

IMAGINING THE UNPREDICTABLE

an experiment in crowdsourcing the risks of
a complex and uncertain world

The risks associated with climate variability and change, as well as other environmental stressors, are becoming more difficult to monitor and manage. As our world becomes increasingly interconnected, a local drought or flood has the potential to disrupt global supply chains, contribute to the movement of people within or across borders, or lead to price shocks of staple food crops. Climate change and globalization expose society to a new set of complex and systemic risks, in which the “failure of a single entity or cluster of entities can cause a cascading failure, which could potentially bankrupt or bring down the entire system or market.”¹ The trigger for a systemic risk can happen in multiple places, and the cascading effects can be unpredictable. Current models and approaches rarely provide warning for, or outline the consequences of, systemic risks.

In 2016, Skoll Global Threats Fund and MIT’s Center for Collective Intelligence, in partnership with Future Earth, began developing the ClimateRisks CoLab as a means to integrate cross-sector and cross-regional expertise to surface plausible scenarios of systemic risks emerging from and/or exacerbated by global environmental changes. The ClimateRisks CoLab brings experts from multiple sectors and regions of the world together in an online platform to develop these scenarios. By imagining and distilling these

systemic risks, this effort aims to raise awareness of the need for integrated assessments and adaptive management of these risks.

Combining both collective intelligence and scenario planning practices in an online platform offers unique opportunities for innovation. The asynchronous platform can reduce barriers to participation, which opens scenario building to a greater number of participants than can typically attend an in-person workshop, and allows new voices and perspectives to surface.

The ClimateRisks CoLab has been developed through an iterative process over the last 18 months. It has initially focused on creating scenarios with a 3–5 year horizon, encouraging creative thinking about the more imminent implications of existing trends in society. This focus has come from a recognition that the climate is already changing and its impacts—along with related environmental changes—are putting stress on society in new ways.

¹ Schwarcz, Steven L., “Systemic Risk.” *Duke Law School Legal Studies Paper No. 163; Georgetown Law Journal, Vol. 97, No. 1, 2008.* Available at SSRN: <https://ssrn.com/abstract=1008326>



EARLY ILLUSTRATIONS FROM THE PILOT

During the fall of 2017, 60 participants from 15 countries, whose expertise include climate, water, food, energy, peacebuilding, humanitarian response, and international security, engaged in the ClimateRisks CoLab pilot.

Nearly 240 contributions were submitted that described technological, social, political, and economic **drivers of change**, as well as **environmental stressors** that are having (or may have) an impact on the world over the next 3-5 years. These contributions served as building blocks to develop **scenarios** that explored potential interactions between drivers and stressors that could potentially have an effect on human security. The following are some highlights of the contributions received, and the scenarios that were generated.

Arctic: Warming in the Arctic leads to greater commercial activity, more frequent environmental disasters and mounting geopolitical instability.

DRIVERS AND STRESSORS

- Decline of **multilateral institutions**
- **Deep sea mining:** Can't see or feel impact until too late to undo
- Opening of Arctic **shipping route** exacerbates environmental risks
- Conflicts sparked over exploitation of **extractive** resources in fragile states



Stateless refugees: Drought and conflict force more refugees toward Southern Europe at a time when climate disasters stress host-country resources and strengthen the voice of ethno-nationalists.

DRIVERS AND STRESSORS

- Population mobility exacerbates resource tensions
- Further ideological **polarization**
- Blockchain makes banks increasingly obsolete
- Goodbye globalism, hello **isolationism**
- Large influx of climate refugees threaten **social fabric** of neighboring countries
- Continued weakening of democracy and **human rights** agendas
- Increasing economic protectionism in major economies

Geoengineering: Weather disasters provoke major geopolitical rivals to experiment in geoengineering in an attempt to control climate effects. The ultimate result is further climate (and diplomatic) instability.

DRIVERS AND STRESSORS

- Geoengineering: **Deliberate manipulation** of the global climate becomes feasible
- Economic impact of disasters is a significant drain on GDP, sooner than expected
- Realisation by investors that their **assets are at risk**
- Me-Firstism
- Spheres of influence
- **Technology revolutions** shift geopolitics and economics



Pandemic: Densely populated cities and crowded livestock farms create ideal conditions for a pathogen to infect humans.

DRIVERS AND STRESSORS

- Asia becomes center of economic growth and activity
- **Urban climate leadership** fails
- **Shifts in disease** and health risks
- **Globalization** of disease vectors
- Continuing **Urbanization**
- **Livestock** = Superbug Factories?
- Unraveling health care systems

Resilient communities: Extreme weather events lead to policy shifts toward resilience—but only in cities that can afford to do so. Poorer communities are vulnerable, lacking support and insurance coverage.

DRIVERS AND STRESSORS

- Driverless trucks and other technology spell the end of good blue collar jobs
- Society **goes around traditional institutions**
- Millennials kill boomer-era norms
- Additive Manufacturing 3D printing
- **Disruptive energy transition:** solar, battery storage, and AEV gestalt/synergy
- **Declining state capacity** to implement policy



Water stresses: A regional drought in the Middle East accelerates security concerns as non-state actors use water as a tool to gain power.

DRIVERS AND STRESSORS

- A **new normal** of temperature regimes, increased average cold nights and hot days
- Groundwater Greed: **Wells dry up** (excessive pumping and insufficient replenishment)
- Stronger weather patterns—drought and rain.
- Drought in Syria, Lebanon, and Upper Tigris-Euphrates Basin
- **Political power** of ethno-nationalist parties/ forces grows



Power out: Extreme heat events in US cities lead to spikes in demand and frequent blackouts. Repairs are no simple fix, leaving some sweltering without electricity for a month.

DRIVERS AND STRESSORS

- **Aging infrastructure** increases vulnerability to **supply chain failure**
- Growing involvement of **non-state actors** in international rule making
- **Urban heat islands** become deadly
- Transportation infrastructure fails in extreme heat
- We all scream for air conditioning
- Drought and heatwaves
- Large scale hacking and leaks erode privacy and shake **trust in public systems**

The ClimateRisks CoLab is an experiment to use the collective intelligence of experts around the globe to imagine the unpredictable and help society prepare for the unexpected in a rapidly changing world.

Over the next year we intend to expand the team of advisors and develop a series of scenarios drawing from a larger global network of experts. We will look to explore the potential value of the ClimateRisks CoLab model in multiple applications of human security and global environmental change.

We are grateful to the participants that engaged with us during the testing and pilot phases, and the feedback that they have provided along the way. If you have any questions, or are interested in participating in the ClimateRisks CoLab, please send an email to: admin@climateriskscolab.org or colabsinfo@futureearth.org

WE HAD 60 PARTICIPANTS IN THE PILOT, AMONG THEM INCLUDED:

Esther Babson	Charlie Iceland
Neil Bhatiya	Molly Jahn
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James Fahn	David Mozersky
John Fei	William Mulhern
Frank Femia	Enrico Ponte
Shiloh Fetzek	Matt Ranen
James Goudreau	Cherie Rosenblum
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Co-organizers



In collaboration with

futureearth