

Facing Global Risks with Honest Hope

Transforming Multidimensional
Challenges into Multidimensional
Possibilities

2024

Accelerator for Systemic Risk Assessment



Disclaimer

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“Most people recognize that humans matter when it comes to transforming the global environment ... However, many of us feel that we do not matter when it comes to deliberately transforming ourselves, our societies, and our systems to meet the challenges that we are facing today.”

— Karen O’Brian in *You Matter More Than You Think: Quantum Social Change for a Thriving World*

This is a report about our individual and organizational capacity to incite change. It explores how we assess and respond to systemic risks and outlines pragmatic next steps for decision-makers in policy, finance, and philanthropy and at the community level. Shaped by a network of transdisciplinary experts and diverse stakeholders, this report shines a light on the key drivers behind today’s “poly-crisis” and examines where positive actions are already happening. From these initiatives, we identify the critical gaps in our tools, governance structures, and resources that both hinder and undermine our ability to understand and address systemic risk.

In many ways, this report is about sense-making and taking responsibility to envision and realize the future we want. Most of us recognize that humans play a crucial role in shaping our planet’s future. However, when it comes to transforming ourselves, our societies, and our systems to meet this moment, we grapple with a pervasive sense of disempowerment.

This report emphasizes leveraging our existing strengths and resources to further develop and catalyze the actions we know have impact. Our recommendations demonstrate that we have agency when it comes to unlocking institutional innovation, reorienting financial flows, facilitating meaningful public participation, and catalyzing new social practices.

Around the world, there is a growing call for new approaches to global governance and a sustainable and equitable future for all, including other species and ecosystems. This is why ASRA advocates for systemic risk assessment. Grounded

in principles and systems-based thinking, it is an approach to understanding risk that can lead to better-informed decisions, more effective responses, and greater adaptive capacity—in many ways, systemic risk assessment is a transformative force whose time has come.

This report is essential reading for policy- and decision-makers across a diversity of sectors, including in governments and multilateral development finance institutions, as well as their advisers (technical experts, researchers, and practitioners). It's also of particular relevance to financial managers in insurance and institutional impact investment, as well as foundations and philanthropists, as it presents fresh pathways to assure the effective use of their resources and the impact of their investments. We also anticipate that it will resonate with other like-minded allies and partners who share our ambition to identify and catalyze actions that reshape systems for human, ecological, and planetary well-being.

While we may not be able to anticipate potential forthcoming global shocks, we can find new ways to navigate this polycrisis and live in honest hope that, together, we can create the conditions for a healthy, resilient, just future.

We matter more than we think.



Ruth Richardson

Executive Director,
Accelerator for Systemic Risk Assessment (ASRA)

We are facing a polycrisis—the actualization of many risks at once, which overlap and interact.

This polycrisis is not simply a perfect storm of events erupting at the same time by coincidence but stems from shared roots: society's Great Acceleration in social and economic development since the middle of the 20th century. This includes a rapid increase in industrial and technological development, particularly post-World War II, which has accelerated the exploitation of our natural resources, a climate crisis, increasing disparities between people and nations, growing conflict around the world, and destabilized political systems. This polycrisis is thus not a neutral or natural phenomenon, but the result of failure to acknowledge and mitigate systemic risk.

This context calls for a radical rethinking of risk, beyond traditional approaches focused on single harms to single organizations, communities, or people. ASRA defines "systemic risk" as the potential for multiple, increasingly severe, abrupt, differentiated yet interconnected, and potentially long-lasting and complex impacts on coupled natural and human systems. This definition highlights the critical importance of addressing systemic risk for the prosperity of all people, societies, species, and ecosystems.

Yet societies still lack the capacities and capabilities to understand, assess, and respond to systemic risk. Doing so requires a firm grounding in principles, including placing justice, transparency, participation, multiple lines of evidence and ways of knowing, a recognition of complexity and uncertainty, and the sanctity of non-human life at the heart of systemic risk thinking. In other words, it requires a radical rethinking of risk for whom and from what, when, and where.

There are promising signs that some sectors are starting to assess and respond to risks more systemically. For example, the finance sector (following the global financial crisis in particular) is much more aware of systemic risks both within the financial system and between financial and other systems, including climate and biodiversity. Environmental science recognizes planetary boundaries representing guardrails that define a safe operating space for humanity around climate, pollution, and critical biological, chemical, and physical processes, as well as dangerous tipping points around Earth systems. Insurers increasingly assess extreme disruptions, such as to two or more food-producing regions simultaneously under extreme weather. And assessments around multiple natural and

human-made hazards, largely driven by the 2015 Sendai Framework on Disaster Risk Reduction, are becoming more commonplace.

Yet much more is required. New methodologies and tools for systemic risk assessment and response are needed, as well as new lines of data and evidence, that incorporate multiple ways of knowing across quantitative and traditional knowledge. Shifting mindsets from short-term crisis response to long-term strategic foresight, and from siloed disciplinary thinking to genuine transdisciplinarity, are critical. Working collectively, multilaterally, and with justice and diverse, meaningful participation is central to achieving effective systemic risk assessment and response at multiple scales. Communicating systemic risk as part of a societal dialogue that speaks to people's needs, values, and concerns is equally necessary. These capacities can only be developed with a radical increase in systemic risk funding.

To achieve these changes, this report recommends the following:

1. Governance organizations at all scales should nurture roles and responsibilities so that leaders have the express authority, mandate, and adaptive capacity to assess and respond to systemic risk.
2. Corporations, financial institutions, and regulators should redirect capital and spending to address systemic risk.
3. Citizens, civil society, and advocates should be supported to engage in public and private sector decision-making processes, and take an active role in these processes.
4. Private and public sector data generators and data holders should develop and share new evidence and datasets fit for systemic risk assessment and response.
5. Research bodies, agencies, and institutes of education should foster a necessary renaissance in research and education in systemic risk, and rapidly “upskill” for a polycrisis world.
6. Philanthropic, public, private, and multilateral funders should radically increase funding to meet systemic responses and transformation across sectors.

The costs of recent systemic crises—societally, economically, and environmentally—are significant. And time is against us. Rapidly enhancing our ability to assess and respond to systemic risk is vital for achieving a safer future for people, the planet, and all living ecosystems.

KEY MESSAGES

There are many definitions of systemic risk. ASRA conceives systemic risk as *the potential for multiple, increasingly severe, abrupt, differentiated yet interconnected, and potentially long-lasting and complex impacts on coupled natural and human systems.*

As systemic risks intensify and converge, all life on Earth is increasingly vulnerable to sudden shocks. Societies and ecosystems have always faced risks, but the planetary scale of contemporary threats, their interconnectedness, and the potential for rapid escalation—compounded by the long shadow of social injustices and ecological harm—create a uniquely challenging moment.

Decision-makers must act with “honest hope” and adopt a fundamentally different approach to assessing and responding to dynamic, non-linear, and complex risks that pose the threat of irreversible harm. Given the potentially immense impacts of global crises on our economies, societies, environments, and future generations, we must transform multidimensional challenges into multidimensional possibilities.

Capacity gaps thwart meaningful action to address this polycrisis. Despite the profound impact of looming systemic risks on people, societies, species, and ecosystems, our current grasp of systemic risks and our actions to mitigate them are insufficient. This wastes resources, damages ecosystems, and costs lives and livelihoods. It also traps decision-makers in a cycle of reacting to emergencies instead of anticipating them and preventing the implementation of critical responses.

Investment in systemic risk assessment and response is both urgent and prudent. Governments, businesses, and philanthropic organizations need to de-silo funding streams used to respond to singular threats and invest in systemic risk initiatives—especially those focused on catalyzing tools and guiding systemic, whole-of-society, and contextually relevant responses.

Justice and equity must lie at the heart of risk management, especially for the most vulnerable ecosystems, communities, and future generations. Policymakers and leaders must focus on the values of justice, equity, non-human sanctity, and universal responsibility to illuminate and address the critical drivers of systemic risk, such as resource over-extraction, environmental pollution, rapid technological changes, weakening democracy, and inequity.

By prioritizing such principles, we can steer systems toward more equitable outcomes for humans, other species, and ecosystems.

Addressing systemic risk requires multidimensional action, radical intervention, and transformation across multiple sectors. Policymakers, industry leaders, researchers, and educators must strengthen governance, invest in transdisciplinary research and education, and develop actionable data to better inform responses. Funding mechanisms must be overhauled and citizens included in decision-making via participatory mechanisms.

Changing how society perceives and responds to systemic risk is critical to turning complexity into opportunity. By changing mindsets or “mental models,” tools, and approaches toward systemic risk, we can better understand, assess, and respond to fast-evolving threats. This will, in turn, rewire our organizations and governance institutions to better navigate uncertainty, guiding actions that build a thriving future for people, societies, species, and ecosystems.

We Must Address Systemic Risk with Urgency and Ambition

Building our capacity to understand and respond to systemic risk is central to tackling this polycrisis.

An increasing number of surveys and analyses are highlighting the growing risks societies and ecosystems are facing, stemming from political, economic, societal, technological, and environmental drivers. The interconnectedness of these risks at a global scale places us in an age of global systemic risk.

When these risks are actualized, they become crises. Because many threaten to do so at once, we now face what is known as a *polycrisis*—an increasingly common term for our times. The consequences of this polycrisis are so potentially devastating that addressing them requires fundamental transformations in our societies, economies, and relationship with the natural world.

Despite the urgency, we still lack a sufficient understanding of the risks we face and how to respond to them, whether through mitigation, preparedness, adaptation, or transformation. We must rapidly enhance our capacity to understand and address systemic risk. This is the focus of this report. In this section, we reflect on the risks and crises the world is facing, the ways in which they compound and interact, as well as the nature of current risk management and how it should be radically rethought.

Multiple crises are affecting people, societies, and the planet as a whole.

It is now widely recognized that the world is facing myriad societal and environmental crises, resulting from an ever-increasing list of risks, as catalogued in several recent studies.¹ Many of these risks, such as climate change, are occurring at a global scale, with worsening impacts disrupting societies and threatening global biodiversity.

Global inequality is now being exacerbated by a cost-of-living crisis affecting billions of people. Millions more are caught up in spreading conflicts.² Nations are still reeling from a global pandemic and its long-term economic and health impacts, having barely recovered from a global financial crisis that started over 15 years ago. Together, these crises have sent government borrowing in many countries to levels that were unimaginable at the beginning of this century.³

At the same time, trust in governments and democratic institutions is eroding around the world, in large part fuelled by the “infodemic” of dis- and misinformation that is rampant on social media. New technologies such as artificial intelligence threaten to intensify those risks or seed new ones, particularly in the absence of strong governance regimes. These add to established risks, including nuclear conflict, cyber-attacks, and terrorism.

Terms such as *polycrisis*,⁴ *permacrisis*,⁵ and *metacrisis*⁶ are increasingly being used to describe our present period of multiple crises, which have resulted from the actualization of many risks at once, and which interact and overlap.

Many of these crises stem from common roots.

This polycrisis is not simply a “perfect storm” of events erupting at the same time by coincidence.⁷ It stems from a rapid increase in industrial and technological development in the context of political economies and the post–World War II period. This “Great Acceleration”⁸ has seen huge advances in economic, social, human, and technological development, yielding greater wealth, education, healthcare, and security for millions of people globally. However, this development has been unevenly distributed, as have the risks that have accompanied it. These include increasing within-country inequality,⁹ greater vulnerability to climate impacts for poorer versus richer nations¹⁰ as well as for women compared to men,¹¹ and the prevalence of “sacrifice zones”—areas of extreme contamination where vulnerable and marginalized groups suffer disproportionately in terms of health, living conditions, and human rights.¹²

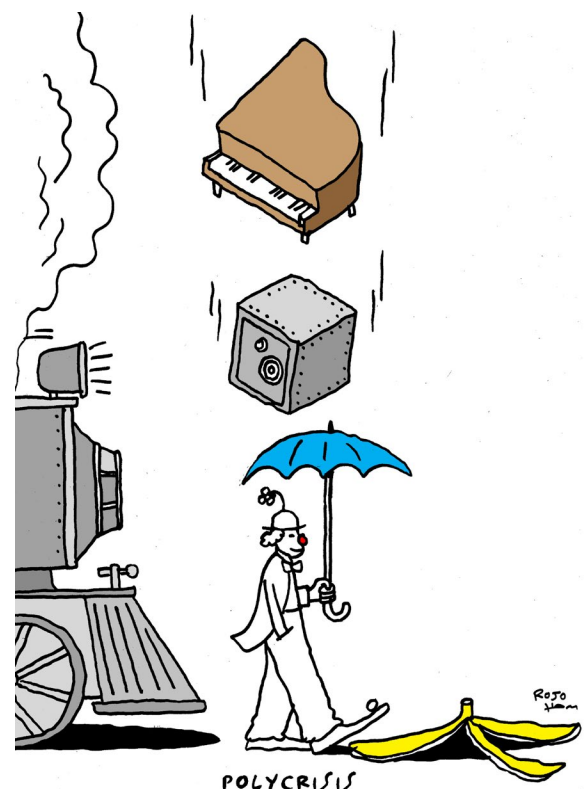


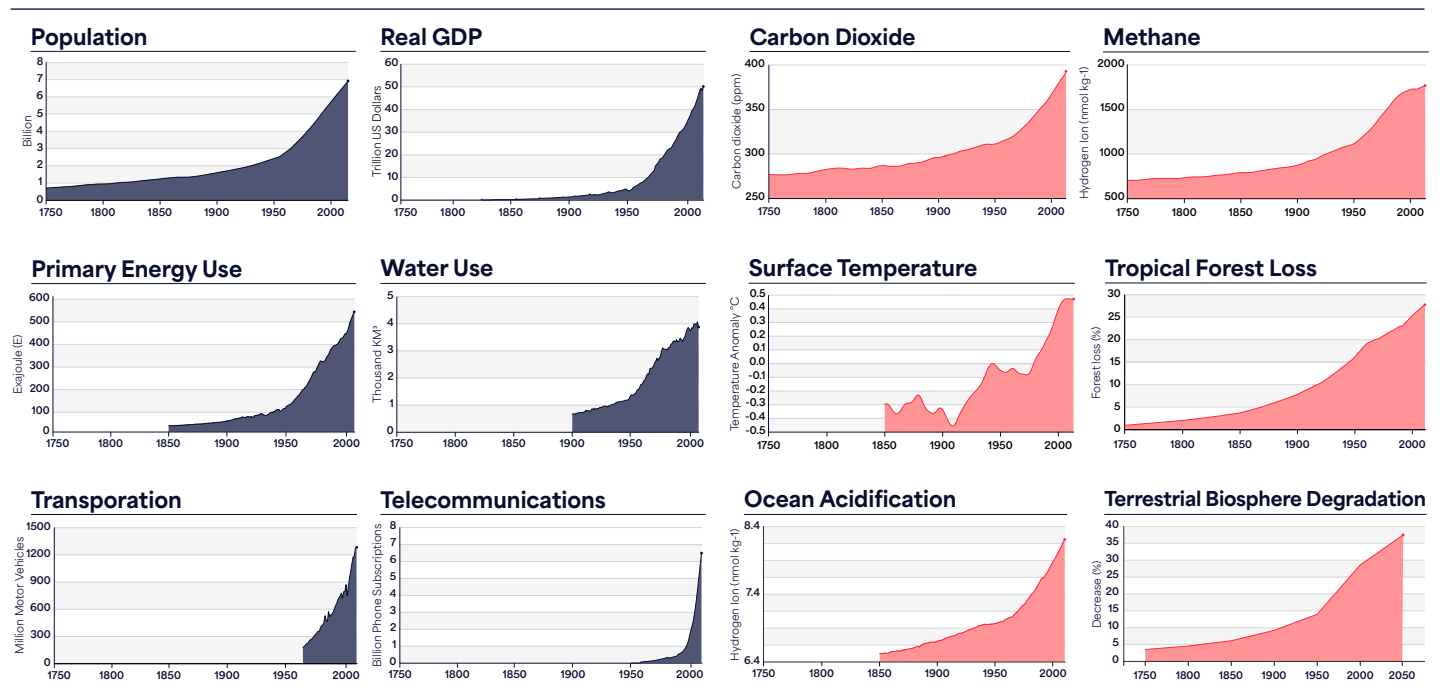
Image: Eugenia Rojo and Ham Khan

The “Great Acceleration” has led to huge increases in material and resource consumption, with an impact on the natural world so profound that we are now in a new epoch of the Earth’s development—called the Anthropocene—in which humans, for the first time, have had a global-scale impact on the Earth’s geology, climate, biodiversity, and ecosystems, with potentially catastrophic consequences. This contrasts with the previous age—the Holocene—a period of environmental stability lasting over 10,000 years, when human civilizations arose and thrived.¹³

As civilization has become more interconnected, complex, and efficient, the systems, networks, and societal functions underpinning it have become increasingly vulnerable.

The risks and crises we now face are thus highly interconnected, in many cases worsening each other.

THE GREAT ACCELERATION.



The Great Acceleration describes the rapid increase in human activity and its impact on Earth’s natural systems. The graphs show socioeconomic and Earth system trends from 1750 to 2010. Source: Reproduced using data shared by the [International Geosphere-Biosphere Programme](#).

We've always had risks. What's different this time?

Societies have always faced risks, including periods in which several risks have been realized at the same time, resulting in often interrelated crises. In that sense, there are echoes of history in our current polycrisis.

The 20th century alone saw two World Wars, a Great Depression, devastating famines, major energy shocks, and numerous economic and geopolitical crises. There have been many previous instances of regional, societal, and ecological collapse, fanned by factors including changing climates, conflicts, increasing energy and resource demands, and environmental degradation.¹⁴

Looking further back, Indigenous Peoples and other societies and cultural groups have suffered the multiple crises of resource depletion, war, and colonialism long into the past.¹⁵ There are deep connections between environmental harms and colonial harms wrought against Indigenous Peoples, as their relationship with the environment was disrupted.¹⁶ As such, we must remain acutely aware of the different perceptions of risk and crises—their root causes and differentiated impacts—from diverse cultural perspectives. This includes a view that the focus on “crisis” has been used by institutions to exploit and strengthen power dynamics and/or ideologies that were the cause of the crises in the first place.

Although environmental and social harms and inequalities often stem from common roots, our current situation is distinct: 1) this polycrisis is now truly planetary in nature, as we have increased our environmental footprint beyond safe limits; 2) new technologies have the potential to do widespread harm; and 3) our communities, societies, and economies are now more interconnected than ever, one consequence of which is that risks can now escalate at speeds and scales unlike ever before.¹⁷

The emergence of systemic risk.

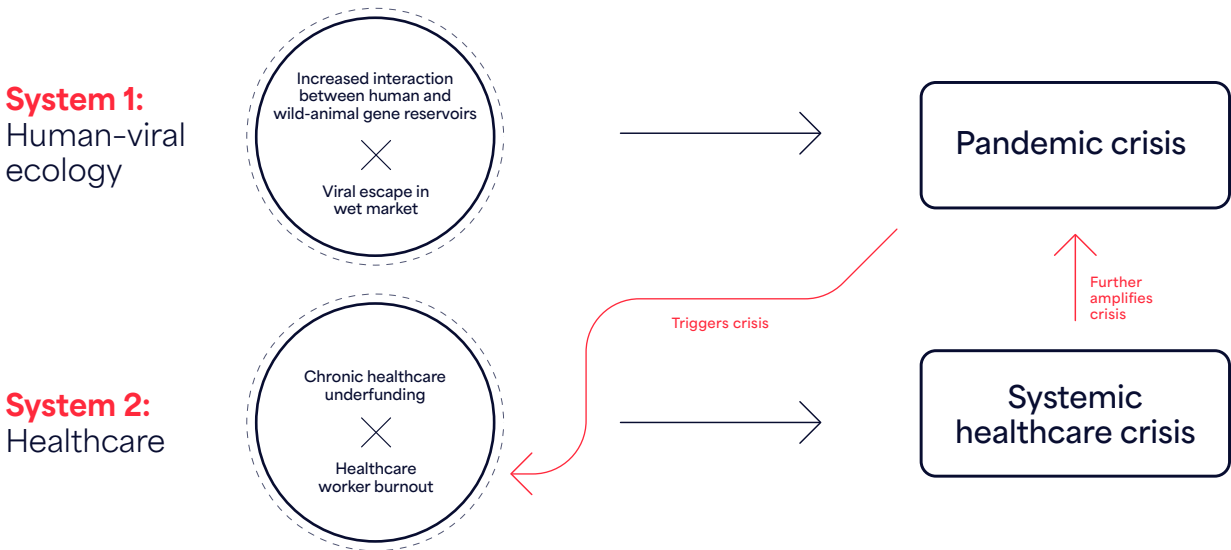
Although there are numerous definitions of risk, it is, at its most basic, the potential for adverse consequences (or, more simply put, the chance of losing something valued). Traditional risk management has been concerned with the likelihood and severity of specific adverse events to individuals, communities, and organizations; the point of focus has been on a single, or limited, set of risks, with probabilities of occurrence and damage that can be reasonably well quantified or at least qualitatively characterized.¹⁸

Major international organizations, such as the International Risk Governance Council (IRGC) and the Intergovernmental Panel on Climate Change (IPCC), have expanded upon this definition, defining risk as “The potential for adverse

consequences for human or ecological systems, recognizing the diversity of values and objectives associated with such systems.”¹⁹ As they define it, these risks stem from the combination of *hazards*, such as heat waves; *exposures*, such as whether populations are located where those heat waves occur; and *vulnerabilities*, such as those influencing how populations can cope and adapt.²⁰

The complex nature of the risks we now face—to multiple systems at once—points to the need for a still-wider conception of risk. Indeed, recent years have seen the increasing recognition of the concept of systemic risk,²¹ which rose to prominence following the global financial crisis of 2008 and has come to be applied to the many issues mentioned earlier.²² Systemic risks can cross between systems, sectors, or regions, leading to cascading effects; they are characterized by lags in cause and effect, with a complexity that makes their consequences hard to predict; and they can have catastrophic consequences, including the collapse of critical environmental and social systems.²³

RISKS IN DIFFERENT SYSTEMS CAN CASCADE AND COMPOUND.



A crisis in one system may affect the stresses and/or trigger event of another system. For example, a pandemic crisis arising from the human–viral ecological system triggers a crisis in the healthcare system, which then further amplifies the pandemic crisis. Source: M. Lawrence, M. Shipman, and T. Homer-Dixon, ["Introduction to Polycrisis Analysis: The Cascade Institute’s Framework for Polycrisis Analysis,"](#) April 2024. Reproduced with permission of the authors.

Radically rethinking risk: Risk for whom and from what, when, and where?

ASRA builds on this broader conceptualization of risk. We view systemic risk as the potential for multiple, increasingly severe, abrupt, differentiated yet interconnected, and potentially long-lasting and complex impacts on coupled

natural and human systems. Systemic risks are often not fully knowable, quantifiable, nor amenable to technical solutions; rather they are characterized by uncertainty and ambiguity. Critically, they have put us on a path toward dangerous tipping points, threatening potentially catastrophic and irrecoverable damage to human societies and ecosystems.²⁴

To address these risks, we must consider multiple objectives and perspectives: the different entities facing risks, where they are located, the timescales in which they face these risks, and the underlying causes. In other words, risks for whom and from what, when, and where?

One way to approach systemic risk thinking is through principles. Principles are a powerful way to guide our vision, both as a diagnostic tool to direct our actions and as a way to find common ground in diverse and contentious contexts. They are found in economics (“Principles for a Sustainable Blue Economy”),²⁵ human rights (Universal Declaration of Human Rights),²⁶ and governance (European Environmental Agencies report “Governance in complexity”).²⁷ They are equally important in systemic risk assessment and response.

PRINCIPLES TO GUIDE SYSTEMIC RISK.

Systemic risks and polycrisis characterized by:

Navigating polycrisis requires principles:

Self-interest	→	Universal responsibility
Anthropocentrism	→	Non-human sanctity and interdependence
Inequity and injustice	→	Justice
Rule of the few	→	Individual and collective agency
Reductionism	→	Complexity
Overt focus on knowable risks	→	Uncertainty
Interactions across local and global	→	Cross-scale
Narrowly focused evidence and methods	→	Multiple ways of knowing
Lack of compassion	→	Compassion
Current systems creating crises	→	Transformation

ASRA has co-developed a set of principles for systemic risk assessment and response to accelerate awareness of systemic risks and to guide collective, transformative action. Source: ASRA, “[Principles for Systemic Risk Assessment and Response](#).” n.p.: The Accelerator for Systemic Risk Assessment, 2024. Licensed under [CC BY-NC-SA 4.0](#).

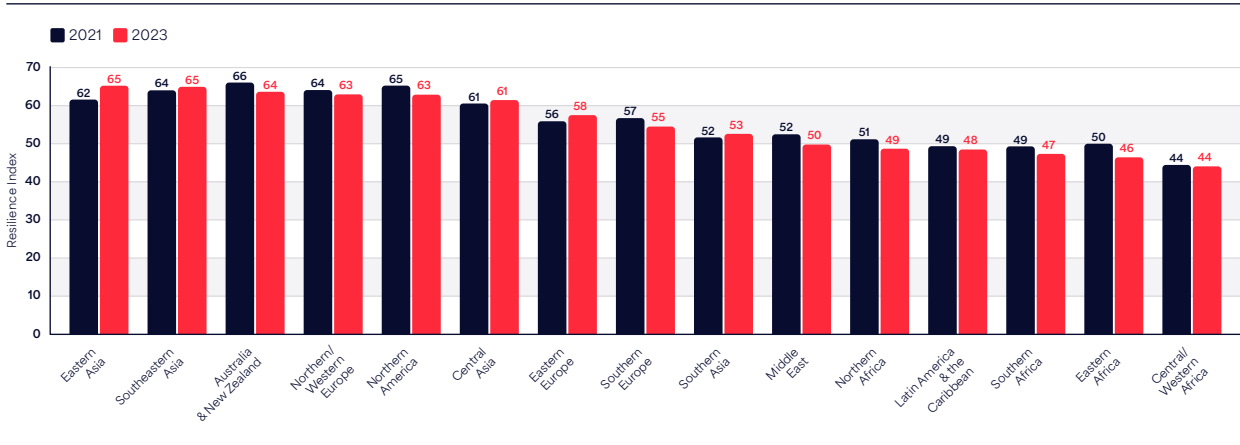
ASRA has developed a set of principles²⁸ that expand the conventional definitions of risk to include other essential considerations in the face of ecological, social, political, and economic instability. These principles take into consideration the root causes of this polycrisis and have the potential to incite a major shift in our understanding of systemic risk.

These principles place justice and equity—particularly for the most vulnerable communities and future generations, who may lack a voice or rights—at the centre of risk assessment and response. They prioritize the planet’s ecosystems and species. They also acknowledge resource over-extraction, environmental pollution, rapid technological changes, weakening democracy, and inequity as critical drivers of systemic risk. In addition, they call upon diverse knowledge to ensure that risk assessment and response tools are relevant to affected communities.

This broader understanding of risk considers the social, economic, and political systems that we have designed, built, and now maintain despite the growing evidence that they often do not well serve humanity or our ecosystems. It questions who controls and benefits from those systems; who suffers harm and inequity from them; and how those systems can be transformed toward sustainability and equity.

Our principles also recognize the sanctity of both human and non-human life; universal responsibility and accountability; uncertainty, complexity, and ambiguity; the importance of individual and collective action; and the need for compassion and a culture of care. Indeed, these are the very attributes of analysis required in situations of uncertainty and unpredictability—the conditions in which systemic risks exist and arise.²⁹

PEOPLE ACROSS THE WORLD FEEL LESS RESILIENT.



Most parts of the world are feeling less resilient than 2 years ago, according to the 2024 World Risk Poll Resilience Index, which surveyed people in 142 countries and territories. The graph shows resilience index scores by region (2021–2023). Source: Lloyd’s Register Foundation, World Risk Poll Resilience Index, 2024. doi.org/10.60743/c0rm-h862. Licensed under [CC BY-SA 4.0](https://creativecommons.org/licenses/by-sa/4.0/).

Honest hope for systems transformation.

We are all in this polycrisis together and must act collectively. This requires a whole-of-society discussion about the future we want and our capacity to assess, prepare, and respond to risks that threaten it, rather than a piecemeal approach to risk management, which only serves to maintain our current deteriorating status quo.

The scale, urgency, and seriousness of this polycrisis, and the increasing threat of a worsening future, demand—and open up space for—“honest hope,” innovative thinking, collective engagement, and bold actions. Such honest hope should stem from recognizing the gravity of our situation³⁰ while both acknowledging the harm that people, cultures, and ecosystems have suffered and grappling with how to address that harm.

Honest hope should also acknowledge the existence of a multiplicity of perspectives; the reality that there is no ideal or “silver bullet” that will deliver safety and prosperity for all; and the need to continually engage in equitable societal dialogue. Inclusion and fairness are crucial conditions for designing responsible systemic risk responses.

At the same time, responses that are inspired by inclusion and social justice should build on our ingenuity, innovation, and compassion for each other and our planet. They should also provide an opportunity to work together across differences and divides to realize a brighter future.

Fortunately, we possess the knowledge, innovation, and potential to understand what is happening to address this polycrisis. This is what we mean by radically rethinking risk and enhancing our systemic risk capacity. In the following sections of this report, we discuss how to nurture this capacity.

A note on our use of the terms “systemic risk assessment” and “systemic risk response”

Throughout this report, we refer to *systemic risk assessment* and *systemic risk response*. There are many different conceptions of these terms, but we are using them in the following specific ways:

- **Systemic risk assessment** encompasses: the understanding of systems, including their goals and stakeholders; who they serve and who they harm; how they connect with other systems; and the different ways in which risks can turn into harms and spread within and between systems.
- **Systemic risk response** encompasses: systemic risk mitigation to lower their likelihood of occurring; preparation and adaptation to lower the harm if they do occur; and transformations away from the harms of systemic risk.

Risk Management is Starting to Encompass Aspects of Systemic Risk

From risk management to assessing and responding to systemic risk.

Risk management is an established practice in sectors ranging from finance and insurance to environmental science and healthcare. Indeed, risk management—in terms of identifying risks as well as their likelihood and potential severity, and designing appropriate measures for prevention, mitigation, adaptation, and burden-sharing—has been central to organizational decision-making since the start of the post–World War II period, when insurance began to be widely used to protect individuals and companies from losses. The finance sector saw a rapid expansion of risk regulation in the 1980s and in the early 21st century, including the 2002 U.S. Sarbanes-Oxley Act, which introduced corporate governance rules to ensure better risk management for companies.³¹

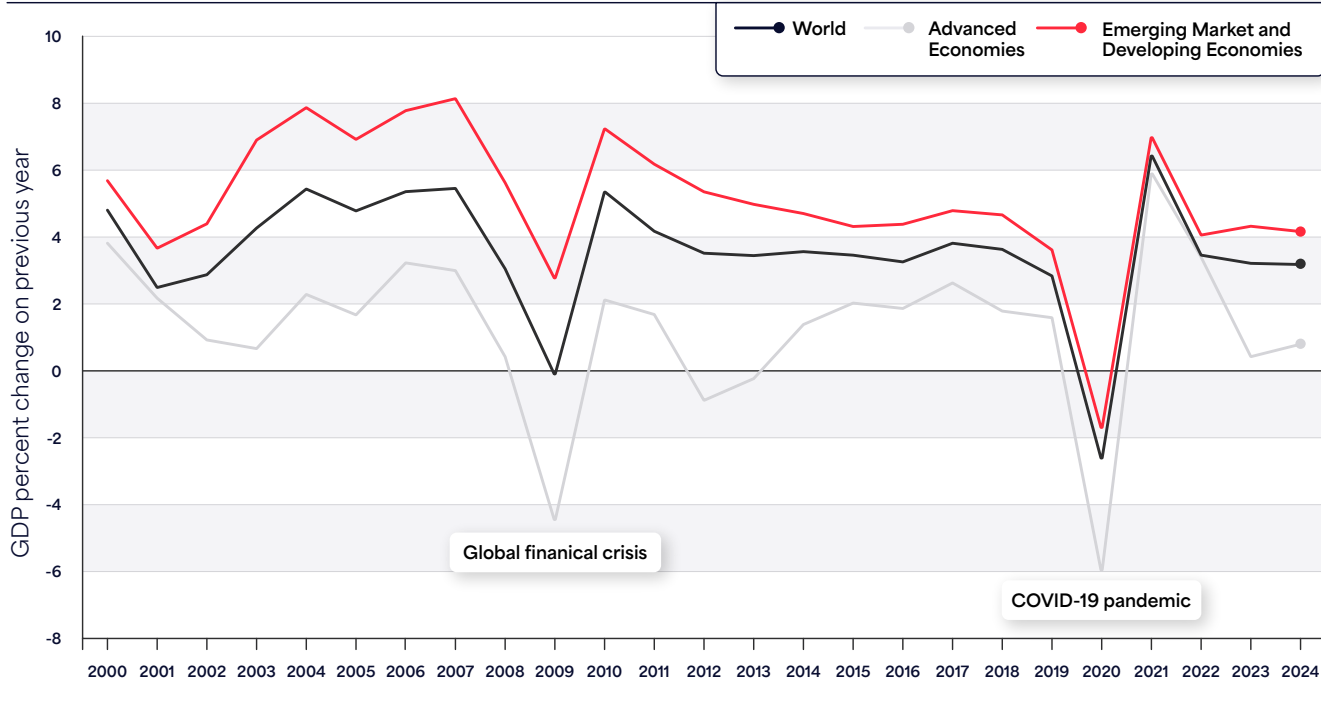
However, the notion of systemic risk is relatively new, especially in terms of risks that not only affect individual people and organizations, but that also can spread to and across whole systems—and perhaps more critically between systems—potentially at planetary scales.³² Progress is being made, however, and the set of examples of how actors in different sectors are approaching risk assessments and responses is expanding.

In the finance sector.

In risk assessment, the International Monetary Fund (IMF)'s twice-yearly World Economic Outlooks³³ provide an overview of global and regional economic prospects, focusing on current issues and their potential impact on key economic metrics. The Basel III framework, building on the original Basel framework of 1988, sets international standards for risk management in the financial sector. It was introduced in response to the global financial crisis, addressing shortcomings in financial regulation (including bank failures due to excessively high

borrowing, and a lack of capital and liquidity). The standards impose stronger capital, liquidity, and stress-testing requirements on banks in an effort to avert another global crisis.³⁴ Separately, climate-related financial stress tests, introduced following the establishment of the Taskforce on Climate-Related Financial Disclosure (TCFD), have been undertaken by banks in several countries to consider both the physical hazards of climate change and the transition risks of decarbonization. This has provided important institutional learning in terms of data requirements, methodologies, and awareness of the potential losses from climate risk.³⁵

GLOBAL CRISES HAVE GLOBAL ECONOMIC IMPACTS.



The chart shows the annual percent change of gross domestic product (GDP) in constant prices for advanced economies, emerging market and developing economies, and the world as a whole. Source: Produced using publicly available data from the [IMF World Energy Outlook April 2024 database](#).

In risk response, the Global Shield against Climate Risks was set up by the Vulnerable Twenty Group (V20), the Group of Seven (G7), and additional supporting countries to facilitate additional “pre-arranged protection against climate and disaster related risks for vulnerable people and countries.”³⁶ The World Bank recently extended its Crisis Preparedness and Response Toolkit to include additional tools to help countries strengthen their preparedness efforts toward future shocks and hasten their recovery from disasters.³⁷

In the insurance sector.

In risk assessment, in 2015, Lloyd's assessed a hypothetical scenario of acute global food system disruptions, caused by simultaneous flooding, droughts, and crop epidemics in different parts of the world. The scenario identified a range of cascading consequences, including huge increases in crop prices, terrorism and political violence, and business disruptions and economic impacts (including 5 to 10% losses in U.S. and EU stock values).³⁸ More recent analysis from Lloyd's (2023) assessed supply chain risks from extreme weather events and estimated that there was a 1 in 50-year likelihood of a disruption to food systems that would result in a USD 5 trillion loss to world output over 5 years.³⁹

Reinsurers including Swiss Re and Munich Re, as well as a number of risk analytics companies, offer natural catastrophe (NatCat) modelling⁴⁰ and database services to identify the likelihood and severity of natural hazards and their financial consequences. In addition, there is evidence that reinsurers are starting to consider the interconnections between risks within their different portfolios and are trying to anticipate the implications of evolving risks.⁴¹ The International Association of Insurance Supervisors (IAIS) has developed a holistic framework for systemic risk to enhance macroprudential supervision and mitigate the potential systemic impact of collective actions by insurers in response to common shocks.⁴²

In risk response, the International Cooperative and Mutual Insurance Federation (ICMIF) together with the United Nations Office for Disaster Risk Reduction (UNDRR) has identified a range of mechanisms to reduce risks from hazards related to climate change, earthquakes, and occupational health and safety. These include risk reduction incentives; investment to build resilience; information and awareness-raising; capacity-building for risk modelling, analysis, and monitoring; enhancing local social capital for risk reduction; and support for public sector decision-making about disaster risk reduction.⁴³ The Insurance Development Forum (IDF), a public-private partnership, aims to enhance the use of insurance risk management capabilities to increase resilience among communities, businesses, and public institutions vulnerable to disasters.⁴⁴



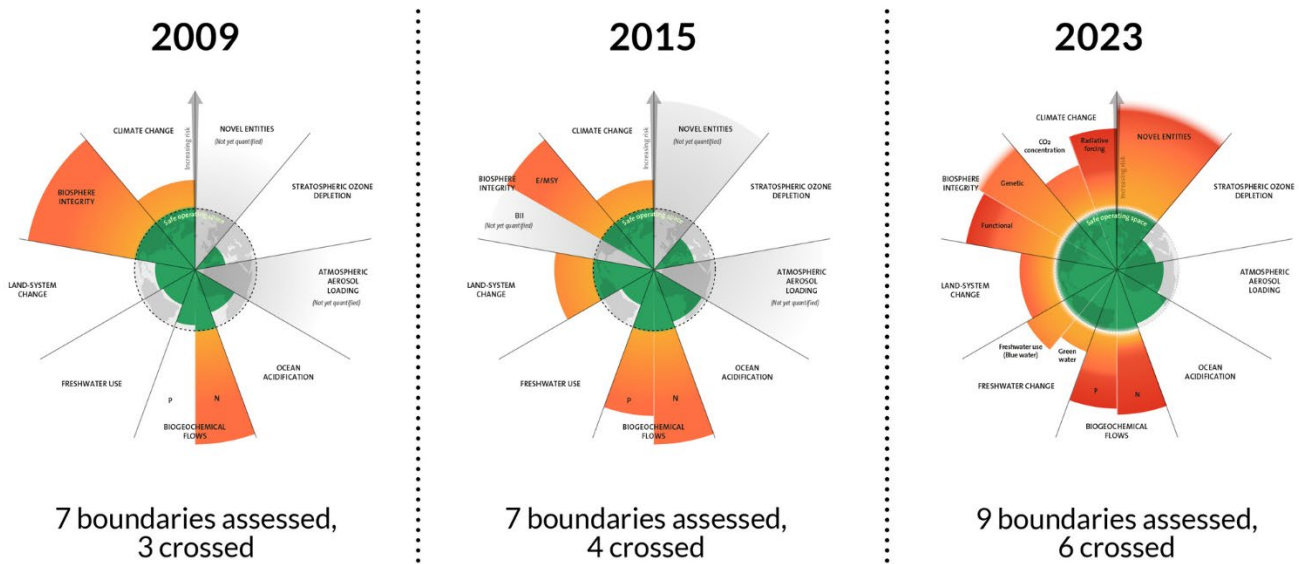
Image: Eugenia Rojo and Ham Khan

In the environmental sector.

In risk assessment, the “planetary boundaries” framework is increasingly influential in highlighting the multiple risks posed by disrupting nine different biophysical and biochemical processes that regulate the planet.⁴⁵ The Economics of Ecosystems and Biodiversity (TEEB), developed under the United Nations Environment Program (UNEP), aims to boost the recognition and valuation of biodiversity and to help decision-makers recognize the benefits of diverse ecosystems. The TEEBAgriFood initiative has developed an evaluation framework for food systems, incorporating risks and uncertainties across the value chain.⁴⁶ Meanwhile, climate change and biodiversity risk assessments are increasingly being undertaken by national governments. These often include estimates of economic loss associated with various climate-warming scenarios as well as assessments of necessary actions to adapt to this warming. Two examples include: 1) China’s 2022 National Climate Change Adaptation Strategy 2035 sets a goal to strengthen climate change monitoring, early warning, and risk management;⁴⁷ and 2) the European Environment Agency’s pioneering 2024 assessment of climate risks combines EU-wide research and member states’ assessments on the implications of climate change for Europe.⁴⁸

In risk response, a range of initiatives focus on “positive tipping points,” meaning fundamental changes in institutions, behaviours, and technological interventions.⁴⁹ These include projects focused on ecosystem regeneration, tree-planting, and wildfire control, among others.⁵⁰

CROSSING SAFE PLANETARY BOUNDARIES.



Graphs show the evolution of the planetary boundaries framework, which represents guardrails that define a safe operating space for humanity. Source: Azote for [Stockholm Resilience Centre](#), Stockholm University. Based on K. Richardson et al. “Earth Beyond Six of Nine Planetary Boundaries.” *Science Advances* 9, no. 37 (2023): eadh2458. <https://doi.org/10.1126/sciadv.adh2458>. Licensed under CC BY-NC-ND 3.0.

In the health sector.

In risk assessment, the annual Lancet Countdown on health and climate change is an international, multidisciplinary collaboration to monitor the multiple health implications of climate change and to independently assess the delivery of government climate change commitments under the Paris Agreement.⁵¹

In risk response, the World Health Organization's 2022 Strategic Preparedness, Readiness and Response Plan assessed the global response to COVID-19, making recommendations to control infection and end the pandemic. The plan consists of an integrated approach, including surveillance; vaccination; safe clinical care; research and development; and preparedness and response coordination.⁵²

In the field of multihazard disaster risks.

In risk assessment and response, the Sendai Framework for Disaster Risk Reduction 2015–30, adopted by 187 United Nations member states, is the only globally agreed framework to prevent new and reduce existing disaster risks. It spans over 300 natural, technological, biological, and environmental hazards and outlines priorities for action: 1) understanding disaster risk; 2) strengthening disaster risk governance; 3) investing in disaster reduction for resilience; and 4) enhancing disaster preparedness for effective response and to “Build Back Better” in recovery.⁵³ The United Nations Office for Disaster Risk Reduction (UNDRR) aims to support member states’ risk reduction efforts by fostering partnerships and helping countries move beyond traditional linear risk analysis. This includes engendering consistent use of scalable, systemic risk information to support more resilient development and humanitarian planning, public and private investment, and decision-making in UN member states.⁵⁴

Another risk assessment and response initiative is the Intergovernmental Authority on Development (IGAD), which covers eight countries in the Horn of Africa (Djibouti, Eritrea, Ethiopia, Kenya, Somalia, South Sudan, Sudan, and Uganda). Its latest 5-year plan of 2021–2025 includes a Risk Management Policy Framework to identify, evaluate, and manage risks to IGAD’s objectives (everything from financial to environmental risks).⁵⁵ The Swedish government takes a multihazard preparedness approach: The Swedish Civil Contingencies Agency (MSB) is responsible for helping Swedish society prepare for various accidents, crises, and conflicts. Led by a Director-General directly appointed by the government, the MSB focuses on prevention and preparedness activities for a wide range of crises, both domestic and international, including assisting people affected by war beyond Sweden’s borders. The MSB produces a range of policies and regulations on civil protection and civil defence, and provides training and support to organizations across public and private sectors. Activities include an annual Preparedness Week aimed at all actors in society, and annual home preparedness campaigns with advice for citizens on how to function normally for a week in case of crisis.⁵⁶

In academic and institutional research.

In risk assessment and response, a number of organizations and institutes undertake research on multiple risks, including global catastrophic and existential risks,⁵⁷ systemic risk cascades and feedbacks,⁵⁸ governance of systemic risks,⁵⁹ and interconnected environmental risks.⁶⁰ Many of these institutes are now represented in ASRA's growing network, with a view to fostering collaboration and information sharing, and to developing and mainstreaming tools and practices around systemic risk assessment and response.

Summary.

This range of examples from different regions, at different scales, and in different systems or groups of interconnected systems demonstrates an encouraging trend toward systems thinking and a growing understanding of systemic risk. It is also a snapshot of the many types of systemic risk we face today. In other words, it highlights the realization amongst a diversity of actors that how we conceive of, and act on, systemic risk must be more holistic and multipronged.

However, current examples do not point toward an established and widely used set of practices to address systemic risks at their current scale. Nor do they point toward a set of wide-ranging responses that act across many systems to mitigate, adapt to, or prepare for systemic risks, and—perhaps even more importantly—transform systems toward safer states. Given the urgency, scale, and gravity of this polycrisis, we need a far greater capacity to assess and respond to systemic risk. The following section explains the capacities needed to mainstream systemic risk.



Image: Eugenia Rojo and Ham Khan

Capacities Needed to Understand and Address Systemic Risk

Several critical shortcomings must be addressed if societies, organizations, and individuals are to have genuine capacity to address systemic risk.

1. Understand systems and the multiple risks facing them.

Holistic and comprehensive systemic risk assessment—encompassing analysis of the likelihood and potential implications of several interacting risks being actualized either at the same time or as a result of cascades from one system to others—is still in its infancy. Consideration of risk drivers, the vulnerability of systems at risk, and the risks that systems themselves create, particularly through their interconnections with each other, is inadequate.

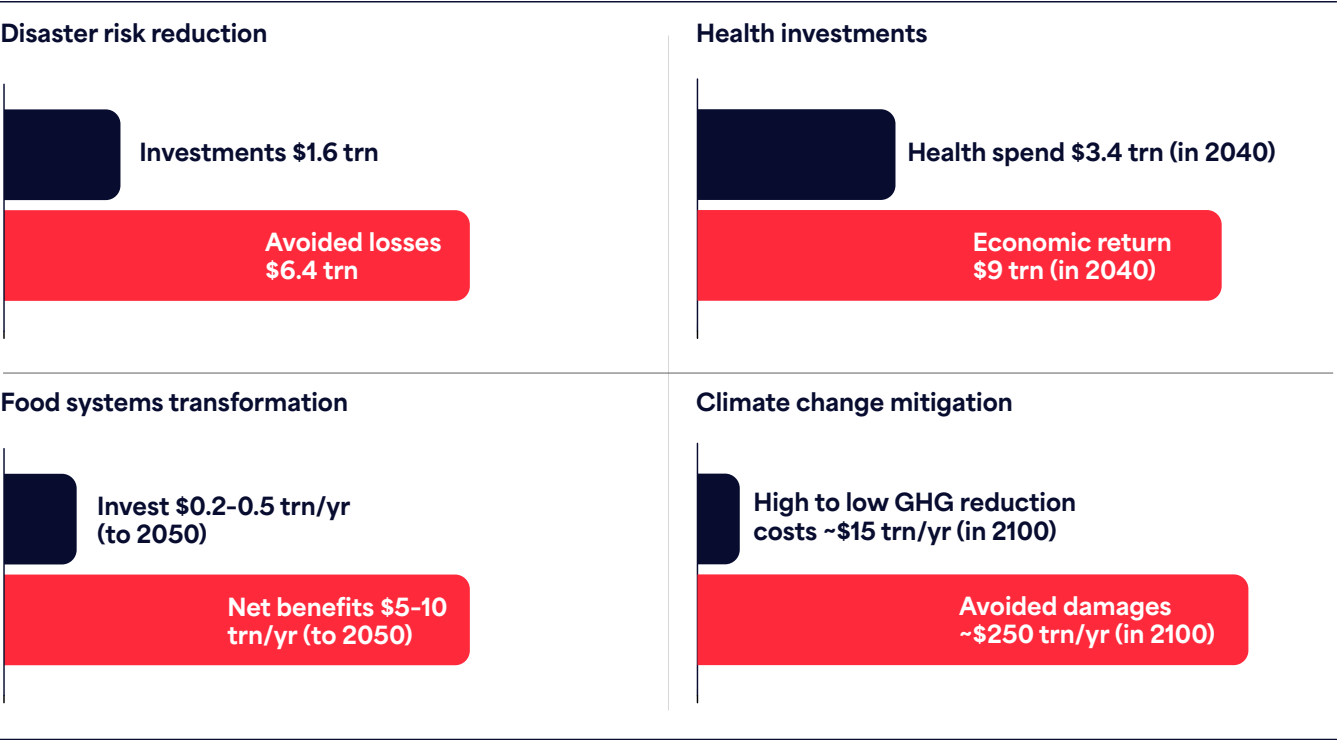
For example, climate change risk analysis, while relatively well developed compared to the practice in other sectors, rarely explores the implications of climate impacts compounding with other crises or cascading into other systems.⁶¹ In addition, such analysis under-explores worst-case outcomes, focusing instead on most likely estimates of impacts and their consequences.⁶² National risk assessment methodologies, while encompassing a range of risks, can be inconsistent in their methodology, too focused on domestic rather than cross-border risk, and fail to account for inter-systemic risk cascades or deep uncertainties (“unknown unknowns”).⁶³ Financial risk assessment, dominated by quantitative financial risk models, failed to capture the likelihood of the global financial crisis because the models had insufficient representation of risk cascades within financial systems⁶⁴ and across society more broadly. Banks experienced events that, according to their models, should have been virtually impossible.



One key reason for these shortcomings is a pervasive lack of transdisciplinarity in both risk assessment and response, resulting in blind spots and insufficient or inappropriate responses.⁶⁵ That is partly because risk assessment and response are still confined to disciplinary silos. Evidence suggests that individuals and organizations favour the safety of utilizing current knowledge over the exploration of new knowledge, as this is seen as more likely to provide professional rewards.⁶⁶ Similar evidence points to higher performance (in terms of publications) in scientists who look to specialize in disciplines versus those who seek greater breadth of study and research.⁶⁷

Institutional structures, such as separate governmental departments focusing on different policy areas, also lead to siloed analysis that is unable to address complex intersystemic risks. For example, national risk assessments are often carried out by professionals from different government departments, stifling an integrated view.⁶⁸ Critically, there is rarely dedicated ownership of cross-departmental or cross-sectoral risks across governance organizations, leading to many interconnected risks falling through the gaps.

SIGNIFICANT BENEFITS TO ADDRESSING RISKS.



Each chart conveys the benefits of expenditure directed at building resilience and mitigating risk across four critical systems. Sources: United Nations Office for Disaster Risk Reduction, [Financing Prevention and De-risking Investment](#), 2023; McKinsey Global Institute, [Prioritizing Health: A Prescription for Prosperity](#), 2020; Food Systems Economics Commission, [Global Policy Report](#), 2024; and estimates using data from [The Economic Commitment of Climate Change](#), 2024.

These shortcomings can be addressed by applying systems thinking and new institutional arrangements to identify interconnections within and across systems. The practice of assessing risks to particular systems must change to encompass a more explicit understanding of the interconnections within and between systems. Systems thinking must be mainstreamed across research, policy, business, and civil society practices. This requires new institutional set-ups, including leaders with responsibility to facilitate cross-departmental and transdisciplinary collaboration, to ensure that silos are broken and cross-cutting issues are identified. It requires knowledge of foresight techniques and other integrative and inclusive methods for assessment to help leaders think strategically rather than in responsive, crisis modes. It also requires the development of systemic risk-focused perspectives and skills across all stages of education to ensure both current and future generations can understand systemic risk and respond to it.

2. Enhance collection of data and diverse sources of evidence.

Many initiatives, including some of those already highlighted, acknowledge the need for greater data and research to improve risk assessments and responses. For example, the European Central Bank has noted that almost half of the banks engaging in climate-related stress tests lacked key information about the corporates they lend to, including the likelihood and severity of climate impacts, granular location data for their operations, their emissions data, and their climate strategies.⁶⁹ Japan's Environment Ministry has noted in its guidance on ecosystem-based disaster risk reduction that quantitative assessment of disaster-reduction potential must be enhanced through further research.⁷⁰ Gaps have been identified in data for critical systems—for example, price and other market data for food systems in Southern and East Africa—which hampers effective risk monitoring.⁷¹

There is also a lack of early warning systems for a number of potential risks, such as climate tipping points, leading to recent proposals to enhance data collection through remote-sensing.⁷² In many cases private sector and security risk analyses use confidential data and methods that cannot be reproduced by other societal actors and organizations.

In addition to these specific examples, there are pervasive limitations and biases in the data and evidence we collect and the methods by which we assess and plan responses to risks, including for whom and from what, when, and where.⁷³ This is driven by a focus on quantitative, modelled approaches, which fail to consider the full plurality of values and perspectives on which risk matters and for whom. There are a variety of worldviews and associated risk perceptions,⁷⁴

yet perspectives such as Indigenous, traditional, spiritual, creative and artistic, rational and intuitive, and generational ways of knowing⁷⁵ are often excluded. This is because current risk assessment and response approaches:

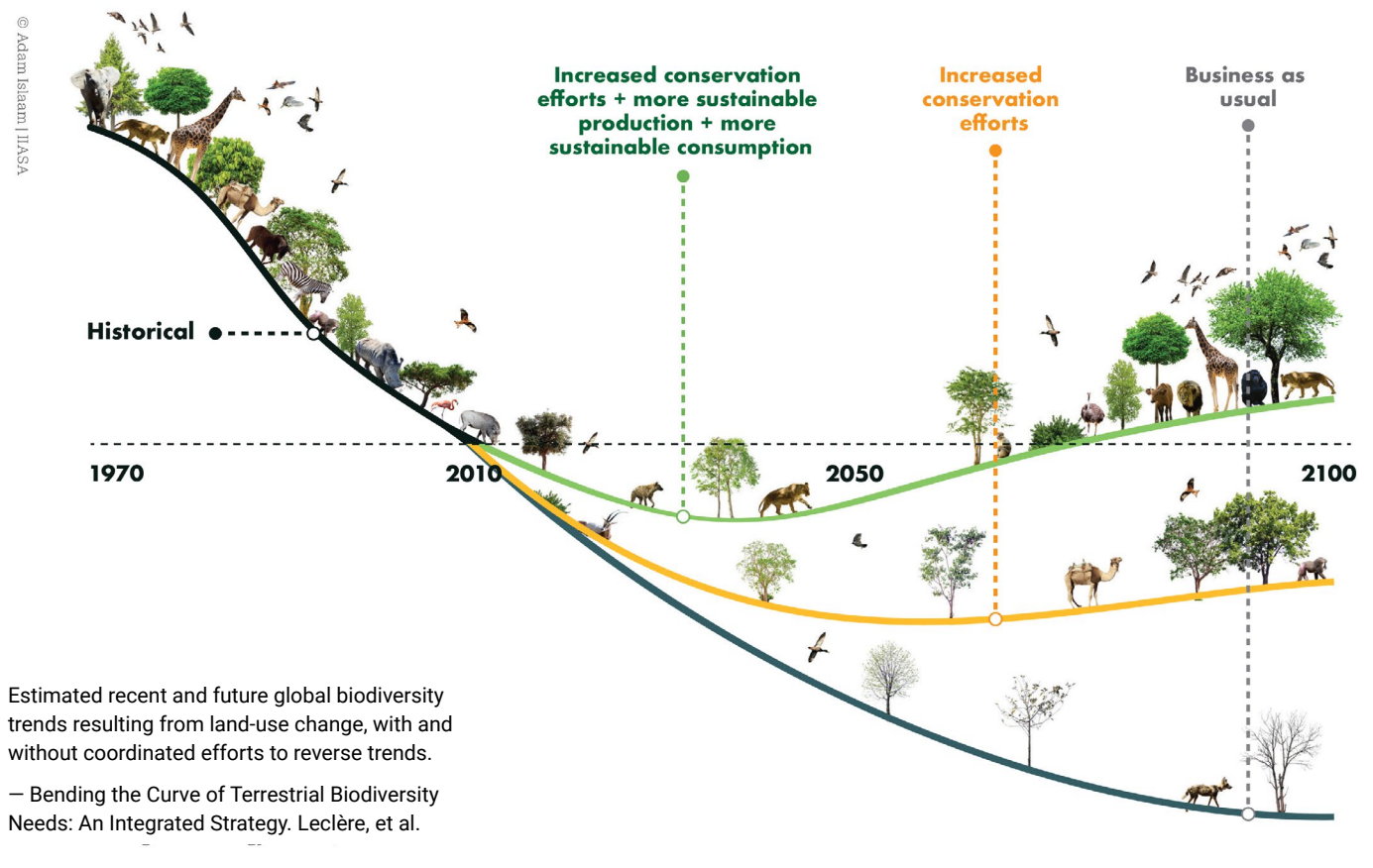
- Often operate through reductionist approaches rather than participatory, inclusive methods that encompass the full variety and complexity of voices.⁷⁶
- Overly focus on techno-economic-scientific responses, missing the social and psychological “inner developments” required to achieve sustainability.⁷⁷
- Focus insufficiently on power relations and how risks disproportionately affect vulnerable nations and communities, for example, in “green sacrifice zones” (communities that shoulder a disproportionate exposure to pollution).⁷⁸
- Do not sufficiently consider individual and organizational behaviours, including vested interests and the ways in which they can frustrate or block risk response actions.⁷⁹
- Do not adequately address the differences in natural, cultural, and social context conditions that demand different and more adaptive approaches to risk management.
- Lack adequate transparency of information related to risk assessment and response, or the capabilities to make sense of the knowledge of different stakeholders.

These shortcomings can be addressed by enhancing data collection and analysis around systemic risks and collective sense-making/decision-making.

Systemic risk assessment and response design requires consistent, enhanced data collection. This includes data relevant to how risks propagate within systems and between them, and relational, trans-contextual information to understand interdependencies and inform response design. This will require the creation of new datasets, and combinations and overlays of existing datasets, to provide more granular, multi-objective data.

While commercial confidentiality, personal data protection, and national security will remain critical considerations around data availability, it is imperative that data is made transparent, open source, and easily accessible by as wide a range of organizations and communities as possible, as part of a global data commons.⁸⁰ There are several existing initiatives around better risk data, including early warning systems in climate change and public health, the Complex Risk Analytics Fund (CRAF'd),⁸¹ Resilient Planet Data Hub,⁸² and Coalition for Disaster Resilient Infrastructure (CDRI)'s Global Infrastructure Risk Model and Resilience Index.⁸³

BENDING THE BIODIVERSITY CURVE.



Source: Chart produced using data from D. Leclère, et al., “Bending the Curve of Terrestrial Biodiversity Needs: An Integrated Strategy.” *Nature* 585 (2020), 551–556. Image copyright © Adam Islaam | International Institute for Applied Systems Analysis (IIASA). Reproduced with permission.

Embracing diverse evidence is key. Improving data collection is only one part of the task. The second step is to develop response strategies based on an inclusive and fair representation of diverse views. Genuine systemic risk assessment and response should encompass multiple sources of knowledge and ways of knowing, including from historically underrepresented groups such as Indigenous Peoples, the Global South, women, youth, and community leaders, and those representing the interests of future generations.⁸⁴

This also requires a shift away from a purely quantitative approach to risk analysis and a top-down approach to design of responses to one that incorporates local and other knowledge systems. Responses should be developed in collaboration with the groups who have stewarded the natural environment for millennia, as well as other stakeholders, recognizing them as equal contributors to assessment and response, and requiring authentic collaboration and co-creation with accompanying support.⁸⁵ For example, traditional knowledge

around agro-ecological practices in farming could be instrumental in helping transition food systems toward greater environmental sustainability;⁸⁶ placing Indigenous knowledge and scientific inquiry on equal footing has been shown to improve our understanding of ecosystem change in riverine systems;⁸⁷ and, similarly, inclusion of youth and young adult voices has been shown to improve organizational performance and outcomes.⁸⁸ It will be critically important to balance findability, accessibility, interoperability, and reusability (FAIR) with collective benefit, authority to control, responsibility, and ethics (CARE) when collecting and curating data and evidence.⁸⁹

It is also critical to acknowledge uncertainty. Even with more data and diverse evidence, we cannot plan for every event. The future is unwritten and uncertain, despite the clear actions that can help better secure societies and ecosystems. Systemic risk assessment and response must therefore acknowledge uncertainty more explicitly; for example, through detailed foresight processes, sensitivity analysis, consideration of worst-case outcomes, and adaptive planning.⁹⁰ The inclusion of diverse evidence, including qualitative data, means that evidence may often be ambiguous. Such ambiguity means that when embarking on using a system-lens we must not get tangled in details but rather aim at understanding the system as a whole.⁹¹

3. Mainstream new systemic risk frameworks and methodologies.

As yet there are no established systemic risk assessment and response frameworks, nor even an existing shared language around systemic risk.⁹² Progress is being made: the Midterm Review of the Sendai Framework for Disaster Risk Reduction explicitly highlights the imperative for international cooperation and the analysis of cascading risks. Organizations including UNDRR are supporting countries to begin analysis on systemic risks, and to apply it in planning and decision-making.⁹³ In the EU, the recent formation of a Systems Transformation Hub⁹⁴ aims to drive systemic solutions for Europe and to support member states' policy-making in the face of multiple crises.

New initiatives, frameworks, and tools for systemic risk have been developed. These include systemic risk governance guidelines⁹⁵ and analytical approaches that use visual representations of intersystemic risk connections, such as systems mapping.⁹⁶ Proposed terminology is also being developed around systemic risks, including cascades and compounding risks.⁹⁷ However, much of this work is still nascent and needs further development and field-testing. Integrated frameworks of systemic risk assessment and response (for example, those that recursively monitor and adapt to risks) are still under development.⁹⁸

These shortcomings can be addressed by mainstreaming frameworks and methodologies that assess and respond to systemic risks. Building on existing work, we must accelerate the development, testing, and mainstreaming of guidelines, frameworks, tools, and approaches to assess systemic risks, ensuring they encompass the principles and processes of both systems thinking and the data and evidence discussed earlier. This will require cooperation between risk assessors across systems and sectors, including those highlighted in Section 2.

Increased support for the design and testing of new responses will be necessary. This will require close collaboration between policymakers and those implementing responses on the ground, from multilateral to local levels.

Communities affected by risks or response measures must be included in decision-making with effective public and stakeholder participation schemes. These should be compatible with the political culture of the country or region in which such participatory activities take place.

Accepting that many risks are in fact unquantifiable uncertainties, policies and responses should be designed to provide resilience across the board. In many cases this means prioritizing policies and strategies that achieve multiple co-benefits. Examples include: Wales' Well-Being for Future Generations Act,⁹⁹ which applies a duty to all Welsh public bodies on seven national well-being goals; all-hazard preparedness approaches, such as the Swedish Civil Contingencies Agency;¹⁰⁰ and energy-efficiency programs that can reduce energy costs, increase energy security, and cut carbon dioxide emissions.¹⁰¹ It will require planning for resilient systems¹⁰² capable of adapting, maintaining, and swiftly restoring functionality during and after disturbances, thereby reducing their vulnerability.



Image: Eugenia Rojo and Ham Khan

4. Expand time horizons.

Governments and organizations too often focus on short-term single-issue crises at the expense of long-term systemic planning, with the mindset that these are different, rather than closely connected, issues. When multiple crises occur, either simultaneously or in short succession, decision-makers are overwhelmed¹⁰³ and rarely consider the underlying drivers. Yet there is an intricate connection between short-term shocks that decision-makers are reacting to and the longer-term issues they should be considering.

We have seen some encouraging signs of long-term thinking in recovery packages embodied in, for example, post-crisis government stimulus programs following the global financial crisis and COVID-19 pandemic. These programs—which have attempted to respond to the specific crises at hand while acknowledging the need to also address other societal goals, such as to develop low-carbon technologies and “build back better”¹⁰⁴—show evidence of more systemic thinking. But more commonly, long-term planning is absent in decision-making, with policy following short-term electoral, business reporting, and media cycles.

These shortcomings can be addressed by instilling mechanisms for long-term thinking alongside systems to manage short-term crises. This means establishing institutional architectures at all governance levels that are focused on long-term policy and response planning, including an explicit consideration of future generations. Examples include creating and implementing ministries or parliamentary committees for future generations.¹⁰⁵ It also entails rapidly expanding investment in societal projects with “patient capital” aimed at long-term returns.¹⁰⁶ More fundamentally, long-term thinking requires a shift in business activities toward an “impact economy,” where performance metrics incorporate human, social, and natural capital considerations alongside financial outcomes.¹⁰⁷

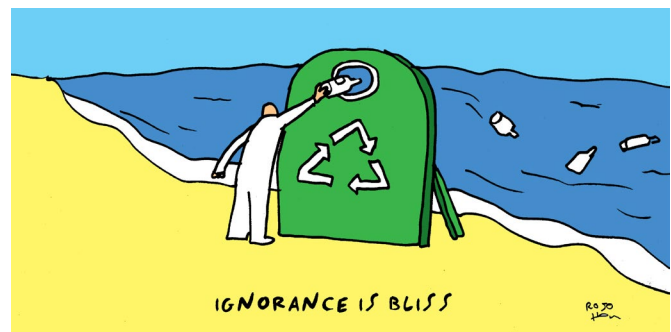


Image: Eugenia Rojo and Ham Khan

5. Put justice, multilateralism, and collective action at the centre of systemic risk.

A polarized geopolitical environment currently dominates our world. As a result, risk contagion—from one region to others—is much more likely. We saw a striking example of this in the global financial crisis, which stemmed from mortgage defaults in the United States and then spread across the world via channels of

bank interdependence. More recently, in late 2019, the outbreak of the COVID-19 epidemic in China brought global economic activity to a virtual standstill as it morphed into a global pandemic within a few months.

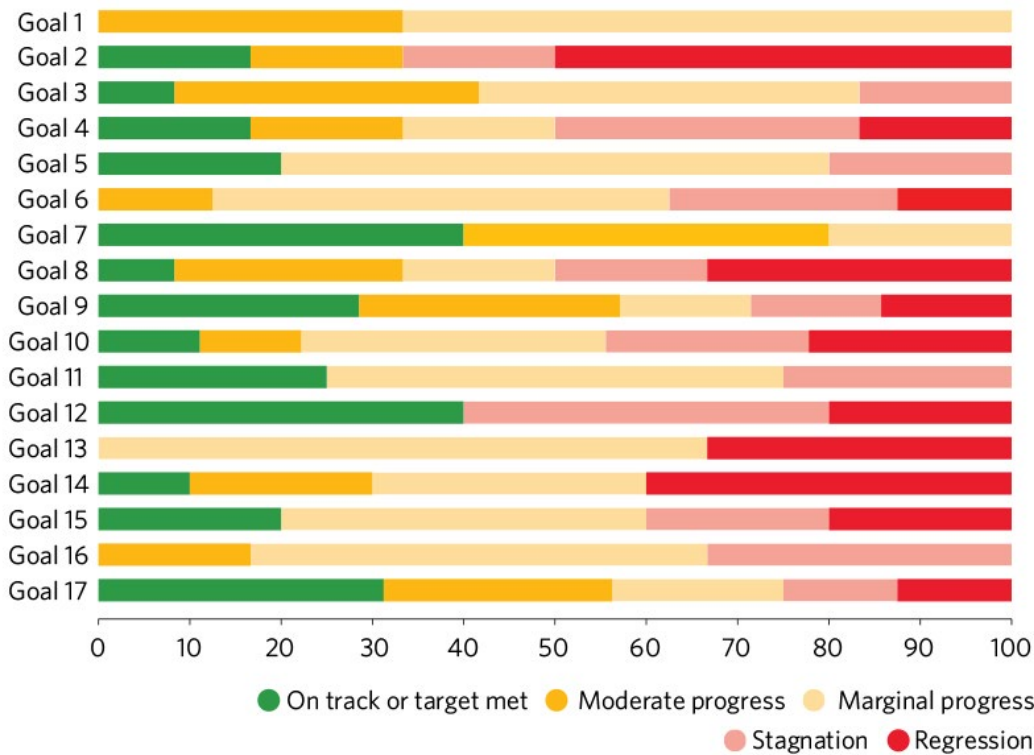
Meanwhile, conflicts are spreading globally—not just the Russian invasion of Ukraine and the current crisis in the Middle East, but also the ongoing wars across the Sahel and Horn of Africa, and the Democratic Republic of Congo, to name a few.¹⁰⁸ During 2022, there were over 50 state-based armed conflicts globally and over 270,000 lives lost to state-based violence.¹⁰⁹

In this polarized world, multilateralism is eroding. It is becoming harder for countries to work together to solve shared problems that are exacerbated by institutional inertia, disinformation and political partisanship, and narratives undermining the need for global cooperation. Hard-won international agreements, such as the 2015 Paris Agreement, the Sendai Framework, and Sustainable Development Goals (SDGs), are in jeopardy unless multilateralism is strengthened. Indeed, recent crises have collectively wiped out years of progress toward the SDGs, thereby exposing people and the natural world to growing risks.¹¹⁰

These shortcomings can be addressed by considering risks for whom and from what, when, and where. There are many different risks to different communities and ecosystems, from different sources, at different points in time, and in different regions. Such considerations place the issues of power, justice, and participation at the centre of systemic risk analysis and response. Systems comprise three fundamental aspects: 1) elements or agents; 2) their interconnections; and 3) a function or purpose, which may or may not be explicitly defined. It is important to recognize that while the function or purpose may be the least apparent aspect of a system, it often wields the greatest influence over its behaviour. For instance, food systems structured or operated with a singular focus on yield and profit impede progress toward achieving food sovereignty and security.¹¹¹

Assessing risk and crafting appropriate responses requires consideration of how to achieve justice for different people, organizations, ecosystems, and species facing risks now and in the future. It will also depend on overcoming existing power dynamics and structures, and the vested interests and practices that contribute to risks. Responses must rely on equitable participation and representation¹¹² for key stakeholders and affected populations, prioritizing future generations and ecosystems.¹¹³ Clarifying the objectives of systemic risk responses will require envisioning the future we want and realizing the implications to our political, economic, and social systems. To do this, we will need imagination, honest hope, agency,¹¹⁴ cooperation, and trust.

TIME TO GET THE SUSTAINABLE DEVELOPMENT GOALS BACK ON TRACK.



The progress assessment carried out in 2024 reveals that the world is significantly behind schedule in achieving the 2030 Agenda. Source: UN Department of Economic and Social Affairs, [“The Sustainable Development Goals Report,”](#) 2024. Copyright 2024 United Nations. Reproduced with permission of the United Nations.

6. Communicate effectively.

Communication around risk is still patchy and undeveloped, with inadequate consideration of the varying perceptions of and responses to risk. The ways in which risk information is presented, translated, and framed to the public and decision-makers does not build agency or motivation to act toward systems transformation. For example, climate change risk communications guidelines have only relatively recently begun to encompass insights from neuroscience and psychology on how people’s minds engage with climate risk. Such insights find that risk information alone will not be sufficient to drive policy actions unless combined with credible, achievable responses and ways of building support for them.¹¹⁵

Systemic risk poses particular challenges for communication. The functioning of complex systems can be counterintuitive; the lack of a clear, single cause can deter action, persuading many people to pursue a “wait and see” strategy. Typical features of systemic risks, such as tipping points, are particularly difficult to convey because they run counter to the experience of gradual change.¹¹⁶

Inadequate communications have been compounded by eroding trust in institutions including media and government, as well as inconsistent and non-participatory approaches to risk communication, as experienced, for example, during COVID-19 lockdowns.¹¹⁷

These shortcomings can be addressed by communicating systemic risk effectively and appropriately. People are less likely to respond to risk communication that does not speak to their everyday lives, needs, and values, and that has not been delivered by trusted or appropriate messengers. It is therefore imperative to convey the problem of systemic risk in an appropriate and captivating way that will build agency to act.

Storytelling is a powerful tool.¹¹⁸ Narratives can possess the ability to elucidate intricate concepts through familiar scenarios; clear, tangible illustrations; and vivid imagery. They also serve as potent tools for capturing hearts and minds, and can cultivate receptiveness, stimulate curiosity, and foster empathy among audiences.

Principles involved in effective risk communication include: 1) communicating in a clear, concise, relevant way; 2) providing compelling narratives to illustrate complex relationships between interlinking risks; 3) identifying and addressing barriers to engagement by understanding audience norms, motives, and values; 4) providing information that motivates and empowers action; 5) providing compelling stories and narratives through trusted messengers;¹¹⁹ and 6) avoiding panic-inducing communications.

7. Direct funding and resources toward systemic risk.

As noted, systemic risk assessment and response suffers from a lack of systems thinking, limited data and constrained evidence, nascent frameworks and methods, a dearth of long-term planning, inadequate risk communication, and failure of collective action. Funding for research and practice—whether from public, private, or philanthropic bodies—often follows the disciplinary and issues-based silos highlighted earlier, thereby serving to lock in those silos and forego the possibility of rapidly expanding transdisciplinary systemic risk assessments and responses.

These shortcomings can be addressed by opening up funding flows to support systemic risk analysis and action. Dedicated funding is needed to address these limitations. This means de-siloing public and philanthropic funding to address multi-system and nexus issues. It also entails directing—through policies, regulations, standards, and information—funding toward responsible investment rather than purely externality-creating profitability. Frameworks such as environmental, social, and governance (ESG) have made some inroads on this front but have been

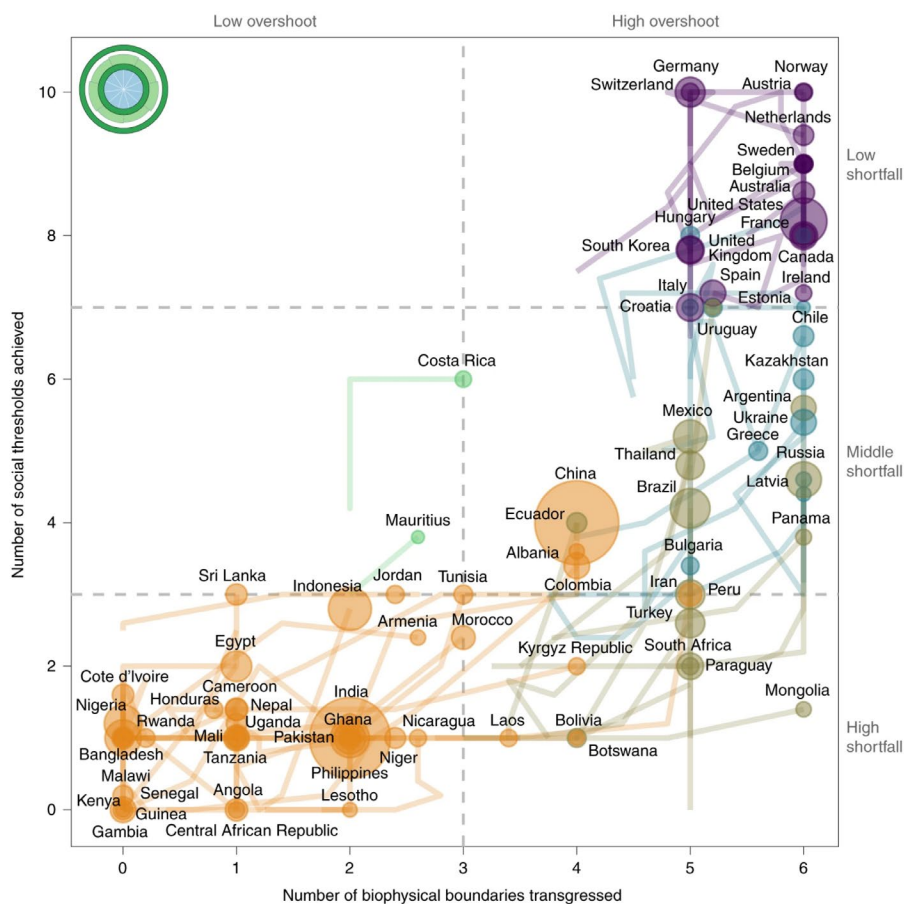
unable to drive genuine behavioural changes in corporations. Considerable enhancements are required.

Owing to the potentially vast economic losses when risks become crises, including estimates of several trillion dollars from global crises experienced in the last decade alone, our public, private, and philanthropic funding bodies should commit a considerable proportion of their budgets toward systemic risk assessments and responses to address the root causes of complex problems.¹²⁰

Summary.

The interventions discussed will contribute toward a change in the ways society perceives and acts on systemic risks. A change in mental models is critical if we are to think in systemic risk terms and enact responses that can lead us through this polycrisis.

WE HAVE YET TO MEET SOCIAL THRESHOLDS WITHIN PLANETARY LIMITS.



In this figure, the circles represent individual countries and their position shows the number of social thresholds achieved and number of biophysical boundaries transgressed at the end of the analysis period (in 2011–2015). Circle sizes are proportional to country population. The lines leading to each circle show each country’s pathway over time, from the start of the analysis period (1992–1995). Countries should ideally be in the green “doughnut” located in the top left corner. Source: A.L. Fanning, et al., [The Social Shortfall and Ecological Overshoot of Nations](#), *Nature Sustainability*, 5, no. 1 (2022): 26–36. This figure was created by Andrew Fanning and is licensed under [CC BY-SA 4.0](#).

Priorities to Accelerate the Development of Systemic Risk Capacities

All of the measures set out in Section 3 will be required to protect the Earth's ecological systems and humanity from the threats of escalating systemic risk.

We may not know the sequence of events that will lead to the next great global shock, but we can work now to ensure our systems and our societies are more resilient and better able to mitigate, prepare for, adapt to, and even transform away from the next crisis. These capacities are necessary for us to understand the drivers of the crises we face and to act in the face of them.

In this section we set out six priorities to accelerate systemic risk capacities in the near and medium terms. The priorities are directed at key stakeholders, including governance bodies (multilateral institutions, and national and local governments); financial institutions; citizens and civil society organizations; and researchers and educators.

Public governance: public institutions, agencies, and risk managers.

Nurture roles and responsibilities so that leaders have the express authority, mandate, and adaptive capacity to assess and respond to risk. Public governance roles must be enhanced to engage in ways that are consistent with the magnitude, direction, and speed of this polycrisis. New and reformed public governance processes and tools need to align with the goal of responding to systemic risk. Responses vary according to context and may be focused on mitigation, preparedness, adaptation, or transformation, or a



Image: Eugenia Rojo and Ham Khan

mix of all. Governance changes should include the appointment of Systemic Risk Officers at the national and sub-national levels, as well as a Global Systemic Risk Officer at the UN level to coordinate member states and other non-state actors to enhance systemic risk capacity globally and ensure critical global frameworks address systemic risk, including the post-2030 agenda. At all levels, appointees should be backed by cross-departmental units and/or independent advisory bodies with sufficient budgets, and should engage with diverse communities and a multiplicity of voices and worldviews, including from across genders, geographies, and generations, to address power imbalances.

Corporations, financial institutions, and regulators.

Redirect capital and spending to address systemic risk. Corporations and financial institutions must integrate systemic risk assessments into their investment, lending, and procurement practices to understand and make visible the full costs and consequences of their activities at planetary, global, regional, and local levels. Financial regulators and central banks should use similar methods to assess a wide range of risks, including conducting stress tests under dynamic, polycrisis scenarios to evaluate capital adequacy and liquidity, and to identify critical points of interventions. Expertise, data, and analysis should be shared with governments and research institutes to mainstream systemic risk assessment methods. Standards should be updated to require systemic risk analysis in regular financial reporting to encourage uptake of comprehensive risk frameworks and normalize continuous learning and experimentation.

Citizens, civil society, and advocates.

Promote inclusive participation in public and private systemic risk assessment and response, and take an active role in these processes. Whole-of-society processes are central to understanding and responding to systemic risk. Participatory mechanisms, such as citizen assemblies, should be advocated for, alongside demands for proactive capacity-building, training and education, and technical material. Civil society organizations and Indigenous Peoples and Local Communities (IPLCs) should be supported to provide technical assistance to global, national, and sub-national entities and to develop and implement effective response mechanisms, drawing on their own expertise and knowledge. Communities must be encouraged and supported to regularly use tools such as forecasting, gaming, and oral history and storytelling to assess their own risk preparedness and then use resulting insights to shape local response strategies. Data, evidence, and communication materials about risk must always be distilled into usable forms, where possible through co-creation and participation with affected communities.

Private and public sector data generators and data holders.

Develop and provide new evidence and datasets fit for systemic risk assessment and response.

Actionable data is critical for effective decision-making. Relying solely on existing data—much of which is proprietary in the private sector and sequestered in the public—is insufficient to model today’s and tomorrow’s risks. Data holders, including governments, corporations, and civil society, must invest in collecting new, primary data. These efforts must proactively identify evidence and data blind spots and areas of bias; for example, with Indigenous Peoples and Local Communities (IPLCs) and other marginalized communities. Evidence and knowledge gaps both distort understanding of situations and undermine action. Data holders should support innovative mechanisms, such as a global data commons, to make existing data publicly available, or available with appropriate licensing, to facilitate inclusive and participatory data collection and collaboration in risk response efforts. Robust and effective data governance agreements are needed to balance multistakeholder needs and expectations with issues of transparency, availability, accountability, responsibility, and protection of privacy.

Research bodies, agencies, and institutes of education.

Foster a necessary renaissance in research and education in systemic risk, and rapidly “upskill” for a polycrisis world.

Researchers, educators, and their backers must prioritize and enhance transdisciplinary research and training, developing competencies, tools, and standards, including new formats for integrating different types of relevant knowledge (systematic, experiential, Indigenous, tacit, etc.). Educational institutions should offer specialized systemic risk training programs and integrate new modules into existing courses and curricula. They should also establish North–South and East–West systemic risk initiatives, including joint research programs and exchanges, to promote peer-to-peer learning, knowledge-sharing, and capacity-building with sensitivity to diverse cultures, methods, perceptions, and responses.

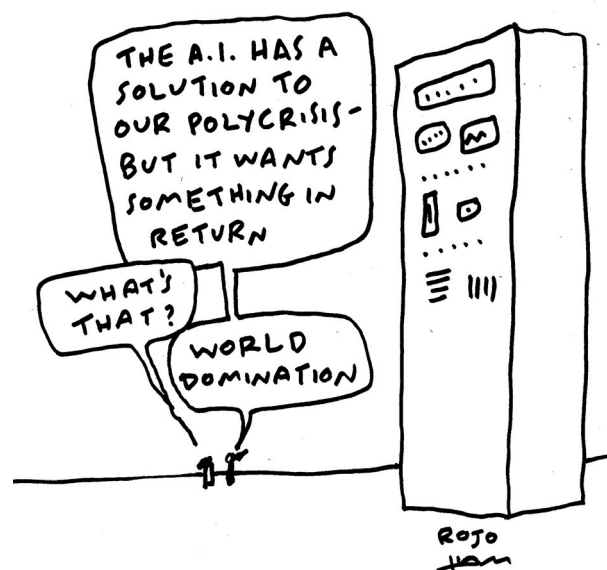


Image: Eugenia Rojo and Ham Khan

Philanthropic, public, private, and multilateral funders.

Radically increase funding to meet systemic crises with systemic responses.

We need a radical increase in funding—from philanthropic, public, private, and multilateral agencies—to address interconnected societal and ecological challenges, with a significant reorientation of funding away from single-issue policy or siloed projects. Early-stage seed funding and support flowing into systemic risk thinking and practice is critical to ongoing innovation and ambition in this area, including for transdisciplinary, participatory data and evidence generation, methodological development, education and skills, and implementation. Understanding what works at different scales and in different contexts is critical to ensuring context-specific and context-appropriate responses to risks as they manifest.

This is a first set of steps for change-makers, drawn from the diverse set of inputs we received through our consultation process. While we acknowledge that there is still more to do and others to engage, these priorities offer immediate, actionable ways to accelerate systemic risk assessment and response.

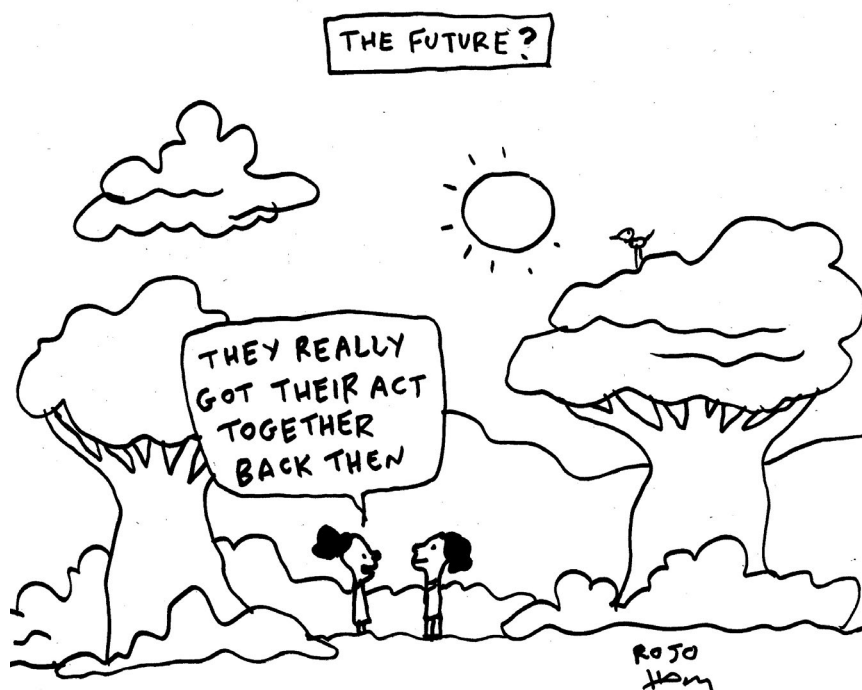


Image: Eugenia Rojo and Ham Khan

METHODOLOGY

This report was researched and developed through:

- An initial set of in-depth conversations with a range of academics and practitioners on the state of systemic risk research and practice across different scales, geographies, organizations, and communities. These conversations were led by ASRA's Executive Director, Ruth Richardson, to develop and refine the goals of ASRA as a new initiative, during the period of February to June 2024.
- The establishment of a dedicated working group, drawn from the broader network of ASRA members, on the state of practice in systemic risk, with a remit to develop this report, starting September 2023. This working group undertook desk research, bilateral interviews, and a survey of systemic risk professionals across the ASRA network to refine the report's focus, aims, and recommendations.
- A stakeholder consultation exercise to test the report findings and emerging recommendations on how to enhance systemic risk capacity. This consultation exercise, running over the period March to July 2024, consisted of five roundtable discussions, as well as bilateral interviews, with professionals across a variety of sectors, backgrounds, and geographies. These included experts from Indigenous Peoples and marginalized communities, experts in governance from multilateral to sub-national levels, as well as professionals in the finance, insurance, artificial intelligence, data, new technologies, mis- and disinformation, military, defence, and security sectors. These focused discussions augmented the deep expertise held within the ASRA network across all sectors.
- Report drafts were shared with the ASRA network as well as other experts to fact check, identify blind spots, and refine messages.

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This report was led by a dedicated ASRA working group consisting of the following:

- Ajay Gambhir, working group lead and report lead author; Kasia Murphy, working group deputy lead; and all of ASRA's core team: Ruth Richardson, Sarah Hendel-Blackford, Hanna Asipovich, Zabrina Kjeldsen; and
- Working group members: Ashwin K. Seshadri, Indian Institute of Science; Ayan Mahamoud, The Intergovernmental Authority on Development; Christopher Hobson, Australian National University; David Korowicz, Korowicz Human Systems; Haripriya Gundimeda, Indian Institute of Technology Bombay; Igor Linkov, U.S. Army Corps of Engineers; Ivana Ema Pavkova, TMP; Lalitha Sundaram, Centre for the Study of Existential Risk; Lara Mani, Centre for the Study of Existential Risk; Lorenzo Benini, European Environment Agency; Maxime Stauffer, Simon Institute for Longterm Governance; Michael Albert, University of Edinburgh; Michael Lawrence, Cascade Institute; Pablo Suarez, in memorium; Robert Lempert, RAND Global and Emerging Risks; Rosemary Ssanyu Nantambi, Callund Consulting Ltd; Sylvanus Doe, Earth System Governance Project, Utrecht University; Tom Oliver, University of Reading.

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ASRA Steering Committee: Ayan Mahamoud, The Intergovernmental Authority on Development; Elizabeth Cousens, United Nations Foundation; Lou Munden, TMP; Michael Lesnick, Meridian Institute; Timothy Lenton, Global Systems Institute, University of Exeter; Zora Kovacic, Universitat Oberta de Catalunya.



IN TRIBUTE TO PABLO SUAREZ

1970–2024

ASRA acknowledges the profound loss of Pablo Suarez, Associate Director for Research and Innovation at the Red Cross Red Crescent Climate Centre, and network member, who passed away earlier this year at the age of 53. Pablo was an extraordinary individual whose creativity, warmth, and collaborative spirit left an indelible mark on all who knew him. His pioneering work in using games and innovative methods to communicate climate and other risks has significantly advanced our field, making complex issues more accessible and engaging.

Pablo's passing occurred while we were in the process of writing this report. In his memory, and to honour his legacy, we have included cartoons gifted to us by his close collaborators, Eugenia Rojo and Ham Khan. These playful yet concise illustrations reflect Pablo's belief in the power of art and storytelling, and embody his spirit of integrating joy and creativity into serious work.

We hope that their inclusion serves as a fitting tribute to a man who brought so much innovation, compassion, humour, and energy to our shared mission.



Image: Eugenia Rojo and Ham Khan

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About the Accelerator for Systemic Risk Assessment (ASRA)

ASRA (the Accelerator for Systemic Risk Assessment) aims to mainstream systemic risk assessment in policy and decision-making in response to current and future challenges. Hosted by the United Nations Foundation, this independent non-profit initiative advances the field and practice of systemic risk, and advocates for transformative action for the prosperity of all people, societies, species, and ecosystems. Learn more at: www.asranetwork.org.



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