Seeding Change by Visioning Good Anthropocenes

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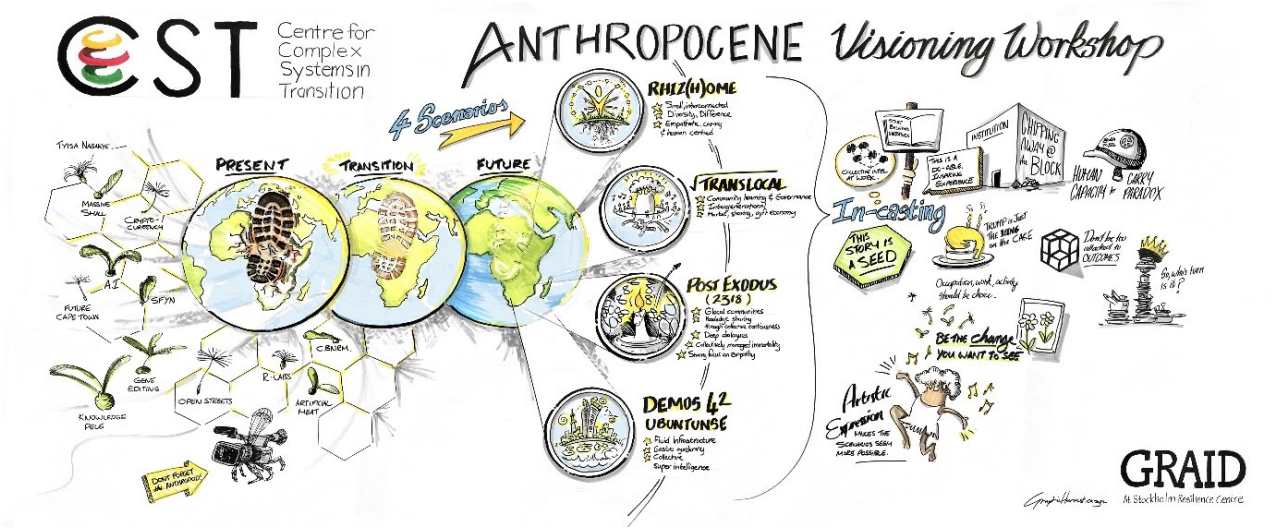

Artwork capturing the Seeds Visioning process from southern Africa in 2016

In Brief

Although we are surrounded by dystopian stories about the age of the Anthropocene, the future does not have to be bleak. Seeds of alternative good futures occur in many places around the world and we can use these to help us think more creatively about pathways to more desirable futures in the Anthropocene. This paper describes the Seeds of Good Anthropocenes (SOGA) project that aims to identify where elements of Good Anthropocenes ('seeds') currently exist on the planet and how they can be used to help us envision pathways towards new, positive futures for the Earth and humanity. Each of the seeds is a potential solution that could help to shift us onto a more sustainable trajectory that will ensure both planetary and human wellbeing. The project has developed and combined novel visioning tools that engage a broad set of stakeholders in identifying potentially game-changing seed initiatives, and exploring how these could develop and combine to create radically alternative futures. This new scenario approach has been used in intergovernmental processes such as the UN Environment's Global Environment Outlook (GEO) and the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES). By tapping into creativity and ingenuity, the SOGA scenario process provides a set of methodological tools through which we can think in new ways about how to navigate towards more desirable futures, starting with the pockets of these futures that are already with us in the present.

Key Concepts

- We need new, positive and inspiring stories and visions of the future
- Seeds—innovations and experiments at the margins—can be a source of inspiration
- We can develop radically alternative, novel and positive future visions for the Earth and humanity by combining different seeds and exploring their implications
- Connecting entrepreneurs behind different seeds can foster learning and collaborations that can help catalyze larger scale transformation
- There are a variety of diverse methods and approaches that can be combined to create transformative spaces within which actors can participate in inspirational visioning that can turn into action
- Creativity and new ways of thinking and doing are critical to fostering new trajectories for the Earth and humanity

The Earth system is now arguably in a novel, uncertain planetary era – the Anthropocene – in which human activities are a major planetary force[1]. These changes have largely been brought about through efforts to increase human wellbeing, particularly through conversion of land for food production and the extraction and use of fossil fuels[2]. This situation leaves us confronted with the grand challenge of the Anthropocene: how can people create a fair, prosperous, and sustainable planet when many people remain poor, and the activities that have created the Anthropocene are the main ways in which we have alleviated poverty to date?

Although the challenge of achieving a just and sustainable planet is daunting, there is hope. People are increasingly responding to the Anthropocene challenge with new ways of living that could contribute to the creation of a more prosperous, equitable, and just world – A Good Anthropocene[3]. We call these actions 'seeds' and define them as existing initiatives that are not widespread or well-known. These can include social movements, new technologies, economic tools, or social-ecological projects that appear to be making a substantial contribution towards creating a future that is just, prosperous, and sustainable.

There are many examples of new thinking, new ways of living, and new ways of connecting people and nature that address aspects of global problems, which could create different trajectories of future change. For example, there are groups reimagining the smart city concept and reshaping how urban citizens move around and reduce their energy consumption and carbon footprints; groups trying radically to reinvent finance for a greener world; people trying to reconnect human and ecological health; and many others (See Box 1 for some more in-depth examples). Indeed, the future does not have to be bleak.

On the global scale, the Sustainable Development Goals (SDGs) offer a set of aspirations for a more sustainable planet, but the pathways towards achieving these in an integrated way remains open. Although individuals, organizations and governments have repeatedly stated their desires and are even taking steps to create a better world, there is little agreement in the scientific or activist community on the details of what constitutes a good Anthropocene and how to bring it about. This may be due to the complexity and scale of change required, because different people's understanding of what is 'good' can diverge, because our sense of the right pathways to a good end are not the same, or because efforts that work in one context might not work in others. Indeed, sometimes, actions taken by one group to create a good Anthropocene create a worse Anthropocene for someone else in another location, at another time, or with a different concept of what is 'good'.

One method to help explore more positive futures and different potential pathways for achieving them is through scenario development[4]. While scenarios are a prominent feature of the global scientific community (IPCC, MA, GEO, etc.), there have been very few analyses of radically positive futures or how to achieve them from diverse perspectives. Those positive futures that do exist tend to follow a similar set of pathways that overestimate the power of mainstream strategies to bring about radical change[3]. This opens up three challenges for the scenario community: 1) scoping different perspectives on what would constitute a 'Good Anthropocene', 2) pushing the boundaries of conventional thinking to imagine positive futures that are *radically different* from the world today to help motivate transformative change, and 3) exploring what deeper structural changes may be needed in our politics, economies and societies to achieve a more desirable future. The Seeds of Good Anthropocenes Project aims to address these challenges by developing positive futures of the Anthropocene from a diversity of perspectives that inspire and empower people to start realizing them. The goal is that these visions need to be creative, innovative and transformative and operate across levels – from the local to the global.

Box 1

In this box, we outline four examples of projects from the Seeds of Good Anthropocenes (SOGA) database that are being undertaken to bring about a better Anthropocene.

Yachay City of Knowledge

Yachay City of Knowledge is a "New City" under development in rural Ecuador. "New Cities" are planned cities, usually designed and constructed in partnership between government and corporate actors. They represent a vision of the future—new ways of people living together and relating to one another and the environment, with innovations to support this vision designed into the landscape and infrastructure.

Yachay is conceptualized to be a technological research and innovation hub containing research facilities, a working university, and bio-tech companies. Because Yachay is located in one of the most biodiverse regions of the planet, nature, green spaces and biodiversity are being integrated into city plans in various ways. Approaches to sustainable development of the city include the use of locally recycled resources such as waste products from palm oil refineries for foot paths; bamboo for fences; recycled shipping pallets for fences and flower beds; adobe clay for paths and benches; and reclaimed wood for buildings.

Despite Yachay's aspirations, its development has been hindered by a downturn in Ecuador's national economy, and a lack of resources threatens its vision as an innovation hub of the South. But Yachay hopes to bring Ecuador sustainable economic development as well as make the country a model of experimentation, innovation, and learning.

Canadian Tribal Parks

"Tribal parks" are an example of Indigenous Peoples asserting their rights to govern and use land in their own way without the prior approval of a national government. In Canada, some tribal parks have been converted into recognized co-managed national parks (e.g. Gwai Hannas national Park) while others exist in a legal grey area where they have partnerships with some levels of government but are not formally recognized by others (e.g. Tla-o-qui-aht Tribal Park).

Tribal parks are interesting because they represent a novel way to incorporate traditional and historical values and Indigenous Knowledge Systems into the protection of ecosystems. They have been asserted not by colonial states, but by colonized people who have historically been displaced by the state. By enhancing the diversity of land ownership and land governance systems, these tribal parks can potentially provide opportunities for experimentation and learning that can benefit broader society and nature. Due to historical treaty rights, aboriginal lands represent places where different norms and rules apply within a country, and where different activities are practiced. These differences provide places where people and nature can interact in diverse ways and potentially provide lessons on social-ecological management that are relevant elsewhere.

Predator Free New Zealand

Predator Free New Zealand 2050 is a plan being implemented by the New Zealand government to eliminate all invasive vertebrate predators to protect New Zealand's rare endemic species, 80 percent of which are endangered. The government estimates that invasive predators cost the country over 3 Billion NZ dollars per year due to damage to agriculture, with additional impacts on cultural identity and tourism.

The goals of Predator Free NZ are unprecedented in global conservation. In an age of global movement of plants and animals, eradicating all invertebrate predators is a massive endeavour, especially in a country the size of New Zealand, with a large proportion of human-dominated ecosystems. While the technical challenges of the job are being met with innovations in science and technology, the social and political challenges are perhaps even more substantial. Killing and monitoring animals over a large area requires substantial public consensus and political support and a new common vision of the relationship between people and nature. In New Zealand, this requires connecting government plans with Māori goals for environmental management and restoration, as well as with the needs of people living and working in agricultural and urban areas. The plan has the potential to spur residents to reappraise their relationships with nature, and specifically with endemic plants and animals.

This seed is globally relevant, because the negative impacts of invasive species are a substantial problem in all parts of the world. In New Zealand the plan is for this seed to grow from isolated islands to larger islands and eventually the mainland.

Foundation for Ecological Security

The Foundation for Ecological Security is an Indian NGO that works to reduce poverty by helping communities organize to restore their ecosystems and enhance their livelihoods. Activities are founded on the idea that improving management of ecological commons is a key pathway out of poverty. The Foundation works with over 8000 village institutions in 31 districts across eight states to promote collaborative self-governance, and equal access of women and poor to decision making. To date, they have supported the restoration of over 1 million hectares of degraded forest, rangeland, and wetlands. The Foundation has also developed programmes and material that have been used to train 350,000 people in ecological restoration and management of village institutions.

The Foundation believes that communities are not passive recipients of the programmes designed to benefit them. By assisting communities in mapping the complexities of natural resource management and in articulating their common concerns, community driven processes become central to efforts that shape and use government policies and programmes for conserving natural resources. They have created a network of partners that includes different levels of government, international NGOs, local and international universities and local stakeholders.

The Foundation for Ecological Security is continuing to grow and increase its impact, but its level of community empowerment, its networked organization and its adaptive management methods could be used as a model for other groups working on poverty reduction issues.

Project description

In this paper, we present insights from an ongoing research initiative, "Seeds of Good Anthropocenes" (SOGA) that is at the forefront of approaches for imagining, exploring

and creating more positive futures in the Anthropocene. The rationale underlying the project is that the current predominance of dystopic visions about the future – climate change, population booms, biodiversity loss, increased inequality – makes it very difficult to imagine how the world could work differently and inspire solutions towards achieving radical change. Identifying positive and inspirational initiatives that already exist, and exploring the kinds of futures they might help create, can empower people to think and act in ways that start creating these more positive futures.

Laura Pereira
Coalitions of seeds being negotiated at the PECS conference in Stellenbosch, South Africa in November 2015

In order to achieve its overall goal, the SOGA project has four interconnected objectives:

1. Identify and collect in a database a diverse range of 'seeds,' (e.g. initiatives, organisations, projects, technologies, networks) that have high potential to contribute to Good Anthropocenes; .
2. Analyze the features of initiatives with high transformative potential, the contexts that best support these initiatives, and their cross-scale interactions; .
3. Develop methods for building more diverse, positive scenarios that push the limits of current thinking and build on the seeds in the database, to imagine radical transformative change across local, regional and global levels; .
4. Convene the change-makers behind the seeds to create new connections and help

catalyse large scale transformations; and.

5. Explore the systemic structural features of today's world that need to be addressed to facilitate transformative change, and enable current innovative initiatives to grow and flourish.

A key aspect of all five aims is a high level of engagement with people outside academia because of the recognition that transdisciplinary and cross-sectoral collaboration is vital to achieving transformative change. For example, seeds were collected in a series of participatory workshops in Southern Africa, and elsewhere, as well as online. In a parallel process, discussions about how to help people think more creatively led to the use of game design for developing scenarios. The project also involved experimenting with tools and methods to get people to think differently and more positively about the future. Over the duration of the project, several events took place where the team could experiment with different processes for collecting seeds, developing creative narratives of the future, and facilitating new connections amongst the innovators behind the seeds. Here, we reflect on these participatory processes.

Description of participatory methodological approaches using seeds

A central goal of the project is to use seeds as starting points for envisioning radically alternative scenarios of Good Anthropocenes. The 'seeds'-based scenario approach responds to the need to avoid creating purely dystopian, utopian or business-as-usual futures, and the need to imagine futures that are at once truly novel, as well as concrete enough to inspire practical action[5]. The scenario approach being piloted is specifically aimed at better imagining emergent change.

The SOGA project has implemented a range of different approaches for scenario creation, including basic narrative development, live role playing games, the three horizons framework and others (Table 1).

Processes used for scenario creation	Source of seeds	Use of seeds	Anthropocene challenges or surprises	Governance and socio-economic conditions	Degree of process co-design/ adaptation, iteration
Basic narrative development	Pre-existing seeds from database	Individual seeds	Not explicitly considered	Not explicitly considered	Pre-designed process: one round
Live role playing game for embodied futuring	New seeds—the process doubles as a way to collect seeds	Combining multiple seeds within the focus area (e.g. local seeds)	Anthropocene challenges as scenario building blocks	Some participants take roles as regime actors	Pre-designed process: multiple rounds with different conditions
Futures Wheels to explore what the implications are for seeds that have matured	Either existing seeds or using three seeds decided on by the group	Seeds are described in their 'mature condition' AND used as starting points to think about the implications of these seeds for social, technological, environmental, economic, political and values dimensions.	Not explicitly considered	The implications for how the seeds in a mature state impact these conditions are described	Pre-designed process with a single round
Cross-impact analysis to explain how seeds could interact with each other	Pre-selected or seeds decided on by the group	Three (or more) seeds are combined in a matrix to form new seeds	Not explicitly considered	Not explicitly considered	Pre-designed process
Mash-up to understand how seeds could combine under certain conditions	Pre-existing seeds from the database or new seeds suggested by the group	Two seeds are combined or 'mashed-up' into a novel idea or initiative	Challenges related to the Anthropocene can be brought in or addressed at any point in the process, especially to challenge thinking of how to deal with surprise	Seeds need to fit within a particular scenario, e.g. technological pathway	Space for the participants to re-design the process through different rounds
Three horizons for pathway development	Brainstorm of seeds as the process emerges (Seeds are used as 'weak signals' of the future)	Combination of seeds into a future desirable future (third horizon)	The first horizon explores existing dominant structures, trends and processes that could 'lock-in' current Anthropocene trajectories	Narratives about changing governance conditions as required for seeds	The three horizons framework is a heuristic tool that can be adapted for different needs
Wildcards	Wildcards can be seeds chosen by experts as the most novel or relevant for a particular group	Seeds are used as additional factors for groups to have to consider during their narrative building	Wildcards are introduced as surprises by the facilitator to disrupt the group and extend their creative thinking.	A wildcard could refer to a seed that has led to a specific socio-economic or political event (good or bad) such as a financial crisis or the collapse of the West Antarctic ice sheet earlier than anticipated	This can be used at any point to stimulate more radical discussions in a group and to test how resilient the future world is to surprise or whether the wildcard has already been incorporated in some way in the discussion.
Food Policy Council game where players play a food policy council combining seeds to achieve city-level food outcomes	A mix of seeds from within and outside the focus region; pre-collected	Participants received standard budget to be spent on combing seed elements into new initiative	Scenarios introduced as event cards based on rolling dice	Participants themselves played dominant regime actors	Can be adapted according to participants' interests, e.g. the introduction of different rounds with increasing budgets or modifications to the rules at each round

Table 1. An overview of different methodological processes that can be combined in various ways in order to design an appropriate workshop process

These different approaches have been implemented in different versions at workshops, scientific conferences, with communities of innovative initiatives and with students to develop seed-based scenarios. Rather than pre-designing a given incarnation of a seed scenario development approach, a co-design process has also been piloted, where in a workshop format the participants conceptualize and experiment with how to best

represent how seeds interact with their contexts and each other (by designing game or other interaction rules). This co-production approach allows for conversations about the nature of transformative change in the face of the Anthropocene, as well as providing an open approach to incorporating inter– and transdisciplinary perspectives into scenario building methods[5].

Laura Pereira
During a side event preceding the UN Environment Assembly in December 2017, groups of interested stakeholders used a seeds approach to help come up with strategies for achieving the SDGs

One particularly useful approach that we have modified and adapted to develop scenarios from seeds is the Three Horizons framework. The 'Three Horizons' is a graphical framework for thinking about what currently dominates the world and how it can change[6]. The currently existing patterns of the first horizon, shift to fundamentally new patterns of the third horizon, through a period of transition in the second horizon. In this process we:

1. Identify a set of disparate set of seeds that currently exist at the margins.
2. Imagine a world in which these seeds have grown from the margins and interacted to be a dominant feature of society.
3. This vision is then refined by looking backwards to the present and imagining what dimensions of our present world would have to become less important and what

would need to increase for this world to occur.

4. This then leads to a consideration of the pathways to get from the present to the future and the conflicts between the growth of the seeds and the decline of the parts of the existing world with which they are in tension (i.e the transition of the 2nd horizon).
5. Finally, we identify what types of enabling conditions would be necessary to enable the conflicts and crises identified in step four to be resolved in a way that achieves a world in which the seeds can grow and interact in a desirable way. These insights can be used to create rich, multi-dimensional descriptions of sustainability transitions from today to the future.

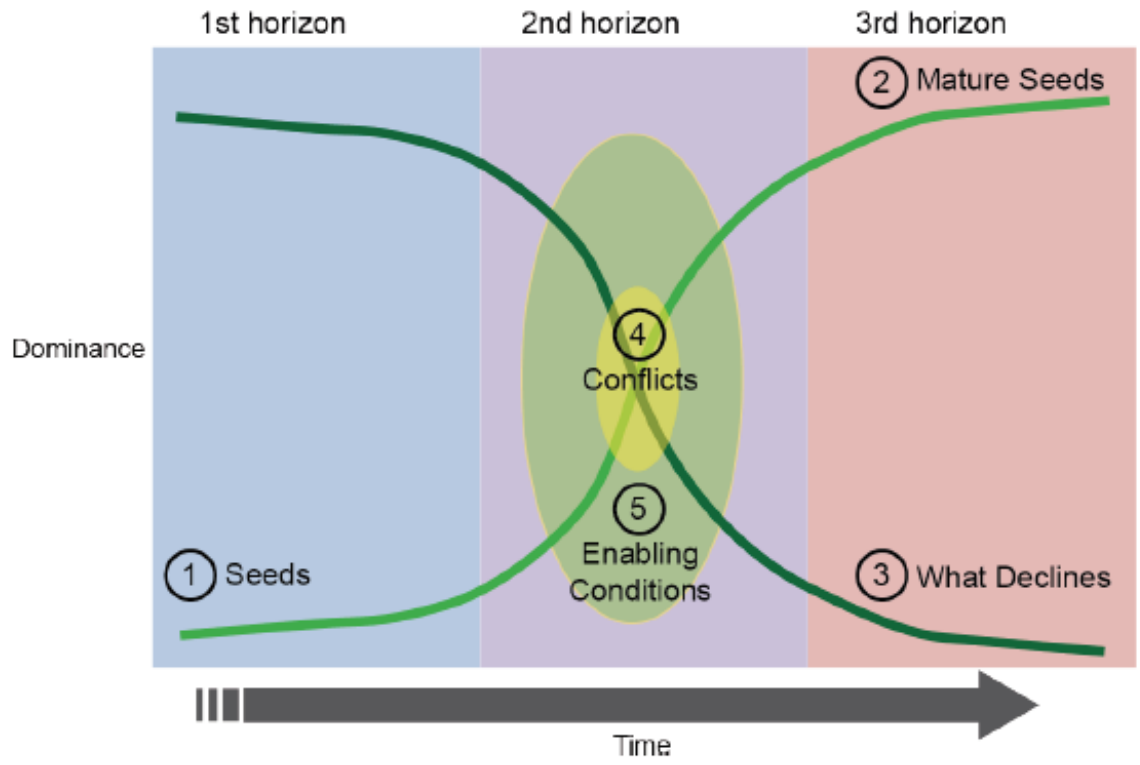

Figure 1. Three horizons framework and the five steps

The relevance of the seeds approach has also been highlighted by international assessment bodies, the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) and the Global Environment Outlook (GEO) run by UN Environment.7,8 Each of these assessment processes have been tasked with implementing more novel and policy-relevant scenario processes.9-11 IPBES used the seeds scenario approach in a nature futures workshop in Auckland, New Zealand that brought together an international group of stakeholders interested in the future of the Earth's biodiversity in order to create positive visions that could inspire decision-makers and inform modelling processes.7 In the GEO 6 process, the seeds approach was used to create an 'innovative' outlook section that talked to the environmental policy makers that commissioned the report.8 Each of these processes has been informed by the theory underlying the SOGA project- that existing positive initiatives exist now that if brought together in interesting ways, could chart a more positive future for the planet.

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At the SESNYC visioning workshop in May 2019, one group had to use coloured string to connect different aspects of their future wheels together

Solution-oriented outcomes

These workshop interventions have resulted in some inspiring and innovative solutions to global challenges. One of the key thematic focus points of the project has been around creating positive food futures, and two

Box 2: Stockholm

The workshop in Stockholm was a one-day event held on Oct 6th 2017 organized by researchers at Stockholm Resilience Centre. Its aim was to articulate alternative positive food

seeds-based workshops have been run with this in mind- one in Stockholm and the other in Kyoto (Box 2 and 3). These examples highlight how the seeds approach can shed new light on how to confront wicked and complex global sustainability challenges.
The global food system represents a nexus of wicked sustainability challenges: it needs to feed a burgeoning human population while staying within planetary boundaries related to climate change, biodiversity loss and nutrient cycles, as well as addressing issues of malnutrition, and safety risks such as antibiotic resistance. Clearly, we need a substantial change – a transformation – of the global food system. While some features of this transformation have been articulated (e.g. shifting to vegetarian diets and cutting food waste), it remains unclear how actually to realize this transformation. The seeds approach allowed us to explore visions of food system transformations that are plausible and grounded in local realities.

Differences and similarities in the perceptions of what such transformations can or should look like have been unearthed. For example, some key food system actors may see sustainable food systems characterized by seasonally adapted diets and geographically limited trade with neighboring countries. Others may hold a more global perspective and focus more on agricultural production at scales to make food affordable globally. It has been important to highlight the diverse cultural values around food systems – e.g. valuing cultural landscapes with biodiversity aided by grazing animals versus a vegan diet with no animal products and therefore a lower environmental footprint- because, despite such differences, there might be several points of agreement. Importantly, these tensions and synergies are mashed together in the seeds process and are central in

articulate alternative positive food futures for the Stockholm-Mälaren region. The 21 participants were from municipalities, civil society initiatives, farmer associations, business start-ups, and research organizations in the region—all wanting change to sustainable food systems, but with different ideas of what that means. Because of the short time frame, only the first step of the Manoa Mash-up[12] for participatory visioning (Table 1) was performed. Each participant brought a seed, their own or someone else's that they were inspired by. The participants were divided into small, but diverse groups, and 1) presented their seeds, 2) created futures wheels, 3) made collages of what the future food system in the region could look like, and 4) shared their ideas among the groups. An artist captured the discussions during the workshop. There was also practical inspiration in the breaks, through the meals prepared by a chef renowned for sustainable gastronomy, and examples of sustainable farming practices at the farm where the workshop venue was situated.

The workshop succeeded in fostering new connections among different actors engaged in sustainable food in the region. There were clear common themes among the groups, and these were captured in one common vision for the region and illustrated by the artist. The vision was presented, together with a set of discussion questions around what a positive future is and how to get there, at a food systems conference in the region. In a next step, the researchers conducted a survey among an extended group of regional food actors, including the workshop participants, to clarify potential conflicts between different values in the vision, as well as common priorities and opportunities for new collaboration projects.

generating a vision of the future that is made up of multiple perspectives and trends and reveals overlapping goals.

Next steps

There are several interesting potential next steps for this project, including further development of the scenario approach; development of a project 'theory of change'; and exploration of how the various seeds in our database are – or are not – successful at bringing about transformation of their situation to a better Anthropocene. Key next steps include trying new contexts that have sometimes been problematic for scenario development, including developing scenarios with indigenous peoples and other marginalized groups, and with individuals that have contrasting ideas of what would be 'good' in a good Anthropocene. We have also experienced the positive, idea-sharing aspect of bringing together seed change-makers to share insights about what works and what are barriers – everything from managing local politics to organizational strategy to financial resources. This could be further supported to inspire and help increase the ability of these entrepreneurs to bring about positive transformation by developing new collaborative projects through a seeds network.

SOGA would like to build a seeds network to mobilize collective action and explore how the seeds could be scaled up in different ways to achieve transformative change, in particular those that can help in achieving an integrated set of SDGs. A critical aspect will be to continue to learn through the research and reflect on the project process as it evolves and takes on new shapes.

Key concepts

- We need new, positive and inspiring stories and visions of the future
- Seeds – innovations and experiments at the margins – can be a source of inspiration
- We can develop radically alternative, novel and positive future visions for the Earth and humanity by combining different seeds and exploring their implications
- Connecting entrepreneurs behind different seeds can foster learning and collaborations that can help catalyze larger scale transformation
- There are a variety of diverse methods and approaches that can be combined to create transformative spaces within which actors can participate in inspirational visioning that can turn into action
- Creativity and new ways of thinking and doing are critical to fostering new trajectories for the Earth and humanity

Acknowledgements
The project is funded by Future Earth in conjunction with the Programme on Ecosystem Change and Society (PECS) and ecoSERVICES, with contributions from the GRAID (Guidance for Resilience in the Anthropocene: Investments for Development) project.

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Box 3: Kyoto

The aim of the series of focus groups and workshops in Kyoto was to test how innovative urban food practices can benefit from collecting, exploring and combining such practices with relevant actors from the field. For the Kyoto case, the "seeds" participants were based in Kyoto prefecture and engaged in social activity that pursues idealist future goals with regards to the food system. They engaged in a mixed-methods research design of semi-structured visioning interviews, back-casting focus groups and workshops consisting of a digital game and a card-based live role-playing game (Table 1). The different methods enabled the participants to share and combine their experiences and visions of the future. For example, the card game consisted of a deck of cards with seed initiatives from Kyoto, Japan and the world. The participants were tasked with combining these seeds and supporting them through the creation of a Food Policy Council. This added an extra framework for experimentation with the seed ideas and what governance mechanisms are necessary to enable these seeds to grow and interact positively.

The outputs of the exercise were both the scenarios that were generated by the participants, but also how the process itself motivated action, the establishment of a network of change-makers, and increased understanding of urban food systems from multiple perspectives. Together, the outcomes were expected to lead to new or extended imaginaries, which are the deep-seated modes of understanding that constitute the social and political space through which people perceive, judge and act towards the future.

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