

THE RISK NEXUS INITIATIVE

METRICS, INDICATORS AND KNOWLEDGE FOR SUSTAINABILITY AND RESILIENCE

EXECUTIVE SUMMARY

The **Risk Nexus Initiative** is a new partnership formed by leading institutions¹, engaged in risk, sustainability and resilience, with a long track record in the delivery of innovative and effective approaches to risk and risk management.

The central focus of the **Risk Nexus Initiative** will be to ensure that all new development is fully risk informed, including, public and private investment in infrastructure and development, climate change adaptation, early warning, disaster risk reduction, actions to address displacement and migration, risk financing and transfer, cities and urban development. The initiative will make actionable and operational the risk component of the 2030 Agenda for Sustainable Development, contribute to the achievement of the vision on prevention of the Secretary General of the United Nations and facilitate the strengthening of global sustainability and resilience

To do so the **Risk Nexus Initiative** will develop and deliver innovative risk metrics to inform planning and decision making, indicators to measure process and enhanced risk governance arrangements, in a way that will strengthen the delivery and impact of development investments on the ground. These deliverables will be integrated into and will inform the development planning and programming of a range of partners and clients including UN organisations governments, international financial institutions, the insurance and reinsurance industry and humanitarian actors.

The **Risk Nexus Initiative** will work transversally across the different international agendas adopted in 2015 and 2016 and thus act as a nexus between sustainable development, climate change adaptation, disaster risk reduction, urban resilience and humanitarian action, enhancing coordination and coherence and breaking down conceptual and institutional barriers and silos.

The **Risk Nexus Initiative** will be managed by a small **Secretariat** advised by a **Steering Committee** and supported by a **Consultative Group**. The **Risk Nexus Initiative** will be hosted in a relevant international organisation, to be selected following a call for bids. Meanwhile the **Internal Displacement Monitoring Centre (IDMC)** is acting as the **Interim Secretariat** of the initiative.

¹ Partners that have already committed to the Risk Nexus Initiative include the CIMA Foundation, Italy, , the Internal Displacement Monitoring Centre (IDMC), The Extreme Events Institute at Florida International University, the Indian Institute for Human Settlements (IIHS), the International Centre for Numerical Methods in Engineering (CIMNE) , the Latin American Social Science Faculty (FLACSO), the National Integrated Drought Information System (NIDIS), NOAA, the United Nations Environment Programme (UNEP-GRID Geneva), the United Nations Research Institute for Social Development (UNRISD) and the UN-Habitat City Resilience Profiling Programme.

BACKGROUND

Risk and uncertainty generated at the interface of physical and social systems², pervades and dominates the contemporary global landscape. A complex ecosystem of interdependent risk drivers including climate change, environmental degradation, badly planned and managed urban development, displacement and migration, water and food stress, poverty and inequality translate into increasingly unpredictable outcomes for social and economic development and for the environment. Continued risk accumulation threatens the achievement of the 2030 Agenda for Sustainable Development, the Sendai Framework for Disaster Risk Reduction: 2015-2030, as well as the Paris Agreement on climate change, the Agenda for Humanity, and the New Urban Agenda.

All new development investment, whether in infrastructure, social expenditure, urban development or agriculture, has the potential to either generate or reduce risk. Today's risks were shaped by how those investments were made in the past. The future sustainability and resilience of societies and economies will be influenced by how they are made in the present. Unfortunately actions through paradigms such as disaster risk reduction and climate change adaptation have so far been insufficient to avoid continued risk accumulation in development.

It is estimated that until 2030 anything between USD 2 and 9 trillion per year will be invested in new infrastructure, including in water and sanitation, energy and transport systems, and housing. Some 60 per cent of the area expected to be urbanized by 2030 remains to be built. If investments of this scale are risk-informed, they will contribute to global sustainability and resilience. If not, they will fuel the accumulation of new risks and increase the probability of global catastrophe: a scenario in which there are ultimately no winners.

Slow progress in addressing the underlying risk drivers leads to high levels of internal displacement and migration and growing humanitarian needs. Cyclical crisis in many countries challenge already limited capacities to provide adequate basic services and infrastructure and to manage risks.

Understanding the trade-offs between risk and opportunity inherent in all development investment is therefore fundamental to sustainability and resilience and provides a powerful rationale for pursuing development pathways that prevent the creation of new risk. Risk metrics, indicators and enhanced risk governance can help to unpack those trade offs and make the risk component implicit in the Sustainable Development Goals, the Paris Agreement, the Sendai Framework, the New Urban Agenda and other relevant international agreements explicit, operational and actionable.

A NEW INITIATIVE

The **Risk Nexus Initiative** is a new **partnership**, formed by leading organisations engaged in risk, sustainability and resilience, that will make actionable and operational the risk component of the 2030 Agenda for Sustainable Development, contribute to the achievement of the vision on prevention of the Secretary General of the United Nations and facilitate the strengthening of global

² The scope of this initiative includes what are currently described as climate, disaster and environmental risks, as well as associated outcomes such as displacement, migration, impoverishment, insolvency and other social and economic stresses. Other risks including those associated with cybercrime, terrorism, financial mismanagement, technological and industrial accidents will not be covered in the initiative, except in the case of cascading and synchronic risks (for example droughts affecting power generation).

sustainability and resilience. The initiative builds on several decades of emerging work on risk management by the partners, including through the UN Global Assessment Report on Disaster Risk Reduction (GAR).

EXCERPTS FROM THE SECRETARY GENERAL'S VISION STATEMENT ON PREVENTION, MAY 2017

By prevention, I mean doing everything we can to help countries to avert the outbreak of crises that take a high toll on humanity, undermining institutions and capacities to achieve peace and development. I mean rededicating ourselves to the UN Charter and the mandate of Agenda 2030 and ensuring that our assistance goes to those who need it the most. Prevention should permeate everything we do. It should cut across all pillars of the UN's work, and unite us for more effective delivery.

The best way to prevent societies from descending into crisis is to ensure they are resilient through investment in inclusive and sustainable development, including concerted climate action and management of mass migration. Agenda 2030 and the Paris Agreement on Climate Change are an essential part of humanity's universal blueprint for the future.

Development is the key to prevention. Far from diverting resources or attention away from development, an effective and broad focus on prevention will generate more investment and concerted efforts to achieve the SDGs.

The UN system is most impactful when truly enabling others. This means building meaningful partnerships with the widest array of Governments, regional organizations, international financial institutions, civil society organizations, academia and the private sector.

Currently risk to sustainable and equitable development is managed through a number of different global frameworks³. This leads to a fragmented policy approach to what in reality are interdependent risks. The **rationale** for the **Risk Nexus Initiative** is that interdependent risk is a common nexus that, although often unrecognised, threads and weaves through climate change adaptation, disaster risk reduction, environmental management and other policy approaches. From that perspective, these approaches should be regarded more as conceptual labels that describe the risk nexus in different ways rather than as distinct areas of policy. The **Risk Nexus Initiative** will go beyond these fragmented policy approaches in favour of a holistic approach to risk, which explicitly recognises and embraces interdependence.

The expected **outcome** of the **Risk Nexus Initiative** is a paradigm shift towards appropriately discounting for risk in public and private investment in infrastructure, agriculture, social and economic development. By facilitating risk informed investment and infrastructure, the initiative would

³ The Sendai Framework for Disaster Risk Reduction: 2015 – 2030, the 2030 Agenda for Sustainable Development, the Paris Agreement, the new Urban Agenda as well as older agreements such as the 1971 Ramsar convention to protect wetlands and the 1994 United Nations Convention to Combat Desertification

contribute to strengthening global sustainability and resilience as well as to integrating and operation analysing climate change adaptation and disaster risk reduction

The principal **outputs** and deliverables of the **Risk Nexus Initiative** will be a new generation of risk **metrics** that condense interdependence and inform investment decisions, **indicators** that transcend fragmented policy approaches in order to monitor progress towards sustainability and resilience and enhanced **risk governance** based on forensic studies of risk, new conceptual frameworks and valuations of risk and cutting edge tools of social communication.

The **clients and partners** of the **Risk Nexus Initiative** will include United Nations organisation⁴; international financial institutions⁵; funds⁶; non-governmental organisations and applied research institutions; governments; the private sector involved in sustainable development, climate change adaptation and disaster risk reduction; the risk financing and transfer sector⁷; regulators in the financial sector, analysts and rating agencies; as well as local and city governments and communities at risk.

PROPOSED ACTIVITIES

The initiative will organise its work through three mutually supportive **Activity Streams**.

ACTIVITY STREAM I: RISK MODELLING AND METRICS

Probabilistic metrics such as Average Annual Loss (AAL) and Probable Maximum Loss (PML) condense the multiple interdependencies and complexities that configure risk into a single numerical value. They can inform investment in infrastructure, social and economic development, climate change adaptation and disaster risk reduction, the development of risk transfer and financing schemes and appropriate analysis and intelligence for investors.

The initiative will produce a new generation of probabilistic risk metrics, through the further development of the cutting-edge Global Risk Model (GRM)⁸. The existing GRM, which measures risks to the built environment, will be enhanced and extended to measure risks in the agriculture sector, to drought, flood and other hazards, including global catastrophic risks, such as multiple breadbasket failure. Water and food stress are expected to increase dramatically in the coming years and will generate concatenated risks in other domains, such as internal displacement, urban development and the environment. Therefore, additional layers will be added to the existing GRM to generate

⁴ UNFCCC, UNISDR, UNOPS and others

⁵ New Development Bank (NDB), Asian Infrastructure Investment Bank (AIIB), the Islamic Development Bank (ISDB) and others

⁶ Green Climate Fund (GCF) and others

⁷ Insurance Development Facility (IDF) and the Geneva Association Extreme Events and Climate Risk Management Programme

⁸ A fully open access model developed by a consortium of scientific and technical organisations under the coordination of UNISDR

improved risk metrics that will inform a range of humanitarian and development approaches and policies⁹.

The risk metrics produced through the initiative will reveal the concentration of risks in specific territories and sectors, thus facilitating a focused and nuanced approach to risk management. Such an approach facilitates targeted and cost-effective interventions to manage risks, in comparison with more generic interventions that are not based on robust risk metrics.

The initiative will provide metrics tailored to the needs of stakeholders such as development banks, the United Nations, national and local governments, the private sector, the insurance industry, analysts and regulators to facilitate risk-informed infrastructure and investment, climate change adaptation and appropriate risk financing and transfer instruments.

The initiative will also develop methods to ensure that risk is integrated into the design and implementation of infrastructure, urban development, watershed management, agriculture, early warning systems and other investments through the development of standards and certification programmes.

ACTIVITY STREAM 2 INDICATORS OF SUSTAINABILITY AND RESILIENCE

Each of the new international frameworks has targets and indicators to measure progress¹⁰. However, and with some notable exceptions¹¹, synergies between the different frameworks are still weak. As a result, it is difficult to measure how progress in one framework supports progress in another or indeed, whether, globally, sustainability and resilience are actually being achieved.

To address this challenge, the initiative will develop a new generation of meta-indicators that measure progress in addressing the risk drivers that generate interdependent risks, rather than the progress towards specific targets in individual international frameworks. These indicators will build on the risk metrics developed in Activity Stream 1.

In doing so the initiative will contribute to strengthening coherence between the frameworks adopted in 2015 and 2016 as well as with older frameworks such as the Ramsar Convention and the Convention to Combat Desertification, both of which address critical risk drivers.

It is expected that the initiative will publish a concise biennial report on global progress towards sustainability and resilience that bridges transversally the different international frameworks.

⁹ For example, the innovative disaster displacement risk model developed by IDMC will be further enhanced and updated to include displacement risk associated with conflict and development.

¹⁰ The Sendai Framework for Disaster Risk Reduction: 2015 – 2030 included Global Targets to reduce disaster mortality, affected people, direct economic loss, damage to critical infrastructure and interruption of basic services. The 2030 Agenda for Sustainable Development, which included 17 Sustainable Development Goals (SDGs) and 169 associated targets, in order to end poverty, protect the planet and ensure that all people enjoy peace and prosperity. The Paris Agreement has the target to limit global warming to 2 degrees Celsius, which was ratified on the 22nd April 2016.

¹¹ Indicators to measure progress towards the seven Global Targets of the Sendai Framework were developed through the work of an Open Ended Intergovernmental Expert Group (OIEWG) between 2015 and 2016. The Inter-Agency and Expert Group on Sustainable Development Indicators (IAEG) then adopted many of these indicators.

ACTIVITY STREAM 3: ENHANCING RISK KNOWLEDGE AND COMMUNICATION

Risk is an integral part and result of human action and development, and it represents a potential opportunity as well as a threat. The social processes involved in its construction are directly related to past and existing development paradigms. Collective and individual perceptions and reactions as well as the values attached to risk are constructed in these paradigms and are socially encoded in the way risk is discounted in development investment. Challenging these paradigms and the perceptions and values associated with them is therefore critical to underpin risk-informed investment.

Forensic studies¹² will be undertaken to highlight how physical damage, economic loss, forced displacement and other outcomes are the result of unmanaged or inadequately managed and interdependent risks. Building on these studies, the initiative will organise a programme of seminars and workshops that bring together experts and policy makers from what are currently fragmented and disconnected policy approaches (climate change adaptation, disaster risk reduction, displacement and migration, environment and urban development etc.). This programme will help to reconceptualise risk and to generate new conceptual frameworks for risk governance, including how risks are valued and discounted, and how appropriate trade-offs between opportunity and risk are identified.

New approaches to communicate risk knowledge will also be employed including massive on-line courses, engagement with the art and design community and the application of cutting edge technology, such as the innovative GAR for Tangible Earth application developed to explore the Global Risk Model¹³.

ORGANISATION AND GOVERNANCE

The organization of the **Risk Nexus Initiative** will combine three strengths: the specialized technical competencies on risk and risk management of the partners of the initiative; a broad network that spans different agendas and paradigms and the programme execution capacities of its hosting agency, once selected.

The governance arrangements of the **Risk Nexus Initiative** will consist of a **Steering Committee**, a **Consultative Group**, an **Executive Secretariat** and a **Hosting Agency**.

THE STEERING COMMITTEE

The **Steering Committee** will consist of representatives of the partner institutions of the **Risk Nexus Initiative** and of the executing agency (see below).

The role of the **Steering Committee** will be to set the overall direction of the Risk Nexus Initiative; agree its policies and strategies; approve annual work plans and monitor performance and provide accountability to those who contribute financial resources.

¹² See for example: <http://www.irdrinternational.org/2016/01/21/irdr-publishes-the-forin-project-a-conceptual-framework-and-guide-to-research-2/>

¹³ <http://earth-museum.jp/en-2/>

The **Steering Committee** will meet biannually, with normally one face to face and one virtual meeting.

CONSULTATIVE GROUP

The **Consultative Group** will be an open and inclusive forum for the partners and clients of the **Risk Nexus Initiative** including organisations of the UN system; donors; governments; international financial institutions; non-governmental organisations; philanthropic foundations; academic, scientific and technical organisations; regulators and the private sector, in particular from the insurance and risk modelling industry.

It will serve as the principal forum to articulate the **Risk Nexus Initiative** to the broader UN system in support of the vision on prevention of the Secretary General and the 2030 Agenda for Sustainable Development.

The **Consultative Group** will be convened by the **Steering Committee** and will meet annually to discuss themes and issues relevant to the three Activity Streams of the **Risk Nexus Initiative**. The **Consultative Group** will have no management role but will identify opportunities and issues to be addressed by the **Steering Committee**.

EXECUTIVE SECRETARIAT

The **Executive Secretariat** of the **Risk Nexus Initiative** will organize and facilitate the work of the initiative through the implementation of work-plans and through the negotiation of agreements with partners and clients. Additionally, the secretariat will support the **Consultative Group** and **Steering Committee** with the planning and organisation of their meeting logistics, agendas, and procedures.

The **Executive Secretariat** will be responsible for developing proposals including their operational aspects to be delivered by the executing agency for the procurement, grants, consultancies, travel, meetings etc. required to implement its work-plans. The **Executive Secretariat** will mobilise the resources necessary to ensure the financial viability of the initiative

Programme activities will be developed through agreements with partners and additional expertise would be procured on a needs basis through consultancy arrangements.

HOSTING AGENCY

A call for bids will be issued on the website of the **Risk Nexus Initiative** inviting relevant international organisations to host the initiative and to act as fund manager and operational support service provider.

Until a hosting agency is selected, the **Internal Displacement Monitoring Centre (IDMC)** acts as the Interim Secretariat of the **Risk Nexus Initiative**.