UNDP SIGNALS SPOTLIGHT 2024

HOPE FOR ALL GENERATIONS

Citation:
UNDP (2024). UNDP Signals Spotlight, 2024. New York, New York.

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ACKNOWLEDGMENTS

The Spotlight includes signals contributed to UNDP's Future Trends and Signals System by 300+ UNDP staff worldwide who continuously scan the horizon for signals of change.

We especially thank scanners who contributed to this year's Spotlight: Beth Allen, Alexandra Antunes, Rebecca Carman, Betty Chemier, Drasko Draskovic, Luis Cervantes García Rulfo, Maria Eugenia Lopez, Gabriela González Lucha, Tanja Hichert, Jennifer Hotsko, Igor Izotov, Alexis Laffittan, Julieta Joseldo Massango Chemane, Zandile Mthembu, Jorge Munguia, Wan Nurul Hanani binti Wan Alkamar Shah, Mariana Olcese, Cristhian Parra, Antoine Pierre, Lazar Pop Ivanov, Ranel Ram Cheng, Maurice Rwamigabo, Piotr Sachek, Muzaffar Tilavov, Anh Thi Bao Tran, Kunzang Wangmo, Lucy Wanjiru and Micaela Zapata.

We much appreciate the reflections of leaders who joined UNDP Administrator Achim Steiner in a Future of Development Strategy Lab on the Spotlight: Lina AbiRafeh, Pablo Reyes Arellano, Joseph D'Cruz, Jacob Ellis, Francisco Gaetani, Roman Krznaric, Patience Masua, Patrick Noack, Alexandria Procter and Jose Ramos.

We are grateful to Shoukei Matsumoto and Natalia Atuesta-Escobar for contributing their perspectives on the future to the Spotlight. We thank Heba Chehade, Pedro Conceicao, Joseph D'Cruz, Francisco Gaetani, Awanish Kumar, Jeannette Kwek, Gina Lucarelli, Linda Maguire, Matilde Mordt, Derek Pieper, George Profitiliotis, Claudio Providas, San Rahi, Samuel Rizk and Isabel Saint Malo for peer reviewing a draft of the Spotlight.

Early sensemaking was discussed with diverse experts for whose collaboration and insights we are most grateful:

Experts convened by the International Science Council: Sibel Eker, Wadid Erian, Alma Cristal Hernandez-Mondragon, Farai Kapfudzaruwa, Awanish Kumar, Mariel Lavieri, Genevieve Liveley, Mitul Luhar, Rita Orji, Carolina Santacruz-Perez, Odirilwe Selomane, Anne-Sophie Stevance, Megha Sud, Saini Yang and Laura Zimmermann.

Members of the European Strategy and Policy Analysis System network: Tommi Asikainen, Salvatore Finamore, Petra Goran, Maija Knutti, Maciej Krzysztofowicz, Eamonn Noonan and Nicola Spano; and from the European Commission (DG International Partnerships), Felipe Bosch, Jiselle Saaman Chidiac, Zdenka Dobiasova, Gael Griette, Sylva Havlu and Michelle Labeeu.

Young activists and futurists: Dana Ahmed, Zawad Alam, Natalia Atuesta-Escobar, Adel Azouni, Anastasija Đorđa Bosančić, Luis Alvarado Bruzual, Kar Marn (Katelyn) Chin, Rezi Dgebuadze, Adolphus Yik Chun Lau, Praise Majwafi, Maira Shaikh Qureshi, Alfredo Lorenzo Sablay, Meeri Seidakmatova, Abhishek Sudke, Yujie Wang and Ecem Yilmazhaliloglu.

Partners and colleagues from UNDP's Regional Bureau for Africa: Evelyne Bamba, Winnie Cheche, Mikayla Cheng, Becaye Diarra, Henry Rene Diouf, El Hadji Fall, Challa Getachew, Raymond Gilpin, Martin Hart-Hansen, Abbi Kedir, Aboubacar Koulibaly, David Maina, Sheila Ngatia, Tony Ngororano, Emmanuel Owusu-Sekyere, Thangavel Palanivel, Nadine Rugwe, Ligane Sene, Njoya Tikum and Zeynu Ummer.

We also thank for their collaboration Scott Smith of Changeist and John Willshire of Smithery; Marie Lena Tupot and Tim Stock of scenarioDNA inc.; and André Arruda and students from the Strategic Foresight and Futures Design Masters' course at the Escola Superior de Propaganda e Marketing, Brazil.

We thank for their contributions our UNDP colleagues Amal Aldababseh, Milica Begovic, Thomas Beloe, Yuping Chan, Alberto Cottica, Pauline Deneufbourg, Patrick Duong, Xoan Garcia, Aleida Ferreyra, Cassie Flynn, Arvinn Gadgil, Stephen Gitonga, Jan Kellett, Julia Kercher, Sarah Lister, Dan Malinovich, Marcos Mancini, Riad Meddeb, Elias Mouawad, Fabio Oliva, Rob Opp, Stefano Pistolese, Corli Pretorius, Josie Raine, Carolina Rivera, Megan Roberts, Ana Rojas, Emanuele Sapienza, Philip Schellekens, Tiina Turunen, Maxim Vergeichik, Clarice Wilson, Eri Yamasumi and Vitalii Zakhozhyi.

We thank Peter Barry, Athena Diaconis, Rodrigo Domingues, Alina Flores, Carolina Given Sjolander, Caroline Hooper-Box, Mark Jones, Dylan Lowthian, Pragya Mahendru and Anna Ortubia for their support with design and communications. We thank Roberto Astorino, Monica Azar, Maristela Marques Baioni, Juliana Grangeiro Ferreira, Manuela Lima, Cristiano Prado, Manoel Salles and Valdinea Pereira da Silva in UNDP Brazil, Botagoz Abdreyeva and Sarah Zubaid for their support with publication and launch.

FOREWORD FROM THE ADMINISTRATOR

At the Summit of the Future in September 2024, the world will consider how to deliver a better present, while still preserving choices for generations to come. It is that difficult balancing act that inspired this year's Signals Spotlight to focus on intergenerational equity, or fairness between generations.

We start from a world mired in conflict, distrust and uncertainty. Two billion people live amid violent conflict. To them the welfare of future generations may seem a remote concern when compared to their daily struggle for survival. Yet intergenerational equity is about fairness for all generations. Hope for the future does not diminish our determination to tackle today's immediate challenges and to see justice for generations now living.

The 1987 Brundtland report "Our Common Future[1]"already defined sustainable development in terms of intergenerational equity, as development that would "meet the needs of the present without compromising the ability of future generations to meet their own needs." The Spotlight does not pretend to judge what might meet that standard, for we cannot presume to know what future generations will want or need. Instead, it highlights some areas where this tricky question of fairness between generations seems to arise, and what this might mean for development.

These are important questions because, despite advances in development, we have a sustainability and fairness problem. Progress towards the Sustainable Development Goals (SDGs) has been limited, with only some 17% of targets[2] on track to be achieved by 2030. We live in an era of immense potential, yet we are competing rather than collaborating. We need to cooperate towards a future of development that preserves our planet for future generations, so they inherit choices, not last resorts, and a legacy of opportunity, not debt.

A half century ago, Barbara Ward's seminal book *Only One Earth* spoke of the "duty to hope," not in a naïve sense but a brave one: hope grounded in conviction and shared interests. The SDGs were born from this kind of hope. This year's Summit of the Future is an opportunity to revive it. I hope this Signals Spotlight, too, will inspire hope for a fairer future, for all generations.

Achim Steiner

Administrator
United Nations Development Programme

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WHAT IS THE SPOTLIGHT?

PURPOSE

UNDP's Signals Spotlight highlights some of the signals and trends UNDP sees emerging that we consider will be significant for development in the next 3 to 10 years. This year, the Spotlight focusses on intergenerational equity (fairness between generations) because of its importance to the Summit of the Future in September 2024.

The Spotlight aims to get the reader thinking about changes on the horizon they might not have noticed, or only seen from certain angles, and to ask what they might mean for development. This helps reveal the infinite variety of possible futures ahead - and where we might be able to steer change towards the future we want.

METHODOLOGY

The Spotlight includes signals from UNDP's Future Trends and Signals System, a growing network of 300+ UNDP staff worldwide who continuously scan the horizon for signals of change. From the hundreds of signals noticed over the past year, the UNDP Strategy & Futures Team chose some of the most interesting, then looked for patterns among them. The team held consultations with experts from the International Science Council, the European Commission, African think-tanks and young people to seek their perspectives on what was emerging.

The team chose 16 themes to feature in the Spotlight. The choice of themes, while subjective, depended on three criteria:

- Particularly relevant to intergenerational equity.
- Deserving greater attention given their growing significance for development.
- Suggesting a potentially interesting or important change of direction.

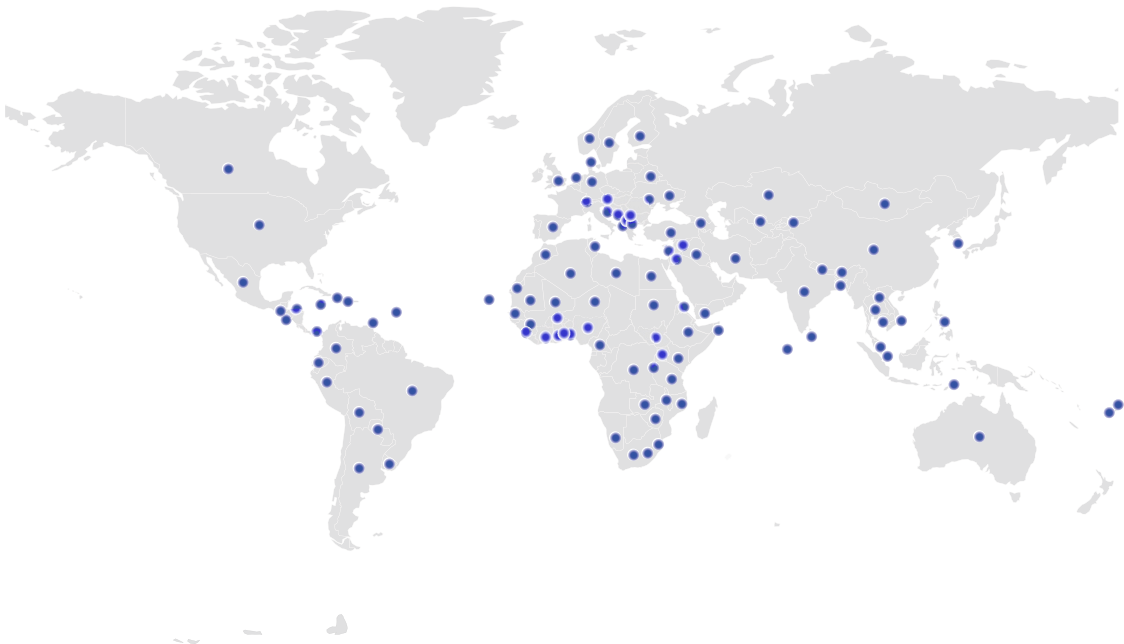
The themes are clustered into three sections: hope for an equitable future, hope for responsible technological progress and hope for resilient and connected communities.

GEOGRAPHIC RANGE OF UNDP SIGNAL SCANNERS, 2023-2024

111
COUNTRY LOCATIONS

389
SIGNAL SCANNERS

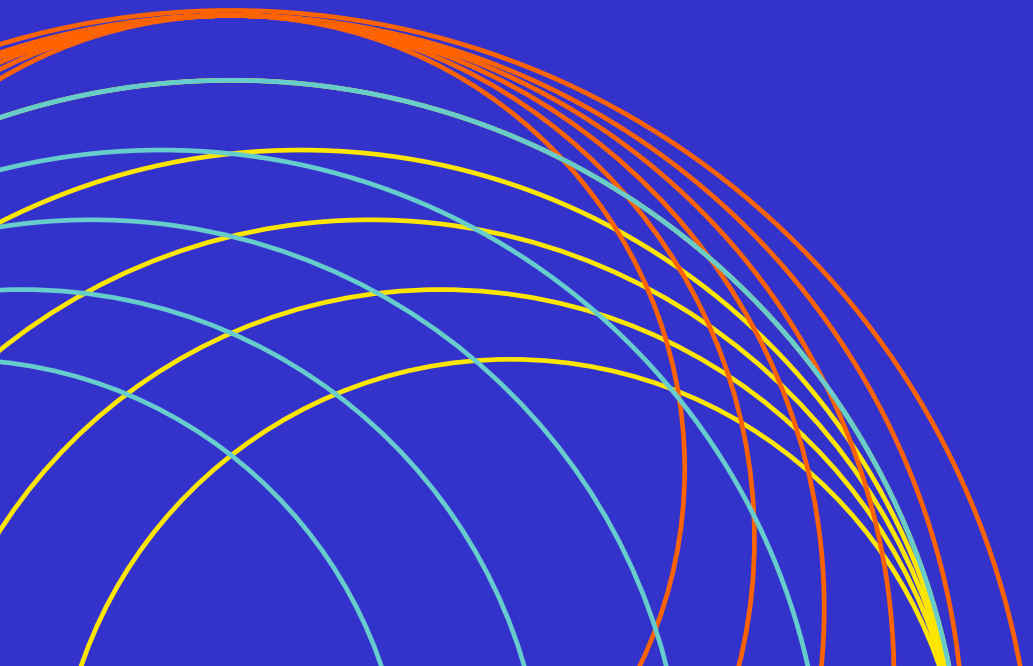
110
ACCELERATOR LAB SCANNERS



OVERVIEW OF THE SPOTLIGHT

Looking ahead to the Summit of the Future in September 2024, the question of what kind of world we leave to our descendants concerns us all. The Signals Spotlight identifies some of the areas where our legacy to future generations is in doubt – and asks what that means for development.

The material in the Spotlight comes directly from the observations of UNDP's staff on the ground, a global network of "signal scanners" who scan the horizon for signs of change. It's a conversation starter; the reader is encouraged to dip into chapters and ask: are the signals of change which UNDP is noticing novel, or already familiar? And what might they mean for development?



The Spotlight is divided into three chapters:

- **Hope for an equitable future:** this chapter looks at opportunities for justice between species, across geographies and time. An equitable future means leaving options open for current and future generations to flourish. To that end, some governments are adopting longer-term perspectives through legislation for the rights of nature and of future generations. There is growing interest in alternative economic models, fairer to people and planet.

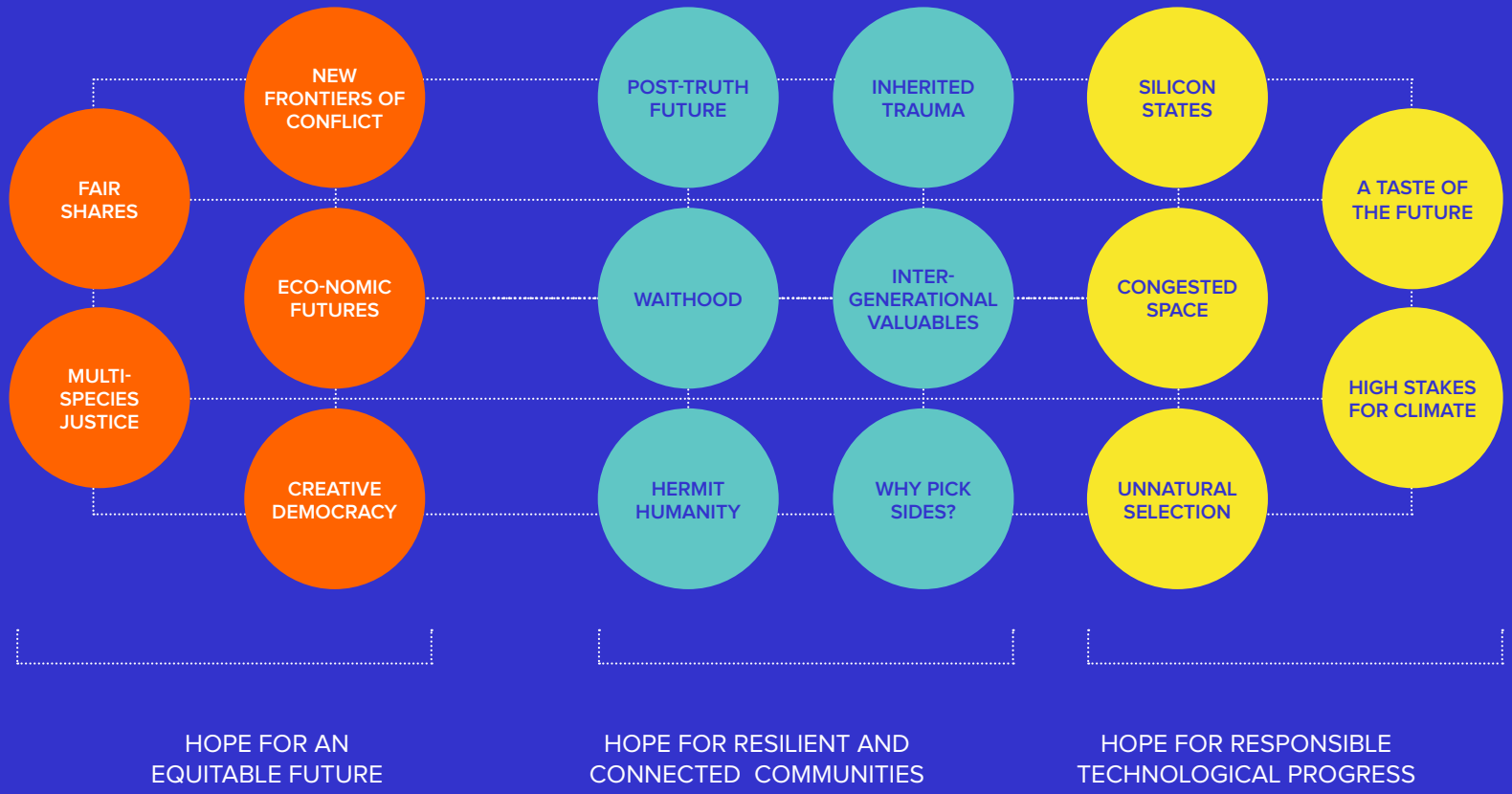
- **Hope for responsible technological progress:** we see huge opportunities for development in today's extraordinarily rapid progress in science and technology, from AI to biotechnology to neuroscience to space exploration. Yet technologies are not neutral. To ensure their benefits are fairly shared – across geographies and generations – multilateral cooperation and responsible governance are essential.

- **Hope for resilient and connected communities:** this chapter looks at some of the threats to strong communities, like the persistent trauma of conflict and disaster, digital disinformation, and the feeling of some young people that they are languishing in "waithood". It finds signs of hope and investment in social and intergenerational connections. Multigenerational living and workplaces are making us rethink our linear model of life. Progress towards gender equality, though much slower than it should be, can improve everyone's chances to thrive.

It can be hard to feel hopeful in a world where two billion people live in conflict. There is a temptation to put off tomorrow's issues in the urgency of today. There is also a temptation to think that the future is inevitable. On the contrary, we live in a world of great possibility. We cannot presume to know what future generations will want or need – but we should leave a legacy of choices. The Spotlight shows that every day, people and communities and governments are making choices that can lead us towards better futures, for all generations.

CHAPTERS AND THEMES

All 16 themes interconnect. The strongest connections are highlighted at the beginning of each theme.



HOPE

It can be hard to be hopeful in an unequal, uncertain and increasingly polarized world. Many young people are frightened[3] of the future; even more are worried[4] about losing their job and threats to societal stability. To "engage" us, social media plays on our negativity bias[5] (the human tendency to pay more attention to negative information than positive) and raises the volume of disagreement[6]. The pessimistic stance can seem the safer option because people tend to forget[7] about gloomy forecasts that don't come true, whereas they love to trumpet the mistakes of over-optimistic predictions.

Why does it even matter whether or not we feel hopeful? Because our outlook on the future influences the choices[8] we make today. People generally pay most attention to the future they consider most likely or plausible, but actually "the most important future is the future the greatest number of people believe the most... the future on which they are basing their decisions and actions." That is why we need to encourage hope and belief in positive futures, so that people will make decisions in that mindset - decisions which then help those futures to materialize.

Hope is more than just a pleasant feeling. It can influence actual outcomes. Positive messaging[9] around climate change, for example, can inspire more productive action than does fearmongering.

Hope encompasses skills that can build well-being and resilience[10] When people cease to believe in the future, the loss of hope can mean apathy or resignation.

Cultivating hope is not about adopting a determinedly blithe attitude to the future or denying its challenges. Rather, it is about pragmatic optimism: asking how we can make the most of the opportunities we do have, looking for ways to preserve choice and agency. Even in the most challenging contexts of conflict or crisis, hope is central[11] to nurturing people's sense of purpose and a path out of despair. Vaclav Havel[12] wrote, "Hope is not the same as joy that things are going well... but rather an ability to work for something because it is good, not just because it stands a chance to succeed."

There are practical ways we can cultivate hope. Involving ordinary people in public policy deliberation can encourage positive thinking[13]. Empathy, which can be learned[14] and transmitted, connects us with the aspirations and fears of others, fostering a shared sense of hope. Tweaking the algorithms[15] that dictate our social media feeds could bring other points of view onto our screens. Using more varied data for artificial intelligence (AI) training could strengthen empathy across geographies and cultures. Developing a planetary conscience[16] can join us together to cultivate a good quality life for all humans and other beings.

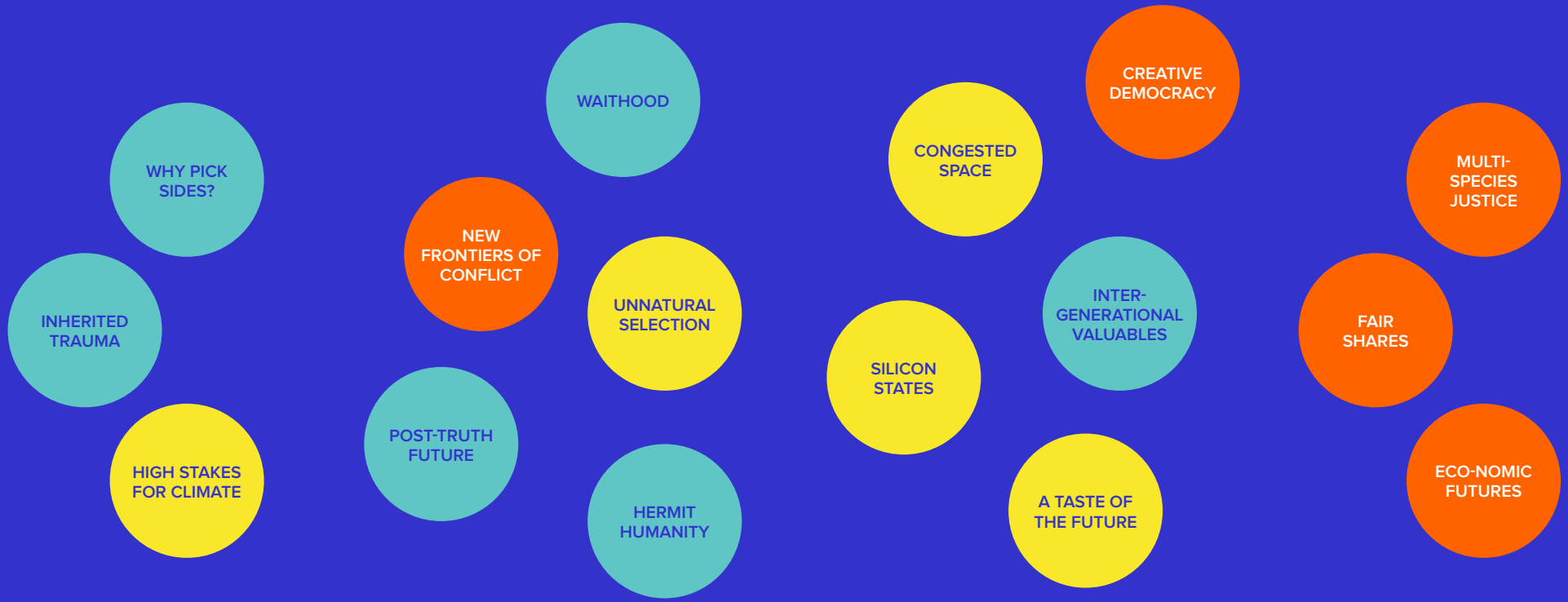
So what gives us hope? Optimists[17] who "recognize that the world will only improve if we fight for it." Students in Lima organizing through social media to make someone happy for a day[18].People's enthusiasm for collaboration in pursuit of the collective good. The idea that hope is teachable and that technology might hold the key to cultivating empathy and stronger human connections. Grassroots innovators[19] solving problems in new ways that, if scaled, could help us get to intergenerational equity.

To build a fairer future for all generations, to create positive futures, we have to start with hope.

MOVING TOWARDS INTERGENERATIONAL EQUITY

The 16 themes are nuanced in their potential for advancing intergenerational equity. Each theme contains seeds of hope as well as obstacles or difficulties in our path. This graphic illustrates the relative effort required for each theme to drive us toward greater equity.

- HOPE FOR AN EQUITABLE FUTURE
- HOPE FOR RESILIENT AND CONNECTED COMMUNITIES
- HOPE FOR RESPONSIBLE TECHNOLOGICAL PROGRESS



POTENTIAL TO **CREATE MORE INEQUITY**

POTENTIAL TO **CREATE MORE EQUITY**

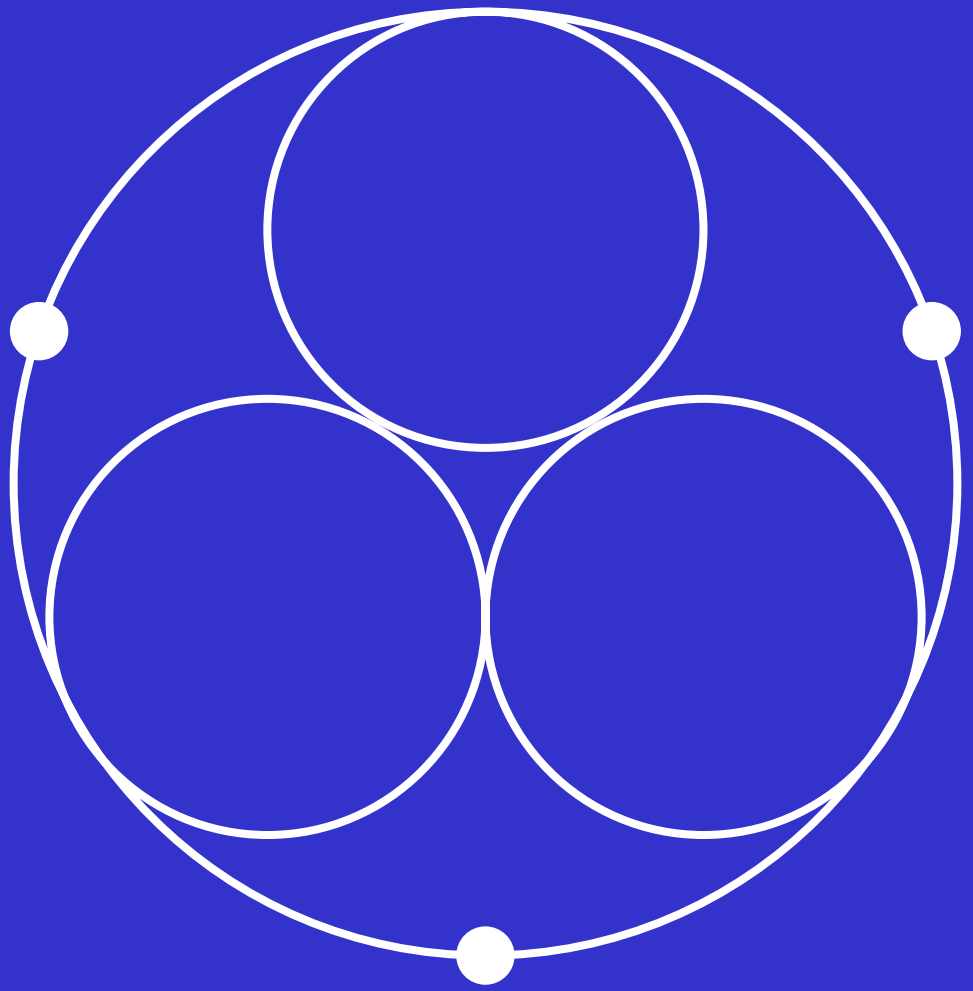
HOPE FOR AN EQUITABLE FUTURE

Opportunities for justice between species, across geographies and time.

01 Fair shares
02 Multi-species justice
03 New frontiers of conflict
04 Eco-nomic futures
05 Creative democracy

The principle of intergenerational equity requires us to leave all the options open – environmental, economic, social – for current and future generations to flourish. While we cannot presume to know what future generations will want or need, we should leave a legacy of choices. To that end, some governments are adopting longer-term perspectives through legislation or dedicated bodies for future generations' rights. There is growing interest in finding alternatives to the current economic models that are decoupled from sustainable development. Alternative models, fairer to people and planet, will increasingly need to consider the interdependent needs of humans, non-human animals and nature. Meanwhile, a quarter of the world suffers amid violent conflict. Stress factors from climate change to AI's growing demand for energy and water may provoke new tensions. Multilateral cooperation is vital to building an equitable future for all.

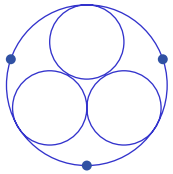
01
FAIR SHARES



CONNECTED TO:

- MULTI-SPECIES JUSTICE
- ECO-NOMIC FUTURES
- A TASTE OF THE FUTURE
- HIGH STAKES FOR CLIMATE
- INHERITED TRAUMA
- WHY PICK SIDES?

01 FAIR SHARES



OVERVIEW

Imagine choosing a society to live in without knowing who you'd be and what chances you might have (as in philosopher John Rawls' thought experiment to design a fair society). Now, extend that to intergenerational equity: imagine you'll be born at some unknown point in the future. You'd want to keep all the options open - environmental, social, economic - for future generations to flourish. Leaving a legacy of choice, not a burden of debt, is the only way to ensure fair shares for all, now and in the future.

SIGNALS

Intergenerational equity, or fairness between generations, is the idea that "the pursuit of welfare by the current generation should not diminish the opportunities for a good and decent life for succeeding generations[20]."

Discussion of the legacy we leave usually focuses on the environment, since young people will disproportionately experience the negative, and compounding, consequences of climate change, biodiversity loss and environmental degradation. But intergenerational equity has to expand to include new challenges, like overburdened pension systems in ageing societies, the shifting nature of work, and even fair shares of non-material resources, like access to knowledge and fulfilling experiences. It must consider not just younger or future generations, but older ones as well; see for example the European Court on Human Rights' ruling[21] that the Swiss government's failure to mitigate global warming violated the right to health and life of a group of elderly women.

Many governments are deliberately trying to incorporate longer-term perspectives into policy-making, such as Wales' Well-being of Future Generations Act[22]. Japan's Future Design[23] movement is inspired by the principle of seventh-generation decision-making[24] practised in many Native American communities. Japan's time rebels[25] wear ceremonial yellow robes and imagine themselves living in 2060, even as they plan today's towns and cities. Time banks worldwide[26] let people bank hours[27] to be redeemed in their old age, supplementing social safety nets[28] and strengthening communities in the process. Citizens' Assemblies[29] factor future generations into decision-making, while intergenerational equity[30] is a stated consideration in some government budgets[31].

Intergenerational justice asks us to look back too, to make reparations for historical injustices that disadvantaged present generations. African and Caribbean nations call for an international tribunal[32] on atrocities dating to the transatlantic trade of enslaved people, while the African Union proposes as its theme for 2025 "Justice for Africans[33] and people of African descent through reparations." Reparations for climate damage[34] might draw on the example of postwar Germany.

01
FAIR SHARES

SO WHAT FOR DEVELOPMENT?

Global ecosystems risk collapsing[35] decades earlier than anticipated, and inequality[36] between and within countries has increased each year since 2020. Reversing these trends means taking a longer-term perspective. Legislation or dedicated bodies for intergenerational justice can make this happen - like the Welsh Commissioner for Future Generations[37]; Parliamentary Committees of the Future[38]; and citizen-based deliberative bodies. Should there be a UN envoy[39] for future generations? Imagine half of all Parliaments were representatives of future generations, or politicians were obliged to assess the seventh-generation impact[40] of their decisions - what kind of decisions would they be making?

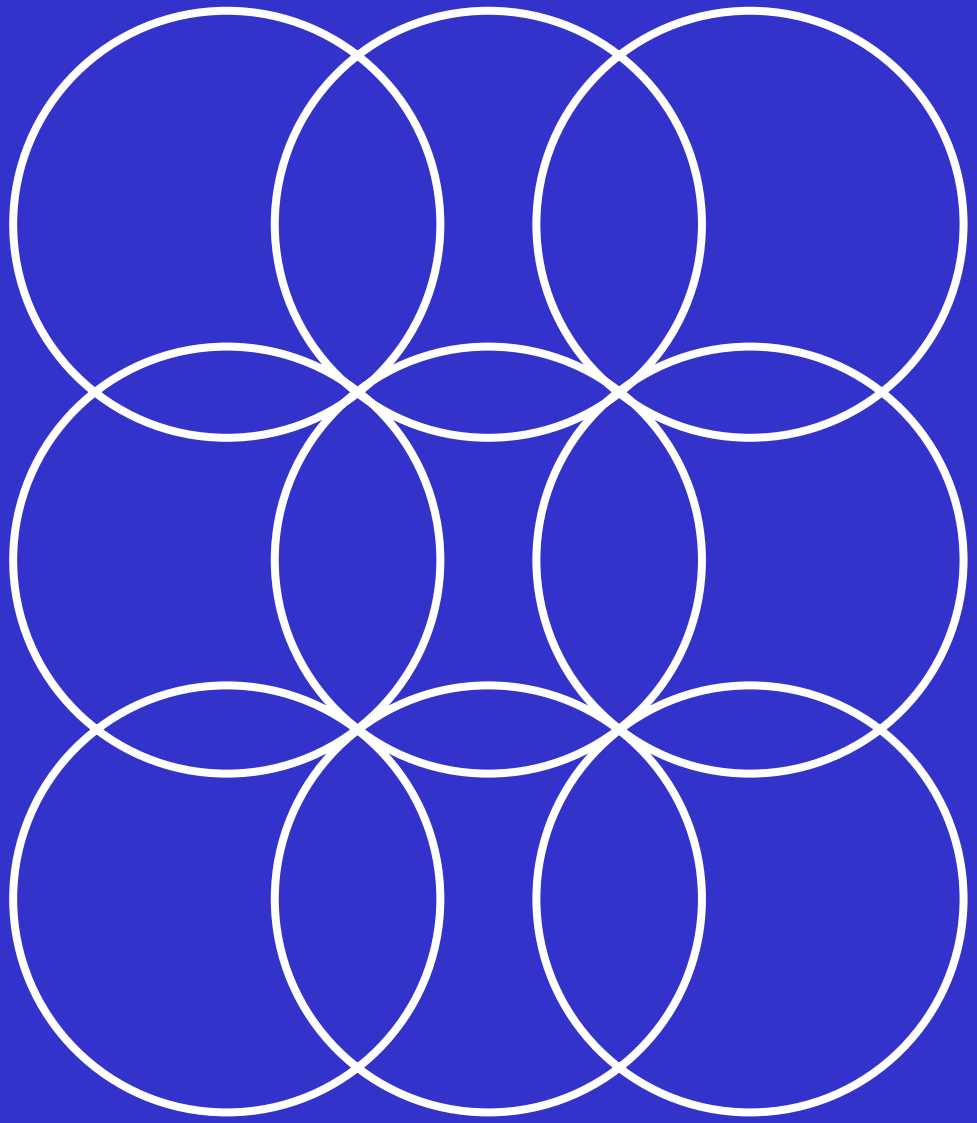
Public spending choices, if motivated by intergenerational equity, might look very different. Basic income in exchange for conservation work could be a shrewd investment[41] for future generations; $5.50/day paid to residents of protected areas in low- and middle-income countries would cost $478 billion[42] – a potentially sensible investment considering the estimated US$44 trillion in global economic production that depends on nature. A basic income pilot for indigenous[43] peoples in three Amazon communities aims to enable them to continue living in and protecting the rainforest. Cash transfers to poor households in Indonesia reduced deforestation[44]. Universal basic income (UBI) can have disruptive effects, though; the unequal benefits conferred in randomized controlled trials have upset Kenyan communities [5].

If intergenerational equity is left unaddressed – if younger generations feel that snowballing problems like climate change or overburdened pension systems are left for them to deal with – public trust in institutions will further diminish, as will human agency[46], weakening the capacity needed to address these hard problems.

The Pact for the Future[47] and the Declaration on Future Generations[48], to be agreed at the UN Summit of the Future, are a major opportunity to move towards intergenerational fair shares.

02

MULTI-SPECIES JUSTICE



CONNECTED TO:

- FAIR SHARES
- ECO-NOMIC FUTURES
- CONGESTED SPACE
- UNNATURAL SELECTION
- A TASTE OF THE FUTURE
- HIGH STAKES FOR CLIMATE

02
MULTI-SPECIES JUSTICE

OVERVIEW

More and more decision-making will need to consider the interdependent needs of human and non-human entities, expanding the scope of rights for what and for whom we seek justice. Indigenous peoples[49] have always recognized the inseparable relationship between humans and Mother Earth. Slowly, governments and companies are starting to acknowledge the rights of nature and to explore ways to incorporate multi-species considerations into decision-making. But who can represent the rights of all life forms, future generations - even robots or AI, if they became sentient – and how?

SIGNALS

Dismayed by ecological loss and climate change, many people are coming to acknowledge how deeply human and non-human entities depend on each other to survive and flourish. Indigenous peoples have always recognized this interdependence; it is they who preserve about 80% of the world's remaining biodiversity. Now an increasing number of countries, including Ecuador, Brazil and Bolivia[50], are recognizing the rights of nature in their constitutions or laws. Ireland[51] could become the first EU member to do so. Some court judgments are giving primacy to environmental considerations, like Estonia's Supreme Court[52] ruling that environmental interests outweigh cultural ones in deciding on a dam removal.

The idea of rights for nature and representation for animals once seemed far-fetched, but no longer[53]. Not only humans use language, for example; sperm whales' communication[54] is more expressive than we thought, but who speaks for them[55]? Two new coalitions[56], More Than Human Rights[57] and Animals in the Room[58] have joined the movement to give legal rights and representation to ecosystems, natural features and non-human species[59]. Artists imagining multi-species futures[60], and funding grants for "more than human" design[61], show how philosophers, scientists and artists are expanding this realm of thinking. The Plantiverse art project gives plants a voice, votes and capital.

Some even argue that robots[63] - artefacts that share our fragile planet - should have rights, too, because mistreating them would degrade our standards of social behaviour. If robots and AI become truly sentient, or conscious[64], their case for rights will surely strengthen. Even today, AI can mimic human emotions: the Project December chatbot can simulate conversations with the dead[65]; people are becoming emotionally reliant[66] on chatbot companions; and the rapid-fire conversations and emotional expressiveness[67] of the newest ChatGPT model makes it even more lifelike. Is AI already a digital "species"[68]?

The question of exactly how to represent in human decision-making the rights of all life forms, natural resources and future generations is hard. But people are trying nonetheless. The UK government is using more-than-human perspectives[69] to adopt a futures approach to freshwater planning for the first time. UNDP's novel Blue Marble[70] thinking puts the health of the planet first, rethinking the role of humans. Non-human stakeholders in business[71], from wildlife to climate to geological features, are growing, with Nature now represented on at least five corporate boards[72]. Courts worldwide are adopting a future-generation perspective in rulings that insist natural resources be preserved for their benefit, like Colombia's Supreme Court order that the Amazon be protected[73] from deforestation. Some people would agree; 41% of respondents in the latest World Values Survey (2017-2022) prioritized environmental protection over economic growth, up from 17% in 2010-2014 (though with significant variations by country).

02
MULTI-SPECIES JUSTICE

SO WHAT FOR DEVELOPMENT?

Care and respect for nature and non-human species helps preserve our planet for future generations. As urbanisation continues, city planning that includes wildlife corridors and more green spaces supports biodiversity and the coexistence of various species – as urban planning[74] in Singapore, Brazil, Mexico, Colombia and China shows.

Yet humans' interaction with other species is not just about environmental protection, or even human wellbeing. As we understand more about animals' ability to think, feel and communicate, and as science expands our horizons beyond present beings, this is increasingly an issue of justice and rights. More powerful AI presents new ethical and legal dilemmas about potential rights for AI, especially as the prospect of artificial general intelligence approaches. Though granting legal personhood to AI systems remains speculative, addressing the legal challenges of potential AI consciousness can help set ethical boundaries for the future.

Advanced AI and biotech could enable us to communicate with non-human species in the future. Might we then see AI-powered "interspecies diplomacy" emerge, transforming how we resolve conflicts between humans and nature? A step further: if and when extraterrestrial life were discovered, it would require new forms of inter-species interaction and communication beyond what we know today. This will pose ethical challenges as well as technical ones.

To better deliver multi-species justice in all its potential forms – including what that means for our human rights - philosophers, and scientists familiar with other species, may need to become more deeply involved in policymaking. Taking non-human interests seriously as claims of justice[75] "means there is a moral and political obligation for our political and legal systems to take those interests into account when making decisions. They cannot be dismissed simply because they are inconvenient or costly... attending to them is not a matter of charity or generosity."

○ This theme inspired our scenario "Making the earth count" – you can read it at the end of the Spotlight.

03
NEW FRONTIERS OF CONFLICT

CONNECTED TO:

- SILICON STATES
- CONGESTED SPACE
- HIGH STAKES FOR CLIMATE
- POST-TRUTH FUTURE
- INHERITED TRAUMA
- WHY PICK SIDES?

03
NEW FRONTIERS OF CONFLICT

OVERVIEW

By 2030, climate-driven poverty could affect an additional 130 million people[76], exacerbating issues like food and water scarcity, energy access, economic instability and political unrest. By 2050, over three-quarters of the global population[77] may face severe water stress, while up to 158 million women[78] could be pushed into extreme poverty by increasing global temperatures. The shift towards renewable energy could heighten geopolitical tensions through soaring demands for critical minerals, expected to quadruple by 2040[79], and disrupt fragile economies dependent on fossil fuels through "traumatic" decarbonization. The growing demand of AI for energy and water may provoke new conflicts, while its use in conflict and cyber warfare will change how wars are fought.

SIGNALS

Wars and conflict have often been driven by competition for natural resources. UNEP suggests that 40% of all intrastate conflicts have been linked to natural resources[80] in the last 60 years, a link that doubles the risk of early relapse into conflict. Climate change is making this worse. Prolonged drought and seasonal flooding in the Horn of Africa, often simultaneously with conflict, led to record internal displacements[81] in 2022. Climate-induced pressures are already causing friction[82] between herders and farmers[83]. Drought-induced migration[84] could increase by up to 200% by 2050. Such pressures may spark new conflicts over scarce resources like land and water on which lives depend.

The green transition itself affects the changing picture of conflict. The rapid, unplanned decarbonisation of fragile oil-producing countries could spark political crisis - "traumatic decarbonisation"[85] – by undermining peace and governance. There is growing competition[86] for critical minerals needed for green tech and electric vehicles. Meeting the Paris Agreement is expected to quadruple demand[87] by 2040, while achieving net-zero would mean a sixfold increase by 2050. As well as the geopolitical implications of this intense competition, human rights[88] and the environment are at stake in countries where mining is weakly governed and local communities[89] see little of its rewards.

AI is already recognized as an unpredictable dimension of future conflict. Advanced AI and AGI (artificial general intelligence) "could destabilize global security[90] in ways reminiscent of the introduction of nuclear weapons." The UN Security Council[91] discussed for the first time in July 2023 the impact of AI on international peace and security. AI-guided weaponry[92] is already in use; AI will make cyber- and information warfare even more sophisticated.

Finally, the appetite of AI for energy and water brings us back to fights over scarce resources. AI data centres[93] that need huge amounts of water for cooling are competing with farmers and communities for water in drought-stricken South America. Digital services' growing demand for water means that by 2030 the average European internet user[94] will consume 3 liters of water a day - more than they drink. Global energy demand from data centres could double[95] by 2026, as generative AI spreads widely (a ChatGPT query uses some 10 times[96] more electricity than a Google search). Even though AI can help predict supply and demand[97] and make data centres more efficient[98], surging energy demand will be a particular challenge for countries with inadequate energy supplies or distribution.

03
NEW FRONTIERS OF CONFLICT

SO WHAT FOR DEVELOPMENT?

In 2022, 75% of people believed there was a real threat of nuclear, chemical or biological attack[99] within the next year. The Doomsday Clock is at 90 seconds to midnight[100] for the second year in a row, reflecting the unprecedented level of danger humanity faces. While nuclear risk remains significant, other dangers posed by climate change, biological threats and disruptive technologies like generative AI are becoming more prominent. This might partly explain why the "doomsday prepping" market is projected to grow to $2.5 billion[102] by 2030.

These interconnected risks pose highly complex challenges, making it even harder for policymakers to take long-term considerations into account. In times of crisis, decision frameworks[102] can help policymakers – even under time pressure - to take into account the socio-ecological impact their decisions may have decades later.

Climate change and environmental degradation act as threat multipliers, increasing displacement caused by natural disasters and conflicts over resources. Ironically, mining critical minerals[103] essential to address climate change can also harm the environment, strain water resources, and violate human rights. But if managed fairly and sustainably[104], mining can uplift livelihoods, including for future generations.

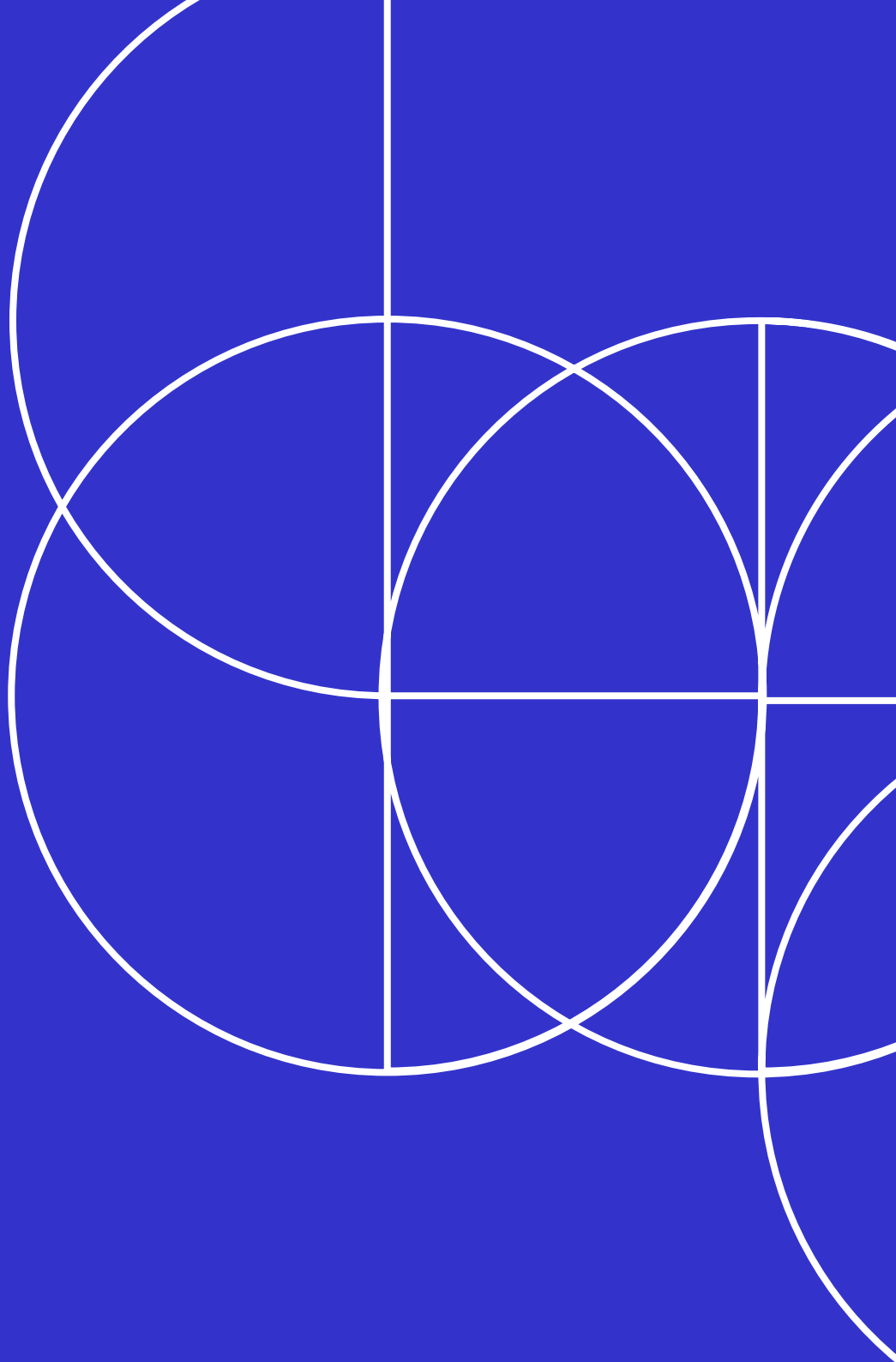
Investments in sustainable development can help break the cycle of fragility and build stability by addressing the drivers of conflict, including environmental degradation. In Yemen, communities are finding common ground over water[105]; in Morocco, a start-up is growing crops in the desert[106]. Indonesia and Malaysia[107] have cut deforestation by more than half in recent years; and from Brazil[108], the UAE[109] to India[110], billions of trees are being planted. Meanwhile, Colombia and Costa Rica are using AI and satellites[111] to track and respond rapidly to deforestation threats and determine a forest's carbon content.

○ This theme inspired our scenario "Celestial commons" – you can read it at the end of the Spotlight.

04
ECO-NOMIC FUTURES

CONNECTED TO:

- FAIR SHARES
- MULTI-SPECIES JUSTICE
- HIGH STAKES FOR CLIMATE
- WAITHOOD
- INTERGENERATIONAL VALUABLES
- WHY PICK SIDES?



04
ECO-NOMIC FUTURES

OVERVIEW

Current economic models have become more and more decoupled from sustainable development. Their benefits increasingly come at the cost of environmental degradation and collapse. Nor are they justly distributed; many people are left out or left behind. There is a growing recognition we need alternatives, from fixing what doesn't work to rethinking economic and financial systems altogether. The sheer volume of ideas about what those alternatives should look like – from circular or regenerative economies, green or post- growth economies, to new or post-capitalism - is creating momentum for change, giving hope that these may grow into a fairer future for all.

SIGNALS

Economic growth is increasingly decoupled from human well-being and ecological balance. Even in the face of a triple planetary crisis – of climate change, biodiversity loss and pollution – fossil fuel subsidies[112] and environmentally harmful agricultural subsidies[113] persist, while political pressure[114] is piling up[115] on governments to slow down necessary reforms to build greener economies. Meanwhile, inequalities are fueling discontent. Gender gaps[116] are increasing, youth unemployment[117] is a growing problem in many developing countries. The IMF believes AI will worsen inequality[118], affecting 40% of jobs worldwide. Inequality means insecurity. Current social security systems[119] are unprepared to cope with ageing populations. Increased risks and volatility from climate change are destabilizing insurance markets[120].

Values attached to nature and ecology are shifting from niche to mainstream. Over half of members of the Youth Global Climate Movement[121] identified the root cause of climate and ecological breakdown as "a system that puts profit over people and planet." The concept of nature as an asset class[122] is growing, where investment returns are seen in biodiversity and ecosystem services; for example Brazil's proposed $250bn fund, Tropical Forests Forever[123], to pay countries for slowing deforestation. Thailand, Kenya and Bhutan[124] are among the countries taxing tourism[125] to raise funds for the environment.

EU interest in post-growth[126] economies and public support[127] in Europe for such policies are increasing. A recent survey showed over half of researchers from non-OECD countries aligned with a green growth position – though some climate scientists are sceptical[128], believing that even "green" growth is incompatible with planetary boundaries. Indigenous economies are attracting interest as models that prioritize sustainability[129], respect for nature and collective well-being. Private initiatives for transformative investing aimed at wealth redistribution[130] are emerging, like Resource Generation[131],whose members have committed to redistributing all or most of their money.

Initiatives like the Bridgetown Agenda are defining more sharply what reform of the international financial architecture should look like and who should pay for climate change. The Presidents of Ghana, Kenya and Zambia have made a joint proposal on how to make global finance work[132] better for Africa. EU Ministers are proposing the fossil fuel industry should pay to fight climate change in developing countries, while G20 members Brazil, South Africa, Spain and Germany[133] are calling for a tax on the rich that could generate $250 billion a year for climate and poverty. It has even been suggested that the IMF should be lending money to developed countries[134] so that they can pay climate reparations.

Investment decisions are beginning to factor in development outcomes. Barclays[135] has committed to mobilizing $1 trillion of sustainable and transition finance by 2030, and will stop directly

04
ECO-NOMIC FUTURES

financing[136] new oil and gas projects. The Taskforce on Nature-related Financial Disclosures[137] aims to shift financial flows from nature-negative towards nature-positive outcomes. A growing body of regulation, including the EU's Corporate Sustainability Reporting Directive[138], encodes companies' responsibilities to report their impact on people and the environment. The Taskforce on Inequality and Social-related Financial Disclosures[139] will recommend something similar for inequality and social-related impact reporting.

Courts have ruled against exploitative and greenwashing companies in Mexico and the US[140]. Small Island Developing States are seeking legal protection[141] at the International Court of Justice. The European Court of Human Rights, in a case brought by NGO Elders for Climate Protection[142], found that the Swiss government's action to combat climate change was inadequate.

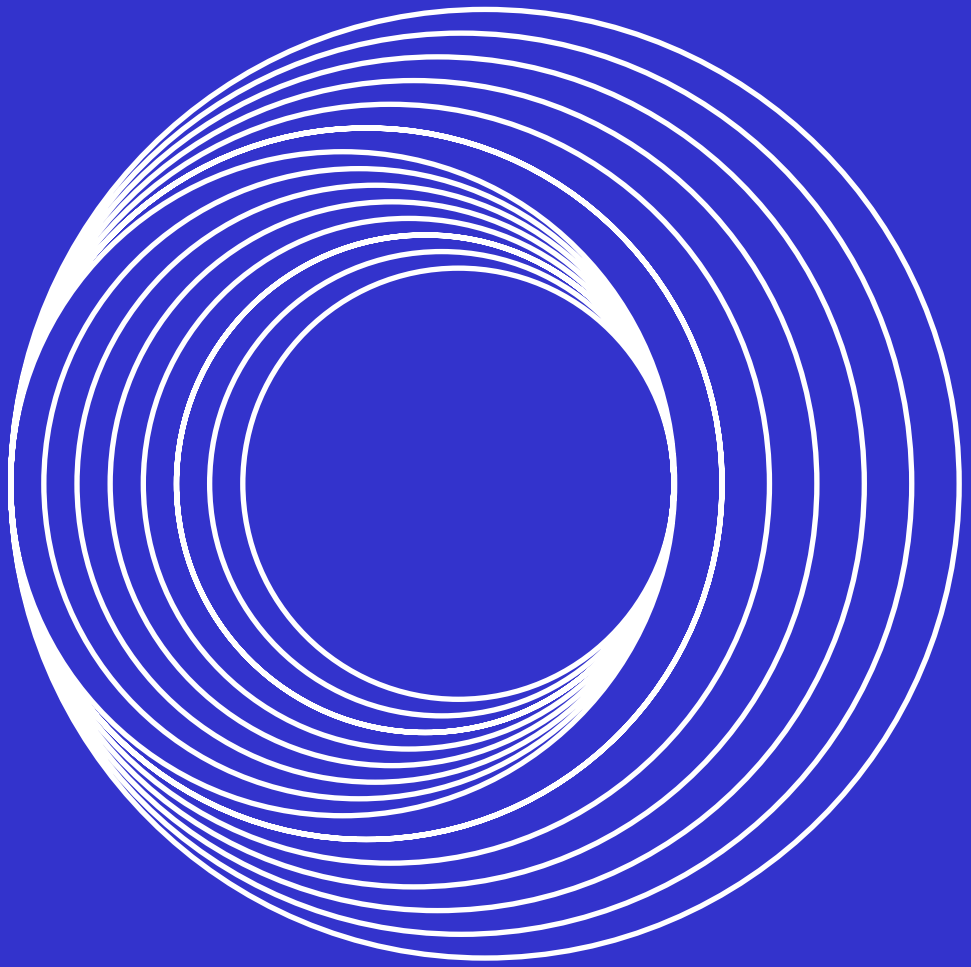
SO WHAT FOR DEVELOPMENT?

We cannot afford to continue to make investment decisions guided by short-term profit, ignoring the intergenerational costs to people and planet and missing huge opportunities for development.
It is encouraging that companies are beginning to factor in the development impact of their investments, whether voluntarily or compelled by stronger regulation. Public financial institutions are growing more focused in linking their support for public finance reform to the development outcomes they are intended for, for example the World Bank's "Reimagining Public Finance[143]" and the IMF Global Public Finance Partnership[144].

The most successful policies for low carbon tech transitions[145] have been bold and integrated, rather than small nudges to a system assumed to self-regulate. Analysis of cases in China, India, Brazil and Europe suggests that investment in emergent technology - whether through subsidies, cheap finance, or bulk public procurement - gave a stronger impetus to systemic transformations, even though these technologies were not always the cheapest way to immediately cut emissions.

Local governments around the world are adopting the concepts of "doughnut economics[146]" that call for redefining success not as endless growth, but rather as thriving in balance between social and ecological boundaries. Debate around the concept of circular economies has tripled[147] in 5 years, with recent studies showing that circular economies[148] could reduce by almost one third the current global volume of consumption. Examples include Roadmap for a Circular Chile by 2040[149];creating a regenerative economy in the Amazon[150]; a regenerative supply chain for palm oil[151]; regenerative farming[152] in Kenya; and more cases of circular economy in practice[153]. These are glimpses of new ways of rethinking economies and financial systems altogether. It seems that the current economic paradigm is waning - but without any consensus on what should replace it. Do we need a single terminology or approach, or is the plethora of pathways exactly what the future of development should be?

05
CREATIVE DEMOCRACY



CONNECTED TO:

- ECO-NOMIC FUTURES
- POST-TRUTH FUTURE
- WAITHOOD
- HERMIT HUMANITY
- INHERITED TRAUMA
- WHY PICK SIDES?

05 CREATIVE DEMOCRACY

OVERVIEW

Half the world's population is under 30. The average age of leaders is 62. Young people are still voting (though their participation still lags behind other age groups), but they are also expressing themselves elsewhere than the ballot box. Their participation in demonstrations and signing petitions has increased, perhaps channeling their political energies into forms of activism that they see as more impactful, immediate or accessible than more formal channels of engagement. They are acting for themselves if governments fail them. They get their news from the internet, while social media, even gaming platforms, has vastly expanded their arena for political engagement and activism, helping mobilise originally non-political networks for political causes. If the citizens of the future are taking democracy to new spheres, what does that mean for the future of democracy and popular representation?

SIGNALS

Two-thirds of people worldwide believe they have little influence[154] over their government's decisions (and in most OECD countries, young people[155] feel that even more strongly). 64% of people feel that politicians don't care[156] about people like them. The 18-34 age group is most disillusioned[157] with democracy, worldwide. These perceptions may partly account for young people's limited participation in traditional democratic mechanisms. 68% of young people[158] in OECD countries voted, compared to 85% of people aged 54+. Fewer than 40%[159] of India's youngest voters registered to vote in the 2024 general election. Young Africans[160] are less likely to participate in traditional forms of politics like voting (though that declines in older people, too).

But young people are not apathetic or uninterested in politics, even if they are expressing themselves in less "institutionalized" ways. Young students across the world recognize governance as a critical issue to be solved[161]. Young Africans[162], for example, are more likely than all other age groups to join "elite challenging" activities such as protests. University students worldwide are protesting at the war in Gaza[163]. Groups created around sports or entertainment are taking up political causes; "ultra" football fans[164] in the Arab world, renowned for fanatical support of their teams, mobilized against dictatorships in the Arab spring. K-pop fans in South Korea[165] led a protest against building a new coal-fired power plant near a famous beach. Young people are even protesting through socially coordinated inaction, as China's young people are lying flat[166] and workers worldwide are quiet quitting[167].

Digital networks have dramatically expanded the channels of communication. Video games are growing as a vehicle for political participation and opinion-shaping among young people. In Brazil, where 70% of people with access to electronic devices spend 2 ½ hours gaming every day[168], young people are becoming politically aware through their online gaming communities. Teens worldwide are joining protests on gaming platform Roblox[169]. And while some people wonder[170] how far reposts and retweets amount to active political engagement, young people are actually more likely to say that social media has advanced their democracy[171].

05
CREATIVE DEMOCRACY

SO WHAT FOR DEVELOPMENT?

The peaceful election of Senegal's new young president[172] is a sign of hope of the strength of democratic institutions. Electing a leader from the same generation as many voters inspires young people that what was the preserve of the old is now open to the young.

Yet to address people's sense of powerlessness, democracies need to provide more active opportunities[173] for people to have their say and be able to influence decisions – more often than a vote every four to five years. There's no shortage of imaginative ideas for how to do this. The Ministry of Imagination Manifesto[174], released in 2024 as half the world prepared to vote, is a collection of ambitious, possibility-infused policies for a positive future. It includes a kind of civic version of jury service, where everyone can join a citizens' assembly[175] to reimagine and plan local or national policies. Trusted, local spaces can offer more opportunities than national political processes for citizens to participate and drive change towards sustainable development.

Does citizen-led political action undermine the idea of formal democracy, or support it? When citizens have to fix what's broken – like private companies[176] paying to keep traffic lights operating in Johannesburg – that relieves the pressure on governments. How does that alter the social contract?

Or why not automate democracy? Cesar Hidalgo's Augmented Democracy[177] would let citizens create personalized AI representatives (digital twins) that participate directly in democratic decisions, augmenting citizens' ability[178] to make decisions by providing information, or by making decisions on their behalf. The idea is not to replace democracy, but to expand people's capacity to participate in it. Such innovations might help make policy decisions more intergenerationally aware, by including in the decision-making process more varied and longer-term perspectives.

SHOUKEI MATSUMOTO
ANCESTORIST AND FOUNDER OF INTERBEING

HOW TO BECOME A GOOD ANCESTOR IN THE 21ST CENTURY

Close your eyes, and imagine. First, in the center, a small circle. It is us, the 8 billion people alive today. Then place another circle below the first, about ten times larger. It is the people, 100 billion, who lived in the past 50,000 years. Lastly, place one more circle above the first circle, about a thousand times larger. It is the people, 7 trillion, who will be born in the next 50,000 years. In between, we, the people living today, may look a mere trifle, but nonetheless we are indispensable.

Social philosopher Roman Krznaric beautifully illustrated these circles in his book, The Good Ancestor. Its core question, "How can we become good ancestors?", is exactly what people living today should ask themselves. One hundred years from now, in the year 2124, we who live today will be "the ancestors". We ourselves, who wish future generations to live a life where they can say, "I am glad I was born," were also wished the same happiness by the dead who came before us. Hope connects us with the past, the future and the present.

So how can we become good ancestors? Or, as the Camphor Tree Village project puts it, "What should we keep or let go for future generations?" As I asked this question of leaders in many different fields, three important virtues emerged:

HUMILITY
Be humble enough to admit we don't know the future. What we can do for future generations is to leave more options for them to choose. They are the ones who decide the future.

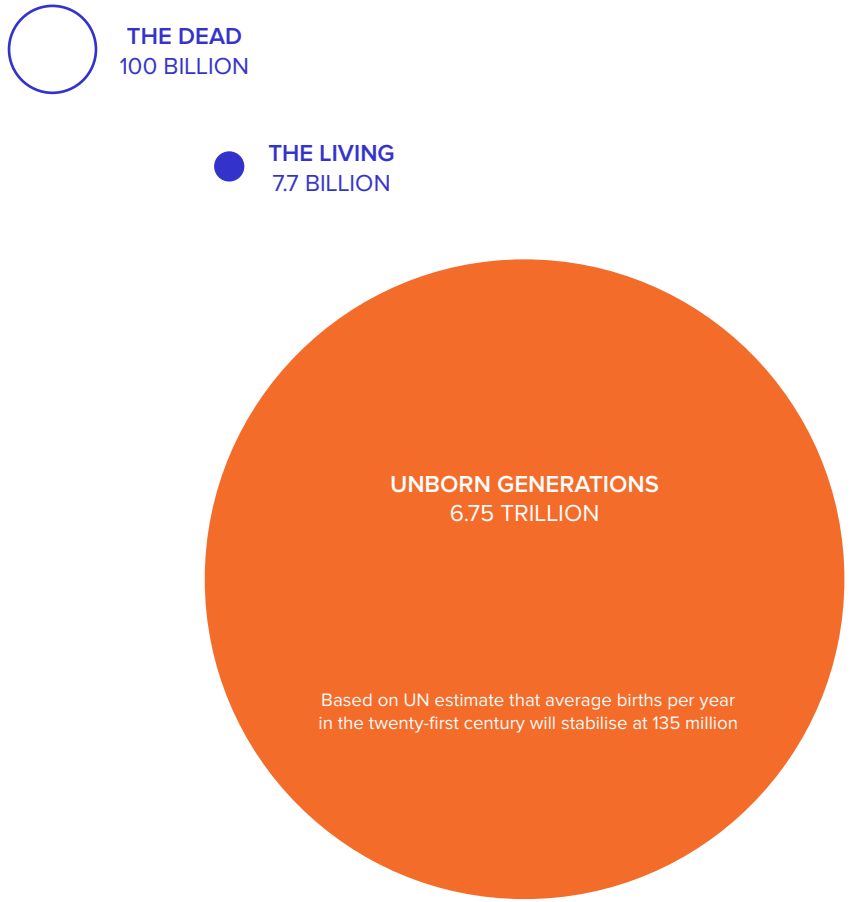
PATIENCE
There is no success or failure by nature. It emerges only when you judge things. Do not rush for results. Keep challenging with patience. Be wise enough to wait to see flowers bloom.

OPEN-MINDEDNESS
Observe people and things as they are, forgetting about judging good or bad. Then, with a feeling of awe, you will understand that the world we live in is full of wonder.

Let's keep learning from our ancestors, which is how we can make all the people in the past good ancestors. And let's keep challenging for the sake of future generations, which is how we ourselves can become good ancestors, whether sung or unsung.

THE SCALE OF UNBORN GENERATIONS

Looking 50,000 years into the past and 50,000 into the future – assuming that the twenty-first century's birth rate remains constant – all human lives ever lived are far outweighed by all those yet to come.



From *The Good Ancestor: How to Think Long Term in a Short-Term World* by Roman Krznaric
Graphic design by Nigel Hawtin.

HOPE FOR RESPONSIBLE TECHNOLOGICAL PROGRESS

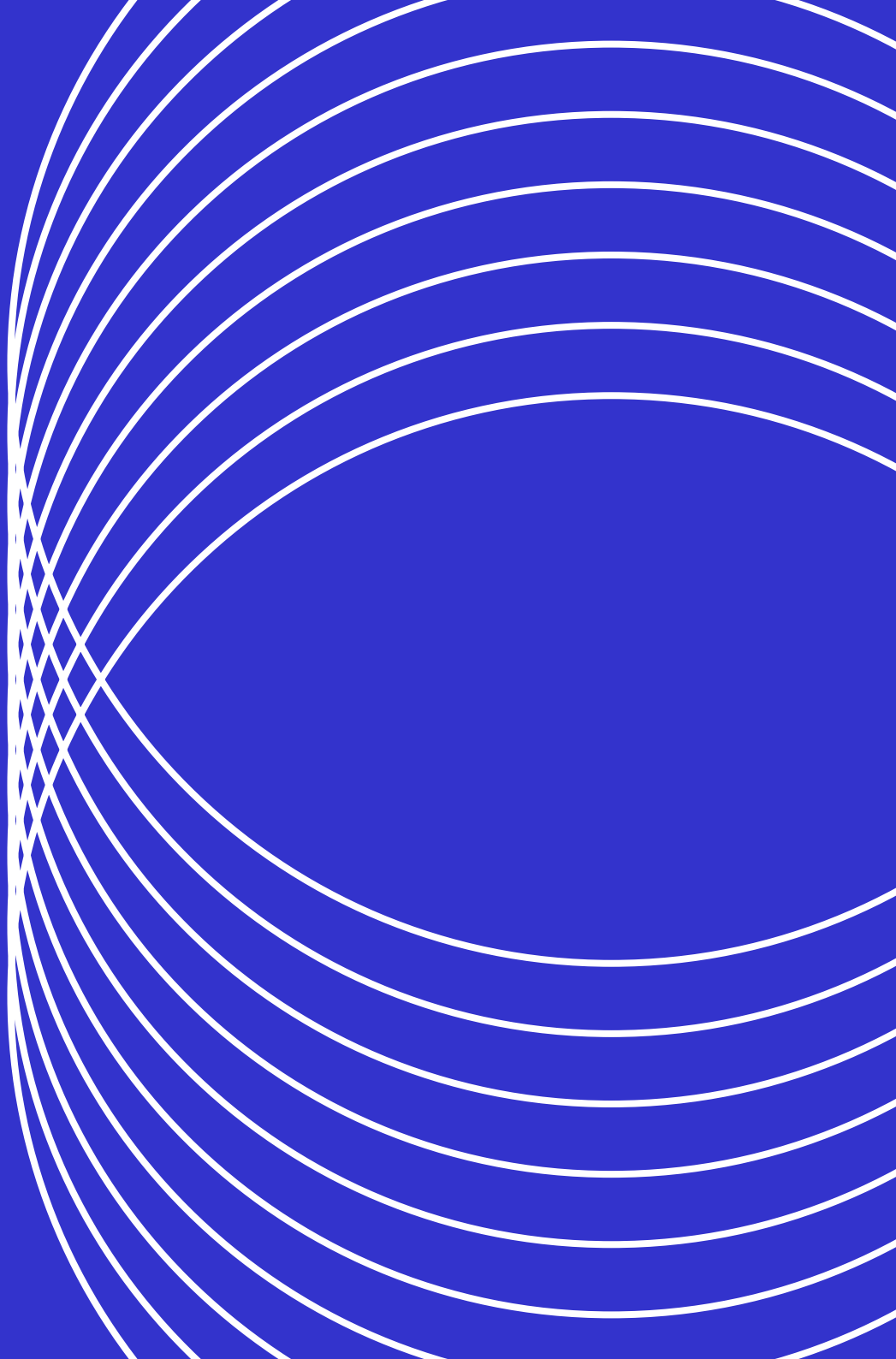
As technology changes our world, using it responsibly for a better future for everyone.

Extraordinarily rapid progress in science and technology, from AI to biotechnology to neuroscience to space exploration, offers huge opportunities for development. Satellites provide communication links for remote areas of the earth. Bioengineering can address health inequities. AI can speed up drug discovery and make agriculture more productive. Renewable energy technologies are becoming cheaper and more efficient every year. Yet an “AI arms race” risks widening the digital divide, particularly for developing countries that need investments in energy access, digital infrastructure and skills. Congestion in space raises questions of sustainability and equity. Technologies are not neutral. To ensure their benefits are fairly shared – across geographies and generations – multilateral cooperation and responsible governance are essential.

06
SILICON STATES

CONNECTED TO:

- FAIR SHARES
- NEW FRONTIERS OF CONFLICT
- POST-TRUTH FUTURE



06
SILICON STATES

OVERVIEW

Governments worldwide are intensifying investments in silicon chip production and development of their own "sovereign" AI, seeing this as a strategic national asset. A zero-sum "AI arms race" risks exacerbating the digital and other divides, leaving developing countries, many of which lack the resources, digital infrastructure, energy access and skills to fully leverage the benefits of AI for development, further behind. A more equitable path would be greater collaboration towards more inclusive AI, as the Global Digital Compact envisages, to leverage its value and deliver benefits for all.

SIGNALS

If cars had improved at the rate semiconductor chips[179] have since 1960, you could be driving at 200 times the speed of light. ChatGPT reached 1 million users within 5 days[180] of its launch (it took Netflix 3 years). AI is changing our world so fast, with such profound implications for societies and economies, that many governments are investing in building their own systems. The CEO of silicon chip producer Nvidia urged countries to develop their own "sovereign AI"[181], using their infrastructure[182], data, workforce and business networks. The Abu Dhabi state-backed AI company[183] promises enterprises and government complete control of their data[184]. China has invested heavily in AI education and now produces half the world's top AI researchers[185].

Some experts argue against thinking of AI as an arms race[186]. One thousand tech leaders even signed a petition in March 2023 urging a pause of AI development – but with no noticeable impact[187] on new product releases. Yet this "AI arms race" risks exacerbating the digital and other divides. AI has unique opportunities for developing countries (including in agriculture, healthcare, pollution control[188], education) – but they are much less ready to take advantage of them. Investments[189] in energy access, digital infrastructure and skills, as well as robust policies for AI and data protection, are needed first. Without them, the concentration of development and ownership of AI will widen the north/south gap and worsen current inequities.

Ethical governance is crucial as AI grows more powerful, as recognized by the comprehensive regulatory framework of the EU's imminent AI Act[190] and the US Executive Order on AI[191]. India now requires government approval[192] of new AI models, reversing its previous hands-off approach. China's cyberspace regulator has promised to work with Africa on governance[193]. Regional efforts towards ethical AI governance include the Santiago Declaration to Promote Ethical AI[194] among 20 countries of Latin America and the Caribbean, and the African Union's Continental AI Strategy for Africa[195].

With broad recognition that responsible governance is needed, some suggest that a global legal framework[196] is warranted, following the 2023 Bletchley Park conference, or enhanced international governance of AI. The challenge is finding ways to regulate AI for safety and ethics without stifling innovation or dampening the extraordinary opportunities of AI applications to sustainable development, while navigating different views among countries; a balance that the proposed Global Digital Compact[197] and the 2024 UN General Assembly resolution[198] on AI strive to strike, in steering AI towards global goods.

06
SILICON STATES

SO WHAT FOR DEVELOPMENT?

AI is racing ahead of attempts to regulate it. Future generations risk being locked into the unintended consequences and risks of AI systems that aren't fully understood or adequately governed. A flood of undetectable AI-generated content could fuel values-based divides[199], eroding social cohesion; and jeopardise access to essential services if AI can exploit weaknesses in critical infrastructure. In the extreme, uncontrolled AI could represent an existential threat to humanity.

A rights-based approach to AI development is essential, establishing safeguards that protect data and privacy, and mitigate or eliminate AI biases. This is hard (for example, users' data assimilated into large language models cannot be removed). Because AI is trained on existing datasets and patterns of behaviour, people who are using AI models trained in other contexts, on foreign datasets and in different languages are at a disadvantage. "We really need data that speaks to Africa itself[200]". Nigeria[201], for example, is developing its own multilingual Large Language Model (the basis for generative AI tools), able to work across five indigenous languages and develop new datasets from them.

"Algorithm activism" movements like the Algorithmic Justice League[202] are trying to harness the power of technology for the public good, illuminating the social implications and harms of AI. The open-source AI movement [203], like Meta's goal to build the best open models[204] with Llama 3, has potential to democratize access to AI, though some think advanced models should be regulated to prevent misuse[205].

Developing robust and inclusive AI governance frameworks, especially at national level, will require a significant increase in AI awareness and education[206], and in some contexts other supportive infrastructure too, like stronger STEM education, startup financing and government digital capacity building: investments that are necessary to preserve the choices of future generations to shape and use AI to their own ends.

This theme inspired our scenario "Heritage meets modern" – you can read it at the end of the Spotlight.

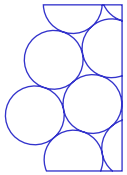
07

CONGESTED SPACE

CONNECTED TO:

- FAIR SHARES
- MULTI-SPECIES JUSTICE
- NEW FRONTIERS OF CONFLICT

07 CONGESTED SPACE



OVERVIEW

Competition is intensifying to explore and understand space – and mine its resources. The global space economy grew[207] to $546 billion in 2023. Like the oceans, space has been exploited with little care for its sustainability. From satellites launched[208] by over 90 countries, to ideas for manufacturing in space, to asteroid mining, space is a zone of increasing competition – but not yet of overt conflict. Who controls space and decides how these benefits should be shared?[209]

SIGNALS

Space is increasingly congested. The number of satellites (10,125[210] in June 2024) has hugely expanded since 2020, increasing by 30% each year[211]. Private actors are growing fast (over half[212] of all satellites actively orbiting earth are owned by US company SpaceX). Congestion means pollution. Space is cluttered with over 30,000 pieces of space debris[213]. Unregulated light pollution[214] from satellites is already making it difficult for astronomers[215] to observe the night sky. It could also harm ecosystems on earth, as well as doing cultural damage to communities that assign special value to the night sky.

As competition for scarce resources on earth heats up, attention is turning to opportunities in space. The European Space Agency is investigating the possibility of beaming solar electricity[216] from space to earth. The decreasing cost of travel into space suggests that asteroid mining[217] could be commercially feasible in the next decade, especially given the concentrations of valuable metals[218] found in metallic asteroids.

All this makes space an intriguing, profitable and contested field – and raises the stakes of who owns or controls it. New space blocs[219] are emerging – like the Artemis Accords and the Sino-Russian Lunar Agreement – that are attracting countries to join one or the other. Russia has said it will work with China to build a nuclear power plant[220] on the moon to power their joint lunar base.

Developing countries are joining the space race. India[221] became the first country to land on the lunar south pole. Uganda, Zimbabwe[222] and others are launching their own satellites and investigating the potential of space for development purposes, like information for environmental management or manufacturing in microgravity. South Africa and China have signed agreements to partner on space exploration[223]. New multilateral groupings include the African Space Agency[224], the Latin American and Caribbean Space Agency[225] and the Arab Space Coordination Group[226].

07
CONGESTED SPACE

SO WHAT FOR DEVELOPMENT?

As more nations become spacefaring and the space economy becomes more mission critical for life on earth, governance of the lunar commons becomes more critical. New space blocs may mean rivalries on earth[227] are simply transposed to space: a new conflict zone? These risks can be reduced if space blocs remain open to all[228], focused on scientific goals and international cooperation. Multilateral cooperation is essential to govern space responsibly and preserve the space commons for the benefit of all, current and future generations.

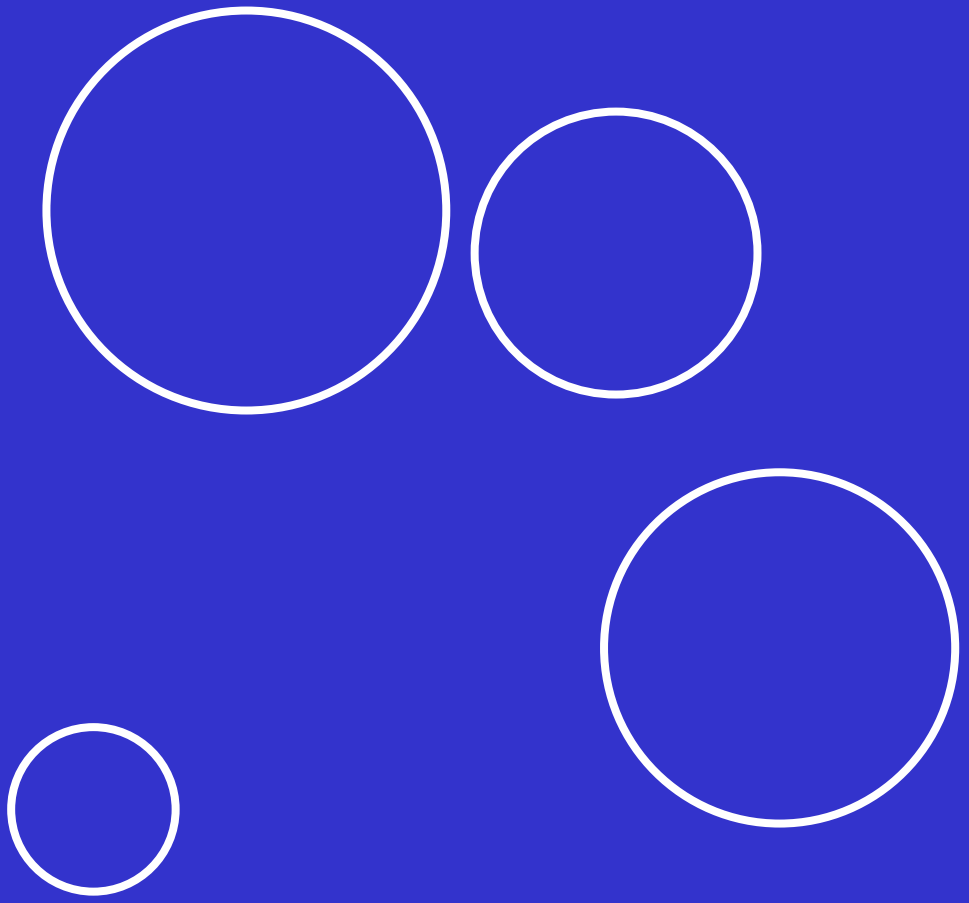
Like the oceans, space is being exploited without much regard for sustainability. To keep space viable for future generations requires international regulations that prioritize sustainability - can we avoid overexploitation and pollution or are we transposing our unsustainable practices from planet to planet? Encouraging signs of concern for sustainability include the US imposing the first space debris fine[229]; and the European Space Agency looking to develop reusable spaceships[230].

Opportunities for development in space are numerous. Satellites can help developing countries leapfrog in their digital development by obviating the need to build telecoms infrastructure on earth. Research in the microgravity of space can accelerate the development of next generation materials in many fields, including medicine (eg 3D bioprinting[231] of human organs in space). Technology to maintain human life on the moon, like water recycling, might help solve terrestrial development challenges like water or energy scarcity or food production. But the disparity between nations that can afford to participate in space activities and those that cannot could exclude poorer nations from the benefits of space resources.

The International DarkSky Association[232] and the Skyglow Project[233] work against light pollution worldwide, to keep dark places dark. This showcases the potential for collective action to protect global public goods that might not be immediately recognizable, such as natural darkness – goods of cultural and scientific significance for current and future humans.

○ This theme inspired our scenario “Celestial commons” – you can read it at the end of the Spotlight.

08
UNNATURAL SELECTION



CONNECTED TO:

- FAIR SHARES
- MULTI-SPECIES JUSTICE
- NEW FRONTIERS OF CONFLICT

- WAITHOOD
- WHY PICK SIDES?

08
UNNATURAL SELECTION

OVERVIEW

Advances in biotechnology and genetic engineering are not only helping treat disease and injury, they are potentially changing what it means to be human. Brain implants could enhance intelligence; genetic engineering could produce “designer babies.” Will the ability to create stronger, smarter, healthier humans benefit just a small elite, or deliver health solutions for all? And what will it mean for equality among future generations?

SIGNALS

Biotechnology and genetic engineering are making breakthroughs in treating disease and injury. Neuralink’s brain implant[234] helping the paralysed to walk is the latest of several brain-computer interfaces. A model of a human embryo[235] grown using only stem cells may help understand how the body’s organs develop, while CRISPR gene editing could potentially cure a wide range of genetic diseases. Advancements in bioengineering offer opportunities to address health inequities globally through cell, gene and RNA therapies[236] to treat or prevent disease; antiaging treatments to extend life spans; improved drug development and more cost-effective production of pharmaceuticals.

Beyond these therapeutic possibilities lies huge potential for human enhancement[237]. Brain-computer interfaces can enable people to control robots or machines with thought alone. Individuals are already biohacking[238] their own bodies, injecting stem cells or microdosing[239] psychedelic drugs for improved performance. Wearable biosensors can now detect human emotions[240]. The Enhanced Games[241] advocates for the use of performance-enhancing drugs in sport.

Becoming “more than human” raises ethical and legal questions. NATO[242] has adopted the first international strategy on the responsible use of bio- and human-enhancement tech. Since biological advances rely on data from our bodies and brains, privacy is a central issue. Legislatures in Chile[243], Mexico, Brazil[244] and the US[245] are starting to recognise “neurorights” and the privacy of “neurodata.”

08
UNNATURAL SELECTION

SO WHAT FOR DEVELOPMENT?

These scientific advances will affect every sector of development (social, economic, environmental, ethical). Like AI, biotech could pose existential risks if its development and deployment are not properly governed[246]. Interdisciplinary collaboration and dialogue, including an intergenerational perspective, are essential.

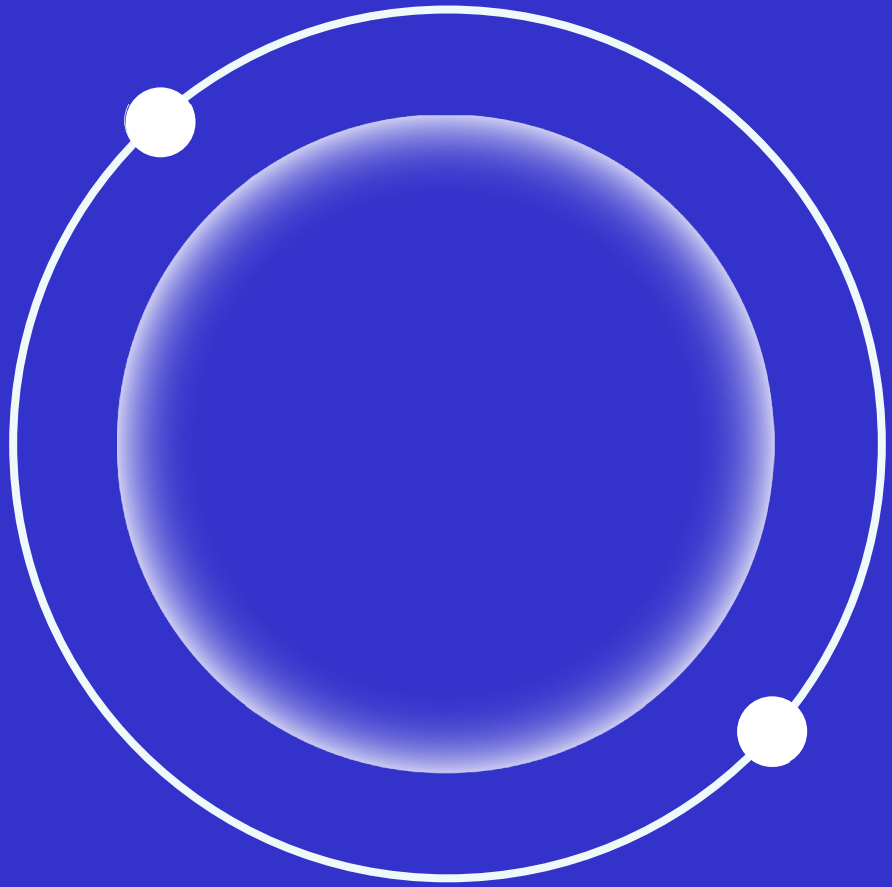
Unequal access to biological advances could perpetuate or magnify inequalities. Indeed, the COVID-19 pandemic showed that scientific breakthroughs[247] will not realize their full potential unless we prioritise equitable access and the common good. To address this deficit, BioNTech is building its first mRNA vaccine plant[248] in Africa in Rwanda, but much more investment is needed in the global south.

The pursuit of immortality could denude life of its purpose[249], raising the question of how we preserve the right of future generations to make risk/reward decisions for themselves. Even choosing to live to 150 years would change our understanding of the life course and our obligations to future generations. We would need to adapt our economic models to fit increasingly ageing populations. Healthcare, pensions and social security would need to be recalibrated to fit a workforce that may not have linear or lifelong employment in a single sector.

Creating new categories of augmented beings will create unpredictable divides in future generations. New forms of governance may be needed to accommodate vastly different levels of cognitive capacity. Might we need to assign distinct legal and moral rights for new categories of beings?

09

A TASTE OF THE FUTURE



CONNECTED TO:

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- MULTI-SPECIES JUSTICE
- NEW FRONTIERS OF CONFLICT
- ECO-NOMIC FUTURES
- INTERGENERATIONAL VALUABLES

09
A TASTE OF THE FUTURE

OVERVIEW

Our modern food system costs more, in damaged health and degraded environments, than the value it provides. It produces more than a third of global greenhouse gases[250] and is projected to leave almost 600 million people chronically undernourished by 2030[251]. Transforming the global food system could unlock some $10 trillion in value and deliver significant health and environmental benefits[252] and cut emissions by a third by 2030[253]. Meanwhile, the combination of changing values and technological innovation in food is powering new markets, from alternative proteins and regenerative agriculture, to upcycled goods and livestock tech that combats methane: an expansion of choice that could help to transform our consumption ethos and systems of production.

SIGNALS

The global food system is an area of extraordinary innovation, from reforestation[254] to livestock methane mitigation[255] and regenerative agriculture[256] upstream to infra-red technology[257] and biodegradable preservation stickers[258] to extend food shelf-life downstream. Agricultural digital twins[259] can enable customized treatment for plants, akin to personalized medicine for humans. Public investment in lab-grown meat[260], an opportunity to diversify[261] protein sources, is growing rapidly. Such potentially disruptive products are proving controversial[262]; US states Alabama and Florida recently banned lab-grown meat[263], even as others welcome their potential to reduce industrialised livestock farming and its environmental impacts. Alternative proteins[264], moreover, could address the threats of antibiotic resistance and new diseases and pandemics.

Interest is also growing in how we can use ancestral and indigenous knowledge to make food production and consumption more resilient. The concentration of agribusiness on a small number of crops weakens crop and diet diversity and damages the soil[265] leaving farmers dependent on fertilisers and pesticides. Industrial agriculture has failed to eliminate food insecurity in Africa[266], and groups like the Alliance for Food Sovereignty in Africa[267] are advocating for agroecological and indigenous approaches that better sustain varied diets and community livelihoods. Forgotten plants[268] can improve food security, maintain biodiversity and enhance human health. Indigenous Zenú farmers in Colombia are reviving ancestral seeds and agroecology[269] for stronger climate resistance, while women in Indonesia[270] are encouraging climate-resilient alternatives to rice. Meanwhile modern diets have changed so much that urban humans have lost much of their ability to digest plants[271].

09
A TASTE OF THE FUTURE

SO WHAT FOR DEVELOPMENT?

The global food system no longer meets our food security and health needs. We live longer, but the length of a healthy life has shortened[272]. Diet is the most important driver of health and changing the way people consume food[273] is the key to a sustainable food system. New foods are being developed or rethought for new markets. Artworks[274] about future foods[275] are exploring what we will eat in the future.

Food security is likely to remain one of the world's critical challenges in 2024, the World Bank[276] says. Collective intelligence[277] can help find scalable solutions. Blue DIGITAL[278] by the UNDP Barbados Accelerator Lab uses digital solutions to improve segments of the blue economy ecosystem and value chains, like making fish catches more traceable. The Sarajevo Food Lab[278] network designs solutions to reduce food waste.

Intergenerational equity requires each generation to leave behind a legacy (planet, society, and systems) at least as good or better than those they inherited. That means reducing the environmental impacts of food production. Some governments are recognizing this. Brazil's ABC+[280] plan seeks to reduce carbon emissions in agriculture and ranching, while a new national development plan in Colombia[281] includes a focus on farmer empowerment, land redistribution and sustainable production. The UK's new Path to Sustainable Farming for England[282] aims at sustainable agriculture, without subsidies, by 2028. Some corporations are offering farmers incentives[283] to adopt regenerative farming practices.

This theme inspired our scenario "Making the earth count" – you can read it at the end of the Spotlight.

10

HIGH STAKES FOR CLIMATE

CONNECTED TO:

- FAIR SHARES
- MULTI-SPECIES JUSTICE
- NEW FRONTIERS OF CONFLICT
- INTERGENERATIONAL VALUABLES

10 HIGH STAKES FOR CLIMATE

OVERVIEW

Despite the urgent need for climate action, the world is still extracting oil and gas (and searching for more). Activists point out that technologies like carbon capture are used to justify ongoing extraction. Renewable energy has the potential to meet the world's growing electricity demands and offer a sustainable future. But the longer the green transition is delayed, the higher the stakes become, and the greater the temptation to resort to options like solar geoengineering whose risks are not well understood. For a just transition, it's crucial to reverse the fossil fuel status quo, responsibly govern new climate technologies, and ensure the benefits of green energy are equitably shared.

SIGNALS

COP28 agreed[284] to transition away from fossil fuels in energy systems in a just, orderly and equitable manner. Yet many governments are still approving new coal, oil and gas projects, with public investments reaching a record high[285]. Exxon is investing $10 billion in a new offshore oil project in Guyana[286], while Eni has announced a major oil discovery off Cote d'Ivoire[287]. The UK granted 100 new North Sea oil and gas[288] licences in 2023.

Movements like Just Stop Oil[289] are protesting against licensing this energetic search for new sources of fossil fuels. The Fossil Fuel Non-Proliferation Treaty[290], signed by 12 countries and 600,000+ individuals, is calling for a halt to all new coal, oil and gas projects. Activists are calling out technologies like carbon capture as a tactic to perpetuate fossil fuel extraction[291]. Carbon removal technologies, such as Direct Air Capture, have so far had limited success[292] despite record levels of investment[293]. To counteract increasing youth resistance, oil companies are paying social media influencers[294] and videogame developers[295] – and even using children's books[296] - to promote fossil fuels among young people and children.

Meanwhile the range of green energy options is growing. Renewable energy is forecast to cover the world's additional electricity demand[297] over the next three years. Low-emissions sources (solar, wind and hydro, as well as nuclear power) should account for almost half global electricity generation by 2026. Investments are being made in green hydrogen in Mozambique and South Africa[298], while 40 companies worldwide are searching for viable deposits of naturally occurring (white) hydrogen.

Given the urgency to limit global warming to 1.5 degrees Celsius, pressure may grow to resort to imperfectly understood options like solar geoengineering – with consequences that are hard to predict. Scientists emphasise the need for more research[300], as does the Overshoot Commission[301], which also recommended countries should adopt a moratorium on the deployment of solar radiation modification, while expanding dialogue on international governance. A UNEP expert review[302], too, underlined that solar radiation modification is no substitute for emissions reductions. One study showed that global south publics[303] seem more supportive of such technological approaches, perhaps because of their younger age and level of climate urgency. Yet they are also more concerned that it could undermine climate mitigation efforts, and that its risks might fall unfairly on poor countries. In multilateral negotiations at the UN Environment Assembly, African countries called for the non-use of solar geoengineering[304]. Mexico has banned it altogether[305].

10
HIGH STAKES FOR CLIMATE

SO WHAT FOR DEVELOPMENT?

Future generations need - and deserve - abundant, cheap, clean energy in order to flourish. Clean energy drives economic growth, creates jobs, connects rural and urban areas, and reduces poverty, offering opportunities to millions at risk of being left behind. Yet one in ten people still lacks electricity[306], mostly in rural areas of the developing world. Investing now in multiple green alternatives will broaden the options for them and for future generations, including creating up to 100 million jobs[307] by 2030 through a green and just transition.

We need a diversity of energy technologies to get there, from technologies already deployed at scale to emerging solutions like the potential of AI. For example, decentralised energy systems[308] – producing energy closer to where it's consumed – can optimize the use of renewable energy, increase access to clean energy for households and communities, and reduce distribution and transmission costs. AI-driven platforms[309] can handle vast datasets in real time, analyzing demand, grid conditions and environmental factors to optimize energy availability, efficiency and storage (though with environmental impacts of its own, given the huge quantities of energy[310] and water[311] AI consumes).

But technologies are not neutral. They can have enormous - and unequal - social and economic impacts. It is not therefore enough to simply make such technologies available; how they are governed and how their benefits are shared, in ways appropriate to each community, will determine whether the green transition is also just. Those differently affected by the transition must be able to actively participate in decision-making. For example, collective intelligence[312] is helping learn how coal mining communities in South Africa perceive the impact of the green transition on their lives, so they can contribute to decisions that take into account the potential social and economic impacts of mine closures during the transition to new energy sources.

The risks of new technologies need to be better researched and understood, and weighed against the risks of climate inaction. Multilateral cooperation[313] around how risky technologies like solar geoengineering will be used is especially important, since they are knowledge gaps and their impacts are not geographically limited. The Montreal Protocol, that has saved earth's ozone layer, gives us hope that multilateral cooperation can successfully address the use of earth-changing technologies.

This theme inspired our scenario "Celestial commons" – you can read it at the end of the Spotlight.

NATALIA ATUESTA-ESCOBAR
PARTICIPANT IN UNDP'S SIGNALS SPOTLIGHT YOUTH CONSULTATION

A WORLD BUILT ON LEGACY, NOT PROMISES

In times of polycrisis, it is easy to succumb to extremes: unlimited optimism promising a utopian future, or paralysing resignation in the face of impending doom. Neither leads to the thriving planet I wish to pass down generations, a resource-full world where people and nature have endless possibilities.

The truth is that challenges are not heralds of despair, but catalysts for progress. Look at nature's most resilient plants; they developed drought tolerance in arid environments, not lush gardens. Entrepreneurs did not forge profitable businesses without solving customers' needs, and Indigenous peoples did not introduce rotational crops into soils that were already nutrient-rich. Innovation flourishes at the borderlines, and a toolbox for the future is enriched by the solutions our ancestors found to the challenges they faced. Handing down this knowledge from generation to generation is the essence of intergenerational generosity: an impulse that gives plants a genetic reservoir for drought tolerance, and equips humans with resilience, curiosity, hope and innovation. The future is not bleak; it is full of potential, and we are the ones who can unlock it.

Young people worldwide long for a world beyond promises and pledges, unmet targets, unaffordable policies, or hopelessness. Amidst the polycrisis, this could have been the generation that gave up. Instead, we chose to stay. We stay because our voices are needed to cut through the negativity, needed to refute empty promises of a future without failure, or one where technology has all the answers. If you are reading this, it means you, like me, are part of the "transition generation," whose mission is to shift the narratives from scarcity to abundance, from fear to resourcefulness. A generation of resourceful trailblazers and bridge-builders who embrace a future that, while uncertain, is hopeful.

I do not wish my children to inherit a problem-free world; that would mean the work is done, and their contributions would not matter. Instead, I would like them to enjoy a world they can craft, where new voices are opportunities and old voices are wisdom. I want our children to inherit a world they, in turn, can pass on to their children.

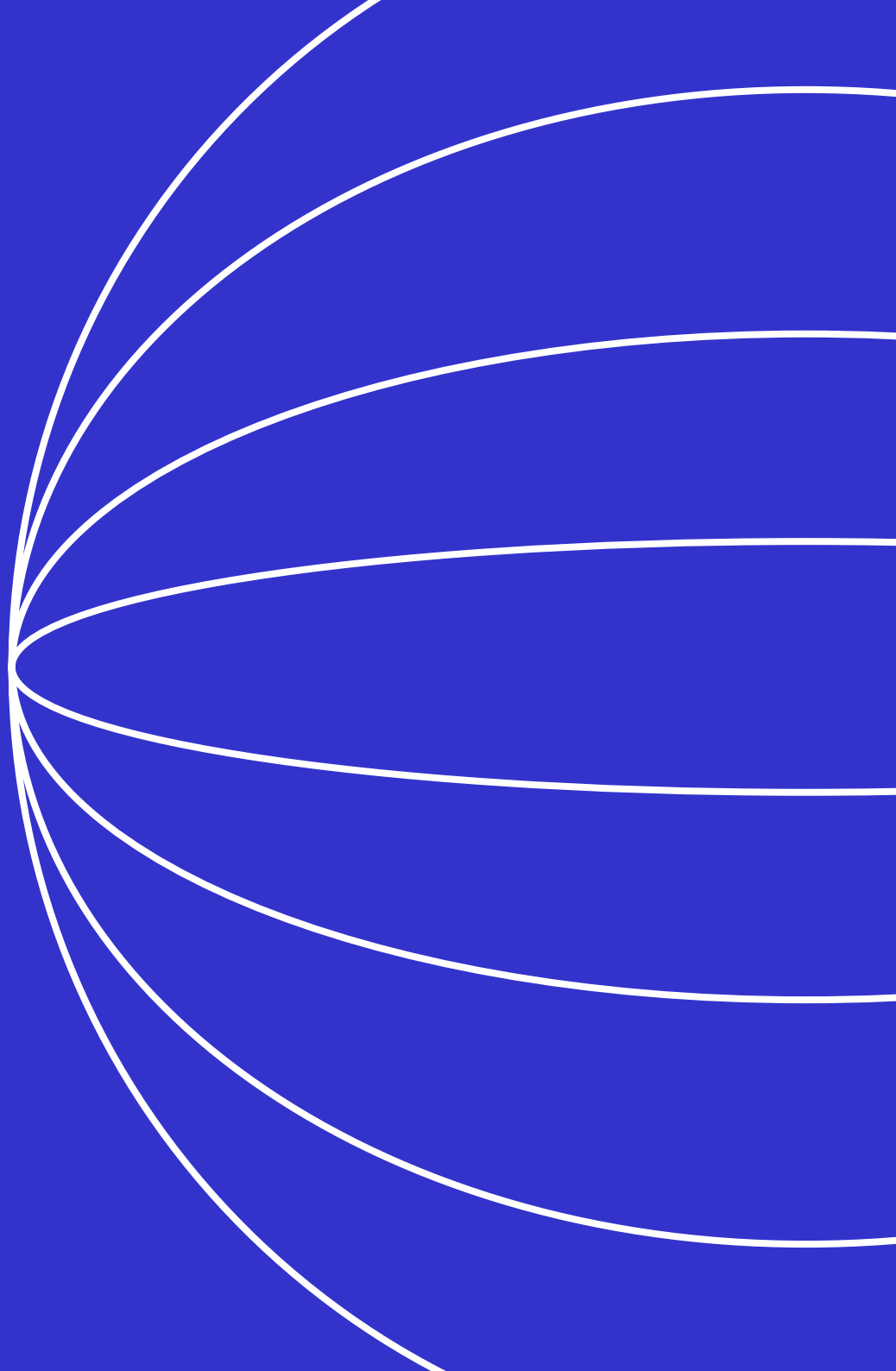
HOPE FOR RESILIENT AND CONNECTED COMMUNITIES

Increasing our chances to thrive amidst change and uncertainty.

Building resilient, connected communities is vital to creating fairer futures. Challenges include the persistent trauma of conflict and disaster, loneliness left by the Covid-19 pandemic and the feeling of some young people that they are languishing in “waithood”. As generative AI becomes more accessible, disinformation is splintering truth and diminishing trust in institutions, making shared realities harder to establish. Yet there are signs of hope: people are attaching value to things that used to be taken for granted, like clean air and water. Communities and start-ups are investing in social and intergenerational connections. Progress towards gender equality, though much slower than it should be, can improve everyone’s chances to thrive. These are elements we can develop into fairer, more equitable futures.

11

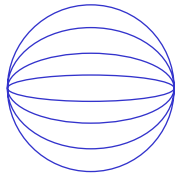
A POST-TRUTH FUTURE



CONNECTED TO:

- NEW FRONTIERS OF CONFLICT
- CREATIVE DEMOCRACY
- SILICON STATES
- HERMIT HUMANITY
- INTERGENERATIONAL VALUABLES
- WHY PICK SIDES?

11 A POST-TRUTH FUTURE



OVERVIEW

Disinformation, deepfakes and conspiracy theories are becoming harder to detect and combat as generative AI becomes easier for anyone to use and extended reality becomes more accessible. This digital splintering of truth, alongside diminishing trust in political leaders, makes it increasingly hard to establish what is real and what is false. Some even challenge the notion of objective truth. People's lived experiences naturally differ, yet imagining shared futures – and collaborating to achieve them – is far harder if we can't establish a shared baseline of truth.

SIGNALS

Increasingly powerful, user-friendly generative AI is making it harder to distinguish the fake from the real. Cybersecurity experts doubt[314] that growing tech solutions to deepfakes, like digital watermarks or detection software, will be able to keep up, advising instead, "assume nothing, believe no-one, doubt everything." Even absent deliberate disinformation, the sheer volume of information available and the power of online influencers can muddy the search for facts[315]. Misinformation – inadvertent mistakes or unchecked AI hallucinations – spreads rapidly online and further decreases trust in what we read there.

This digital confusion goes alongside diminishing trust in institutions. Over 60% of people surveyed in 28 countries believe that establishment leaders – in politics, business and journalism - are purposely trying to mislead[316] by saying things they know are false or exaggerated. Even official efforts to counter disinformation are vulnerable to criticism, as for example the short-lived US Disinformation Governance[317] Board or Elon Musk's[318] criticism of the Brazilian Supreme Court's social media regulation. Academic institutions are not immune; scientific publishers have retracted[319] hundreds of fraudulent research papers and even closed journals altogether.

The very notion of establishing an objective truth can be controversial[320], given the importance of acknowledging people's lived experiences. Increasing polarisation and even the growing divergence[321] of young men and women's perspectives undermine the idea of common truths. Yet if we want to build resilient and inclusive societies, is there not value in establishing some starting points we can all agree on? We can use digital tools; generative AI is already helping fact checkers[322]. But they're fallible (millions of research papers are at risk of disappearing forever[323]) so human critical thinking will be vital, too.

11

A POST-TRUTH FUTURE

SO WHAT FOR DEVELOPMENT?

Evidence-based policymaking may become harder and more contentious if it cannot be grounded in a shared baseline of truth. A study of 70,000+ people worldwide found trust in scientists moderately high; 75% agreed scientific methods are the best way to find out if something is true (though trust levels vary among countries and are linked to political orientation[324]). Should scientists wield more influence in policymaking?

Deepfakes can be used to manipulate public opinion, further dividing us on critical issues like climate change or inequality. Even the gradual personalisation of online news feeds is exacerbating echo chambers, as AI algorithms curate content based on a user's past consumption, interests and even location, creating "filter bubbles" where people only see information that confirms their existing beliefs. That online manipulation may partly explain the growing gulf in political views[325] between young women and young men. Such polarisation will make it even harder for future generations to agree on historical facts and learn from the past.

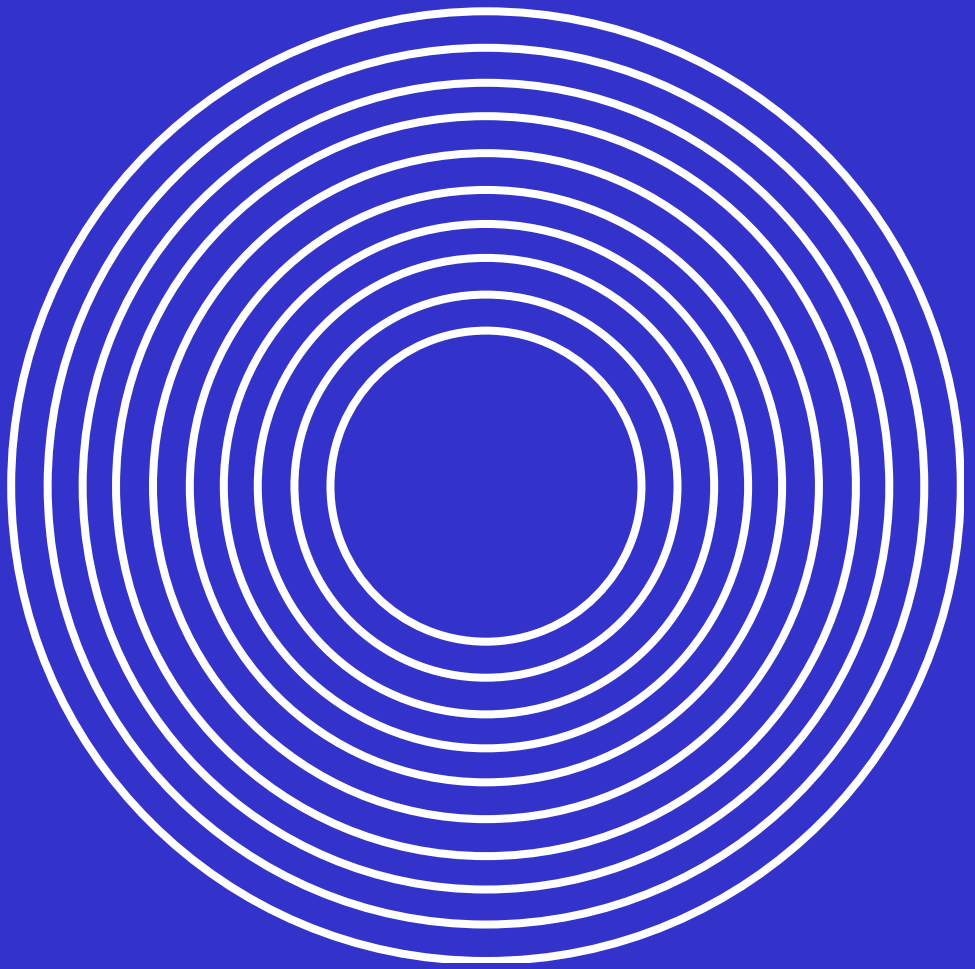
The very preservation of knowledge cannot be taken for granted. Digital archives are vulnerable; 176 open access research journals have already vanished[326] from the internet. As AI plays an increasingly important role in structuring and organizing information, its judgments[327] will influence what becomes public knowledge. That may erode for future generations their authority or power to decide what is true or worthy of attention.

Meanwhile, preserving and strengthening the human capacity for critical thinking can help insulate us against mis- and disinformation and keep us alert to the value of knowledge and truth. Media literacy – becoming mandatory[328] in many US schools - can improve detection of disinformation[329]. An experiment showed that adding "trust" and "distrust" buttons[330] on social media could curb misinformation by incentivizing people to share what they trust.

○ This theme inspired our scenario "Heritage meets modern" – you can read it at the end of the Spotlight.

12

WAITHOOD



CONNECTED TO:

- ECO-NOMIC FUTURES
- CREATIVE DEMOCRACY
- UNNATURAL SELECTION
- HERMIT HUMANITY
- INTERGENERATIONAL VALUABLES
- WHY PICK SIDES?

12 WAITHOOD

OVERVIEW

The term “waithood” describes a stage where young adults face delayed traditional milestones, such as marriage and homeownership, due to job scarcity and a “silver ceiling” caused by older generations delaying retirement. While societal norms often equate adulthood with these milestones, creating a perception that young people are in limbo, the reality is different. Many young adults are actively forging new paths, including in entrepreneurship and creative or informal economies. This shift underscores the need to evolve our notions of adulthood as societies change and to promote education and employment policies that better prepare young people for a much greater variety of life and career patterns.

SIGNALS

Patterns of life, work and family are changing. Young adults are getting married and having children later in life[331]. AI is beginning to transform jobs[332] and will replace some altogether. Some young people are stuck in so-called “waithood”[333] — a prolonged period between childhood and adulthood where traditional milestones, like leaving home, marriage, homeownership and children, are delayed due to job scarcity and a “silver ceiling” caused by older generations working longer. Some Chinese parents are paying[334] their unemployed adult children to be kids. In the US, more Gen Z are enrolling in trade school[335], seeing better prospects – and less threat from AI – than in professional jobs.

“Waithood” doesn’t mean young people are inactive – studies show[336] they are often busy, paid or unpaid – but they are not following traditional life patterns. Many are entrepreneurs, working in creative industries or informal economies. The “creator economy” (businesses that create and monetise online digital content) could double to $480 bn[337] by 2027; 57% of Gen Z say becoming an influencer[338] is their top career choice. Creative industries account for 50 million jobs worldwide and employ more young people[339] (and women) than other sectors. Nigerian musician Burna Boy was the first African to sell out a US stadium[340] at Madison Square Garden, New York.

Yet societal norms still tend to link adulthood to marriage, work and homeownership. 78% of young[341] people employed worldwide are in informal employment (compared with 58% of adults). While many young people do attain social markers of adulthood[342] without a formal job, others may aspire to those traditional milestones but find them out of reach. For them, “waithood” is an uneasy limbo, not a choice.

12
WAITHOOD

SO WHAT FOR DEVELOPMENT?

A young population like in sub-Saharan Africa, the world's youngest region[343] with 70% under the age of 30, holds great economic potential. In South Africa, a 2023 study discovered 1 million informal innovators[344], 2.5% of the population. But in 2021, a quarter of young people[345] in developing countries were neither in employment, education or training. The frustration and disillusion that can result is a risk for healthy societies of the future. Education and labour policies need to evolve to equip younger generations to compete in a rapidly changing job landscape. As AI and technology disrupt traditional jobs – and create new ones in sectors like creative[346] and digital – education has to adapt, teaching skills[347] for the jobs of the future. New technologies like classroom robots[348], virtual reality and AI for personalized learning could help that extended learning, if these technologies can be made broadly accessible.

Younger generations are getting married and having children later[349], or not at all, often because they can't afford to. This challenges societal norms, creating a mismatch in expectations across generations of what adulthood means. Yet the familiar linear model of life – education, work, retirement – is becoming obsolete as we all live longer. In the "postgenerational"[350] society, "perennials"[351] will live much more varied lives, pursuing several occupations, interacting with multiple generations. BMW[352] and other companies, for example, are creating multigenerational workplaces[353]; mixing as many as five different generations in redesigned factories to maximise their different abilities, increasing productivity and job satisfaction. Our understanding of adulthood needs to adapt to this more "perennial" mindset.

This theme inspired our scenario "Heritage meets modern" – you can read it at the end of the Spotlight.

13

HERMIT HUMANITY

CONNECTED TO:

- CREATIVE DEMOCRACY
- POST-TRUTH FUTURE
- WAITHOOD
- INHERITED TRAUMA

13 HERMIT HUMANITY

OVERVIEW

The Covid pandemic and its associated policies of distancing and lockdown had severe and lingering implications for mental health and wellbeing. Social isolation is linked to poor physical health and increased risk of cognitive decline[354]. Loneliness can skeaw perspectives towards a more negative worldview[355]. People who experience increasing loneliness are more likely to embrace conspiracy theories[356] in midlife, while isolation has been found to correlate with anti-democratic values[357]. And as we increasingly connect with "people like us" online, that can weaken social cohesion in real life.

SIGNALS

The Covid pandemic brought home to many of us what it felt to be lonely. The long-term implications of social distancing and lockdowns are still not fully apparent, but the World Health Organization (WHO) noted that anxiety and depression[358] worldwide increased by 25% in the first year of the pandemic, with loneliness and social isolation a major factor. US social distancing policies were associated with adverse mental health[359] outcomes. Social isolation and distancing changed patterns of behaviour and habits. South Korea's "untact" (contact-free)[360] policy has lingering effects today on education, while in some contexts people are experiencing "skin hunger"[361], a deficit of touch. "Hermit consumers"[362] in the rich world are spending more on staying at home, with $600 billion less than expected now spent on services outside the home.

The WHO has launched an international commission on loneliness [363], declaring it a global public health concern as harmful to people's health as smoking 15 cigarettes a day[364]. Across the world, a quarter of older people feel socially isolated. Depression among the elderly in low- and middle-income countries is much higher[365] than in the US. The young are lonely, too; 12% of adolescents in Africa[366] are lonely, damaging their education and job prospects. Some teenagers are turning to chatbots[367] for psychological advice and friendships; some report growing addicted to them.

Beyond individuals' mental health, loneliness poses a threat to societies. Online homophily[368] – connecting with socially similar people – makes people socialize less in real life, weakening local social cohesion. One German study[369] even found that loneliness correlated with anti-democratic attitudes, an inclination toward populism and belief in conspiracy theories.

13
HERMIT HUMANITY

SO WHAT FOR DEVELOPMENT?

Now that we know that isolation and loneliness are bad for your health[370], we owe it to future generations to preserve their options to maintain strong communities and social networks that will keep them healthy and happy. Governments like the UK[371], Spain[372] and Japan[373] are investing in programmes to reduce social isolation. Startups[374] are focusing on social connection[375], bringing different generations together in person to combat loneliness and strengthen communities. We should be learning from the lessons of COVID-19 how we can pre-empt the damaging effects of compulsory isolation that might be needed in future pandemics.

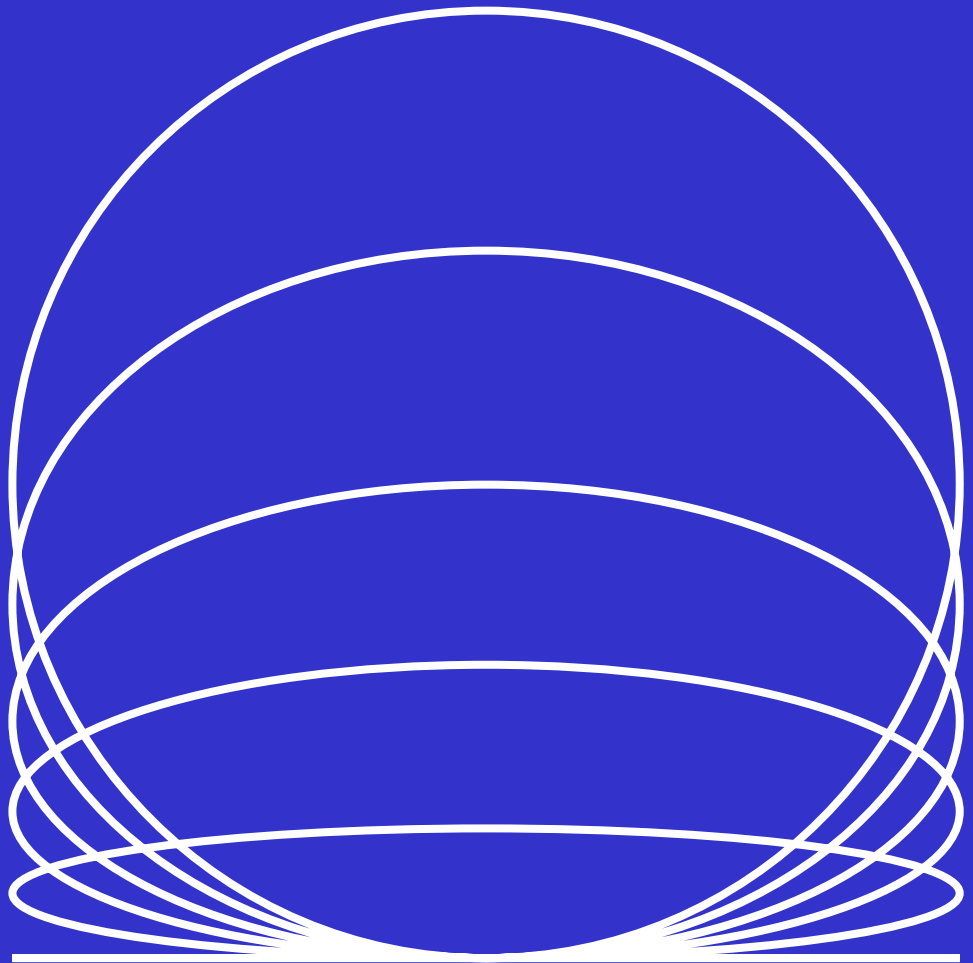
Multigenerational living, the historical norm in much of the world, is on the rise again[376] in the US and Europe[377] (albeit mainly driven by financial necessity). It can build mutual understanding between generations and prevent loneliness. In Africa[378], conversely, growing individualism in "Westernising" family structures may weaken intergenerational solidarity.

Digital solutions to loneliness are a double-edged sword; social media does connect people, but it is damaging[379] adolescent mental health. Virtual reality tools and digital pets can reduce depression[380] in older people, but the longer-term effects of more immersive digital experiences are unknown. Such digital interactions are likely to become more frequent and powerful, as AI makes them more appealing and ubiquitous. Increasing use of digital tools – especially as human-to-AI interaction grows - could weaken our human capacity for empathy and for relationships with other humans: a dubious legacy for future generations?

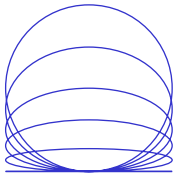
14 INHERITED TRAUMA

CONNECTED TO:

- FAIR SHARES
- NEW FRONTIERS OF CONFLICT
- CREATIVE DEMOCRACY
- WAITHOOD
- HERMIT HUMANITY
- WHY PICK SIDES?



14 INHERITED TRAUMA



OVERVIEW

The trauma from violence, conflict, disasters or pandemics is not felt only by their immediate sufferers. Trauma can be inherited, for example by babies born to mothers suffering stress in pregnancy. It can even change gene expression and thus pass between generations. Without effective interventions, trauma can compound in future generations, weakening societies' ability to thrive. Building intergenerational equity requires us to address the mental health of individuals and the resilience of societies to break the cycle of inherited trauma.

SIGNALS

Violent tragedies, from genocide to slavery to conflicts across the world today, demonstrate that trauma leaves a legacy of damage to the descendants of those who experienced it. How trauma is passed down epigenetically through generations, influencing gene expression[381] in future generations, is still debated[382], but intergenerational trauma has been linked to depression, mental disorders and mortality rates.

Rwandans continue to suffer from the collective trauma of the genocide[383] of 1994. Four generations of people in Bosnia and Herzegovina are affected by traumas of the wars of the last century; even those born after the war can inherit the traumas[384] of parents who were witnesses, victims or perpetrators of violence. Yazidi survivors of the 2014 genocide[385] suffered higher psychological stress and suicidality than Yazidis not exposed to violence. Mothers who experienced the Holocaust[386] showed changes in the activity of a DNA segment regulating the stress response – changes that appeared also in their children. Apartheid discrimination and violence suffered by pregnant women in South Africa affected[387] their unborn children years later. 155,000 pregnant women[388] are suffering during war in Gaza.

It is not only conflict that inflicts trauma. Natural disasters[389] increase the prevalence of mental health disorders. COVID-19 stress[390] physically altered teenagers' brains in ways previously only seen in children experiencing chronic adversity. The trauma women suffer from gender-based violence, which remains one of the commonest violations[391] of human rights, and conflict-related sexual violence[392], affects the health and well-being of their children, with high social and economic costs for women, their families and societies[393]. Breaking the cycle of intergenerational trauma not only matters for individuals' mental health and their chances to thrive, it is essential to building healthy, resilient societies.

14
INHERITED TRAUMA

SO WHAT FOR DEVELOPMENT?

With conflicts at their highest[394] since World War II, two billion people are today exposed to the trauma of war. Many conflicts persist through generations. Preventing conflict would end intergenerational trauma before it's even created.

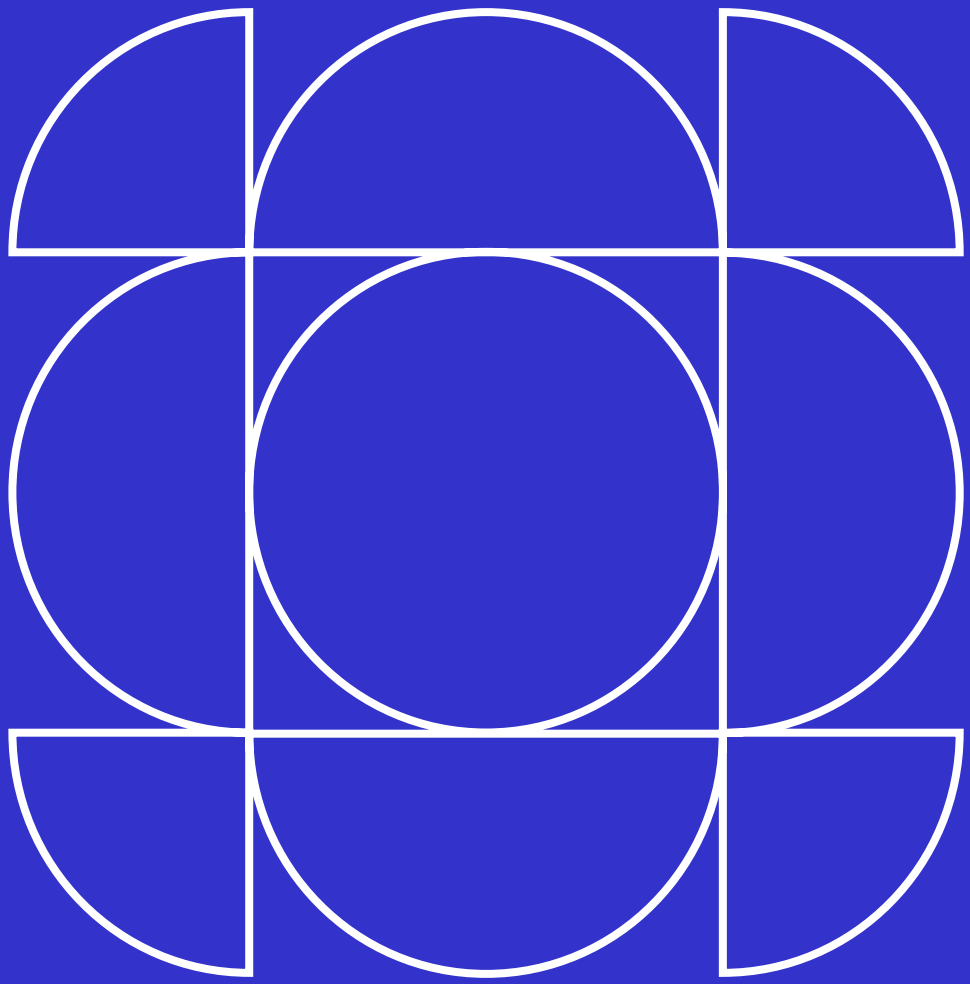
Trauma is a development issue that goes far beyond a single sector and a single generation. Inherited trauma, untreated, impairs a person's cognitive development and damages their educational and professional chances, destroying human capital that is vital to development. Yet research suggests that the effects of trauma on children's brains, once considered permanently damaging, are in fact amenable to treatment, underlining the importance of mental healthcare. This is a serious challenge for low- and middle-income countries, where only 0.3% of public health spending[395] is allocated to mental health, compared to 3.4% in high-income countries.

Sierra Leone's transitional justice model, which included a Truth and Reconciliation Commission as well as a formal prosecution mechanism, has helped keep the peace[396] in Sierra Leone. But years after the civil war and the Ebola epidemic, people continue to suffer[397] the effects of trauma from both, while mental health services remain very limited.

Rwanda's success[398] in treating survivors of the 1994 genocide through community-based approaches, such as integrating mental health services into primary care, shows that effective trauma treatment and resilience-building is possible, even with limited resources. Rwanda's social healing[399] programme, including community dialogues and restorative justice, has been effective in building a unified Rwandan identity.

15

INTER-GENERATIONAL VALUABLES



CONNECTED TO:

- ECO-NOMIC FUTURES
- A TASTE OF THE FUTURE
- HIGH STAKES FOR CLIMATE
- WAITHOOD

15 INTERGENERATIONAL VALUABLES

OVERVIEW

The majority of the world remains without financial protection across all areas of life. The protection gap between what is insured and uninsured continues to grow, with financial risk management rapidly outpaced by rising risk, hazard and shock. Climate change and environmental degradation are forcing us to attach greater value to what used to be taken for granted, like clean air, forests, water and biodiversity. Which of these tangibles and intangibles should we be insuring and assuring for the future? And who should pay the premiums as lives get longer and richer?

SIGNALS

Everywhere, risks are increasing – from climate change, geopolitical tensions, economic shocks – yet most of the world remains uninsured against them. Extreme weather events caused $360 billion[400] of damage worldwide in 2022, but only 40% was covered by insurance. Some things are becoming uninsurable. The largest homeowner insurer in California has stopped[401] accepting new customers because of growing catastrophe exposure, including wildfires. Floods and other climate risks are driving insurers[402] out of other US states. Homes that cannot be insured will lose value.

Insurance is essential to protect people and planet and to incentivise investment and growth. Countries with greater insurance coverage[403] have faster economic recoveries from disasters and rebuild with greater resilience; a 1% increase in insurance coverage can reduce national disaster recovery costs by up to 22%. Risk sharing[404] is crucial to increasing protection for developing countries most affected by climate change yet least able to bear the burden. Lloyds of London and the United Nations Capital Development Fund are teaming up to improve access to insurance for Pacific island states and other climate-vulnerable[405] countries. High-profile cases like the FSO Safer[406] operation demonstrate the role of insurance in preventing environmental and economic disasters.

The kinds of things people want to insure are changing. People are attaching greater value to what used to be taken for granted, like clean air and water. Digital tools let them measure it, for example AireLibre air quality sensors[407] in Paraguay that provide real-time data on air quality via a network anyone can join. Natural resources are being insured, like a 100-mile coral reef[408] in Mexico. Brazil has proposed “Tropical Forests Forever,[409]”a new fund to pay countries to maintain and restore rainforest.

Alongside changing values, digital tools are changing the insurance market. Insurance companies can use AI and digital platforms[410] to offer hyper-personalized and real-time risk protection. Digital tools are also empowering consumers in new ways, like decentralized networks[411] that allow groups of friends to pool risks, in another iteration of the sharing economy.

15
INTERGENERATIONAL VALUABLES

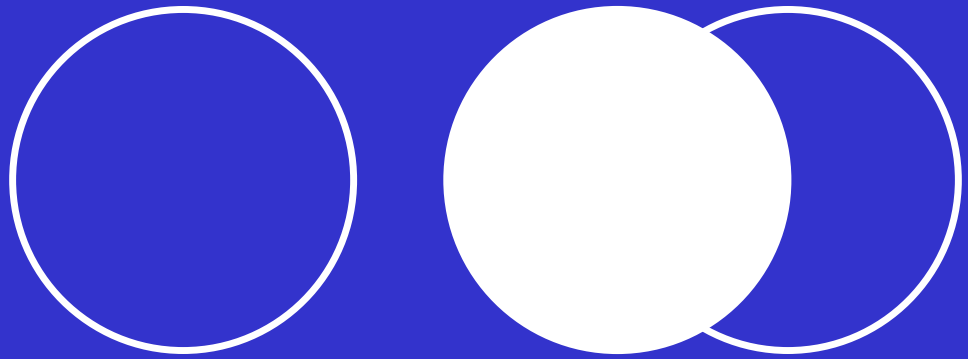
SO WHAT FOR DEVELOPMENT?

Closing the “protection gap” - between what is insured and uninsured – is vital to development and for fairness to future generations. New insurance solutions[412] for climate risks, low-income pre-retirees and gig workers can make societies more resilient, for example by alleviating pressure on public pensions. But rising risks can make insurance unaffordable. Flood Re[413], an initiative between the UK government and insurers, makes the flood part of homeowners’ insurance affordable for those in high flood risk areas. Such public-private partnerships[414] could be applied in developing countries to share the costs of risks borne by the most vulnerable.

We cannot predict the kinds of things future generations will want to insure, but today’s changing demands offer some clues. Younger people want to insure digital assets like virtual goods and avatars[415] and protect themselves against identity theft[416]. Consumers want not just risk coverage, but risk prevention[417] services, like health coaching or rewards for safe driving. Insurance products that reward healthy living could appeal to younger people. So could peer-to-peer insurance[418], pooling risks among friends or communities, like Laka[419], an insurance collective for cyclists.

This theme inspired our scenario “Making the earth count” – you can read it at the end of the Spotlight.

16 WHY PICK SIDES?

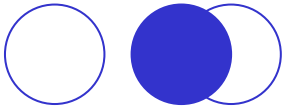


CONNECTED TO:

- NEW FRONTIERS OF CONFLICT
- ECO-NOMIC FUTURES
- CREATIVE DEMOCRACY

- POST-TRUTH FUTURE
- WAITHOOD
- INHERITED TRAUMA

16 WHY PICK SIDES?



OVERVIEW

Gender politics – more polarizing than ever- can be portrayed as a zero-sum game, where supporting one gender is seen as harming another. Women still earn less than men, are underrepresented in government and most legislatures, suffer child marriage and increasing gender-based violence. Youth across the world recognize gender equality as a primary concern[420]. So it is startling to see that some believe gender equality efforts have gone far enough[421]. 60% of Gen Z men in 31 countries believe women's equality discriminates against men[422]. This backlash is partly due to outdated societal norms around masculinity and gender that reinforce sexist attitudes. The digital world exacerbates the problem by creating echo chambers and safe spaces for abuse, mirroring real-world gender-based violence.

SIGNALS

Not a single indicator for SDG5[423], gender equality, has been met. A quarter of people worldwide believe[424] it is justifiable for a man to beat his wife. Women earn only 51 cents[425] to every man's dollar (2019). Women spend three times more hours than men on unpaid care work. Nearly 9 out of 10 men and women still hold fundamental biases[426] against women. Given the dismal state of progress towards gender equality, it is startling that 60% of Gen Z men in 31 countries believe women's equality discriminates against men[427]; and even more shocking that 40% of Gen Z women think so too.

Why is this happening[428]? There are ways in which boys are struggling. In some contexts, boys are falling behind in education; 72,000 more girls than boys[429] graduated high school in South Africa in 2023. In 114 countries, more women than men are in higher education[430]. Added to that, societies expect different things of men and women. Boys are often taught to repress their emotions, which restricts relationships and reinforces sexist attitudes. It's a point of comment when a TV show portrays emotional expression among men[431]. Worldwide, the ideological gap[432] between young men and women is growing, with young women increasingly more liberal than men. Online communities denigrate women[433] and fuel the idea that progress towards gender equality is a zero-sum game[434] where women's gain is men's loss.

New forms of exploitation[435] of women are emerging with the growth of digital platforms that popularize misogynistic narratives. Chatbot abuse[436] often has a gendered component, with men creating digital girlfriends to punish them with words and aggression. The newest emotionally expressive AI chatbots[437] have the potential to mirror even more vividly such real-world domestic violence. Inadequate controls[438] on social media platforms allow hate speech[439] to spread.

Online behaviour can have a chilling effect on women's political participation. A survey found 77% of women in the UK are not comfortable expressing political opinions[440] online because they fear misogyny, trolling or threats in response. UNDP is piloting an online monitoring tool[441] to track hate speech against women.

16
WHY PICK SIDES?

SO WHAT FOR DEVELOPMENT?

Men believe[442] more strongly than women that gender equality is a zero-sum game in which they have the most to lose. But to build healthy, resilient societies, both women and men must able to flourish; progress towards gender equality ultimately benefits all genders. Gender equality is not a women's issue, it's a human one. Women and men have to come together to build the future we want.

Differentiated approaches may be needed, though. The consequences of girls or boys not going to school, for example, are different. Boys falling behind or out of school could lead to more violence and crime, possibly extremism; for girls out of school, the impacts are more likely to be domestic abuse, lower lifetime earnings, political marginalization. Differentiated policies are needed to address cumulative inequalities, too; for example, 65% of old people without pensions[443] are women.

There are particular dangers to society that come from boys becoming isolated, being raised differently and held to traditional expectations of "masculinity". Models encouraging positive masculinity do exist. Bogotá's "Manzanas de Cuidado" program includes a virtual school for men, to teach caregiving skills[444] and promote fair sharing of unpaid care work. The Global Boyhood Initiative[445] aims to break the pattern of harmful masculine norms, handed down through generations. The Babe Locotfo campaign in Eswatini promotes positive fatherhood[446] by encouraging fathers to be present and supportive, reaching over 230,000 people. The National Football League's "Men against Violence" campaign in Cabo Verde[447] mobilizes men and boys as ambassadors of gender equality.

WHERE NEXT?

The Spotlight describes a very varied range of signals. Some may seem distant where you are. But everything connects; what's happening faraway can alert you to opportunities and risks you might otherwise not notice, or which might only gradually be emerging.

The Spotlight aims to spark conversations that engage multiple perspectives, throwing a new or altered light on things. These might prompt you to think how similar signals of change could play out in your context, or to draw different conclusions.

This can help you incorporate a variety of futures into your work, becoming more anticipatory and more effective in the face of uncertainty.

CREATING YOUR OWN SCENARIOS

One way to do this is by creating your own scenarios, or stories about possible futures. This doesn't have to be complex, time-consuming, or involve many people. You can tell interesting stories about the future in various ways. They don't have to be dry descriptions of the world, unless that's the brief.

Scenarios help us imagine the texture of a future, particularly at a human or community scale. Creating them can be as simple as bringing together signals, trends and higher-level forces and describing how they might manifest in different places.

For the scenarios in this Spotlight, we did just that. For each scenario, we selected three themes. Then we imagined what might happen if they converged, and what a slice of that future might look like through a lens of intergenerational equity. (We used AI to frame out the basic story, then refined it.)

We ended up with three scenarios: a new organization to ensure the just use of resources in space; a new centre that leverages AI to bring generations together around common values; and innovations in legal and financial tools that support society. These represent just one way of looking at the convergence of selected themes.

We then zoomed in a little and explored each scenario in the form of a simple artefact—something mundane that might exist tomorrow as well as today: a three-year programme review, an opening speech, and a slice of a financial prospectus. Each is something familiar, yet helps bring the future story to life.

We encourage you to do the same—with a group or as a personal exercise. Select three themes from the Spotlight, consider them, and describe a piece of a future where they converge and interact. Imagine the impacts this future might have on development. Work backward from this future and imagine what it would take to get there. Illustrate it with something that might exist in that future, or a short story about someone in your scenario. Share with colleagues or partners and have a conversation. What did you learn? How might the world change? How might development change? How might you change the world?

SCENARIOS AND ARTEFACTS

SCENARIO 01

CELESTIAL COMMONS

INCORPORATING THEMES OF HIGH STAKES FOR CLIMATE, CONGESTED SPACE, AND NEW FRONTIERS OF CONFLICT

In the early 2030s, the Celestial Stewardship Initiative (CSI) has been established in New York City, with centres in nations historically impacted by colonial exploitation. These countries, once heavily mined for valuable minerals, now lead a movement for sustainable and equitable space resource management. CSI's mission draws on these regions' historical experiences in order to avoid the unregulated and exploitative practices of the past.

The "Guardrails for the Galaxy" campaign is CSI's flagship initiative, promoting stringent regulations and collaborative approaches to space mining. By fostering technology-sharing, CSI aims to prevent monopolization and ensure that space mining benefits all nations, especially emerging economies.

CSI successfully brokered negotiation of the "Lunar Legacy Pact," an international agreement signed by major spacefaring nations and private entities. This pact establishes sustainable quotas and responsible methods for lunar mining. It also created a global fund, financed by space resource revenues, to support renewable energy projects on earth, particularly in regions historically disadvantaged by colonial practices.

CSI addresses potential conflicts over space resources by facilitating dialogue between nations and industries. It works to establish cooperative rules, deterring behaviors that could lead to geopolitical tensions.

Through partnerships with environmental groups, policymakers and the United Nations, CSI helps shape a global policy framework that includes rigorous environmental impact assessments and requires restoration bonds from companies involved in space mining.

By situating its key units in countries once marred by colonial exploitation, CSI underscores the importance of learning from history to safeguard the future. This strategic location symbolizes a commitment to managing space with equity, sustainability and foresight, protecting these new domains for generations to come.

ARTEFACT 01

CSI PROGRESS REPORT

CELESTIAL STEWARDSHIP INITIATIVE THREE-YEAR PROGRESS REPORT: EXECUTIVE SUMMARY

Since its inception in 2030, the Celestial Stewardship Initiative (CSI) has promoted sustainable and equitable space resource management. Based in New York City with operational centers globally, CSI ensures that space resource utilisation avoids the mistakes of past resource exploitation.

ACHIEVEMENTS

01 Launch of the "Guardrails for the Galaxy" Campaign - CSI's flagship campaign has successfully advocated for stringent regulations and collaborative approaches to space mining.

02 Negotiation of the "Lunar Legacy Pact" - This international agreement, signed by major spacefaring nations and private entities, sets sustainable quotas and environmentally responsible methods for lunar mining. A portion of space resource revenues funds renewable energy projects on earth.

03 Averting International Conflict - CSI mediated a peaceful resolution between two major spacefaring nations over a contested asteroid.

04 Environmental and Social Governance - CSI has partnered with environmental groups, policymakers and the UN to create a global policy framework for space resource management, including rigorous environmental impact assessments and restoration bonds.

05 Educational and Outreach Programmes - CSI has launched programmes to raise awareness about sustainable space resource management and responsible space exploration.

CHALLENGES AND OPPORTUNITIES

While harmonizing international regulations and ensuring compliance remain challenges, they also present opportunities to strengthen global cooperation and set higher standards for sustainable space resource management.

FUTURE DIRECTION

CSI's first three years have laid a strong foundation for sustainable and equitable space resource management. Through historical insights and international collaboration, CSI is committed to ensuring that space exploration benefits all of humanity.

CSI will advocate for further international treaties, expand educational programmes and enhance global cooperation to ensure that technological progress in space mining benefits all nations and safeguards resources for future generations.

SCENARIO 02

MAKING THE EARTH COUNT

INCORPORATING THEMES OF INTERGENERATIONAL VALUABLES, TASTE OF THE FUTURE, AND MULTI-SPECIES JUSTICE

In the first decades of the twenty-first century, the world has faced growing existential risks from climate change, economic shocks and geopolitical tensions. Of particular concern is that many individuals and businesses are uninsured, creating a dangerous protection gap due to the rising cost of disasters and crises, coupled with retreating capital markets.

In the face of these growing risks, new financial instruments like EcoShield insurance policies address natural capital risks by protecting vital ecosystems such as coral reefs and rainforests. Digital risk anticipation tools are revolutionizing insurance, through peer-to-peer models like SafeCircle and AI-driven risk protection. Public-private partnerships, like Climate Cover, make climate risk insurance affordable in high-risk areas. Online platforms provide real-time air quality data, empowering communities and creating incentives to sequester more carbon.

New financial and legal models protect the rights of animals and nature. BioTrust Funds support biodiversity conservation, ensuring biospheres thrive. The global food system is transforming with innovations like lab-grown proteins that reduce climate impact and the digital Heritage Harvest Agricultural University, which revives ancestral agricultural practices to promote food security through regenerative methods.

To address intergenerational transfer, financial models like GenWealth Bonds fund renewable energy and conservation projects, particularly in regions lacking long-term investment. Multi-species justice, supported by the Borneo-Bogota-Berlin Biorights Accord, acknowledges the rights of nature and non-human entities, enshrining these in laws.

Finally, EcoGovernance programmes promote biodiversity. Future interspecies diplomacy, led by the NatureTalk information protocol, could reshape human-nature interactions. These innovative financial models and regulatory approaches, backed by new legal frameworks, aim to build a resilient, equitable future, balancing human progress with the rights and needs of all earth’s inhabitants.

ARTEFACT 02

FINANCIAL PROSPECTUS

PART OF A FINANCIAL PROSPECTUS FOR THE ECOSUSTAIN BRAND OF INNOVATIVE FINANCE INSTRUMENTS

Welcome to EcoSustain: Pioneering Financial Solutions for a Sustainable Future

ECOSHIELD POLICIES
Protect our planet's most vital ecosystems with EcoShield Policies. Safeguard coral reefs, rainforests and other critical natural assets while securing returns from eco-friendly projects. Your investment helps preserve essential environmental resources for future generations.

SAFECIRCLE PEER-TO-PEER INSURANCE
Experience the future of community-based risk management with SafeCircle. This peer-to-peer model allows groups to pool risks and offers personalized protection plans through AI-driven insights. Invest in a system that fosters solidarity and provides innovative insurance solutions.

BIOTRUST FUNDS
Champion biodiversity and conservation with BioTrust Funds. Direct capital towards preserving ecosystems and supporting wildlife. Investing here means backing projects that maintain the planet's natural balance and preserve ecological wealth for future generations.

Join EcoSustain and invest in a future where financial growth meets ecological responsibility.

For more information, visit our website or contact our investment advisors.

FINANCIAL DISCLAIMERS:

01 **Quantum Market Fluctuations:** Investments may be affected by quantum computing advancements, causing unpredictable market shifts and volatility.

02 **Algorithmic Bias:** AI-driven models in SafeCircle could inherit biases, and hallucinate, leading to unequal risk distribution and unforeseen financial consequences.

03 **Ecosystem Sentience:** BioTrust Funds rely on the stability of natural ecosystems, which may exhibit emergent sentient behaviors affecting investment outcomes.

Investors should consult with their financial advisors to understand the specific risks associated with each investment product.

SCENARIO 03

HERITAGE MEETS MODERN

INCORPORATING THEMES OF WAITHOOD, SILICON STATES, AND POST-TRUTH FUTURE

The Nadi Pintar Centre emerged as a transformative force in one of Asia's new capitals, addressing the evolving challenges endemic in the 2020s such as the drive for decarbonisation and managing rapid urban growth. The Centre became a focus for integrating technology with local traditions.

At Nadi Pintar, AI was trained on cultural heritage and modern curricula to develop educational programmes that addressed local needs in sectors like sustainable agriculture and entrepreneurship. Young farmers learned to use neural net-aided diagnostics to enhance crop yields and manage resources efficiently, while aspiring entrepreneurs used emerging technology to enable lightweight, mobile and adaptable new businesses.

The centre also played a crucial role in combating digital misinformation. Digital literacy workshops employed advanced AI to simulate real-world scenarios, teaching participants to identify and counteract false narratives.

Central to Nadi Pintar's success were the "Digital Navigators," young leaders who transitioned from learners to mentors.

Looking ahead, Nadi Pintar plans to introduce more specialized training programmes in technology and entrepreneurship, bridging the gap between traditional skills and modern innovations. There is potential to replicate the Nadi Pintar model in other cities, creating a network of innovation hubs that promote sustainable development and digital literacy across Southeast Asia.

ARTEFACT 03

SPEECH

SPEECH AT OPENING BY INAUGURAL DIGITAL NAVIGATOR

Ladies and gentlemen, distinguished guests and fellow pioneers,

It is a privilege to stand here today at the grand opening of the Nadi Pintar Centre. As one of the inaugural Digital Navigators, I have witnessed a remarkable transformation within this community—a transformation that addresses not just our immediate challenges, but also the aspirations of future generations.

We inaugurate today not merely a building but a beacon of hope and a bridge to the future. Here at Nadi Pintar, we confront the legacy of our times, where many young adults find themselves in a holding pattern, delayed in reaching traditional milestones of adulthood due to economic and social barriers. This Centre represents our resolve to ensure that today's advancements do not compromise the wellbeing of those who will come after us.

At Nadi Pintar, we merge cutting-edge AI with our deep cultural heritage to develop educational programmes that equip us to meet global economic demands and address local challenges. Our programmes are designed not just to provide skills but to weave those skills into the fabric of our community's needs, ensuring sustainability and relevance.

As Digital Navigators, we are the embodiment of the Centre's mission to guide our entire community through the evolving digital terrain. We are prepared to tackle misinformation, apply technology to traditional industries, and advocate for critical, forward-thinking approaches that consider the long-term impact on our community and beyond.

I invite you all to join us in this journey. Let us work together to ensure that the digital revolution enriches our lives and that the potential of our youth is fully realized, not deferred.


HOPE
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HOPE

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The Signals Spotlight was developed by UNDP's Strategy and Futures Team, drawing on signals of change from UNDP's Future Trends and Signals System, submitted by over 350 UNDP signal scanners worldwide.

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