The Global Risk Assessment Framework (GRAF) 1st Meeting of the GRAF Expert Group

Synthesis Report

August 2018

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The adoption of *The Sendai Framework for Disaster Risk Reduction 2015-2030* (the Sendai Framework) on 18 March 2015 created new requirements and new opportunities for those involved in building resilience to the shocks to which societies are exposed and articulated the need for improved understanding of risk in all its dimensions. In response, UNISDR has established a process to co-develop a Global Risk Assessment Framework (GRAF) to inform decision making and transform behaviour. The 1st Meeting of the GRAF Expert Group on 13-14 June 2018 at the Palais des Nations in Geneva was an important milestone event in the process of co-designing and developing the GRAF. This report is a summarised synthesis of the extensive discussions of experts over the course of the two-day meeting.

1. Meeting objectives

- 1. Create a shared understanding of the background and context for the establishment of the GRAF, as well as a roadmap for user-centric co-design, development and implementation
- 2. Collaborative and consensus decision on the core elements of the GRAF Concept, including the vision, goal and principles, and expected outcomes
- 3. Collaborative and consensus decision on the components of the delivery plan to develop and implement the GRAF
- 4. Collaborative and consensus decision on the phasing of activities and priorities, with definition of tasks for the GRAF, including the establishment of Working Groups and initial delivery milestones for immediate priority actions
- 5. Discussion of the organization and working modalities of GRAF, including the approach to governance and management, and the enabling IT and systems, as well as funding and resources
- 6. Clarification of linkages between the GRAF and the Global Platform for Disaster Risk Reduction, the Sendai Framework Monitoring System and the High Level Political Forum on Sustainable Development (HLPF), as well as the UN Secretary-General's Integrated Platform for Prevention, and the UN Global Assessment Report on Disaster Risk Reduction (GAR)

2. Remarks of the Special Representative of the Secretary General for Disaster Risk Reduction

The meeting was opened by the Special Representative of the Secretary General for Disaster Risk Reduction (SRSG), Mami Mizutori, who emphasised how critical 2015 was for the United Nations System and the wider world. The Executive Office of the Secretary General has communicated that the development of the Global Risk Assessment Framework (GRAF) is under way, that it is important in the context of the Integrated Platform for Prevention and that it will be launched at the Global Platform on Disaster Risk Reduction in May 2019. The adoption of the Sendai Framework established the need for a paradigm shift, from managing disasters to managing risks and as reflected in paragraph 15, it significantly expanded the scope of hazards and risks to be managed. However, given that 2018 is three years into the implementation period for the Sendai Framework and with only twelve years remaining, the question was asked: do we really have enough time to get this done?

From the November 2017 meeting of experts convened by the UNISDR it was clear that there was the energy and enthusiasm to bring many efforts together into a useable package to support decision makers at all levels, and at all scales. This meeting was convened to enable the invited group of experts to provide input and agree on the next steps and immediate priorities for action for the development of this useable package, the GRAF.

The opening session closed with an exhortation from the SRSG to keep the purpose of this activity and the beneficiaries at the forefront of experts' deliberations; this work is to save lives and to make people's lives better all over the world.

On Day 2 of the meeting, the SRSG provided a summary of the discussion and observations from Day 1, the 16 points are included in Annex 1.

3. Introductory observations by the Expert Group

The SRSG invited all participating experts to provide introductory remarks to explain their background and experience and their reason for nominating for the Expert Group, the synthesis of these remarks provided a concise explanation of what the GRAF is:

"The GRAF is a trusted space to broker, coordinate, harmonize and connect action to build a broader understanding of risk in all its dimensions for decision makers to apply at all scales, fuelling a shift to proactive, anticipatory behaviour to prevent risk creation and reduce existing risk. The Framework is focused on identifying and, coherently and effectively, leveraging and amplifying existing efforts, working across cultures and languages, harnessing emerging technologies, integrating science, dissolving barriers between silos within a framework of action and practice to propel positive impacts at all scales to achieve peace and security; enabling resilient futures of human, ecological, economic and political systems"

The following are the summarised observations from the experts as to what they see as important for the GRAF Expert Group to consider:

- Principle of using science to achieve peace
- Desire to move forward from managing and understanding to action, over the next 5 years there is a need to move from demonstrators to full scale action
- Focus on integrated disaster risk management and economic analysis of the impacts of disasters
- Aim to bridge the gap between scientists and decision makers, would like to see GRAF as an easy-to-use platform built on a robust scientific foundation using an innovative and systematic process
- Important to create a strong science-policy interface and explain the social, economic and institutional factors that contribute to vulnerability and acknowledge that the role of insurance, valuable as it is, cannot manage down existing risks

- Address the risk governance challenges embedded in the GRAF vision which will require working closely with local authorities not just national governments
- Focus on the impact of digital systems on the creation of risk
- Incorporate citizen science, including mapping and local ownership of risk
- Bridge the gap between providers and users; co-design and co-development is what is really exciting about the proposed GRAF process
- Address the interactive and intertemporal nature of risk; GRAF needs to be a sustained process over an extended time period as it allows space to think very big about possible futures
- Work on integrating technological and industrial hazards and risks, building a common understanding about what we know today and what we can predict in the near future
- Focus on behavioural change, exploring how we can integrate all of the multiple dimensions of hazards and risks into people's understanding and decision making processes
- Incorporate infectious disease risks into GRAF to explore "anticipating epidemics" using big data networks and modelling to improve prediction
- Understand, map and then rely on what is already happening and braid it all together to create greater impact; this includes bringing lessons from inter alia natural and social scientific constituencies, as well as traditional and cultural communities of knowledge

4. Open discussion on the draft GRAF Concept Note

The Expert Group was then invited to bring forward more substantive suggestions and recommendations on the content of the draft GRAF Concept Note. There was broad support for the GRAF Principles as stated in the GRAF Concept Note, as well as support for the explicit statement of GRAF Objectives to support the GRAF Vision statement. The following is a condensed summary of the key topics that were discussed during this session:

4.1 GRAF as a process, not a product

GRAF is an evolutionary process addressing the evolving process of risk; it is a mechanism and a call to action that will develop dynamically, utilising co-design and co-creation principles across many iterations to inform decision making. In applying these principles, it is necessary to reframe thinking about providers of information and users of information as an overall group of participants who must first be incentivised to engage with GRAF to support their existing and future planned activities and decisions. Potential participants must be supported to shift their perspective on risk and uncertainty. This will require sophisticated and nuanced approaches to work across and within cultures and languages.

4.2 GRAF participants

It is important to ensure that the process works to allow for GRAF to go to potential participants but also draws potential users to GRAF. This will require a better understanding of the needs of potential participants – their values, their priorities, their perceptions of risk, their behaviours – by building on the preliminary user stories compiled in the GRAF Concept Note and potentially a reframing of potential participants within the context of a matrix of providers and users. The framework will need to be flexible in terms of both structure and direction, and be open-ended, to be able to adequately address currently unknown or lower priority risks (an example being cyber risks that will become significantly more important in the coming years). Loss aversion is prevalent but risk aversion is less common, GRAF must support this shift.

4.3 GRAF in support of the aligned intergovernmental process

- The primary focus of GRAF will be to support the implementation of the Sendai Framework, in particular the shift from input indicators to impact indicators and the shift to ex-ante and upstream management of the drivers and determinants of risk. This must be in the context of enabling alignment across the multiple intergovernmental agendas (the 2030 Agenda, the Paris Agreement, the New Urban Agenda, and the Sendai Framework). The focus on alignment also extends to the potential for GRAF to align and increase efficiency across multiple funded programmes with partners with explicit prioritisation arising from clear identification of gaps; with the understanding that organisations will not drop what they are already doing but rather that they will adjust and align their own goals, funding and priorities in the wider GRAF context.
- GRAF must recognise the broader strategic context in which the world currently operates and from which risk is created, including the reality that a significant proportion of risk generation is as a result of risk-blind private capital investment.

4.4 Communication strategy is critical

- Communications must be integral to the GRAF process to be able to communicate the shift which is going to be both complex and complicated, in particular the approach to communication must involve those who are at risk, i.e. capacity building and engagement should commence immediately, as this will improve the transmission of benefits of and importance of what GRAF is developing to support those most vulnerable. The media activities and broadcasting of GRAF must be well aligned with the Theory of Change to create narratives for engagement.
- Increased access to information alone has been demonstrated to have limited impact on improving outcomes, GRAF must be focused on creating a process that understands the current baseline information, tools and processes used by decision makers and enabling improved understanding and confidence to incorporate available evidence into decision making processes. This necessarily leads to the need to design GRAF to provide scenarios and options not just improved risk information.
- The GRAF Concept Note must be very concrete and specific about immediate priorities and planned activities, as well as providing the wider context, so that potential participants can engage in a two-way process of communication. Linked to this is the importance of packaging GRAF to demonstrate how exposure to what GRAF is doing and how the participants are working on creating solutions is valuable to users. The Expert Group members will play an important role in acting as advocates or ambassadors for GRAF to transmit to new networks and in other fora to build a broader understanding of, and engagement in GRAF.

4.5 GRAF as a pluralistic framework rather than a standardised methodology

- Rather than GRAF aiming to create a "shared methodology" or "standardised methodology", or focusing specifically on whether GRAF develops standards or guidelines, it is potentially more relevant for GRAF to:
 - support the development of interdisciplinary and transdisciplinary systems thinking to enable interoperability, activity across multiple scales (both spatial and temporal) and to explore the drivers of risk to enhance understanding of why exposure and vulnerability continue to increase
 - be relevant for the level of maturity of each nation, region and local authority
 - be an "open" space that facilitates a rich exchange of ideas through the co-development of a universal framework that reduces potential for aligned efforts to not be connected and therefore minimises duplication of effort by offering a clearing house and matchmaking function to support steering all participating stakeholders towards shared aims

- encourage the collection and contribution of data at multiple levels (a universal matchmaker role), including contributions by local authorities and citizen scientists as well as incentivizing engagement by the world's best scientists and scientific institutions. The key is the application of science rather than the production of academic publications which cannot be easily implemented
- share stories, practices and tools, both successes and failures, to enable the widest possible range of participants to engage in learning and feedback loops to be able to find their own way, in their own context, their culture, their level of development
- develop the capability to move towards continuous risk assessments, monitoring and risk conceptualisation
- focus on supporting a process to create a pluralistic framework that facilitates through both collaboration and competition and enables continuous rapid improvement of multiple methodologies (rather than the development of specific methodologies) and the development of multiple tools all aimed at improving risk-informed decision making; the GRAF Impact Cube is a useful lens to frame this approach.

4.6 Governance at multiple levels

Governance is a significant challenge for the ambitious multi-scale GRAF approach, important to shift from "black box" to "glass box" with increased transparency to build trust and confidence to engage with the GRAF process and to be able to scale effectively for decision makers from global scale to local applicability. Whilst open approaches are an important principle, GRAF will also need to demonstrate leadership on how to navigate everything that is available to enhance the alignment of activities and actors towards the agreed, shared metrics; the role of the GRAF Secretariat will be an important early demonstration of leadership.

5. Detailed discussions to explore core GRAF elements

Four breakout groups formed for detailed discussion about the core elements, priorities and phasing of activity in which there was clear acknowledgement of the need to move from the initial inclusive, listening consultations that have been coordinated by UNISDR over the past year, to a mode in which actors come together to solve problems. The immediate priorities must include practical demonstrators of the key elements of GRAF to participants as soon as possible in order to secure the "licence to continue" beyond the launch of GRAF at the Global Platform in May 2019, as well as elaborating on what are the "core" elements of GRAF and what are the more complex challenges that are yet to be determined as being within the scope of the co-design and co-development of the GRAF.

It was noted that "everything is connected, everything is moving and everything is transforming" as a broad context to consider the co-design and co-development of the GRAF.

Core elements broadly agreed by the experts included communications and convening, matchmaking and research sharing across domains, as well as broader coordination across various initiatives. It is also important that GRAF supports the coordination across the UN system linked to the implementation of the 2030 Agenda, the Paris Agreement, the New Urban Agenda and the Sendai Framework.

The following is the summary of the key points discussed by the experts in the breakout groups' discussions:

- Gap and Mapping Analysis is a high priority activity to inform further prioritisation of activities by the Expert Group by the 2nd Meeting of the GRAF Expert Group in November 2018. It is essential to know what has already been done, what is currently in progress and what is planned, this would provide GRAF with a mapping of the gaps and the state-of-the-art at all scales. The analysis could explore different potential applications of GRAF and what the outcomes and impacts may be if GRAF filled the identified gaps and then align with existing and future potential mandates and funding streams to more effectively demonstrate why GRAF is worthy of investment of time and resources.
- Given the very large ambition for the GRAF, a Theory of Change must be developed to cover the full scope of activity, outputs, outcomes and impacts of the GRAF over the period from initial co-design and co-development to implementation through to 2029; three phases of activity are recommended:
 - 1. Design and set up 2018-2019
 - 2. Building the framework 2019-2023
 - 3. Scaling implementation 2023-2029.

The Theory of Change must be conceived as a dynamic document that will be adapted to circumstance as the GRAF gains momentum, so as to frame decisions regarding the further development and implementation of GRAF.

- The Theory of Change must clearly state the causal pathways to move from inputs to outputs and outcomes to impacts to achieve the objective, as well as the milestones along each pathway. The enabling elements (such as the communications and IT platform, the demonstrators and pilots) and the assumptions and monitoring approach to help funders to understand the "investable" components of the GRAF that fit within various funding windows (such as mitigation, adaptation, sustainable development, risk reduction, conflict and migration etc).
- Fostering interdisciplinary systems thinking and approaches is an early priority focus to evolve the framework building on the elements presented in the GRAF Impact Cube, to catalyse a new way of thinking about configurations of risk, new dimensions of risk and emerging risks without losing sight of more traditional approaches to understanding risk. Improving understanding of systemic risks as an emergent property of the drivers within systems and both the structural complexity and dynamic complexity associated with systemic risk.
- The core of the GRAF process must be the Systems Pathway to ensure sustained focus on the holistic, multi-dimensional nature of risk rather than perpetuating the analysis and over-analysis of component parts¹. Experts identified that this requires multi-cultural perspectives of risk, including those of Eastern views and the knowledge of indigenous communities. It is a useful approach to framing that is consistent with the language in the Sendai Framework and positions GRAF in the wider systems context demanded for the effective implementation of the Sustainable Development Goals.
- For hazards and risks in the context of the expanded scope introduced in paragraph 15 of the Sendai Framework GRAF must be able to define not just at the global level but also to define at local scale; this is particularly relevant for slow-onset and cascading effects of multi-dimensional hazards such as drought.

¹ Our current understanding of systemic risk is very immature for three reasons: 1. It is very complex with multiple, non-linear, interactive feedback loops and interdependencies within and across systems, 2. Academic and research communities and most decision makers operate in silo structures, 3. There are very complicated, diverse transmission pathways of risks within and across systems, particularly across tightly coupled systems in which the nature and extent of coupling and connectivity is poorly understood. These, require both new approaches to research as well as vast computational capacity to analyse non-linear dynamics and avoid hypersensitivity and inaccurate calibrations.

- The significant shift in risk from the physical world to the digital world creates opportunities for GRAF but it is a constantly evolving complex space that will require dedicated focus over an extended period of development to separate the known knowns from the known unknowns (where the opportunity is to coordinate and organise activity to fill known gaps), the unknown knowns and the unknown unknowns (for which GRAF should be aiming to stimulate new interdisciplinary and transdisciplinary research and demonstrators) which should be a core outcome of GRAF to support prioritisation of activity and improve context for decision making.
- Definition of users, user profiles and user needs must be elaborated in the context of the matrix of users and participants of GRAF with a more dynamic and interactive approach to improve understanding of the interlinkages and interdependencies between different users at different times and at different scales. The focus of GRAF effort must be on building community of participants and building capacity and supporting engagement with the knowledge and tools created by GRAF, but beyond information and knowledge. It is essential that GRAF brings forward new narratives on complexity and uncertainty for decision makers to more effectively engage with currently poorly understood dimensions of risk.
- In building the GRAF community, specific focus on language and ontology is not as important as ensuring that GRAF is contextualised for local needs and is inclusive of a much wider range of stakeholders than have previously been engaged. An immediate challenge is the design of a "call" to open up the co-development space to the widest possible range of inputs and experience.
- A suggested approach is to connect building the GRAF community with other committed technical investments by networks (or networks of networks); an example put forward was the Knowledge Systems for Sustainability which brings together four significant networks to be able to act in community at the scale and across the range of activities expected of GRAF. This does not result in duplication, rather it supports finding areas of convergence and efficiency across efforts and approaches the challenge of building the GRAF community as creating a web of networked participants.
- There will be a significant coordination required across the various working groups to achieve synergies and to avoid duplication with other initiatives. It is proposed that some key roles are required for GRAF to progress, including coordination, communication, funding and resource mobilisation, IT management and science and technology support. The funding needs for GRAF will change over time, the current stage of development is akin to a "start-up" phase, with an initial estimate provided of between USD 1 1.5 million per year to manage across a portfolio of projects and activities of around USD 5 10 million per year not all of which would necessarily run through UNISDR.
- GRAF needs to facilitate a shift in the way models are created and provided to decision makers. Modelling is about more than just the creation of models, which need to increasingly be co-designed with decision makers as part of the process of engagement on both the modelled outcomes but also sharing the understanding of the modelling assumptions (the shift from "black box" to "glass box" approaches to modelling). This is particularly important in terms of the different time resolutions and geospatial scales applied in different models which creates sensitivities and will increase participation in "playing" with the models to test extremes and sensitivities to understand results that are contextually relevant to decision makers not just designers and creators of models. Several experts have experience in this regard and offered to support the development of this approach in the GRAF, including the Global Earthquake Model Foundation (GEM).
- Acknowledgement of the multiple levels of interoperability technology level, data level, human level (culture, education, language), institutional level with all four being within the remit of GRAF. Whilst technology and data level interoperability is how the challenge is commonly framed, it is important for GRAF to also act as an example to support human and institutional level interoperability which are the more difficult aspects as they require a deeper understanding of behaviours, values and incentives but are where the most progress is possible in improving

efficiency of information and tools, insights and scenarios to improve decision making. A suggestion to support the human level interoperability is the early development of Guidance Papers or Guidelines to help those wishing to contribute to efficiently navigate what is expected, what is good practice, how they can expect to benefit. This would be an example of "adequate standards" rather than focusing on precision and completeness to support activity in the direction indicated by the Theory of Change along the causal pathways.

- ^a Approach to governance to date has been informal which has been appropriate to foster communication and share principles, and to leverage, promote, guide and coordinate very early stage design and development activity. But now require a more substantive approach to formalising governance and management of GRAF including elaboration of responsibilities, authority, administration and accountability. This will require the establishment of a Working Group to examine recommendations for consideration at the 2nd Meeting of the GRAF Expert Group in November 2018, including aspects of the operating model and organisational design and the initial IT strategy and infrastructure needs.
- There was agreement that executive management and Secretariat role should continue to be performed by UNISDR in advance of the report of the Working Group. An important principle to include in GRAF governance is to maintain as much flexibility as possible in the context of GRAF being an evolutionary process supporting emergent learning. In establishing Working Groups, the duration and terms of reference of each Working Group must be considered carefully to focus attention on action and solving defined challenges rather than sustaining the existence of Working Groups. Expert Group members should participate in the Working Groups and where relevant act as Chair to connect Working Group activity directly into the Expert Group deliberation and oversight process.
- The development and selection of demonstrators and pilot projects to provide practical examples of the GRAF principles in action is an immediate priority. An initial demonstration concept was developed by several Expert Group members during the meeting and presented to the full Expert Group in plenary. This proposed project aims to connect the combined efforts of a range of preeminent organisations to build a new global risk index (the GRAF Risk Index) based on a modification to a proven composite indicator methodology. The early concept for the GRAF Risk Index would start from the INFORM Index for Risk Management and modify to make it fit-for-purpose for Sendai Monitoring, according to the GRAF principles and aiming to demonstrate progress against the GRAF objectives.
- The GRAF added value of weaving together elements that have never been combined creates an opportunity to augment pre-existing efforts and investments and to stretch each beyond their current areas of focus. By initiating this demonstrator, among other pilot projects, it will be possible to present tangible progress with preliminary outcomes against the Theory of Change and agreed Delivery Plan immediate priorities to support the launch of the GRAF at the Global Platform in May 2019.

6. Closing remarks

Kirsi Madi, UNISDR Director, invited Expert Group members to provide closing reflections and remarks on the two-day meeting. She confirmed that it is the intention for GRAF to be a connector and that the Expert Group must play a clear role in further defining what the GRAF is and to substantiate coherence across the 2030 Agenda, as this is now embedded in the DNA of UNISDR and the UN system more broadly. The closing comments are summarised below:

- Very comprehensive session, impressed that the Expert Group was able to achieve so much in the two days, with this session the GRAF is now taking shape
- There was a clear and explicit acknowledgement of the very rapidly changing nature of risk and the changing perception of risk together with a shared understanding that GRAF is essential
- UNISDR has initiated a very fruitful process. It is the process which is most important and we have now started to take ownership with a shared commitment to continue to move forward
- There has been a lot of good work done to ensure that this a collaborative approach, it is pleasing to see that we are now moving from words to action, it is timely, and we now need to build the momentum
- There is enormous enthusiasm for the GRAF Concept, both within the Expert Group and increasingly in the wider community
- The meeting provided clarity on the Concept Note, the proposed demonstrator is an exciting development and it is now much clearer on what we need to do
- Pleasing to see that there is appetite to build something bigger than the sum of all the parts. The clear acknowledgement of the need for a Theory of Change is an important development in this meeting, the follow up will now be critical
- There is clear understanding now of the need to move forward with tangible efforts linking the Sendai Framework with the 2030 Agenda
- Through the Expert Group discussions, the picture of what GRAF is has become more complex and colourful in terms of the vision, as a group we must now engage very widely
- The meeting was a well balanced mix of concrete discussions about tangible actions with some important abstract discussions, it is very refreshing to see that this is not another "imposed" framework but that there is clear intention for it to be built as a community. The inclusion of the human and institutional aspects of interoperability and risk is important as these areas are very challenging and largely underdeveloped
- The GRAF activity has enormous potential if we are to truly go to work towards achieving evidence based decision making in the real world
- The level of expertise, dedication and enthusiasm in the Expert Group is inspiring, the meeting was an important reminder of just how much work needs to be done to breathe life into the GRAF concept to make it concrete and useable
- GRAF provides an opportunity to go beyond risk assessments to establish a 'culture of understanding' across key stakeholders and decision makers to ensure the shift we are aiming for is sustainable
- The meeting reaffirmed the commitment and understanding of the importance of the shift from managing disasters to managing risk, the ambiguity of the challenge will remain for some time but the definition of a clear and widely understood GRAF is an essential step forward
- The Expert Group was missing key representatives, in particular the face of Asia, the Asian mindset, representatives of indigenous communities and wisdom and the private sector and investment communities. These voices will be critical as we move forward, as is increasing clarity on the link between the Sendai Framework, the Paris Agreement, the New Urban Agenda and the 2030 Agenda

Annex 1: SRSG Day 2 opening summary

- 1. GRAF should be built on the concept of participants and chains-of-users, in which participants become users as they apply GRAF in their context as an active tool with useful scenarios and options that decision makers want to use within a more developed understanding of behaviours, attitudes and values of decision making (integrating social science).
- 2. GRAF to emphasis importance of shared responsibility across multi-stakeholders and integration of efforts to address systems dynamics and systemic risk challenges.
- 3. Communication must be integral to the process of GRAF to be able to communicate the shift that we are aiming to engender. Communication must be based on a positive message people don't like to be scared.
- 4. GRAF must have the capacity as a framework to enable a range of methodologies rather than focus on a singular, standardised methodology; with clarity over the level of maturity of each methodology, and each region, nation and local authority. The GRAF Impact Cube is a good starting point to consider the different dimensions. GRAF needs to put science to work, to enable the implementation of science.
- 5. GRAF is an open-ended, emergent evolutionary process of the evolving nature of risk, it is a mechanism that will develop over many iterations to enable continuous, dynamic risk assessments, it is a global process to enable a better understanding of risk, particularly the determinants and drivers of risk (the conceptualisation of risk) but which has the required granularity and cultural relevance to be useful at local scales where impacts are felt and decisions are made and where learning and knowledge are widely shared.
- GRAF must explicitly be developed to support national and local governments to implement the Sendai Framework in the context of integrating activity across the 2030 Agenda, the Paris Agreement, and the New Urban Agenda.
- 7. GRAF to be open but in context of concerns over sharing at some levels for some information, and able to link the government at multiple levels to succeed. Local governments are key to both data inputs and results utilization. National and local governments to be priorities in terms of decision makers to be supported.
- 8. GRAF is to enable an exchange of ideas, not to force or compel but rather to facilitate availability of appropriate methodologies and tools, collection of data and sharing of practices/ experiences and creating a culture of understanding (rather than focusing on standardising or language/ ontology) so that organisations can over time adjust priorities and focus, recognising the knowledge of users from the onset.
- 9. Co-design principles are important but co-design might be harder to achieve than we think, we will need to learn how to collaborate and compete simultaneously. Open approaches are welcome but also need leadership and guidance on how to navigate 'everything that is available' as we are all aiming for the shared metrics.
- 10. Systemic focus and systems dynamics must be addressed very early in development.
- 11. An immediate priority is to agree on terms of reference and scope of a Gap and Mapping Analysis which will inform all other priorities and provide basis for developing clear a value proposition for funding and resource requirements. Will need to be a periodic or continuous exercise to ensure GRAF maintains focus and relevance. UNISDR has an important role in this exercise with national governments. Initial analysis can be initiated through a questionnaire. Mapping will build the evidence base for coordination across and collaboration with existing initiatives and efforts.

- 12. Demonstrators and pilots to commence as soon as possible. They need to be early exemplars of what GRAF does, what it offers, what impacts it will have for decision makers, including cultural and other contextualisation. Demonstrators must focus on how GRAF will be implemented in practice.
- 13. Need to have a clear message and clear 'deliverables' to present to the world at GP2019, these must be informed by the Gap and Mapping Analysis and early demonstrators and pilots as well as a signed off plan for the next 2 years through to GP2021. GRAF Community to be developed and presented at GP2019.
- 14. All 7 of the GRAF Principles were endorsed through the discussion.
- 15. Involvement of private sector, including the investment community, is critical as it is a significant source of risk generation.
- 16. Scope of hazards/ risks will require a technical team to be established, boundaries and scoping will be very difficult as will phasing of effort.

The SRSG emphasised that the GRAF Secretariat were looking for commitments to action from the Expert Group.

Annex 2: Meeting participants

Family name	Given name	Institution
Abdallah	Chadi	NCRS, Government of Lebanon
AbuZeid	Khaled	CEDARE
Aldaoud	Naela Khaled Nayel	Royal Scientific Society, Government of Jordan
Benouar	Djillali	Algerian Academy of Sciences & Technologies
Bishop	Bob	ICES Foundation
Burton	lan	IPCC / University of Toronto
de Groeve	Tom	JRC, European Commission
Del Rio Vilas	Victor Javier	University of Surrey
Green	David	NASA, Government of the United States of America
Guimarães Nobre	Gabriela	UN Major Group for Children and Youth
Hamdan	Fadi	DRMC, Lebanon
Iguisi	Edwin Osawe	NEMA & Ahmadu Bello University, Nigeria
Jahn	Molly	University of Wisconsin-Madison
Karba	Jasmina	Government of the Republic of Slovenia
Løvholt	Finn	Norwegian Geotechnical Institute
Mahmoud	Ahmed Amdihun	IGAD
Moufouma Okia	Wilfran	IPCC & Université Paris Saclay
Obersteiner	Michael	IIASA
Randrianalijaona	Tiana Mahefasoa	CERED, University of Antananarivo
Rees	John	UK Research & Innovation & BGS
Robinson	Lisa	BBC Media Action
Ruane	Alex	University of Colombia, AgMIP, NASA
Hohl	Markus	BABS, Swiss Government
Schneider	John	Global Earthquake Model (GEM)
Souch	Claire	RMSG, Insurance Development Forum (IDF)
Stone	Jonathan	DFID, Government of the United Kingdom
Tatano	Hirokazu	GADRI, Japan
Thow	Andy	UNOCHA
Toregas	Costis	Eye on Earth & George Washington University
Vogel	Coleen Heather	University of the Witwtaresrand, South Africa
Ward	Philip	GLOFRIS/ Aqueduct
Whitaker	Dickie	OASIS
Shindo	Nahoko	WHO
Mizutori	Mami	SRSG & Head of UNISDR
Madi	Kirsi	Director, UNISDR
Mena	Ricardo	UNISDR, GRAF Secretariat
Gordon	Marc	UNISDR, GRAF Secretariat
Katsanakis	Rhea	UNISDR, GRAF Secretariat
Fysh	Adam	UNISDR, GRAF Secretariat
Ahmed	Siara	UNISDR, GRAF Secretariat
Menchise	Chiara	UNISDR, GRAF Secretariat
Williams	Scott	UNISDR, GRAF Secretariat

Annex 3: Meeting Agenda

Day 1: Wednesday, 13 June 2018

08:30-09:00	Arrival and coffee	Palais des Nations, Room IX		
Opening session				
09:00-09:10	Welcome and opening remarks	Mami Mizutori, SRSG		
09:10-10:30	Introductions	Expert Group members		
10:30-10:50	Coffee break			
10:50-11:25	Setting the stage: Introduction to the Global Risk Assessment Framework (GRAF), findings from the expert consultation on the GRAF in November 2017 and subsequent consultations	Ricardo Mena Marc Gordon		
Session 1: Open discussion on the GRAF Concept Note in Plenary Throughout Day 1, you are invited to upload your reflections, recommendations and questions with respect to the GRAF Concept Note via sli.do				
11:25-12:30	Guiding questions: What do you want the GRAF to be? What do you want the vision, goal, principles to be? What do you think the outcomes of GRAF should be? What do you think of the four workstreams as presented in the Concept Note? The co-design principles underpin the establishment of the GRAF, what do you think of this approach and the aspects of shared understanding, and shared methodology? Do you have further recommendations in relation to the abovementioned foundational elements of the GRAF?	Moderated by: Marc Gordon		
12:30-13:45	Lunch	In groups		

Session 2: Breakout groups to explore core elements of the GRAF and to discuss priorities			
	Activities and priorities		
	Phase 1: Immediate priorities		
	 User profiles, needs and metrics Scope of hazards/ risks (Sendai paragraph 15) Exposure models Gap and mapping analysis Language and ontology 		
	Phase 2: Activities to commence by GP19		
13:45-17:00	 Building the community Modelling Social vulnerability Ecological vulnerability Data standards and protocols Model interoperability Phases 3 & 4: Activities to commence by GP21 & GP23 Capacity development and training Systemic risk and uncertainty Platform and online portal Demonstrators and pilots 	In groups	
17:00-17:55	Report back to Plenary and Q&A	Moderated by: Marc Gordon	
17:55-18:00	Feedback on sli.do reflections, recommendations and questions		
18:00-18:05	Day 1 Conclusion	Ricardo Mena	
19:00-21:00	Dinner – UN Plage, Restaurant (at participant's own cost)		

Day 2: Thursday, 14 June 2018

08:30-09:00	Arrival and coffee	Palais des Nations, Room IX		
09:00-09:20	Recap of Day 1 and explanation of Day 2	Mami Mizutori, SRSG		
Session 3: Users and Providers – defining the tasks				
Throughout Do	ay 2, you are invited to upload your reflections, recommenda	tions and questions via sli.do		
09:30-10:30	Users (participants and chains of users) - User profiles, need and metrics - Building the community - Capacity development and training	Moderated by: Molly Jahn & Claire Souch		
10:30-10:50	Coffee			
10:45-12:30	Providers and Gap & Mapping Analysis - User profiles, need and metrics - Building the community - Scope of hazards/ risks (Sendai paragraph 15 - Exposure (physical, financial/ economic, social and ecological, other) - Modelling - Vulnerability (social and ecological, physical and economic, other) - Systemic risks - Uncertainty	Moderated by: Alex Ruane and Tom de Groeve		
12:30-13:40	Lunch			
1340-1430	Systemic risk and evolutionary processes	Moderated by: Coleen Vogel, Bob Bishop and Michael Obersteiner		

Session 4: Interoperability and standards – defining the tasks				
14:30-15:30	Interoperability and standards - User profiles, need and metrics - Gap and mapping analysis - Language and ontology - Data standards and protocols - Model interoperability - Platform and online portal	Moderated by: Wilfran Moufouma-Okia and Dickie Whitaker		
15:30-15:45	Coffee break			
Session 5: Organisation and working modalities – defining the tasks				
15:45-17:30	 Governance and management IT and systems Risk communication Incentives (users and providers) Theory of change and organization design Roadmap 2029 Demonstrators and pilots Funding and resource needs 	Moderated by: John Schneider and Tom de Groeve		
Session 7: Meeting wrap up				
17:30-18:00	Closing remarks from Expert Group	Moderated by: Kirsi Madi		
18:00-18:10	Closing remarks	Kirsi Madi and Ricardo Mena		
18:10	Meeting concludes			