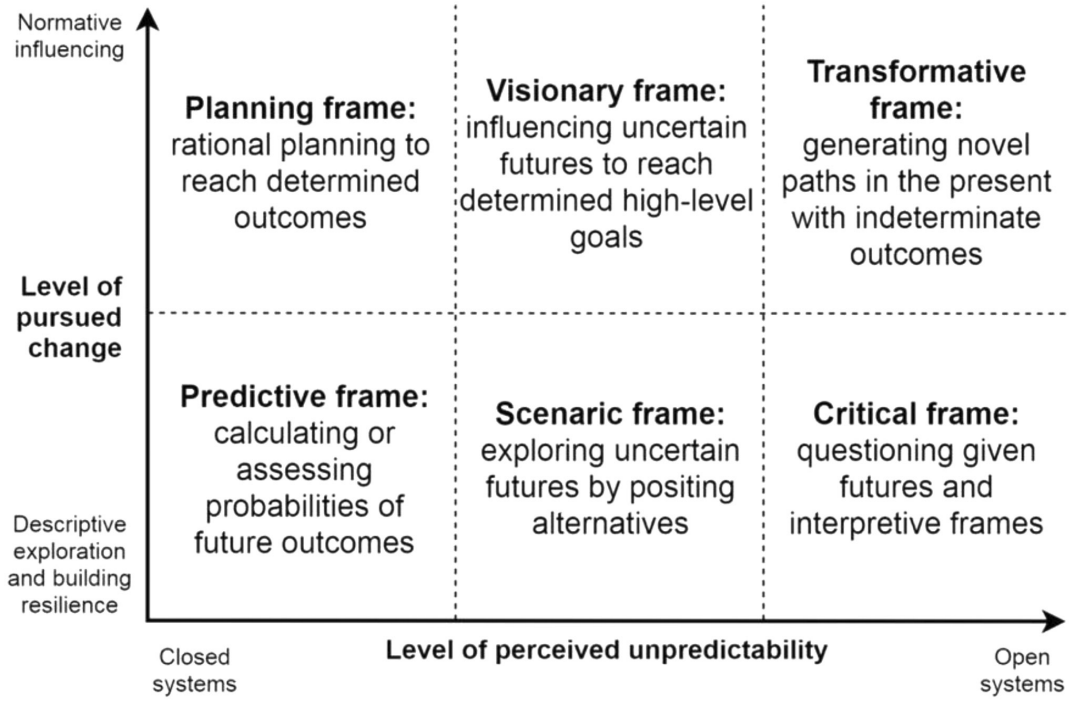


FIGURE 1 Six foresight frames (Minkkinen et al., 2019).

potentialities (Hichert & Schultz, 2024) and engages diverse stakeholders in envisioning and creating desirable futures.

Central to the SoGA initiative is the concept of "seeds"—small-scale experimental projects that embody new ways of thinking and acting, often at the margins of current systems and worldviews. These seeds, which may include new social institutions, technologies, or frameworks, demonstrate potential at a local scale to enhance livelihoods and sustainability, especially in developing countries. With its focus on seeds, the SoGA initiative aligns with the enabling approaches to transformative change as outlined by Scoones et al. (2020) and Moore et al. (2014), focusing on facilitating change through collective efforts and localized networks. These networks incrementally reshape systems from the grassroots level, reflecting the values and aspirations of local actors, and often lead to unanticipated outcomes (Stirling, 2008; Tuckey et al., 2023). Unlike approaches that emphasize elaborate theoretical frameworks, enabling approaches prioritize core values, agency, relationships, and processes that are essential to societal and systemic structures (Scoones et al., 2020).

Moreover, the SoGA initiative incorporates various foresight methods categorised as "transformative mindset" and "desirable worlds," according to a futures method typology by Hichert and Schultz (2024). These methods explore how to actively engage with change by questioning our assumptions, envisioning the future we desire, and how to actively shape it (Ketonen-Oksi & Vigren, 2024).

2.1 | The SoGA process: A short summary

The scope of this article does not allow a detailed description of the foresight process that has been documented in detail by Hichert et al. (2019), but Figure 2 offers a succinct overview of the main stages of the transformative foresight process that informs the basic design template of all workshops that are hosted under the SoGA initiative.

The following steps summarize the process:

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1. **Select seeds and develop Future Wheels**: The process begins by selecting three diverse "seeds" that represent innovative ideas, practices, or initiatives. Each group of participants develops three Futures Wheels, each based on a seed representing a mature condition that is the opposite of their current niche or marginal condition. These completed Futures Wheels are then placed side by side for comparison, contrast, synthesis, and analysis (see Figure 3 and 4). A Cross-Impact Matrix utilizing the seeds also aids in generating content at this stage. This method results in the formation of a skeleton scenario, which outlines an alternative positive future resulting from the impact cascades and systemic interconnections of the three divergent seeds.
2. **Creatively communicate skeleton scenarios**: Each group communicates their scenario outline to the workshop participants, employing creative methods to convey their narrative. This can include three fictional future statistics (data points), a headline, and an artistic depiction (in any medium)
3. **Application of the Three Horizons Framework:** The Three Horizons Framework (Figure 5), which was developed by Bill Sharpe (2013), is a graphical approach used to explore systemic change over time and connects the future to the present. It is an adaptable foresight tool and is often used as an intuitive, accessible introduction to futures thinking, as well as to make sense of emerging changes (Curry et al., 2008). In the SoGA process, the Three Horizons Framework is specifically used to (1) enrich scenario narratives describing what must change and to recognize that change; and (2) to chart a developmental pathway from the present state where seeds are marginal to envisioned futures where seeds are mature. This involves mapping out how these ideas evolve from niche, experimental concepts to dominant forces within society.

Figure 6 illustrates the five stages of how the seeds are used in the Three Horizon process. Seeds that are currently marginal in society: (1) can grow to become mainstream (2), while powerful institutions can decline (3). These shifts can lead to societal transformation but generally must pass through times of conflict (4) and require enabling conditions to successfully transition those conflicts (5) The process includes reflection on what elements of the present must diminish in significance to facilitate this transformation. An important part of the conversation also involves incorporating values and an ethnographic lens using Lum's (2015) VERGE framework.

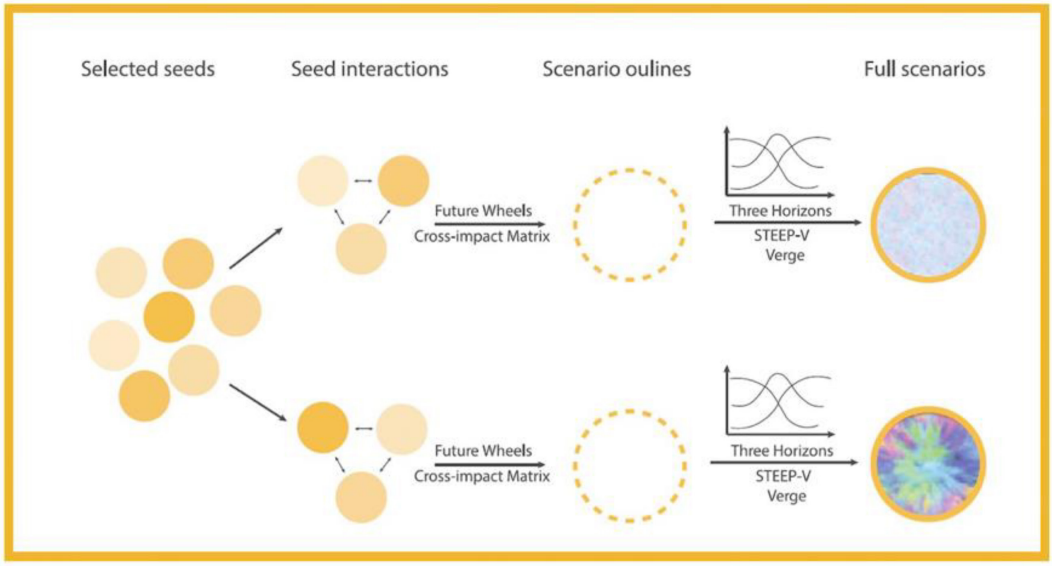


FIGURE 2 Main stages of the SoGA process.
Source: Hichert et al. (2019).

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FIGURE 3 In-person workshop example of Futures Wheels from the workshop on Building on "Seeds of Success" in invasive species management hosted in Stellenbosch, South Africa 2022. (The text in this picture is not important to see here. The image serves to illustrate the format of the future wheels and the levels of impact that emerge from the central 'seed').

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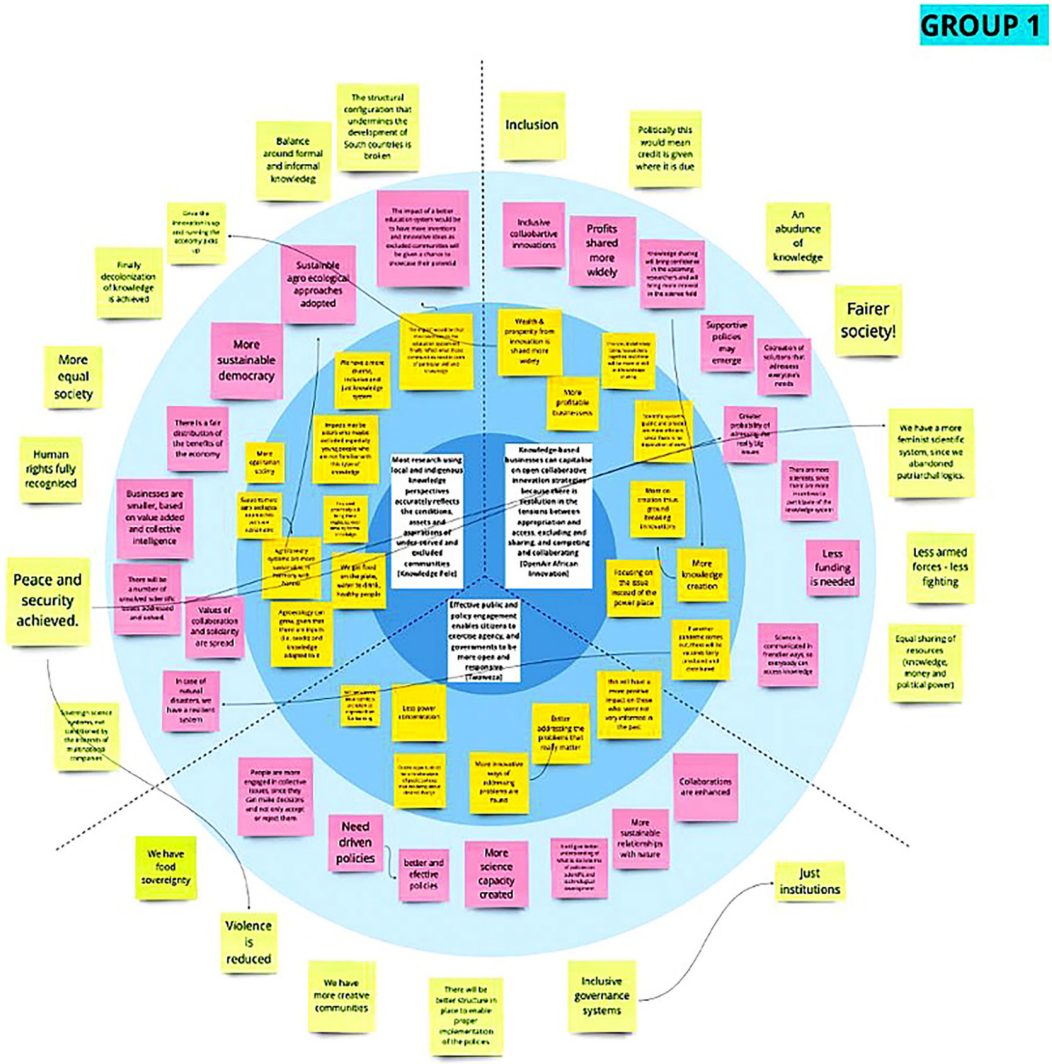


FIGURE 4 Online example of Futures Wheels from workshop sponsored by the International Development Research Centre (IDRC) on more inclusive knowledge systems and innovations hosted online in 2022. (The text in this picture is not important to see here. The image serves to illustrate the format of the future wheels and the levels of impact that emerge from the central 'seeds').
Source: transcribed from workshop sticky notes as captured on Miro board by Tanja Hichert.

4. **Visions of positive futures**: Participants use content generated during the previous steps to fully flesh out their skeleton scenarios and articulate complete scenarios that encompass both the final future vision and the transitional journey from the present to that future. Groups employ creative approaches to describe and communicate their scenarios to fellow participants, resulting in distinct presentations that enrich the scenario narratives. The scenarios generated are systematically explored and include identifying commonalities and disparities among them. This analysis explores aspects such as the growth of presently marginal elements, the decline of current mainstream components, conflicts between current and future elements, and the enabling conditions required for a successful transition (Figure 5). Sellberg et al. (2020) also combined these approaches with a follow-up survey to identify barriers and enabling conditions and policy strategies to remove barriers and enhance enabling conditions more precisely.

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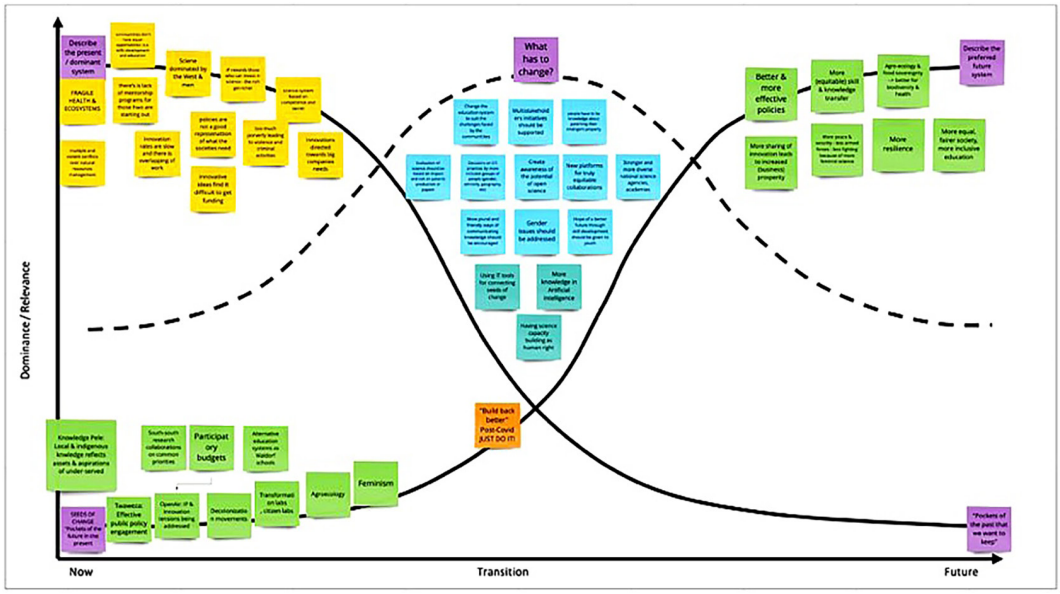


FIGURE 5 Three Horizons populated with the outcomes of the Future Wheel in Figure 1 from IDRC sponsored workshop on more inclusive knowledge systems and innovations hosted online in 2022. (The text in this picture is not important. The illustration serves to visualise the format of the Three Horizons template and how it can be populated. The text on the sticky notes is not of concern for the purpose of this paper).
Source: transcribed from handwritten workshop sticky notes by Tanja Hichert.

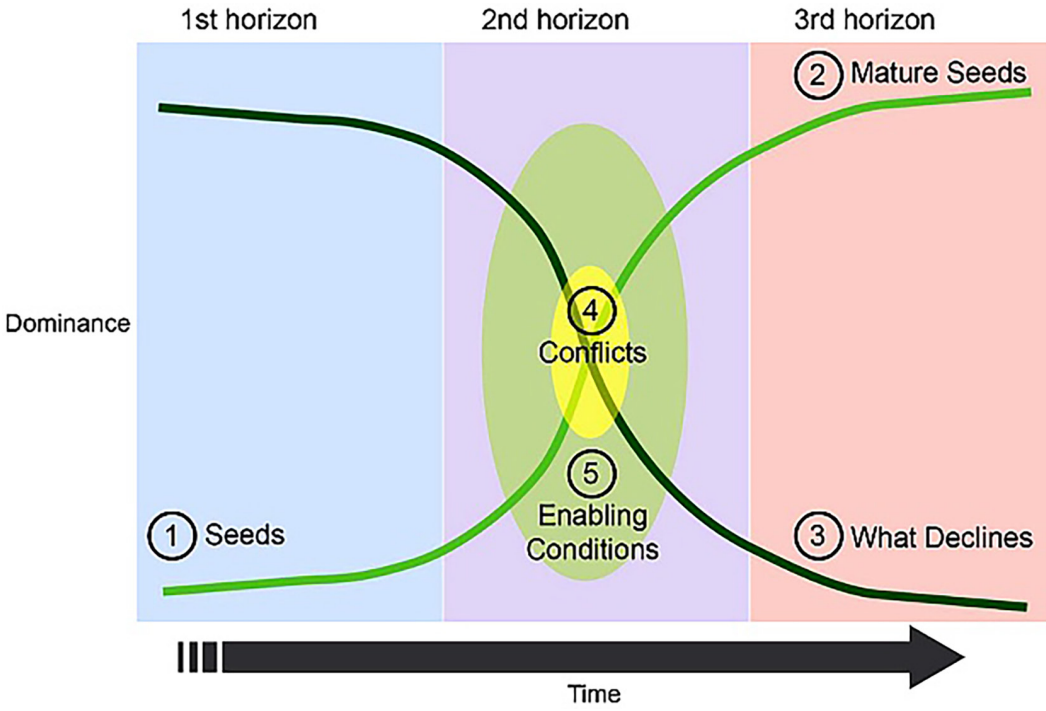


FIGURE 6 Seeds process adaptation of Three Horizons framework to examine how seeds grow.
Source: Raudsepp-Hearne et al., 2020.

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These methodical steps collectively contribute to the development of a comprehensive and internally consistent vision of a positive future, allowing for a better understanding of the pathways to realising such a future.

3 | LEARNING FROM THE SOGA INITIATIVE: IMPLICATIONS FOR DESIGNING CHANGE PROCESSES AND SUPPORTING CREATIVE POLICY WORK

Over the past decade, the SoGA initiative has conducted numerous workshops around the world, as documented in various studies (Bennett et al., 2016; Hamann et al., 2020; Pereira et al., 2018, 2020, 2023; Raudsepp-Hearne et al., 2020; van Velden et al., 2023). The authors of this article have hosted many of these workshops and have observed diverse groups of participants engaging in transformative foresight processes. From a decade of direct involvement and participant observation, we suggest that the SoGA approach aligns closely with the principles of transformative foresight as outlined in the earlier sections of this article. Specifically, the SoGA process effectively explores how change unfolds over time, examines the impact of varying belief systems on change, considers alternative future visions, recognizes the interconnectivity of systems, and incorporates a wide range of stakeholder perspectives. These elements confirm the transformative nature of the SoGA workshops, echoing the dynamics of transformative foresight, as discussed in Minkkinen et al. (2019).

Recent evaluations of the SoGA workshops indicate that the process enhances interactive and spontaneous participation among stakeholders, promotes the exploration of new ideas and experimentation, facilitates communal learning, provides tools for conflict resolution, and supports the coexistence of diverse knowledge types (Tuckey et al., 2023; van Velden et al., 2023). Furthermore, the SoGA framework engages with the dynamic nature of change, aligning with contemporary collaborative change-making approaches (Pereira et al., 2018; Preiser et al., 2021). The transformative foresight methods applied in these workshops are particularly effective in managing divergent views and power imbalances within group dynamics, allowing participants to discuss and negotiate what constitutes a "desired" future (Pereira et al., 2020).

Drawing from our extensive involvement in the SoGA workshops as organizers, researchers, and facilitators, along with recent evaluations underscoring the initiative's strengths in fostering interactive participation and dynamic engagement, we propose that the lessons learned can enhance transformative change processes and creative policy work. The SoGA initiative demonstrates that transformative foresight approaches can effectively support change and policy initiatives as they offer participants, planners, and decision-makers opportunities to reinforce the collaborative and transformative objectives of their own policy and convening practices.

3.1 | Insights relevant to change processes and policy work

Learning from the SoGA process, we suggest that the use of transformative foresight approaches can reinforce the impact of change processes and policy work in the following ways:

3.1.1 | Facilitate participatory processes for developing diverse and plural visions of preferred futures

Foresight methods enhance governance and participation in innovation by guiding the exploration of systemic structures and processes needed to develop new funding- and knowledge-creation models. These methods promote inclusivity and interdisciplinary collaboration by incorporating diverse perspectives and moving beyond traditional narratives to shape plural visions of preferred futures (Milojević & Inayatullah, 2015; Rutting

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et al., 2022). The inclusion of varied insights and ideas from different backgrounds is crucial, as it allows for the exploration of a diverse range of potential and innovative future scenarios (Martín-López et al., 2015). For example, the involvement of Indigenous Inuit communities in the Canadian Arctic in foresight processes shows how integrating traditional values into planning can profoundly impact inclusive participatory processes, fostering a shared vision for the future and deepening understanding of agency and power dynamics (Falardeau et al., 2019).

3.1.2 | Co-create narratives that are positive and inspirational

Aligned with the SoGA initiative's use of narrative-based scenarios, this strategy highlights the significant role of narratives not just as communication tools but as potent agents that merge various perspectives into coherent, compelling visions aimed at driving transformative change. The narratives, designed to be both positive and inspirational, could potentially encourage proactive policy changes aligned with envisioned future states, as suggested by Wibeck et al. (2022).

This narrative-centric approach is particularly resonant with current sustainability research trends advocating collaborative research across academic and non-academic spheres to tackle complex sustainability issues effectively (Biggs et al., 2008; McPhearson et al., 2016; Norström et al., 2020). By fostering optimistic and actionable future scenarios, the SoGA scenarios help counter the prevalent negative and apathetic attitudes towards climate change, encouraging a shift towards engagement and positive action (Skurka et al., 2023).

3.1.3 | Inspire participants to repattern their theories of change

The SoGA workshops may encourage participants, particularly from quantitative backgrounds, to reconsider their theories of change in a way that could influence policy development. By facilitating a cross-disciplinary dialogue, these workshops suggest that participants might expand their methodological scope to include futures thinking, potentially broadening the perspective on policy implications (van Velden et al., 2023).

In addition, interactions between quantitative specialists and those with an arts-based focus could inspire a more imaginative approach to policy formulation. Techniques such as science fiction prototyping and artistic integration may both invigorate the policy-making process and contribute to crafting policies that are both innovative and inclusive of diverse viewpoints (Lazurko & Keys, 2022; Pereira et al., 2023). These suggestions point towards a model where the arts and sciences collaborate, potentially leading to policies better equipped to address complex future challenges and cater to varied stakeholder interests.

3.1.4 | Create transformative spaces for reflective and creative multi-stakeholder engagements

Traditional meeting formats, often characterized by structured expert-led discussions, may not always foster innovation or facilitate transformative relationships. Reflecting on these limitations, sustainability and systems researchers advocate the creation of "transformative spaces." These spaces are intentionally designed to foster new relational dynamics and generate transformative opportunities, serving as "opportunity contexts" that can unlock potential changes (Pereira et al., 2018; Preiser et al., 2021; Westley et al., 2013). Such environments encourage more fluid and creative interactions, which are crucial for achieving meaningful and systemic change.

These transformative spaces suggest a move towards more dynamic settings where participants are encouraged to engage deeply with the material to collaboratively re-imagine new futures. The SoGA initiative embodies this shift by evolving continuously in response to emerging ideas and collaborative opportunities, highlighting

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an essential trend towards more engaged, interdisciplinary research that incorporates both academic and practitioner insights in a supportive, experimental environment (Pereira et al., 2018). This approach emphasizes the importance of nurturing safe spaces for experimentation and collaboration, which could be pivotal for advancing sustainable practices and theories.

The examples in Table 1 outline instances where these four insights have been prominently demonstrated throughout recent workshops.

4 | LIMITATIONS AND CONSTRAINTS

The SoGA initiative, and the methods mash-up used for it, is subject to some limitations and constraints taking into consideration that foresight evaluation typically requires modifications around the need to address the challenges of complexity, to deal with a long time horizon, the qualitative nature of the work, and documenting largely intangible and multiple foresight outcomes (Gardner & Bishop, 2019). Foresight evaluation has also mainly been focused on the predictive and planning frames, as opposed to the transformative frame, and have focused on assessing probabilities of futures outcomes (predictive) or planning to reach determined outcomes (planning) (Ko & Yang, 2023).

Moreover, evaluating what a "good" method is will always depend on the local and cultural contexts, the stakeholders and participants involved, the intended audience, and the objective of the futures study or foresight project (Hichert & Schultz, 2024). In this sense, the SoGA method can be judged a "better" method, compared to other foresight methods, when it comes to invoking depth of reflection, attracting and involving stakeholders, changing minds, and engaging hearts, as opposed to rigour in terms of formal logic and data structure.

Given the foresight evaluation caveats, limitations and constraints of the SoGA initiative and its related methods include; (1) challenges around identifying "seeds of change;" (2) the requirement for experienced and skilled facilitators with some background and knowledge of foresight; and (3) addressing the perennial problem of futures practice, which is connecting the futures insight generated by a project to the construction of a set of strategic responses that allow the actors and stakeholders to influence choices, actions, and decisions towards their preferred future.

4.1 | Identifying "seeds of change"

Identifying "seeds of change" is akin to the well-known foresight method of horizon scanning for weak signals, in particular the tracking and retrieving modes of scanning. Choo (2002) typifies weak signals as being difficult to detect, appearing as confusing (difficult to analyse), spurious (i.e., not indicative of a true change), and revealing the incompleteness of the available information. This description could characterize the search for—and identification of—seeds but, in reality, seeds identification is more straightforward due to their working definition of small-scale, existing, experimental projects and initiatives that employ new ways of thinking or doing and exist at the margin of the current world and worldviews. Seeds can take the form of new social institutions, technologies, or frameworks for understanding the worlds that are not yet mainstream, but have the potential (or have shown such potential at local scale) to improve livelihoods and sustainability outcomes. This definition of seeds brings them closer to Schoemaker and Day's (2010) conception of a weak signal being recognizable as "part of a significant pattern by viewing it through a different frame or connecting it with other pieces of information" reinforcing Harris and Zeisler's (2002) claim that, "Weak signals are weak because they are easily obfuscated by other factors, including current mind-sets, attitudes, and biases of those involved in the search for the future."

Taking into consideration the working definition of seeds that somewhat mitigates the challenges of weak signal identification, it is still recommended that researchers who engage in identifying seeds are aware of and guard against biases, as their choice of seeds can be influenced by factors like their social status, values, and the

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TABLE 1 Examples of specific instances where the four insights have been notably manifested during workshops.

SoGA process capacity	Illustrative anecdote/quotation	Workshop topic	Diversity of workshop participants	Sources
i. To facilitate diverse and plural visions of preferred futures	"You can't be what you can't see"	Better community futures in Wales	Youth and youth support organizations Local sustainable living activists Food bank volunteers Local government policy-makers	https://wcva.cymru/projects/better-futures-wales-community-foresight-project/
ii… To co-create narratives that are positive and inspirational	"A sense of inventiveness, of imaginativeness, freedom, and agency, those are on the rise… so the kind of work that we're doing here [is] to strengthen and invigorate our own imaginative capacities and to understand maybe some of the connections between these imagined futures and what we do today…"	Visions of good Anthropocenes in southern Africa	The stakeholders were chosen for their diverse professions, cultural backgrounds, interests, ages, and genders. However, each participant was considered to be a social innovator with agency and influence in their various networks. The professions of the participants ranged from scientists and artists to entrepreneurs	https://biospherefutures.net/scenario/scenarios-of-good-anthropocenes-in-southern-africa/ https://doi.org/10.5751/ES-09907-230119
	"I really like the positive imaginings of the future, because current times can be very overwhelming, and that creates inaction, because it is all too much, but if we come together with all the different minds and actively imagine a positive outcome it is encouraging."	Seeds of Good Anthropocenes: Fostering food systems transformations in Africa	Participants were selected on the basis of their participation in Cape Town's food system landscape and included farmers, activists, chefs, artists, local non-governmental organizations, and researchers	https://idrc-crdi.ca/en/project/seeds-good-anthropocenes-fostering-food-system-transformation-africa
	"I believe we can be a role model throughout the rest of the North. […] Others can learn from what we have started." "To imagine a scenario where change is possible can be very influential to try to make little steps toward trying to make things happen."	Participatory Scenario Planning: Case study in the Canadian Arctic	Indigenous/Local Knowledge experts, scientists, and managers at local and federal organizations	https://link.springer.com/article/10.1007/s11625-018-0620-z#Sec15

(Continues)

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TABLE 1 (Continued)

SoGA process capacity	Illustrative anecdote/quotation	Workshop topic	Diversity of workshop participants	Sources
iii. To inspire participants to repattern their theories of change	"You can't control the future, but you can influence it."	Better community futures in Wales	Youth and youth support organizations; Local sustainable living activists; food bank volunteers; local government policy-makers	https://wcva.cymru/projects/better-futures-wales-community-foresight-project/
	"Inspires me to take action even in small ways because cumulatively it can create systemic change."	Seeds of Good Anthropocenes: Fostering food systems transformations in Africa		https://idrc-crdi.ca/en/project/seeds-good-anthropocenes-fostering-food-system-transformation-africa
	"This an interesting process to be part of. As a natural scientist, all these tools were new to me." "[I] really enjoyed the model of seeing change over time and imaging what different futures could look like." "I loved them [the tools]. It was great to have processes that have not already been overused in the biodiversity sciences arena."	Building on "Seeds of Success" in invasive species management	Academics, invasive alien species management practitioners, local policy-makers, business people running Seed initiatives	https://link.springer.com/article/10.1007/s11625-023-01406-0
Iv To create transformative spaces for reflective and creative multi-stakeholder engagements	The focus of these conversations were: • developing a shared "hub" space • developing a circular food system • promoting wellbeing systems, and • creating resilient funds for local investment.	Better community futures in Wales		https://wcva.cymru/projects/better-futures-wales-community-foresight-project/
	"I feel like it was a meeting of old friends…friends from the future."	Seeds of Good Anthropocenes: Fostering food systems transformations in Africa		https://idrc-crdi.ca/en/project/seeds-good-anthropocenes-fostering-food-system-transformation-africa

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multiplicity of points of view. Schoemaker and Day (2009) provide a typology of biases that includes ways of circumventing them.

Regardless of the challenges of identifying weak signals, conducting scanning involves time and effort and is beyond any one person to perform well (Hichert et al., 2021). Ideally, the process should involve a broad network that, when stakeholders are involved, can enable greater contribution to, and ownership of, subsequent stages of the foresight process, increasing the likelihood of policy relevance to constituents and allies (Hichert et al., 2021).

4.2 | Requirement for skilled facilitation

Like many other futures and foresight methods and processes (Hichert & Schultz, 2024), the SoGA method requires experienced, skilled facilitators with some background and knowledge of foresight due to the visioning process being a combination and culmination of Mānoa scenario building, Three Horizons Framework, backcasting, and in some cases experiential futuring in the form of role play and storytelling. The need for skilled facilitation in foresight practice is underscored by the fact that this is not an expert-driven forecast-oriented foresight process, but a transformative "journey" involving diverse stakeholders where, among others, the importance of reflexivity is emphasized. Tully et al. (2018) clearly argue in their chapter "Using foresight methods to adapt development co-operation for the future" in the *OECD's Development Co-operation Report 2018* that skilled facilitation of foresight can help development actors engage with uncertainty and craft solutions for future challenges.

The need for skilled foresight facilitation typically involves in-person workshops, which incur costs for venues, travel, and supplies. However, spurred by Covid-19 lockdowns, the SoGA method has adapted to an online format, which, while delivering similar outputs, may lack the spontaneity and immersion of lived experiences.

4.3 | Linking project insights to strategic actions

A significant limitation of the original SoGA process is the absence of connecting the transformative positive visioning process to more mainstream decision-making and a set of strategic responses that allow actors and stakeholders to influence choices, actions, and decisions towards their preferred future. Curry (2021b) terms this a perennial problem of futures practice, and Hasbullah (2009) highlights the challenge of aligning futures-oriented research with practical, present-day decision-making processes.

This limitation was addressed in a subsequent SoGA initiative (van Velden et al., 2023) where the process was adapted by running a follow-up workshop to generate actionable domains of change with which to identify stakeholder-specific actions needed to move from the present to the desired future. This involves clustering transition actions generated in Horizon 2, identifying stakeholders, and making use of a "stakeholder matrix" ultimately populated by numerous strategic actions, plans, and recommendations for diverse stakeholders in their different contexts (van Velden et al., 2023). Current SoGA workshops have adopted this adaptation and are generating specific actions and recommendations for policy-makers, civil society actors, researchers, and other stakeholders for consideration when linking project objectives to strategic actions.

5 | CONCLUSION

Transformative foresight approaches can be tailored to support diverse policy contexts as they are well suited for integrating practitioners, local and indigenous knowledge systems, and those with scientific expertise around specific themes (Calof et al., 2012; Könnölä et al., 2007). The SoGA initiative promotes transformative

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change by facilitating creative and structural engagement through dialogue and deliberation, aimed at reimagining fundamental shifts in societal values, assumptions, and worldviews. This process can be relevant to policymakers for envisioning more radical and ambitious policy agendas that focus on systemic transformations rather than incremental changes. By recognizing the importance of contextualization, the SoGA initiative tailors its approach to the unique needs and circumstances of different geographical areas, acknowledging that different regions and communities have different priorities and challenges. By challenging the status quo and envisioning positive and transformative futures, the SoGA initiative encourages policy-makers to move beyond conventional approaches and consider innovative solutions that address social, economic, and environmental challenges. The usefulness of the SoGA initiative extends to various contexts, serving a range of purposes rather than a single function. Through the convening of localized networks and participatory processes, the SoGA initiative highlights the significant influence of narratives in shaping reality and driving positive change. These narratives shape our reactions to global events, moulding our actions in alignment with our envisioned futures.

The SoGA initiative demonstrates that transformative foresight approaches are more than just academic exercises—they have the potential to serve as potent catalysts for systemic change. Projects like SoGA not only prompt contemplation on a broader scale regarding how development interventions could be more transformative and contextually appropriate, but also foster connections and opportunities for the exchange of diverse perspectives and values across various societal realms. These connections create networks of interaction that give rise to cascading effects, thereby amplifying the potential for broader and more significant influence and impact. In this capacity, initiatives like SoGA function as dynamic spaces that encourage consideration of the broader systemic impact of change and serve as platforms for fostering new connections. This approach offers a compelling contrast to the often negative cascading effects seen in the "convergence of crises." By harnessing these dynamics positively, the SoGA initiative provides a template for how deliberate, inclusive, and transformative foresight can mitigate complex global challenges through thoughtful design of collaboration and innovation processes.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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