

Adaptation Research Alliance Shared Learning Process on Understanding Climate Risk

February - March 2022



Author information

This report was prepared by Jonathan Walter and Simon Anderson, Nora Nisi, Aditya Bahadur and Sarah Tucker for IIED.

About the events

Global Workshops, 31 January and 1 February 2022
Learning Assignment, 1-28 February 2022
Regional Workshops (Asia, Africa, Latin America), 1-3 March 2022

Organised for the Adaptation Research Alliance (ARA) by IIED.

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Third Floor, 235 High Holborn, London, WC1V 7DN

Tel: +44 (0)20 3463 7399

Fax: +44 (0)20 3514 9055

email: info@iied.org

www.iied.org

@iied

www.facebook.com/theIIED

Adaptation Research Alliance

ARA is a global collaborative effort to catalyse increased investment in and capacity for action-orientated research that supports effective adaptation to climate change – primarily in developing countries – at the scale and urgency demanded by the science. ARA is an initiative of the UK's Foreign, Commonwealth and Development Office (FCDO).

ara@southsouthnorth.org

@Adapt_Alliance

Disclaimer: The views expressed in this report are those of the participants, as captured during the workshops from January-March 2022. They do not necessarily represent the views of IIED or the ARA.

Table of contents

Executive Summary	4
1. Introduction	4
2. Understanding climate risks and knowledge and risk information ecosystems	4
3. Knowledge and knowledge gaps in understanding climate risk	5
4. Proposing regional climate risk learning communities	6
5. Conclusion and next steps	8
1. Introduction.....	9
1.1 Adaptation Research Alliance	9
1.2 Aims and objectives of the shared learning process on understanding climate risk.....	9
1.3 Building on consultations conducted by the University of Cape Town.....	9
1.4 Structure of the shared learning process	10
1.5 Application and selection process	11
2. Understanding climate risks and knowledge and risk information ecosystems.....	12
2.1 Framing climate risks and risk information ecosystems.....	12
2.2 Roles organisations play in understanding climate risk	14
2.3 Overcoming challenges in understanding climate risk	17
2.4 Overcoming blockages to collaboration	19
2.5 Trends and insights	21
3. Knowledge and knowledge gaps in understanding climate risk.....	22
3.1 Introduction.....	22
3.2 Asks and Offers – global workshop.....	22
3.3 Asks and Offers – regional workshops.....	23
3.4 Trends and insights	24
4. Proposing regional climate risk learning communities	25
4.1 Introduction to learning communities.....	25
4.2 Potential objectives, guiding principles and activities of learning communities	26
4.3 Regional implications for learning communities	31
4.4 Vertical and horizontal integration of learning communities.....	31
5. Conclusion and next steps.....	33
Annex 1: Participating organisations	35
Annex 2: Agenda of global workshops	37
Annex 3: Agenda of regional workshops.....	38
Annex 4: Learning assignment questionnaire	39
Annex 5: Global “Asks” and “Offers”	40
Global workshop Asks	40
Global workshop Offers	41

Executive Summary

1. Introduction

“Climate risk” is a comprehensive concept spanning socio-economic and bio-physical elements – identified by the Adaptation Research Alliance (ARA) as a vitally important area of learning and collaboration. As ARA formulates its strategy for 2022-25, the insights from this shared learning process on understanding climate risk will prove vital in helping deliver one of ARA’s key objectives – to enhance learning across both climate research and climate action communities.

Objectives

The shared learning process brought together local, national and international organisations with three objectives:

- Catalyse peer-to-peer learning on climate risk assessment and management
- Generate a shared understanding of challenges that ARA can work to overcome and good practices ARA must amplify
- Forge regional networks and communities of practice on understanding climate risks

Process

Two global and three regional workshops (all virtual) took place between January and March 2022, with a co-developed learning assignment in between. Out of 151 organisations that applied to participate, 57 were selected, with those from Africa, Asia and Latin America receiving technical and financial support.

The process built on a consultation on climate risk assessments in least-developed countries by the Climate System Analysis Group (CSAG) of the University of Cape Town. CSAG’s consultation highlighted the importance of **collaboration, learning and sharing**. It concluded that a global shared learning process should involve:

- Peer-to-peer learning
- Communities of practice to build a shared understanding of challenges
- Regional networks on climate risk assessment and management

2. Understanding climate risks and knowledge and risk information ecosystems

The successful design and implementation of climate action and adaptation initiatives relies in large part on an inclusive understanding of climate risks that encompasses the insights and experiences of many different types of stakeholders.

Co-producing knowledge requires engaging different actors

Traditional models of knowledge production are top-down and exclude those directly affected by climate risks. But co-production can generate knowledge from indigenous as well as scientific sources. This legitimises knowledge and makes it more accessible and useful for a wider range of stakeholders.

Co-producing a shared understanding of climate risks is not just about employing a range of tools. It requires different actors to play different roles: conventional producers to generate information from science or experiential learning, and intermediaries to negotiate what can be considered legitimate knowledge and to broker that knowledge for action.

Collaboration and funding can help overcome challenges to gathering data

Responses to the learning assignment questionnaire revealed that most organisations are focused on data collection at local and national levels. While most prioritise gathering local knowledge for the subjective insights it provides, they triangulate this with scientific data to build a comprehensive picture of climate risk and vulnerability. Gathering sufficient data requires collaborating with a huge number of organisations, including government, academia, NGOs and civil society.

Participants identified some technical challenges to understanding climate risk, including an absence of standardised methods for gathering and analysing data (spanning data on vulnerability, exposure and hazards), lack of resources to ensure sufficient data is gathered, and the inaccessibility of meteorological data due to its cost, bureaucratic procedures or technical terms. Downscaling climate models to district and sub-district levels urgently needs addressing. Other challenges include the need to communicate climate risk knowledge to those most at risk, as well as ensuring that the insights of vulnerable people are not dismissed as merely qualitative.

To overcome these challenges, respondents highlighted the importance of greater collaboration and partnerships, facilitated through spaces for exchange of knowledge and expertise. Greater access to data, capacity building, more funding and tools to integrate local knowledge into risk assessments are also needed.

Flexible financing, mandate and capacity building could open up collaboration

Numerous blockages to collaboration exist, including a lack of mandates, spaces for exchange and shared approaches to describing climate risk. Some Asian participants pointed to the “arrogance of knowledge” preventing deeper, shared understanding. A shortage of funding reduces the time and resources available for meaningful collaboration. Participants suggested the main way to overcome these blockages would be to create spaces for exchange, such as a community of practice for “sharing ideas, approaches and tools between member institutions”. Such a community would need consistent, flexible financing and capacity building to succeed.

The survey of participants revealed a lack of effective collaboration, although there are some geographies (e.g. Argentina) where mechanisms for shared learning on climate risks are emerging. The diversity of participant organisations may make it difficult to secure a mandate for convening collaborative activities. There may also be a reluctance to expend resources on collaboration – even though most respondents agreed that curating spaces for knowledge exchange would support a more inclusive understanding of climate risks.

3. Knowledge and knowledge gaps in understanding climate risk

During the workshops, participants discussed their top “Asks” (What do you need to understand climate risks better?) and “Offers” (What can you contribute to others trying to better understand climate risks?). The main themes include:

Communicating climate risk information to the marginalised

Organisations need to customise climate risk information in ways that marginalised communities can understand and act upon. Offers include experiential learning tools, impact-based forecasting and climate risk narratives.

Gender, youth and justice perspectives

Many organisations wish to deepen their understanding of how climate risks and actions are gendered, and the role youth and women can play in bringing social justice to the process.

Ensuring climate knowledge influences government policy

As well as sharing knowledge, participants want to influence government behaviour, for example by using community-generated data on climate impacts to advocate for better policies and actions. Or getting government buy-in for co-created climate risk assessments.

Integrating academic, practitioner and community knowledge

Co-production of climate risk knowledge among vulnerable communities is a high priority. But it needs integrating into climate risk assessments that also draw on data from researchers, practitioners and government agencies.

Climate impacts

Capturing the real impacts of the climate emergency on frontline communities requires a monitoring system to evaluate losses, damages and the adaptation measures required to build future resilience.

Risk-specific data and adaptation solutions

Some Asks were risk-specific, such as analysing the impacts of heat on health, providing crop insurance for smallholders in Africa, or understanding how big data could improve the resilience of marginalised urban communities.

Data acquisition and analysis

Smaller organisations need training in methodologies to measure and systematise data (spanning exposure, vulnerability and hazards), especially data sourced at different geographical scales. Downscaling of global climate models to local or district levels remains a challenge. Participants also highlighted the challenges in melding insights emanating from different types of data (especially “bottom-up data” collected from communities with “top-down” scientific data).

Financing

Financing is needed to validate and disseminate local, co-produced knowledge. Learning communities could share insights into alternative forms of financing.

Virtual networking at regional and global levels

Participants are keen to extend their knowledge ecosystems on climate risks and actions, by integrating with ARA’s network to exchange experiences and develop new research.

4. Proposing regional climate risk learning communities

Reasons to facilitate learning communities include learning from failures and scaling up successes; building influence through common agendas, policies, programmes and projects; and innovating in ways that reduce opportunity costs of testing.

Strong support for new learning communities

Over 85% of participants answered Yes when asked if a learning community would be useful in overcoming challenges in understanding climate risk, while 0% said No. Some who voted “Unsure” feared replicating existing learning communities without strengthening them or understanding why they might be failing. So it is important to understand the structure and function of any proposed new learning communities.

Participants shared insights into what makes learning communities successful, and proposed objectives, guiding principles and activities that learning communities should embrace.

Success factors

- Co-create clear expectations
- Provide spaces for exchange
- Have high levels of inclusion and co-ownership
- Be action-oriented, e.g. by building capacity and achieving influence

Objectives

- Share knowledge within and across regions, and build the social spaces for this to happen
- Achieve commitments to collective action
- Collaborate with diverse partners
- Develop common approaches to understanding climate risks

Guiding principles

Participants identified eight guiding principles for learning communities. They also proposed activities under each of these principles, detailed in the main report.

1. Inclusive, gender-responsive, diverse and locally led

Learning communities should include vulnerable members and bring their lived experience to the platform. This will promote mutual understanding and help socialise and validate information co-produced with at-risk communities. Inclusivity will bolster the mandate of learning communities to be listened to by policy-makers. The proposed ARA learning communities could be the action-research analogues of the locally led adaptation (LLA) communities of practice.

2. Accessible knowledge and systems

Participants are keen to create a centralised database of knowledge accessible to all members both conceptually and technologically. The learning community should systematise methodologies, lessons and case studies so they can be compared across regions and accessed by the wider community.

3. Context-sensitive

Despite the need to systematise knowledge, each situation requires its own context-sensitive approach. A learning community that matches tools to the characteristics of different actors, risks and situations could prove valuable in the search for locally relevant risk mitigation.

4. Cross-sectoral, interdisciplinary approach

A learning community must build bridges between sectors, disciplines and communities (e.g. academic research and practice, formal and informal processes, research outputs and policy decisions), to foster exchanges of ideas between diverse actors across various locations.

5. Networked with local government

Learning communities must engage with local government, for example by building an understanding of climate risks among municipal decision-makers and sharing knowledge on how to address risks through appropriate policies.

6. Influential over national and international policy

Participants want learning communities that can influence national and international policies, for example by providing high-quality climate risk data and knowledge to inform the development of national climate policies, NAPs and NDCs.

7. Impact-orientated

Beyond collating knowledge and facilitating dialogue, many participants want learning communities that make tangible impacts on mitigating and adapting to climate risks, for example through integrating community-driven knowledge in advocacy and policy, sharing information on funding sources and leveraging impacts through collaborating with local actors and businesses.

8. Sustainable

Several participants from the Asia workshop cautioned that if a learning community is too intensive it may become counterproductive, as too many discussions can hamper tangible outcomes. ARA should build on the achievements of similar learning communities and learn from their mistakes.

Implications for learning communities

Communities of actors and institutions focused on understanding climate risk (also called “climate risk knowledge ecosystems”) vary widely in status and sophistication between countries and regions. The starting points for establishing such learning communities must be location-specific. The shared learning process showed how knowledge ecosystems are stratified vertically – from central government and national agencies to mid-level researchers and businesses, to CBOs and small-scale enterprises. However, there are also organisations across different locations that share similar roles in understanding and addressing climate risks.

So, there is potential to catalyse fruitful knowledge exchanges both horizontally – between organisations of similar types in the same or different locations – and vertically – between organisations of different types in the same locations, that need to link up not just to understand climate risks but also to address them collaboratively.

5. Conclusion and next steps

The results of the shared learning process clearly demonstrate that – while an understanding of climate risks is challenging and there is a diversity of approaches being used – participants, ARA members and wider stakeholders share a strong interest in improving their own and other actors’ understanding of climate risks.

The organisations involved in this initiative have not only shared learning during the process but demonstrated enthusiasm to share a lot more. This indicates that a basis for shared learning communities exists.

Next steps

Some steps have already been taken, such as:

- Participants invited to join ARA
- Report presenting findings from the shared learning process submitted to ARA and circulated
- Participants encouraged to follow up on Asks and Offers shared during the workshops
- Participants invited to join ARA’s Tracking, Learning and Sharing (TLS) workstream and to engage in the Co-creation workstream to incubate new ideas and peer-to-peer learning

ARA must now consider whether and, if so, how it could facilitate the learning communities described in this report. Part of ARA’s workstream four is the development of a TLS framework that envisions the creation of communities of practice to establish systems for knowledge-sharing and generation by ARA’s members. Learning communities on understanding climate risks could achieve this. Furthermore, our findings from the learning assignment indicate an alignment between the principles and approaches outlined in the TLS strategy and those suggested by our participants.

The TLS strategy sees ARA playing a catalytic role by creating spaces in which members can encounter one another, identify possible partners and learn collaboratively. Our shared learning process on understanding climate risks has revealed the benefits of such an interactive space. This report highlights the themes and principles that need to be adhered to in establishing and managing effective shared learning communities.

Looking beyond the TLS framework, the wider proposed strategy for the implementation phase of ARA includes, under its “research planning and cooperation” functional area, the establishment and functioning of “regional learning communities”. The creation of such communities could ensure that the conversations catalysed through our shared learning process continue and start to influence policies, programmes, funding and practice.

1. Introduction

1.1 Adaptation Research Alliance

The Adaptation Research Alliance (ARA) believes that a new paradigm of action-orientated research is needed to inform effective adaptation to reduce the risks from climate change, particularly for countries and communities that are most vulnerable – at the scale and urgency demanded by the science. The Alliance was formally launched at COP26 by the UK Foreign, Commonwealth and Development Office as part of its Adaptation and Resilience campaign. The ARA is a global, collaborative effort to increase investment and opportunities for action research to inform and develop effective adaptation solutions.

Through diverse stakeholder partnerships and collaborations between funders, researchers and actors that make up the ARA membership, the alliance aims co-create, innovate and find solutions that have tangible effects on people's everyday lives. ARA believes that climate-vulnerable countries should not only become resilient – but that they should prosper. For this to happen, systemic change is needed to ensure that climate research is radically collaborative, southern-led, and provides long-lasting, real-world solutions.

The ARA is now a global collaborative effort with over 140 member institutions from almost 40 countries that seeks to catalyse increased investment and capacity for action-orientated research that supports effective adaptation to climate change – primarily in developing countries. The ARA focuses on ensuring that increased ambition can be delivered through evidence-based action and recognising that practical action is required to minimize and avert loss and damage.

ARA is at a critical stage in its development, creating its strategy for 2022-25. The insights from this shared learning process on understanding climate risk will prove vital in helping deliver one of ARA's key objectives – to enhance learning across both climate research and climate action communities. More information on the ARA can be found [here](#).

1.2 Aims and objectives of the shared learning process on understanding climate risk

Members of the ARA consider “climate risk” to be a comprehensive concept spanning both socio-economic and bio-physical elements – and ARA has identified this concept as a vitally important area of learning and collaboration for the Alliance.

The shared learning process on understanding climate risk brought together local, national and international organisations and institutions to mobilise effective knowledge, catalyse collaboration and generate new knowledge on this theme. The process involved two virtual global workshops and three virtual regional workshops, between January and March 2022, with a co-developed learning assignment in between. Participating organisations received technical and financial support to participate, with the ARA providing £3,000 each to 35 organisations as well as one-on-one support.

The objectives of this initiative were to:

- Catalyse peer-to-peer learning among ARA members and other organisations on climate risk assessment and management
- Generate a shared understanding of challenges that the ARA can work towards overcoming and good practices that the ARA must amplify
- Forge regional networks and communities of practice on understanding climate risks

1.3 Building on consultations conducted by the University of Cape Town

The shared learning process carried out by IIED built on the findings of a two-month consultation process on climate risk assessments (CRAs) in least-developed countries (LDCs), carried out on behalf of the ARA by the Climate System Analysis Group (CSAG) of the University of Cape Town.

CSAG presented its findings to the IIED's global workshops and identified five top challenges, each with its own set of opportunities (bulleted) as follows:

1. Climate risks are complex and interlinked

- Integrate local context into national assessments
- Encourage linkages across sectors in the CRA
- Ensure that decision-making and implementation also link across sectors

2. CRAs often take place in isolation with limited lesson-sharing

- Build on what's done, fund a variety of actors to collaborate in the CRA process
- Improve access to primary data by offering to share data interpretation with communities
- Create a centralised repository for CRAs and their data that's easy to access
- Promote multi-disciplinary approaches to CRAs

3. Lack of access to data and standards for appropriate use of data

- Collaborate to develop standards for data and methods used in CRAs
- Collaborate to develop Standard Operating Procedures for free sharing of public-funded data and CRAs

4. No plan or funding to sustain, communicate or implement CRA recommendations

- Before embarking on a CRA, understand how you can implement recommendations
- Ensure solutions-based recommendations
- Consider role of intermediaries in turning CRA recommendations into action

5. CRAs are an additional burden on overstretched resources – especially in LDCs

- Link CRAs to ongoing adaptation and monitoring, evaluation and learning (MEL) initiatives
- Encourage cross-organisational learning to spread the load and broaden the network of organisations that can act on recommendations
- Leverage national CRAs to lobby for more funding (to implement CRA recommendations)
- Develop capacity to interpret existing CRAs and to act on recommendations

CSAG's consultation process highlighted the importance of **collaboration, learning and sharing**. Researchers concluded that the development of a global shared learning process should involve:

- Peer-to-peer learning
- Communities of practice to build a shared understanding of challenges
- Regional networks on climate risk assessment and management

1.4 Structure of the shared learning process

The shared learning process comprised of two global workshops, a month-long learning assignment for all participants and three regional workshops.

Global workshops

On 31 January and 1 February, two half-day global workshops were held to accommodate different regional time zones (Africa and Latin America, Asia). These highly interactive learning events focused on the following tasks:

- Map current knowledge and experience on climate risks assessment
- Explore how and where knowledge and expertise can be exchanged
- Review salient insights from the recently concluded global consultative process on Climate Risk Assessment undertaken by the ARA
- Agree on a joint "learning task" to be completed by all participants for the regional workshops

Learning assignment

At the global workshops, participants jointly agreed on a set of learning questions they would answer over the next four weeks, ahead of the regional workshops. The questions helped collate an understanding of activities, innovations and challenges associated with climate risk assessment and management. The questions fell under six broad headings as follows (see Annex 4 for full questionnaire):

1. Understanding climate risk information and knowledge ecosystems
2. Challenges in understanding climate risks
3. Experiences with other learning groups and networks
4. Learning communities for better understanding of climate risks
5. Identifying learning and sharing on understanding climate risk
6. Stakeholders consulted

Responses to these questions formed the basis of the peer-to-peer learning in the regional workshops. Participating organisations also received one-on-one calls with workshop facilitators to discuss any challenges in completing the task and to allow space for questions and clarification. The aim of this exercise was to help build a shared understanding of challenges and good practice around climate risk assessment and management, and to form the basis of discussions at the regional workshops.

Regional workshops

Three half-day regional workshops took place from 1-3 March 2022, allowing participants from Africa, Asia and Latin America and Caribbean to contribute. Each workshop took the format of a peer-to-peer learning process that built on the results of the month-long learning assignment. The aims of the regional workshops were to:

- Elicit examples of climate risk assessment approaches currently being undertaken – looking at what works well and why
- Look at key hurdles and challenges in processes of climate risk assessment and management
- Generate learnings and ways forward on overcoming the challenges identified
- Forge regional mutual-support networks and communities of practice on climate risk assessment and management

1.5 Application and selection process

In all, 151 organisations applied to take part in the shared learning process, out of which 57 were selected. Eligibility criteria for participation included the following:

- Government, non-government, private sector or other organisations and institutions across the globe working on climate change adaptation and climate change risk management
- ARA membership encouraged but not mandatory
- Geographically representative set of participating organisations
- In line with the ARA's intended impacts of promoting Southern leadership, the ARA prioritised organisations and institutions working in the Global South

The applications received indicated that a wide range of different types of organisations are interested to learn more and to share learning on understanding climate risks. The diversity of organisation types was no more apparent than from Latin America – in particular from Argentina and Brazil. Far more applications were received from these countries than could be accommodated into the shared learning process. The organisation types ranged from government agencies working at the national and global levels to local non-governmental organisations (NGOs) and community-based organisations (CBOs) working on ecosystem conservation and small-scale agriculture and forestry. Youth organisations and indigenous groups also applied to be part of the shared learning process.

2. Understanding climate risks and knowledge and risk information ecosystems

2.1 Framing climate risks and risk information ecosystems

Why understand climate risks?

Climate impacts will cause loss and damage, undermining the wellbeing of people, groups, enterprises and economies. They may also present potential, often shorter-term, opportunities. A deeper understanding of how the adverse impacts of climate change can be reduced could help to:

- Lay the foundation for planning climate action – supporting risk-informed decision-making
- Prepare a plan to access financing and investments in locally led adaptation
- Climate-proof development interventions and ensure that development does not inadvertently exacerbate climate risks

Understanding climate risk – the IPCC approach

The most widely accepted definition of risk is that used by the Intergovernmental Panel on Climate Change (IPCC):

Risk signifies the possibility of adverse effects in the future. It derives from the interaction of social and environmental processes, from the combination of physical hazards and the vulnerabilities of exposed elements.

This definition captures the three key dimensions of risk: exposure, vulnerability and hazards – explored further below. Climate risk can also vary in scale (local/national), scope (sectoral/multi-sectoral) and process (top-down/bottom-up).

Exposure is defined by the IPCC as:

The presence of people, livelihoods, species or ecosystems, environmental functions, services, and resources, infrastructure, or economic, social, or cultural assets in places and settings that could be adversely affected.

It can be assessed by satellite remote sensing (SRS) of topographical, geological and physical parameters, census data (e.g. on house types) and participatory surveys such as transect walks.

Vulnerability can be defined (Cardona et al., 2012) as:

The propensity of exposed elements such as human beings, their livelihoods, and assets to suffer adverse effects when impacted by hazard events.

Vulnerability also comprises of adaptive capacity and sensitivity. It can be assessed by SRS, existing surveys and census data, and participatory approaches such as vulnerability mapping and focus group discussions.

A **hazard** is a shock, stress or disaster defined by the IPCC as:

The potential occurrence of a natural or human induced physical event that may cause loss of life, injury, or other health impacts, as well as damage and loss to property, infrastructure, livelihoods, service provision, and environmental resources.

Hazards can be understood through weather forecasts, climate models, SRS and perception-based surveys.

Climate Risk Assessments – and challenges in their execution

Climate Risk Assessments (CRAs) are the process by which data on exposure, vulnerability and hazards is combined. CRAs act as an essential source of information for decision-makers to increase their risk knowledge and assess uncertainty. They identify the likelihood of future climate hazards and their potential impacts on communities. At times, CRAs might be used to make a case for greenhouse gas mitigation (by demonstrating how emissions might lead to enhanced risk) and for preparing for risks that can't be reduced (through, for instance, insurance).

Broadly speaking, every CRA is characterised by the following four steps:

- Defining objectives
- Data collection
- Data analysis
- Decision-making

The process of understanding climate risk through CRAs can be subject to the following challenges:

Technical

- “Robust” decision-making may be hampered by difficulties in combining bottom-up data (including on vulnerability) and top-down data into a coherent whole
- Proclivity to work in averages might under-represent extreme events
- Most CRAs create a static picture of a dynamic situation

Functional

- Ensuring and deep and meaningful participation of all stakeholders
- Plethora of frameworks and a lack of coordination
- Difficult to build a comprehensive picture

Structural

- Politics of knowledge – whose knowledge counts?
- Access to data
- Siloed operations

Mobilising climate risk information for shared understanding

The successful design and implementation of climate action and adaptation initiatives relies in large part on an inclusive understanding of climate risks that encompasses the insights and experiences of many different types of stakeholders.

Traditional models of knowledge production tend to be top-down and exclude the most important groups – those directly affected by climate risk. By contrast, co-production can generate knowledge from indigenous as well as scientific sources. This legitimises the knowledge and makes it more accessible and useful for a wider range of stakeholders.

Co-producing a shared understanding of climate risks is not just about employing a range of tools – it requires different actors to play different roles. Conventional producers are needed to generate information from science or experiential learning. Intermediaries are also needed, to negotiate what can be considered legitimate knowledge and to interact with others to broker that knowledge for action.

Knowledge exchange and learning are part of a continuous cycle characterised by four phases:

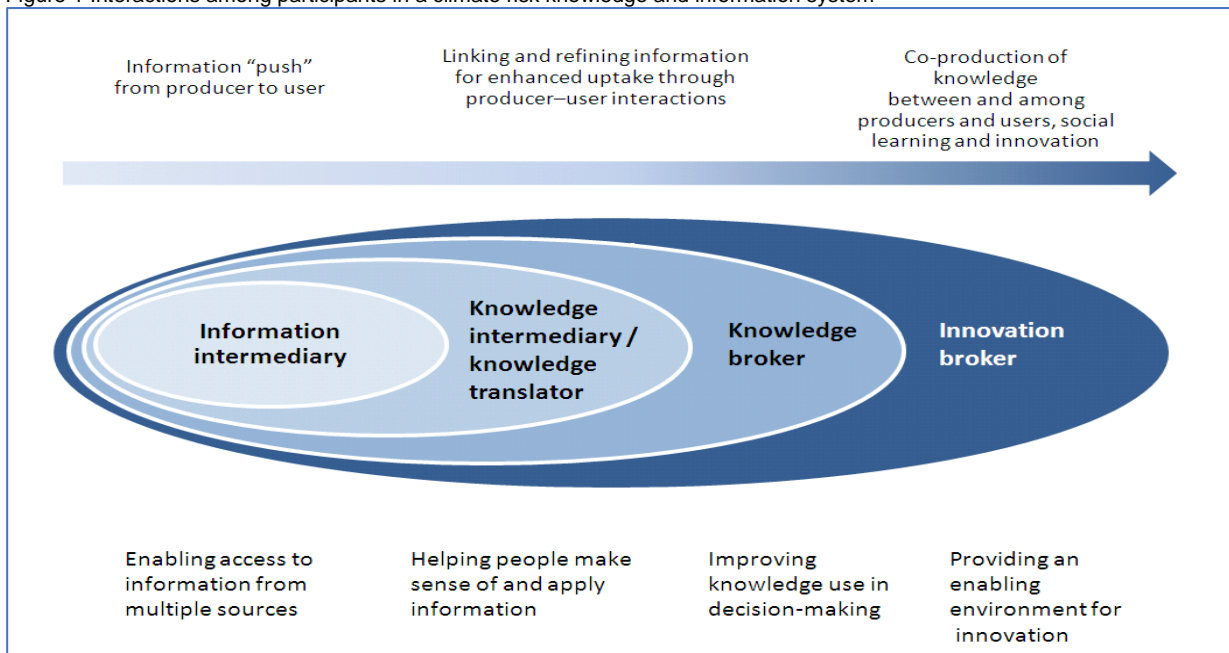
- Identifying entry points and actors; building partnerships
- Co-exploring needs
- Co-developing and co-delivering solutions
- Evaluation

Participants need to be open to knowledge that may be new to them and/or imported from elsewhere, as well as being prepared to explore what they don't know. Finding ways to communicate uncertainty around climate risk to wider sets of stakeholders is important. Terminology regarding the probabilistic character of future climate risks needs to be accurate, clear and accessible for people to access it and act upon it.

2.2 Roles organisations play in understanding climate risk

The roles and interactions of actors in climate information and knowledge systems are important. Figure 1¹ was used in the workshops to show how interactions and collaboration among participants in a climate risk knowledge and information system can function. Participants in the learning assignment were able to identify themselves as actors in such a potential system – but they were also aware that the low level of collaboration between actors hindered a better shared understanding of climate risks. Nevertheless, findings from our learning assignment questionnaire show that collaboration between key actors could be enhanced through creating more active spaces for learning exchanges.

Figure 1 Interactions among participants in a climate risk knowledge and information system



Findings from learning assignment

The information presented in the following sections is drawn from a largely qualitative and descriptive analysis of the 50 responses to the questionnaire in the learning assignment. Four groups of organisations were identified for the analysis: those located and working in Latin America, Asia and Africa, plus organisations working across more than one region. The findings are based on the frequency of different categories of responses to questions. The categories were formed during the analysis and were used across all organisation groups. The sampling of organisations from the population of applications to be part of the shared learning process does not allow us to draw categorical conclusions about the differences between regions – but the variability and trends in the answers can be used as indicative of comparisons and contrasts across organisations interested in understanding climate risks.

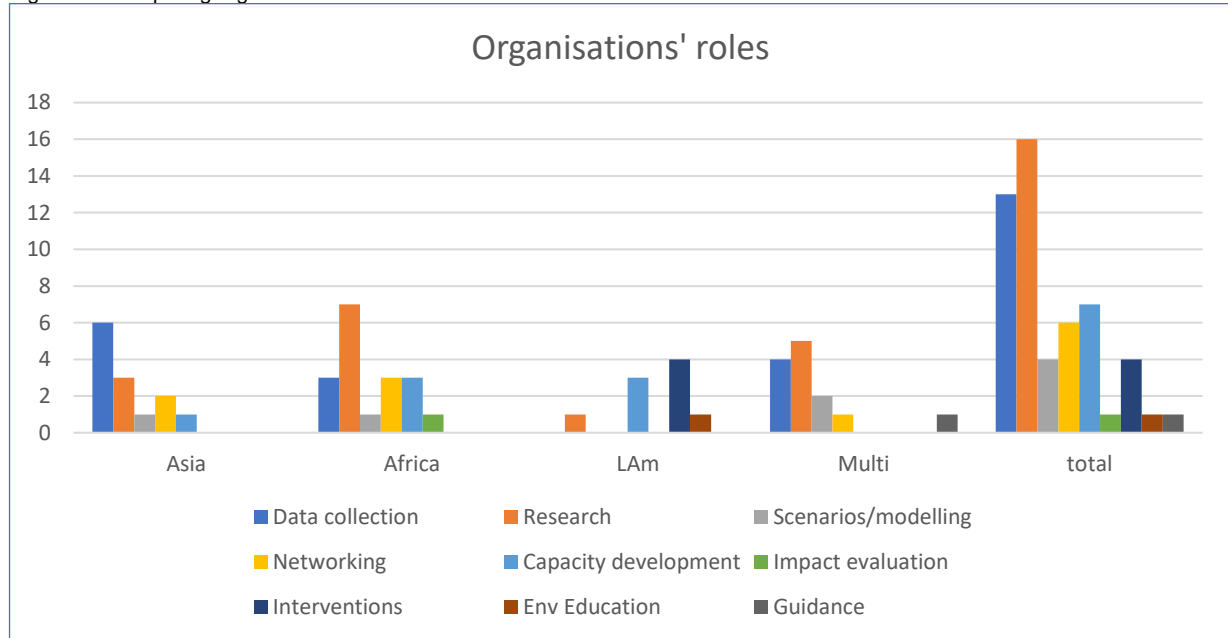
Organisations' roles

Most of the participant organisations are involved in data collection and research (see Figure 2). This includes roles such as “knowledge integration” (where insights on risk from different scales are combined), “multi-disciplinary research” (where insights on risk are garnered using analytical tools from different disciplines), primary research utilising participatory tools (such as hazard maps and vulnerability matrices) and secondary research (by processing and analysing assessments undertaken by others). Some organisations explained that they are engaged in building the capacity of various kinds of stakeholders on understanding climate risk. For instance, one organisation described how they engage young people through exercises that simulate varying levels of risk and then work with them to find solutions for ameliorating that risk. Another organisation explained how they contribute to capacity

¹ Source: Hammill, A., B. Harvey and D. Echeverria, “Knowledge for action: an analysis of the use of online climate knowledge brokering platforms”, *Knowledge Management for Development Journal*, 2013, 9(1): 72-92, <http://journal.km4dev.org/>.

development by nurturing risk knowledge ecosystems where they coordinate the flow of information to ensure that organisations have the knowledge resources they need to reduce risk. A range of institutions also described practical projects and interventions they are undertaking in this domain, such as working with city governments to ensure they are making risk-informed decisions, operationalising early warning systems and supporting forecast-based decision-making.

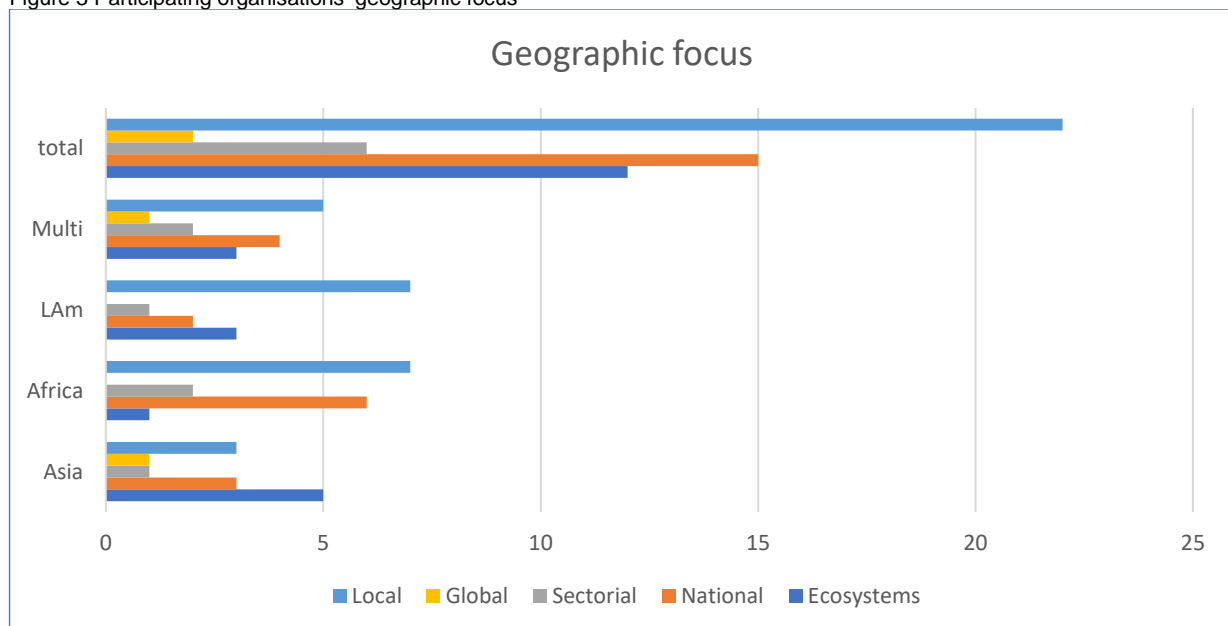
Figure 2 Participating organisations' roles within climate risks



The geographic scale of organisational focus ranges from local to global and includes sectoral, ecosystems and national perspectives (see Figure 3). In Asia, an ecosystems rather than local focus is apparent. Latin American and African participants focus more on local geographies.

Organisations that participated in this learning process (see Annex 1) were fairly evenly split between those that primarily use information on climate risk to develop and deliver policies or programmes (e.g. Practical Action) and those that primarily acquire and analyse this information for use by others or for contributing to research and knowledge (e.g. CSAG). A number of organisations play both these roles (e.g. Red Cross Red Crescent Climate Centre).

Figure 3 Participating organisations' geographic focus



Information sources and types of collaborating organisations

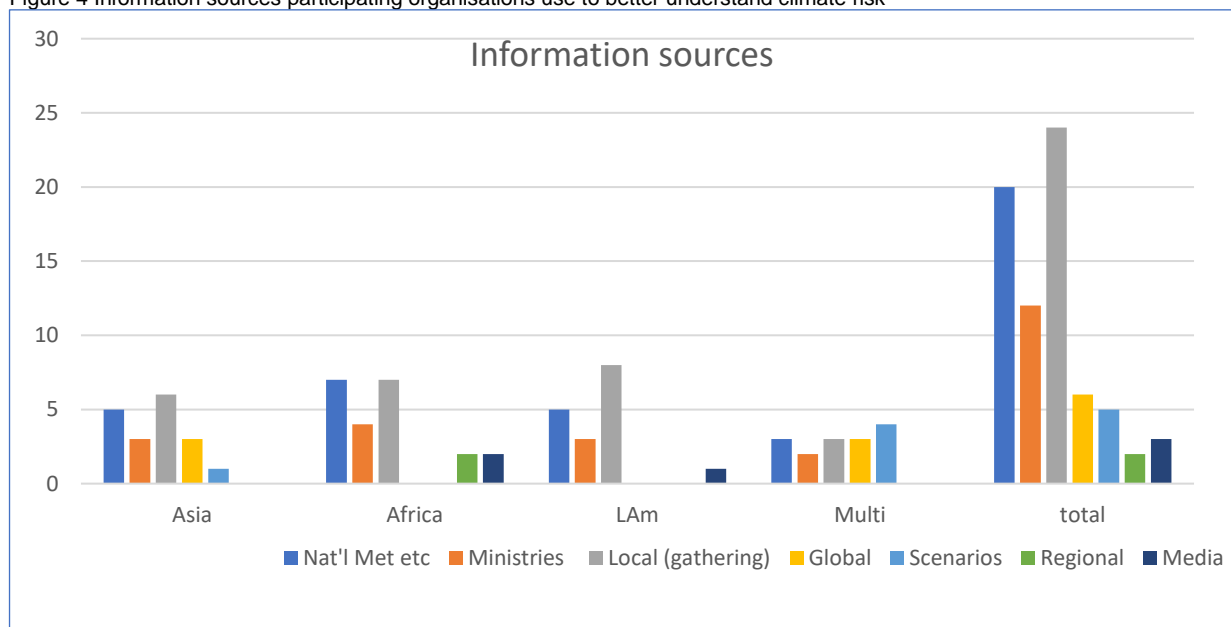
Many of the participants in the learning assignment reported that they prioritise collecting climate risk information from local sources. Some organisations use national data from meteorology services and line ministries. Asian organisations and multilateral agencies also use information from global sources, such as the IPCC, UN agencies and international NGOs. Many respondents draw on all the sources outlined in Figure 4 below, with one participant observing: “We seek to triangulate data from across diverse sources and stakeholders, and bridge scientific/technical data with local-level knowledge and diverse stakeholder perspectives.”

Some organisations conduct their own research on emerging issues, such as loss and damage, funding gap analysis and nature-based solutions. Post-event analysis of flood early warning systems (EWS), for example, has helped shed light on the role of EWS in helping communities understand, monitor, communicate and respond to risks. Innovative information gathering methods include pairing a community agent with an academic researcher to conduct environmental surveys or compiling a historical archive of a watershed based on photographs, maps, videos and accounts from local people.

Local data in particular is prized for its ability to deliver subjective insights on climate risks. According to one South Asian respondent: “While we may use secondary data to understand hazards, we work directly with communities to understand vulnerability and risk. Our research supports our belief that the ‘climate risk signal’ can’t be easily isolated from the multiple stresses and risks faced by vulnerable communities in their everyday life. Climate risk therefore needs to be understood within the wider context of agency, access and development of communities.”

“To understand current vulnerabilities, transdisciplinary and social science approaches are extremely important to allow for various perspectives to be shared, particularly since subjectivity plays a large role in perceiving and understanding climate risk”

Figure 4 Information sources participating organisations use to better understand climate risk

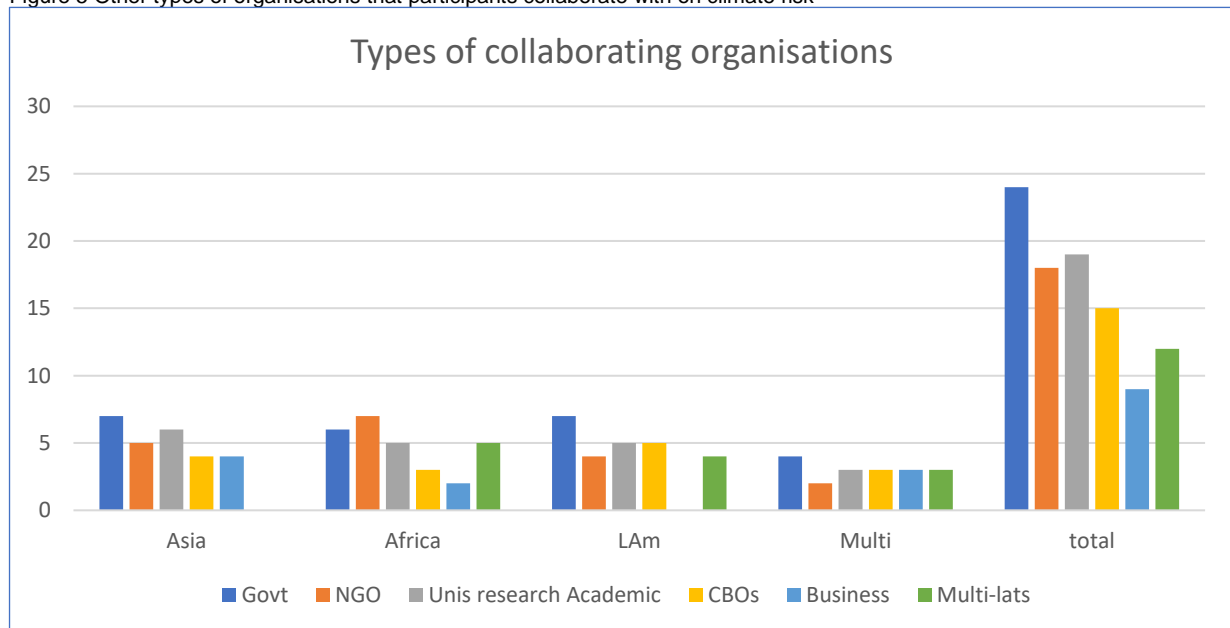


The types of organisations that participants are currently collaborating with include government agencies (at both local/municipal and national levels), UN agencies and international organisations (multilaterals in Figure 5), national and regional NGOs, research bodies and universities, civil society and community-based organisations, and some businesses. There were few apparent differences between regions in types of collaborating organisations.

The range of organisations that participants have to collaborate with is often very extensive. Take government agencies for example: participants are working with national disaster management authorities, as well as ministries or departments of meteorology, hydrology, forestry, environment, agriculture, livestock, engineering, science and technology, internal and legal affairs, and so on.

While many participants emphasised the inadequacy of current financial resources to match the needs of both climate risk assessment and climate adaptation, few are engaging with the private sector to generate these resources. This could be a missed opportunity, according to one respondent who noted: “research we did last year with public, private and impact investors highlighted both a real lack of awareness and understanding of key climate risk concepts, as well as a need for clearer metrics and methodologies both for understanding risks to investments, but also opportunities for investing in adaptation that could be measured.”

Figure 5 Other types of organisations that participants collaborate with on climate risk



2.3 Overcoming challenges in understanding climate risk

Most organisations responded that they are involved in gathering and/or analysing local data and information. However, as Figure 6 clearly illustrates, the availability and accessibility of data is a technical challenge that exists across all regions. In circumstances where data *is* available, organisations have mentioned challenges in accessing this data. These challenges include government bureaucracy, unclear or non-existent channels of access for grassroots organisations, and the financial cost of accessing meteorological data.

“Key data on climate conditions and data related to exposure are available but often not accessible by the public or NGOs”

The technical and jargon-heavy language in which data is communicated affects its accessibility as well. Local organisations lack the expertise to properly understand, translate and analyse such data. In terms of data availability, many participants pointed out the need for data to be more locally specific. In other words, data is often generalised at the macro-level. For climate risk to be better understood and more actionable, this data needs to become more context-specific and brought down to the micro-level. This could involve the downscaling of climate models to district and sub-district levels.

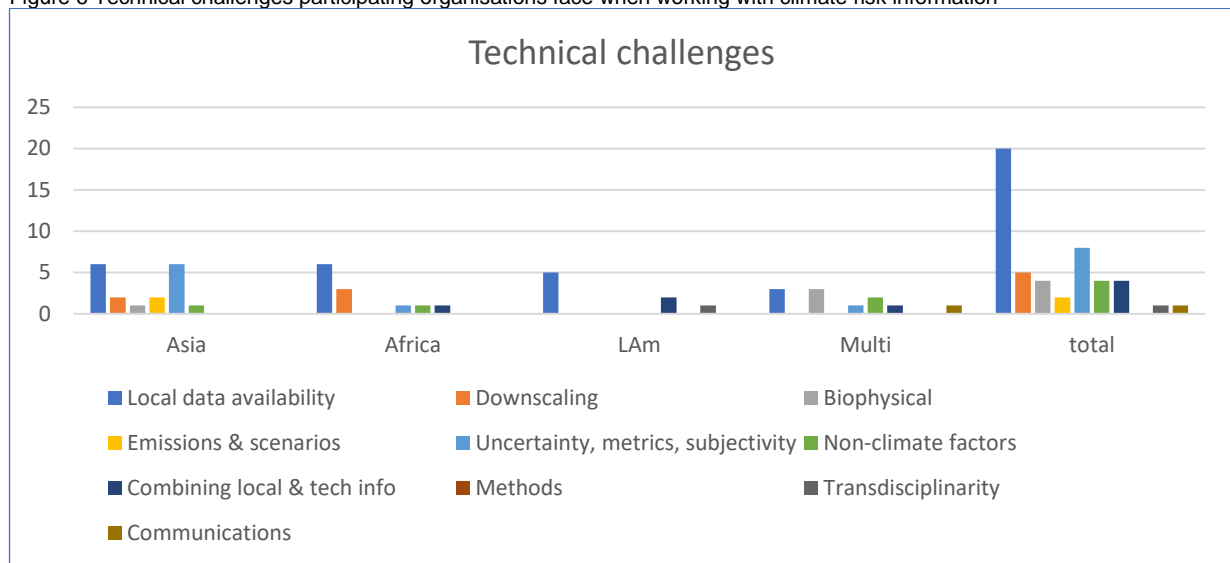
“It is rare to find city-level downscaled climate information to understand how future climate scenarios will impact urban areas, and that granular detail is important while prioritising climate action”

Other challenges noted by participants include the communication of climate risk, managing and communicating uncertainties related to short- and medium-term future climate risks, and combining local information and scientific data to advance climate risk understanding. Climate risk information is only effective if it is communicated to those who need it the most – this means from meteorological offices down to the local level. Many participants, however, noted that local communities (especially those most vulnerable such as slum dwellers) do not receive the climate risk information they need.

At the same time, the perspectives of those most vulnerable to the impacts of climate change are often not considered in climate risk assessment processes. According to one participant, this is in part due to the “dismissing of local (and sometimes all qualitative) knowledge because it’s not ‘hard data’”. However, participants felt that climate risk information needs to incorporate both local perspectives and local knowledge in a process that balances top-down and bottom-up approaches.

“We need to bring together lived experience and data-driven approaches to climate change risk assessment processes”

Figure 6 Technical challenges participating organisations face when working with climate risk information



When asked for the best ways to overcome these technical challenges, a clear point made by the majority of participants is the need for greater collaboration and partnerships (see Figure 7). These would be between institutions and organisations, between different organisations working on climate risk, between different levels of government and the meteorological office, between organisations and government ministries, and between organisations working at different levels (e.g. grassroots and national/regional).

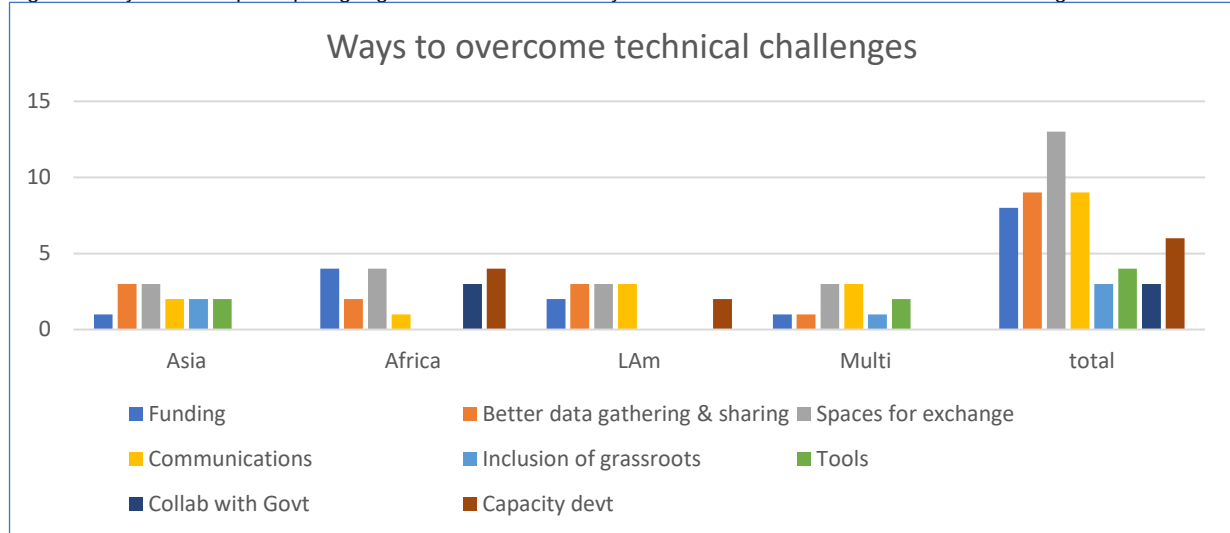
“Establish more partnerships and specific projects with organisations that can generate the necessary information.”

Other ways to overcome technical challenges include greater access to data, capacity-building, more funding, tools and platforms to integrate local knowledge and lived experiences into risk assessments (one participant termed these as “exposure platforms”), and learning platforms and communities.

Respondents proposed capacity-building around both the capacity to understand climate risk and technological capacity. In some cases, the partnerships and collaborations mentioned above were seen to help in delivering capacity-building. In other cases, respondents indicated that learning platforms could work as a way to build capacity. Overall, many respondents saw learning platforms as a great way to gain knowledge and to share experiences, learning and good practice.

“What would help us overcome these challenges would be to have a centralised platform with this knowledge that can be easily accessed in multiple languages. Having the exchange of good practices and how to bring more concreteness to theory would be extremely useful.”

Figure 7 Ways in which participating organisations identified they could overcome climate risk technical challenges



2.4 Overcoming blockages to collaboration

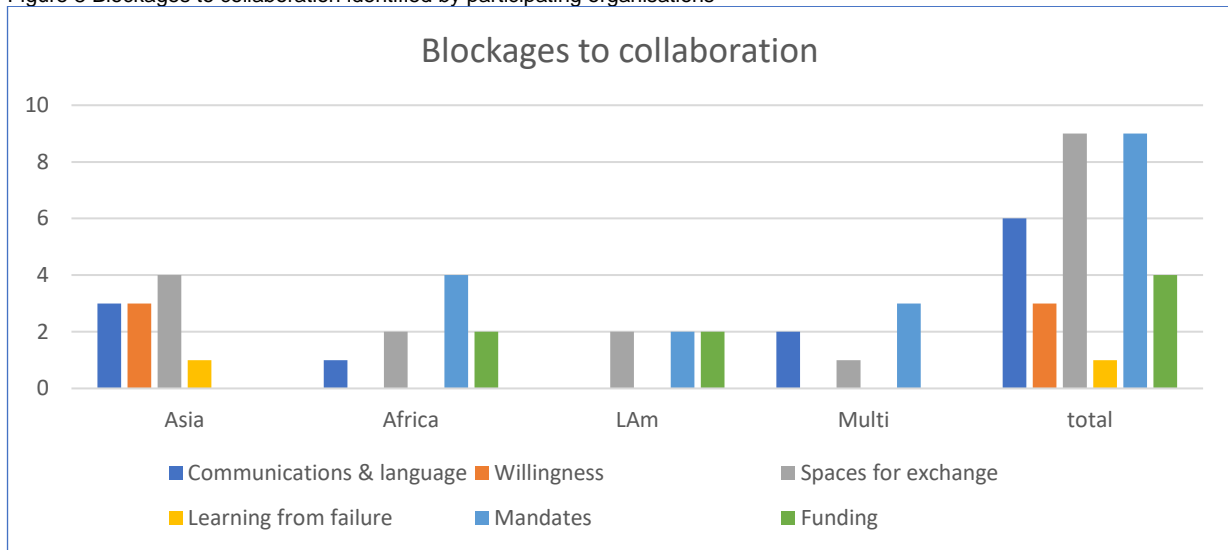
Blockages to collaboration are related to a lack of institutional mandates, lack of spaces for exchange (virtual or physical platforms where data on risk and insights on conducting CRAs can be exchanged), and issues around communication (see Figure 8). Apart from differences around language, communication can be hampered by clashing epistemic viewpoints and the use by organisations of very different tools and approaches for examining similar problems. Some participants underlined how the use of very different terminology to describe similar phenomena creates problems for effective collaboration. “A challenge is to speak the same language and be on the same page about the meaning of concepts,” said one respondent.

In Asia, while willingness to collaborate is seen as an issue, lack of mandate is not. One Asia participant tellingly referred to the “arrogance of knowledge” as a blockage to collaboration and flows of information. For example, another participant described how foreign institutions sometimes initiate collaboration based on their pre-existing and individual priorities, as opposed to objectives that are genuinely co-developed. This “extractive” characteristic of some partnerships is a barrier to effective collaboration.

Funding also emerged as an important barrier, with participants highlighting a scarcity of grants or research funding that allow time and resources for adequate engagement with other organisations. One contributor put it this way: “We think availability of space and time to have conversations with the intention to jointly learn about what is working and what isn't is generally lacking”, adding: “Given the increasing challenges around funding, organizations are more keen to design and implement programmes and have real constraints on dedicating time for such conversations.”

“Availability of space and time to have conversations with the intention to jointly learn about what is working and what isn't is generally lacking”

Figure 8 Blockages to collaboration identified by participating organisations



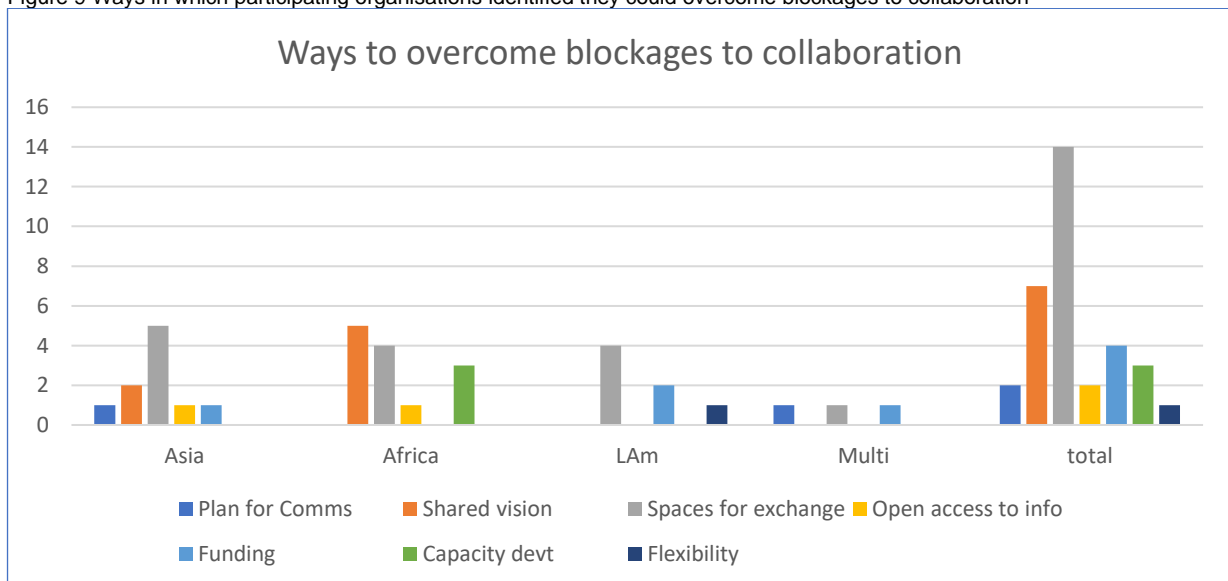
Creating and using spaces for exchange is seen as the main way to overcome blockages to collaboration (see Figure 9). One participant argued there is a need for a platform where “different stakeholders can meet frequently and agree common priorities”, another talked about the need for developing a community of practice “for sharing ideas, approaches and tools between member institutions”, while a third underlined how a “learning space and networking opportunities should be made available to foster closer collaborating”.

Financial resources can also play a role in supporting effective collaboration, with participants suggesting three options:

- More flexible and agile financing for projects is essential to support more meaningful collaboration
- Small but consistent financial support could help organisations maintain links with key stakeholders
- Financing ad hoc activities (not linked to long-term projects) could cement ties between organisations

Training and capacity building featured as a way to engender effective collaboration, especially among African respondents. This includes raising awareness of the need for enhanced collaboration, training individuals in working in cross-organisational teams, strengthening channels of communication between key stakeholders, and developing exercises to build mutual respect and understanding.

Figure 9 Ways in which participating organisations identified they could overcome blockages to collaboration



2.5 Trends and insights

The survey of participant organisations during the learning assignment revealed a general lack of joined-up and effective collaboration to develop better shared understanding of climate risks. As CSAG's consultation process showed, there are technical challenges in using climate risk assessment tools and there is a concern that local data and information is missing as a basis for understanding climate risks. Nevertheless, the survey also revealed there are some geographies – principally in Argentina – where organisations are collaborating and mechanisms for shared learning are emerging. The cluster of linked-up organisations in Santa Fe province and around the city of Rosario is one such example.

The participant organisations across the regions, within regions and at sub-regional levels are diverse. Given this, it may not be straightforward to secure an inter-institutional mandate for convening collaborative activities to better understand climate risks. There may also be a reluctance to expend resources on collaboration – even though most participant organisations agreed that curating spaces for the exchange of information, knowledge, tools and approaches would support a more inclusive understanding of climate risks.

The results from the learning assignment questionnaire underline the importance of information and knowledge ecosystems as determinants of how well climate risks are understood and managed in different contexts. This is seen through the fact that “spaces for exchange” came up as one of the most importance ways of overcoming technical challenges identified. The need for platforms, communities of practice, learning spaces and networking opportunities all contribute to this finding.

3. Knowledge and knowledge gaps in understanding climate risk

3.1 Introduction

During both the global and regional workshops, participants proposed and discussed their top “Asks” and “Offers”, defined as follows:

Asks – What do you need to understand climate risks better?

Offers – What can you contribute to others trying to better understand climate risks?

Participants’ contributions were not attributed to organisations or regions at the global workshop stage. The aim was to scope out the possibility of conducting a similar exercise during the three regional workshops, during which the Asks and Offers were attributed and followed up on.

“Here in Brazil we have a great informational void, especially with regard to climate change for civil society”

3.2 Asks and Offers – global workshop

The two global workshops revealed a broad consensus on key requirements that would enable organisations to better understand and act on climate risks. The workshop exercises showed what participants’ organisations considered important knowledge to be gained as well as what to impart to others. A qualitative analysis of the Asks and Offers is summarised below, while the full narrative can be found at Annex 5.

Asks

Categories of knowledge and expertise that participants in the global workshops identified as being most needed include:

- Access to more reliable localised data on climate impacts and risks
- Ways to analyse compound risks and social vulnerabilities
- Methods for revealing and validating local knowledge and integrating this with technical/scientific information
- How to communicate climate risks knowledge in accessible and inclusive ways
- Ways to engage and influence (local) governments and policy-making
- How to impart the necessary sense of urgency for addressing climate risks
- Need for resources – human, technical and financial

Offers

Categories of knowledge and expertise that participants in the global workshops were willing to offer to other organisations include:

- Capacity-building ways to do climate risk assessment, including in urban settings
- Technologies to identify and communicate climate risks
- Ways to disseminate climate risk information to local communities
- Planning and budgeting climate action for local governments
- Networking for knowledge sharing

Some of the Asks and Offers discussed at the global workshops can be matched into reciprocal pairings, so that knowledge requested from one organisation can be provided by another organisation in the same region or elsewhere. However, a more in-depth assessment of the demand/supply sides of knowledge areas for better understanding climate risks needs to be carried out. The information developed so far reveals the potential level and volume of such exchanges.

3.3 Asks and Offers – regional workshops

The regional workshops were designed and implemented to elicit more discussion and assessment of the knowledge and information needed and that held for understanding climate risks. These workshops added detail to the initial assessment possible in the global workshops. From the outputs of the exercises undertaken at the three regional workshops, we have generated a systematised collation of Asks and Offers. Full details of these collations are available.

Below is a summary of the main themes and topics identified as priorities for knowledge exchanges within regions. The bullets beneath each of the nine broad subheadings indicate the most frequently raised key Asks under each theme:

Communicating climate risk information to the marginalised and converting knowledge into local action

- Communicating with vulnerable communities
- Customising climate risk information and communicating with marginalised communities on ground
- Experiential learning tools to communicate climate risk to communities and policy-makers
- Impact-based forecasting and risk messaging
- Roles of different communication tools in pushing community action
- Organisations willing to pilot adaptation in informal settlements and share learnings
- Climate risk narratives to explore future effects on systems and planning

Gender, youth and justice perspectives on climate risk

- Role of youth and women, social equity
- Understanding how climate risks and actions are gendered

Ensuring climate knowledge influences (local and national) policy

- Influencing national policies
- Communicating to local government climate risk impacts on urban poor
- Using research to advocate for policy and action
- Using community data to influence government policies
- Getting government buy-in for climate risk assessment
- Influencing policy and decision-makers

Integrating academic, practitioner and community climate risk knowledge

- Co-production of climate risk knowledge among vulnerable communities
- Participatory data collection methods
- How to integrate lived experience into climate risk assessment
- Integrating knowledge between academia, practitioners and communities
- Collaborative approaches engaging communities and local government

Loss and damage

- Capturing the real impacts of the climate emergency in frontline communities
- Monitoring and evaluation system for the implementation of adaptation measures and loss and damage

Risk-specific data and adaptation solutions

- Rural heat-health impacts, landslides, smallholder farmers in sub-Saharan Africa, alternative energy solutions
- Using big data to improve resilience of urban marginalised communities
- Nature-based solutions for water and sanitation issues
- Climate risk and crop insurance for smallholders
- Landslides and early warning systems

Data acquisition and analysis

- Data sources at different geographical scales for improved understanding of climate vulnerabilities and risks
- Process to downscale global climate models at district level
- Training in data measurement and systematization methodology

Financing

- Financing for the validation of local knowledge, dissemination of co-produced environmental information
- Platform to share experiences of alternative forms of financing for large-scale projects

Virtual networking platform at regional and global levels

- Extend knowledge networks and ecosystems on climate risks and adaptation actions
- Need for integration with the ARA network to exchange experiences and develop new research

The relative emphasis on themes and topics varied across regions. However, there is apparent potential for fruitful knowledge exchange among organisations of similar types (in the same or different locations) that perform similar functions, and also between organisations of different types in the same locations that need to link up not just to understand climate risks but also to address them collaboratively.

3.4 Trends and insights

As reported in section 2.3 above, participant organisations responding to the learning assignment questionnaire identified technical knowledge challenges in terms of: managing and communicating uncertainties related to short- and medium-term future climate risks, and combining local information and scientific data to advance climate risk understanding. These themes were echoed in the global and regional workshops.

Evidence from the workshops and the shared learning assignment shows that the information and knowledge needs for a better understanding of climate risks can be responded to through exchange (i.e. importing and adapting existing knowledge from other places) and through collaborative generation of new knowledge. The array of topics and themes for climate risk information and knowledge is vast. This array can be systematised and addressed in sequence by learning communities. At each stage of learning, new topics and themes to be addressed will arise – the onions skins of knowledge – and learning communities can work together to achieve this.

4. Proposing regional climate risk learning communities

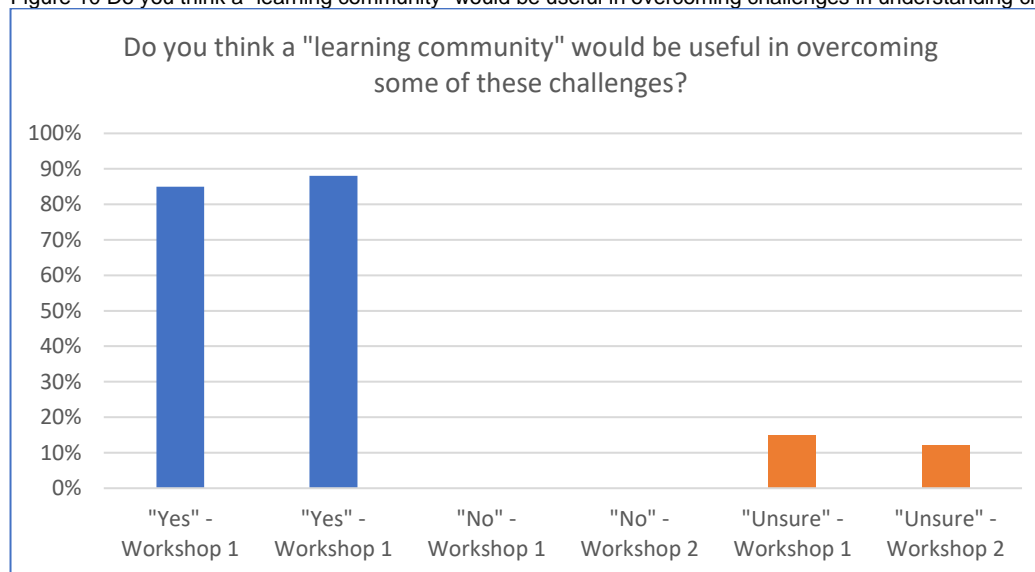
4.1 Introduction to learning communities

ARA seeks to enhance learning by better engaging the research community in monitoring, evaluation and assessment activities, through improving knowledge management and peer-to-peer networks across the research and action communities. Reasons to facilitate learning communities include:

- **Learning** from failures and successes is important for dealing with complexity and uncertainty
- **Efficiency** by avoiding mistakes and scaling up successes
- **Influence** by developing shared common agendas, policies, programmes and projects
- **Innovation** in ways that reduce opportunity costs of testing and trialling
- **Scaling-out and scaling-up** to derive an amplified impact

At the global workshops, participants were asked: “Do you think a ‘learning community’ would be useful in overcoming some of the challenges [in understanding climate risk]?” Participants in both workshops responded with similar levels of enthusiasm – 85-88% answered Yes, while 0% said No (see Figure 10). Among the 12-15% who voted “Unsure”, there was some concern around the danger of replicating existing learning communities without strengthening their ability to communicate or understand why they are not working. So it is important to understand the structure and function of any proposed new learning communities.

Figure 10 Do you think a “learning community” would be useful in overcoming challenges in understanding climate risk?



“From my experience in the local context, projects last a few years and then go. So a learning community is very important”

Understanding and managing climate risks implies the intelligent and strategic generation, dissemination and use of information and knowledge by stakeholders involved in actions to manage climate risks.² The earlier CSAG-led consultation was a helpful starting point to understand how the knowledge and information systems that support the assessment of climate risk are working.

² Davenport T. and L. Prusak, “Knowledge Management is the process of capturing, distributing, and effectively using knowledge,” *Working Knowledge: How Organizations Manage What They Know*, January 1998, https://www.researchgate.net/publication/229099904_Working_Knowledge_How_Organizations_Manage_What_They_Know.

Through the shared learning assignment, we have started to understand how the functioning of climate risk knowledge and information systems needs to be improved and we have begun to identify ways to optimise these functions in the future.

Key findings from learning assignment – current and proposed learning communities

Some participant organisations are members of local, sectoral or global learning communities. There are very few examples of national learning communities.

Participants considered that learning communities are successful when they provide spaces for exchange and have high levels of co-ownership. Conversely learning communities are less successful when expectations are confused or not properly co-owned, networking practice is poor, and willingness to collaborate is low (the "arrogance of knowledge" identified at a global workshop).

The consensus was that learning communities are about openness and inclusion and that our contributions are to widening knowledge – as well as benefitting from this.

Nearly all participant organisations agreed it would be helpful to have learning communities to promote a better understanding of climate risks. They must be action-oriented and not just talking shops. Learning communities should enable knowledge and experience exchange, build capacities by such mutual exchange and achieve influence.

Short- and medium-term objectives prioritised by participants are:

- Knowledge-sharing
- Collaboration with diverse actors
- Creating spaces for exchange
- Within those spaces, being willing to develop common approaches (to understand the escalation of climate risks)

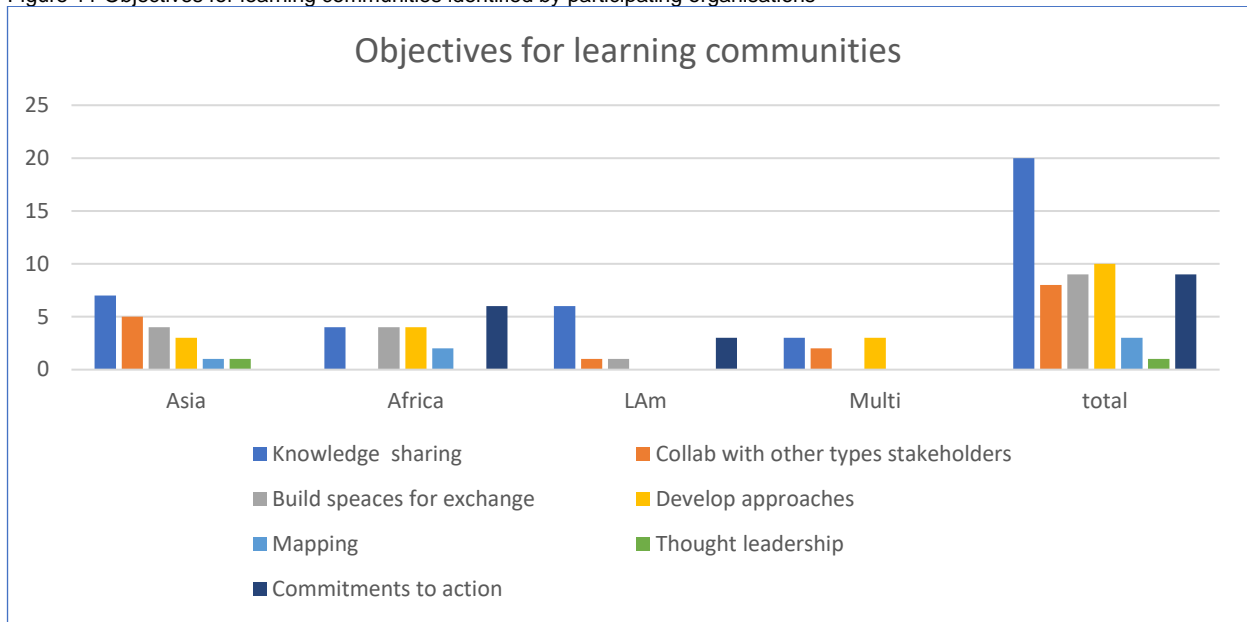
Also it was agreed that learning communities should invest in policy dialogues (including science to policy) and the inclusion of grassroots organisations. For example, the drafting of the IPCC Working Groups' reports engages political, scientific and local perspectives in a "tripartite" approach that may dilute the science but which builds consensus.

4.2 Potential objectives, guiding principles and activities of learning communities

Objectives for learning communities

As part of the learning assignment survey, participant organisations were asked to identify the key objectives to enable learning communities to generate a shared understanding of climate risks (see Figure 11). The greatest consensus was around the importance of sharing knowledge and experience within and across all regions, along with building the social spaces for this to happen. Additional important objectives included achieving commitments to collective action (especially among African and Latin American participants), collaborating with a diversity of partners (i.e. other types of organisations) and developing common approaches to understanding climate risks.

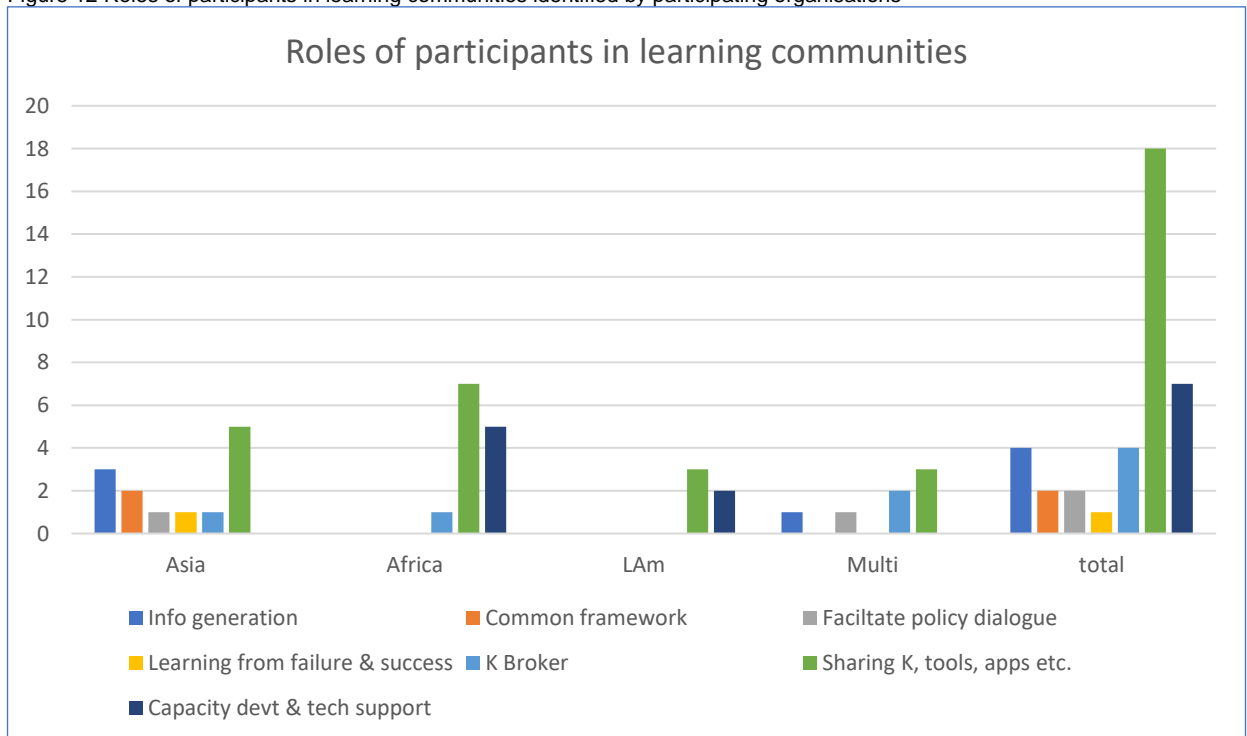
Figure 11 Objectives for learning communities identified by participating organisations



The principal roles that participant organisations see for themselves in learning communities are to share knowledge, tools and approaches, and to support capacity development. Asian participants signalled the generation of common frameworks as an important role (see Figure 12).

Participants identified capacity development as a reciprocal process: it could be a key benefit to emerge from the creation of learning communities, as well as a role that some organisations could envisage playing. Put another way, some organisations seek to build their capacity through collaboration and shared learning communities, while others are keen to offer their expertise and skills for capacity development. And there were also some organisations open to building their own capacity and the capacity of others simultaneously.

Figure 12 Roles of participants in learning communities identified by participating organisations



Guiding principles for learning communities

During the three regional workshops, participants split into breakout groups to discuss the potential aims, objectives and results they would like to see learning communities embrace and deliver. From these rich and wide-ranging conversations we have distilled some of the key guiding principles for learning communities that are common across Asian, African and Latin American participants. These should guide the design and functioning of learning communities and activities recommended under the ARA (see Conclusion for more detail).

1. Inclusive, gender-responsive, diverse and locally led

Participants voiced strong support for a learning community that not only includes members from vulnerable communities but actively seeks to bring local voices, insights and lived experience to the platform. They see this as an opportunity to bring together different communities working on climate risk to understand one another and to socialise the information that is co-produced with local people. Such a learning platform could visualise and validate knowledge derived from the experience of at-risk communities and from ancestral sources.

“Who gives the mandate to a learning community to be listened to in policy-making?”

An interesting debate emerged in the Asia workshop around who gives the mandate to a learning community to be listened to in policy-making. One answer is that inclusivity enhances the mandate of the learning community – since any platform that is committed to giving affected communities the agency and finances to respond to climate impacts gains for itself a moral authority and by extension a mandate. In this way, the proposed ARA learning communities could be the action-research analogues of the locally led adaptation (LLA) communities of practice.

Learning communities should ensure that understanding climate risks is done in ways that are gender-responsive – as stated in Article 7 of the Paris Agreement. Both the operation and functioning of the learning communities should adhere to gender and intersectionality equalities and the ways identified to address climate risks should enable gender and intersectional equality.

2. Accessible knowledge and systems

In each workshop there was great appetite to create a centralised repository or database of knowledge that is accessible to all members both conceptually and technologically. The learning community should collate and systematise methodologies, lessons learned and case studies in a way that enables them to be compared across regions and shared among the wider community in accessible ways. Among many practical purposes for this database, it could help identify gaps in learning, gaps in practice between countries and opportunities that donors could fund.

3. Context-sensitive

Despite the desire to systematise and streamline climate risk knowledge and information, there was also a clear recognition among participants that each climate-impacted situation requires its own context-sensitive approach. “Solutions are local”, said one Latin American participant. A learning community that collates different tools and methodologies that respond to the characteristics of different actors, risks, localities and situations could provide a valuable resource in the search for the most locally relevant risk mitigation measures.

“Not everything works the same way everywhere every time”

4. Cross-sectoral and interdisciplinary approach

There was widespread recognition of the need for any learning community to build bridges between sectors, disciplines and communities, for example academic research and practice, formal and informal processes, research outputs and policy decisions. This principle speaks to the need recognised above to integrate local voices but goes further in emphasising the importance of a horizontally integrated learning community which can foster interactions and exchanges of ideas between a diverse range of different actors across various locations.

“We must address the tension between science-led approaches and those focused on social impact”

5. Networked with local government

A recurrent theme in the regional workshops was the need for the action-research community to build connections with local government and municipalities. One role a learning community could play in this regard would be facilitate training in how to mainstream climate risk into the policies of local government. This could happen, for example, through engaging in long-term discussions with municipal decision-makers to build an understanding of climate risks at the local level and to share knowledge on how to address those risks through appropriate local policies.

6. Influential over national and international policy

Participants were equally eager to create a learning community that could exert influence over national and international policy processes as well as engage at the highest levels of climate risk reporting and planning. Such a learning platform could deliver high-quality climate risk data and knowledge to inform the drafting and development of national climate policies, NAPs and NDCs. From African participants there was a plea to facilitate a process for engaging more local and national African voices in the creation of global documents such as the IPCC reports.

“Out of 270 scientists and lead authors in the recent report by IPCC Working Group II, less than 25 were Africans”

7. Impact-orientated

Beyond simply collating knowledge and facilitating dialogue, many participants in the regional workshops expressed an ambition to create a learning community that could make tangible impacts in mitigating and adapting to climate risks. Ideas of how to achieve impact ranged from integrating climate risk knowledge and learning into all levels of policy and practice to including community-driven knowledge in advocacy. The community could also generate and share information that catalyses action, such as news on funding sources, ways to accelerate proposal processes and methods for assessing climate risk, damage and losses. The learning community could leverage its economic, social and environmental impacts through collaborations with local actors and the private sector.

8. Sustainable

Several participants from the Asia regional workshop sounded a cautionary note. “We are all probably part of more than one learning community”, said one, “but how much time do we truly give to the community?” Sometimes a learning community that is too intensive can even be counterproductive, as too many discussions may hamper achieving tangible outcomes. It will be important for the ARA and its members to identify and build on the achievements of similar learning communities and to learn from their mistakes rather than replicating them.

“There are perhaps more learning communities that have been born and died, than those that have sustained”

Potential activities for learning communities

The following activities were proposed by the three regional workshops. They are organized here under the headings of the guiding principles, as a way of giving life to the principles that could inform any future learning communities.

1. Inclusive, diverse and locally led

- Focus on encouraging collaboration with local level stakeholders and communities
- Bring in young academics as knowledge brokers to communicate research results to community and seek feedback – with an emphasis on women
- Ensure climate risk knowledge reaches people in the final mile

- Bring ground level experiences into the learning community to improve understanding
- Encourage collaboration at the local level and start community mapping to help analyse and address vulnerabilities
- Conduct exchange programmes among a wide range of stakeholders to build capacity

2. Accessible knowledge and systems

- Create a climate risk knowledge “one-stop shop” that is a repository for information on climate risks in particular geographies and collates reports and knowledge products containing this information
- Create a user-friendly, tech-enabled climate knowledge portal, where everyone can easily share and access their data, research, experience, strategies and programmes
- Make sense of major international reports (e.g. IPCC) for the African context – salient issues and local sectors
- Make climate risk assessments more accessible through training, translating and repackaging information
- Have a platform where the main sources of information can be summarised and other repositories analysed; create a catalogue of solutions proposed and implemented by members to mitigate climate risks
- Establish criteria for the application of risk assessment methodologies

3. Context-sensitive

- Group learning communities around specific themes and challenges as recognised by local people

4. Cross-sectoral and interdisciplinary approach

- Create a knowledge system that brings together social, physical and political science
- Document various tools and methodologies, from the scientific to the participatory
- Exchange programme to allow reps of local organisations to spend time with regional/national CBOs/research institutes and vice versa to exchange insights and approaches on understanding climate risk
- Implement collaborative projects with learning community partners across different sectors every six months, to show results of work in communities that can be replicated in other places
- Collaborative research / policy-making / development / projects involving different members across the region

5. Networked with local government

- Map, register and monitor rubbish piles in slums, to be able to initiate a dialogue with local health authorities

6. Influential over national and international policy

- Develop a climate risk learning hub where information on climate risk is systematically shared with key policy-makers through a series of learning events
- Invite different organisations to consolidate their capacities to influence national climate policies by sharing their experiences and links with national or subnational levels
- Run co-production research and policy-making workshops to build capacity, involving different members across the region
- Reframe advocacy priorities and agendas based on risk assessments
- Publish regular blogs to give visibility to the learning community and to the ARA
- Propose a role for learning communities to contribute directly to higher level meetings – e.g. COP, CBA etc.

7. Impact-orientated

- Generate and share information that catalyses action, such as information on funding sources, methodologies that accelerate proposal processes, project management and generation of information on risk assessment, damages and losses
- Implement collaborative projects with learning community partners across different sectors every six months, to show results of the main work in communities that can be replicated in other places

8. Sustainable

- Leverage existing resources for capacity development and knowledge-sharing

4.3 Regional implications for learning communities

Both the numbers and types of organisations represented by those who applied to be part of this learning process, along with the diversity of information generated through the shared learning process across the different regions, indicate quite wide differences at regional, national and even local levels with regard to how organisations are generating and sharing information and knowledge to understand climate risks.

Although detailed characterizations of the different climate risk knowledge and information ecosystems across the regions and countries covered in the shared learning process are not possible with the information to hand, it is clear that the current status of these ecosystems is very heterogeneous. So, the starting points for establishing learning communities – as discussed with participants in the shared learning process – are location-specific. From a wider perspective this is an opportunity to generate and share learning across locations at different scales.

Some broad regional implications for learning communities are presented below:

Across all regions, there is a diversity of organisations involved in understand climate risks – though the involvement of private sector stakeholders was less than other sectors. In Asia and Africa, outreach to and inclusion of grassroots organisations was identified as challenging.

In Asia, the understanding of climate risks is mainly related to landscape-level ecosystems and a systems-oriented approach is being used for knowledge generation through research.

In Africa, access to and use of information and data from local levels is more of a challenge in understanding climate risks across the region. More multi-regional organisations focus on African contexts than other regions. Meanwhile, national and local organisations want to see clear regional and national institutional mandates for managing climate risks, and to engender greater collaboration and commitment to collective action.

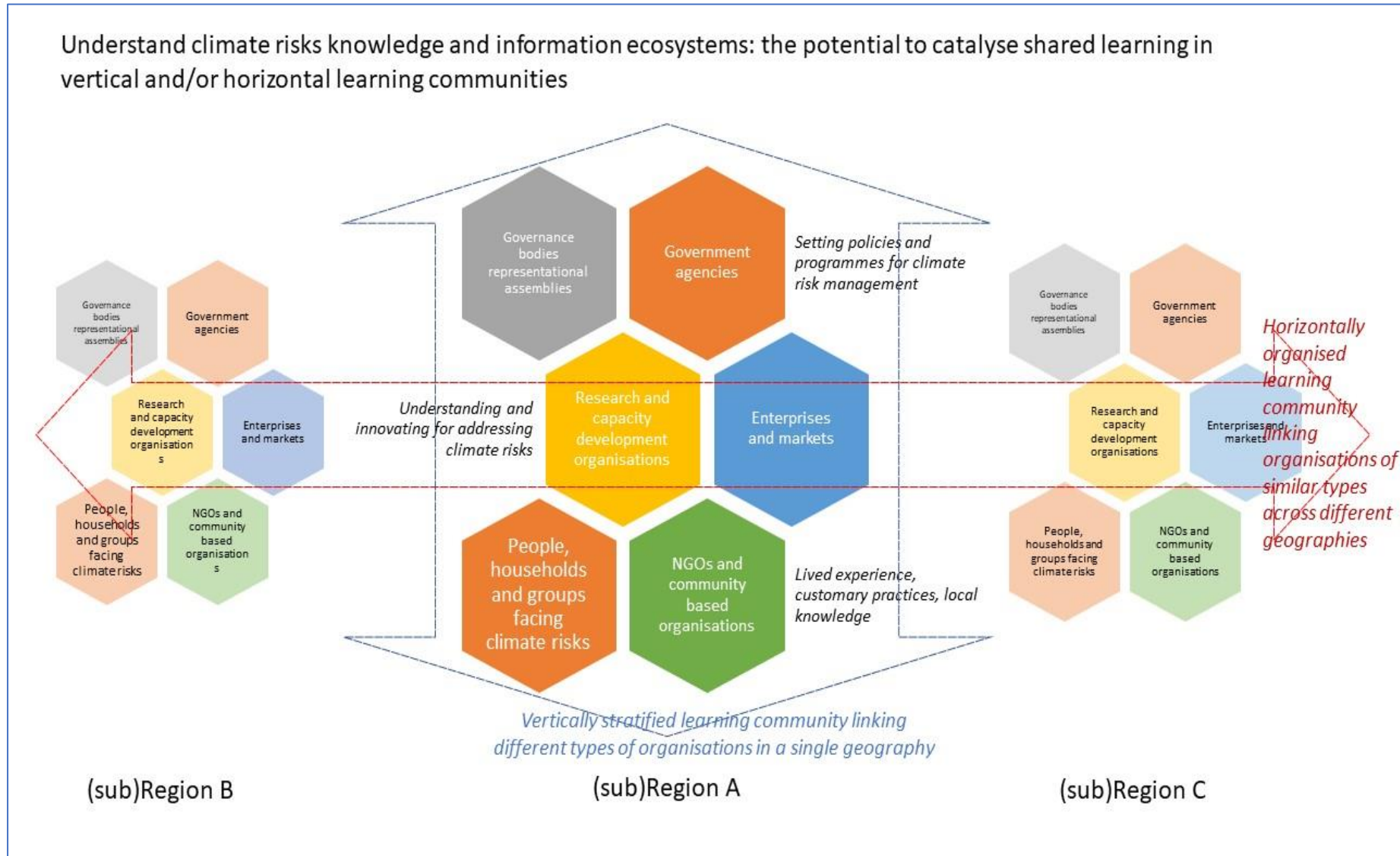
In Latin America – especially in Argentina and Brazil – the diversity and stratification of organisations involved in understanding climate risks is higher. There are emergent examples of knowledge and information ecosystems addressing climate risks that are further ahead than elsewhere.

4.4 Vertical and horizontal integration of learning communities

The shared learning process showed how in different regions and countries the knowledge and information ecosystems are stratified vertically – from central government and national-level agencies to mid-level research and innovation organisations (including businesses and markets), to local CBOs and small-scale enterprises involving people, households and groups. However, there are also organisations across different locations that share similar roles in understanding and addressing climate risks.

So, there is potential to catalyse both vertical and horizontal shared learning about climate risks across organisations. While vertical integration is vitally important to share learning between different types of actors within the same countries and geographies, horizontal integration between similar entities in different subregions could also bear fruitful results. Figure 13 on the following page illustrates these possibilities.

Figure 13 The potential to catalyse shared learning in vertical and/or horizontal learning communities



5. Conclusion and next steps

The objectives of this initiative were to catalyse peer-to-peer learning among ARA members and other organisations on understanding climate risks, to generate a shared understanding of the challenges involved, and to forge a basis for regional networks and communities of practice on understanding climate risks. The initiative built on the findings of CSAG's two-month consultation process on climate risk assessments in least-developed countries.

The results of the shared learning process clearly demonstrate that – while an understanding of climate risks is challenging and there is a diversity of approaches being used – participants, ARA members and wider stakeholders share strong interests in improving their own and other actors' understanding of climate risks at all levels and across different timelines. The recent report from Working Group II of the IPCC's Sixth Assessment Report validates these interests and urges better understanding as a foundation for addressing what are known to be intensifying, cascading and compounding climate risks globally.

The organisations involved in this initiative have shared learning during the process. There is a lot more to share and the willingness to do so is palpable from the questionnaire responses, the enthusiastic engagement of participants during the workshops and the wider interest shown through the multiple applications to be part of the process. In addition, the global and regional workshops – and indeed some responses following the workshops – indicate that a basis for networks and learning communities exists.

Immediate next steps from the workshop (within a month of the conclusion of the learning process) included the following:

- Participants invited to join ARA (a number of them have now done this)
- Analytical report presenting the findings from the shared learning process submitted to ARA and circulated to participants (this report has been circulated, feedback received and integrated)
- Participants encouraged to follow up on Asks and Offers shared during the workshop (detailed actions around organisations meeting up with other organisations after the workshop have been agreed)
- Participants invited to join the ARA's Tracking, Learning and Sharing (TLS) workstream and to engage in the Co-creation workstream that seeks to incubate new ideas and peer-to-peer learning (see below)
- ARA to consider whether and, if so, how it could support an inclusive understanding of climate risks, including facilitation of the learning communities described in this report.

Medium-term next steps from the workshop (within a year of the conclusion of the learning process) are outlined below.

Part of ARA's workstream four is the development of a TLS framework. The ARA's strategy for this envisions the creation of communities of practice in part to establish frameworks and systems for knowledge-sharing and generation by ARA's members. Learning communities on understanding climate risks can achieve this.

Not only did participants of the shared learning process show a great appetite for the establishment of such learning communities, but findings from the learning assignment (as outlined above) clearly indicate an alignment between the principles and approaches outlined in the TLS strategy and those suggested by the shared learning process participants. More specifically, participants emphasised the importance of spaces for knowledge-sharing, dialogue and collaboration in understanding climate risks, while also underlining components of learning processes such as *collaborative learning* when discussing how a learning community can be most effective.

The TLS strategy sees the ARA playing a catalytic role by creating spaces in which members can encounter one another, identify possible partners and work collaboratively, and by facilitating collaborative learning. This shared learning process on understanding climate risks (which was initiated as part of the TLS strategy) has revealed the benefits and effectiveness of such an interactive collaborative space. Furthermore, this report highlights the topics and themes for shared learning for

understanding climate risks and the guiding principles that need to be adhered to in establishing and managing effective learning communities.

As this report was being finalised, ARA was defining its TLS activities for the year 2022-2023. Figure 14 maps the alignment of planned TLS activities with the key findings of this shared learning process.

Figure 14 Planned TLS tasks and key findings of the shared learning process

Agreed TLS tasks (2022-23)	Alignment with findings from shared learning process
Develop a “learning agenda”	One of the first tasks of the TLS workstream is to develop a “learning agenda” ³ (a framework to guide learning and sharing between organisations). Insights and key questions identified through this learning process will be employed to inform the learning agenda, creating a foundation to continue this discussion as part of the ARA TLS workstream.
Develop an online platform to encourage closer integration between ARA members	This online platform will provide a virtual space for exchange and learning on particular topics (such as understanding climate risk). Once the platform is up and running, TLS leads will catalyse conversation by posing questions, opportunities and learning tasks (drawn from deliberations during this learning process) on understanding climate risk and invite participants from this process to engage.
Curate content on various aspects of climate and development for online and offline forums	TLS activities include a substantial component on content curation. This will allow TLS leads to incubate partnerships between organisations that participated in this process to jointly develop blogs, position papers, events (for conferences such as CBA) and podcasts on aspects of understanding climate risk identified as important through this learning process.
Quarterly learning workshops	The TLS workstream includes the organisation of learning workshops every quarter where organisations associated with the ARA will be able to engage with each other on a range of issues. The Asks and Offers identified through this learning process will inform the programme of these workshops and learning sessions on priority needs will be organised (e.g. pathways for influencing local government decision-making).
Learning activities	The TLS workstream includes the organisation of four learning activities in the next 10 months. These include “learning clinics” (where a challenge is presented, following which participants engage in a dialogue to deepen their understanding of the problem from different perspectives, then draw up a plan to apply the learnings in practice) and other forms of peer-to-peer learning (e.g. action learning sets, critical moments reflection, storytelling). The insights from this learning process will inform the organisation of these learning activities so that they explicitly extend this conversation.

Looking beyond the TLS framework, the wider proposed strategy for the implementation phase of the ARA includes, under its “research planning and cooperation” functional area, the establishment and functioning of “regional learning communities”. While final approval of this strategy from the ARA’s Steering Board is pending, the activities included in Figure 14 will be executed so as to build the institutional structures required for the thematic exchange of views, solutions and opportunities on understanding climate risk, thereby bringing learning communities to life.

In this way, tangible activities stemming from a strategic approach will ensure that the conversations catalysed through this learning process continue and start to influence policies, programmes and practice.

³ “A learning agenda is a set of questions that relate to the work of an organization or network. Working collaboratively to answer those questions provides an organization or network with a framework to guide their learning, and also contributes to improvements in the effectiveness and efficiency of the members”. Source: ARA TLS Strategy.

Annex 1: Participating organisations

1.	Adaptation of African Agriculture Initiative to climate change (AAA Initiative)	Morocco
2.	African Initiative on Food Security and Environment.	Uganda
3.	African Research and Impact Network (ARIN)	Kenya
4.	Amazonian Youth Cooperation for Sustainable Development (COJOVEM)	Brazil
5.	CABI	Brazil
6.	CEMADEN	Brazil
7.	Center for People and Environment (CPE)	Bangladesh
8.	Clima de Eleição	Brazil
9.	Comisión Nacional de Áreas Naturales Protegidas, Mexico	Mexico
10.	Comunidad y Biodiversidad, A.C., Mexico	Mexico
11.	Conexsus	Brazil
12.	CONICET-UNSAM	Argentina
13.	Dialogue on Shelter for the Homeless Trust	Zimbabwe
14.	Envirosmart Solutions Limited	Zambia
15.	Forum for the Future	United Kingdom
16.	Friendship	Bangladesh
17.	Fundación Avina	Panama
18.	Fundación Barranquilla+20	Colombia
19.	Fundacion Casa Mangle	Colombia
20.	Future Earth	USA
21.	Global Resilience Partnership	Sweden
22.	Gobierno de la Provincia de Mendoza	Argentina
23.	Gorakhpur Environmental Action Group (GEAG)	India
24.	Green Africa Youth Organization (GAYO)	Ghana
25.	Gujarat Mahila Housing Sewa Trust	India
26.	Indian Institute for Human Settlements (IIHS)	India
27.	Institute for Social and Environmental Transition (ISET)	USA
28.	Institute for Global Environmental Strategies	Japan
29.	Instituto de Pesquisa Ambiental da Amazônia (IPAM)	Brazil
30.	International Institute for Applied Systems Analysis	Austria
31.	International Research institute for Climate and Society, Columbia Climate School	USA
32.	Jimma University	Ethiopia
33.	KickStart International	Kenya
34.	King's College London	United Kingdom
35.	Kota Kita Foundation	Indonesia
36.	Kounkuey Design Initiative	USA
37.	La Usina Social	Argentina
38.	Makerere University	Uganda
39.	Municipalidad de la ciudad de Santa Fe	Argentina
40.	Nepal Water Conservation Foundation (NWCF)	Nepal
41.	Philippine Action for Community-led Shelter Initiatives, Inc.	Philippines
42.	PlanAdapt	Germany
43.	Practical Action	Nepal and UK
44.	Red Argentina de Municipios frente al Cambio Climático (RAMCC)	Argentina
45.	Red Cross Red Crescent Climate Centre	Netherlands
46.	Red Regional de Cambio Climático y Toma de Decisiones (RRccyTD)	Uruguay
47.	Sniffer	Scotland
48.	Society for Participatory Research in Asia (PRIA)	India
49.	Transitions Research	India
50.	UK Alliance for Disaster Research (UKADR)	United Kingdom

51	UK Centre for Ecology and Hydrology	United Kingdom
52	UNDP	USA
53	UNESCO	France
54	Universidad Nacional de Rosario	Argentina
55	University of Cape Town, Climate System Analysis Group (CSAG)	South Africa
56	National Science and Technology Center for Disaster Reduction	Taiwan
57	World Resources Institute (WRI)	USA

Annex 2: Agenda of global workshops

31 January 2022 14:30 – 17:30 GMT
 1 February 2022 08:30 – 11:30 GMT

Session	Session lead
Welcome	Jesse De-Maria Kinney, ARA
Understanding climate risk Questions and clarifications	Aditya Bahadur, IIED and Simon Anderson, IIED
Overview from CSAG: Consultative process and findings with Q&A	Anna Steynor, CSAG
Sharing current practices and opportunities	Nora Nisi, IIED
Exploring processes of understanding climate risk	Nora Nisi, IIED
Co-creating a learning task	Simon Anderson, IIED
Next steps and closing	Sarah Tucker, IIED

Annex 3: Agenda of regional workshops

Asia Regional Workshop	1 March 2022 08:30 – 11:30 GMT
Africa Regional Workshop	2 March 2022 10:00 – 13:00 GMT
Latin America Regional Workshop	3 March 2022 13:00 – 16:00 GMT

Session	Session lead
Welcome and icebreaker	Jesse De-Maria Kinney, ARA
Objectives of the learning process	Nora Nisi, IIED
Session 1: Understanding climate risk information knowledge ecosystems	
Climate risk information knowledge ecosystems and key findings from the learning assignment	Simon Anderson, IIED
Challenges in receiving and using climate risk information	Nora Nisi, IIED
Session 2: Unpacking regional climate risk learning communities	
Learning communities and key findings from the learning assignment	Simon Anderson, IIED
Learning communities; Activities and impact	Regional facilitator
Session 3: Forging regional partnerships	
Asks and offers from global workshop and key findings from the learning assignment	Nora Nisi, IIED and Simon Anderson, IIED
Knowledge market: Asks and offers	Regional Facilitator
Next steps and closing	Nora Nisi, IIED

Annex 4: Learning assignment questionnaire

1. Understanding climate risk information and knowledge ecosystems

- 1.1 What does your organisation do to understand and address climate risks?
- 1.2 Where do you get the information from that is necessary to understand climate risks?
- 1.3 At what level (local, sub-national, national) and at what geographic scale (highland, mountain, flood plain, delta, coasts) does your organisation focus on with regard to climate risks?
- 1.4 The IPCC identifies hazards, exposure and vulnerabilities as the drivers/determinants of climate risks. Which of these aspects does your organisation focus on? Which types of climate hazards does your organisation focus on?
- 1.5 What other aspects of climate risks are important for your organisation?
- 1.6 What other organisations do you collaborate with in work to better understand climate risks?
- 1.7 What roles do these organisation play?

2. Challenges in understanding climate risks

- 2.1 What are the most important technical challenges that your organisation faces in understanding climate risks?
- 2.2 What other challenges has your organisation encountered in understanding climate risks?
- 2.3 What would help your organisation overcome these challenges?
- 2.4 Are there challenges or blockages to closer cooperation with these other organisations and institutions? If so, what are they?
- 2.5 What would help overcome these challenges or blockages?

3. Experiences with other learning groups and networks

- 3.1 Is your organization part of other learning groups and networks? If yes, what are they?
- 3.2 Based on your experiences, what are three factors/elements that make learning groups and networks successful?
- 3.3 What are some factors that make learning groups and networks unsuccessful?

4. Learning communities for better understanding of climate risks

- 4.1 Do you think that a 'learning community' for understanding climate risks would be useful/beneficial in your context/region? If so, explain why? If not, explain why not?
- 4.2 How could your organisation benefit from closer engagement with other organisations/institutions?
- 4.3 If a 'learning community' for understanding climate risks were to exist, what should be some of its key short- as well as medium-term objectives?
- 4.4 What would success look like for such a learning community in terms of results and/or indicators of success?
- 4.5 How should a learning community on understanding climate risks reach out to the wider stakeholders (government, development agencies, communities), also reach out to those stakeholders with indigenous and traditional knowledge?
- 4.6 What role do you think that your organisation would play in a proposed learning community?

5. Identifying learning and sharing on understanding climate risk

- 5.1 What information, insight, experiences or knowledge on understanding climate risks would your organisation like to contribute to others?
- 5.2 What insight, experiences and knowledge on understanding climate risk would you like to gain?
- 5.3 Would your organisation be open to support further shared learning on understanding climate risks? If so, how might you support this. If not, why not?

6. Stakeholders consulted

- 6.1 Please identify two external stakeholders (outside your organisation) who have reviewed or inputted into the answers provided (names and email addresses).
- 6.2 Please identify two internal stakeholder (within your organisation) who have reviewed or inputted into the answers provided (names and email addresses).

Annex 5: Global “Asks” and “Offers”

The two global workshops revealed a broad consensus on key requirements that would enable organisations to better understand and act on climate risks, summarised below. Asks common to both workshops are captured under thematic subheads, while outlier Asks are listed at the end.

Global workshop Asks

Access to more reliable localised data on climate impacts and risks

Many participants highlighted a need for better quality localised climate data to enable them to compile community and local-level risk assessments. Data needs included better access to information on slow-onset weather extremes, frequency of climate extremes, climate impact data and monitoring systems for extreme weather events (e.g. in sub-Saharan Africa), accurate population censuses (e.g. in Latin America), and risk models showing how social vulnerabilities impact on communities' experiences of risk. There were also requests for methodologies on assessing the adaptive capacity of local communities and standardising risk indicators to eliminate subjectivity.

Better analysis of compound risks and social vulnerabilities

Organisations need data not just on climate but on the full range of risks and vulnerabilities that affect the ability of people to adapt to climate change. For example: understanding the link between conflict and access to natural resources in a context of prolonged drought and climate change variability. Or data on worldwide pollution and contaminants in landscapes indirectly affected by climate change. Participants called for better tools, resources, data and relationships to support the systematic documentation and analysis of compound risks (i.e. interaction of climate and non-climate risks). Rather than taking climate projections as a starting point, viewing climate risk through the lens of current and historic social vulnerability could reveal the multiplicity and scale of cross-sectoral risks that vulnerable populations face.

Methodologies to value local knowledge and integrate with top-down data

Participants requested more scientific methodologies for creating community-level climate risk assessments, including ways to visualise and value local knowledge and lived experience alongside more technical data from researchers and organisations. Organisations need practical tools to integrate the perspectives of persons living with disabilities and those living in informal settlements, so that climate risk assessments can be co-produced. Participants also seek a better understanding of the existing sources of information that inform adaptation decisions in local communities.

Communicating climate risk knowledge in a way everyone understands

Many organisations highlighted the challenge of simplifying climate risk knowledge in a way that everyone can understand and act upon. Vulnerable communities need materials to help them understand climate risks in a way that allows them to meaningfully engage with the process. This could also include capacity building among communities to promote skills and knowledge in understanding climate risk.

Engaging local government and influencing policy and decision-making

The largest number of Asks from both global workshops gravitated around how practitioners can engage local government policy- and decision-makers in assessing and understanding climate risks and responding to them through appropriate local adaptation. The right kind of data is needed to enable local authorities to assess the costs of climate risks and decide how to justify resource allocation. Local municipalities deliver services such as water, sanitation and health that are very prone to climate risks, but they don't grasp climate risk vulnerabilities or how to mitigate them. Organisations are seeking ways to reach decision-makers up and down the government hierarchy with the information they need to understand cascading risks and translate risk data in local government priorities.

Urgency and the need to scale up

Many organisations highlighted a need to understand how much time they have to assess climate risk and build local capacity before having to respond on an emergency footing. Some are seeking support for a more dynamic understanding of risk at different scales and across sectors. Others are looking for ways to reach a scale that matches the scale of problem they and the communities they support are facing.

Resources

Numerous participants called for more resources, whether to employ people to synthesise climate risk data, or to build sustainable local capacity in climate risk assessment and management, or to enable vulnerable communities to commit time to participatory research and actions to boost resilience.

Outlier Asks

“Outlier Asks” are those mentioned by just one or two participants. They include:

- Enhance sustainable institutional capacity building around climate risk management, especially in the curricula of universities in places most impacted by climatic change
- Meaningfully engage youth, from communities to cities, in risk assessment processes
- Need to know more about negotiated resilience – especially how to implement it practically, for example through using climate risk narratives
- Guidance on simple technologies such as cell phones that are being used to minimize and understand risk
- Evaluations of the impacts and cost-effectiveness of different solutions that create resilience to risks on the ground
- Data on risk transfer and its role in reducing vulnerability caused by hydro-climatic risks
- Learning from how things did not go well with processes of understanding risk – how to have honest and open dialogue

Global workshop Offers

The two global workshops revealed a wider spread of Offers that would enable organisations to better understand and act on climate risks, summarised below. Offers common to both workshops are captured under thematic subheads, while outlier Offers are listed at the end.

Participatory climate risk assessments and foresight exercises

The largest share of offers came from organisations willing to share their experience with participatory climate risk assessments, planning and learning approaches to promote knowledge transfer and minimise challenges with data availability. Organisations offered techniques such as participatory mapping, storytelling and ethnographic methods (e.g. walks) to help communities understand the geographies of risk, along with foresight exercises to enable people to construct their own resilient futures and address compounding vulnerabilities. The workshop heard of creative practices to combine meteorological data with local lived experiences of storm impacts to create a locally specific climate storyline which could be used to support bottom-up participatory climate risk assessment as well as the search for solutions. One organisation spoke of its work mentoring local champions through participatory and co-learning processes for risk resilience; another included a focus on including persons with disabilities.

Support for urban climate risk assessment and capacity building

Numerous organisations offered support with participatory risk assessment, action research and capacity building models in urban areas, especially in informal settlements and among migrant women. The workshop heard about community-led data collection processes in informal settlements, urban gardening to address food security and house building using alternative technology.

Universities and researchers building capacity in climate risk assessment

Several universities in the developing world offered support through their networks for training in different methodologies for climate risk assessments and capacity building in how to use climate risk information. These universities offered to link participants to networks of students able to do data collection. Some of the practitioners present offered technical assistance in analysis of climate extremes, flood risk modelling, risk and vulnerability assessments, and preparation of climate action plans. Universities also offered support in developing skills- and competency-based curricula in understanding climate risk and conducting risk assessments. One participant offered to share experience developing a diploma in the Political Management of Climate Change.

Technology to identify and communicate climate risk

Some organisations offered support with technology, for example participatory GIS risk mapping at the local level to identify risks and hazards, and in preparing contour maps with GIS to identify which crops are suitable in which areas. The workshop heard about connecting cell phones, local radio stations and schools with hydro-meteorological data, to channel risk information to the public, emergency responders and decision-makers more efficiently. One organisation uses low-cost electronic devices that help generate data of interest for local monitoring of variables related to the climate.

Working with local communities to disseminate knowledge and build capacity

A large number of participants have expertise to share in bridging the climate knowledge gap with local communities. One offered cultural and artistic activities that validate rural climate knowledge in urban contexts. Another collaborates with Indigenous groups in the Brazilian Amazon, to support their insights into and actions to fight the climate crisis. Additional offers in this area included: knowledge-sharing platforms at the interface of policy-making and local community practice, risk dissemination mechanisms using end-to-end early warning systems, co-designing community-led weather and climate information communication systems, risk communication to communities through universal design to overcome language barriers and knowledge gaps.

Helping local government plan and budget for adaptation

Many organisations have experience to offer in engaging different stakeholders in creating climate actions plans for municipalities and subnational governments. This includes providing technical assistance and tools to municipalities to help them plan and budget for climate risk, such as methodologies for costing adaptation action. Brazil has a network of parliamentarians interested in implementing local public policies, while in Argentina a network of municipal authorities exchanges experiences and knowledge of assessing climate risk and designing adaptation measures. Several participants highlighted their experience in mobilising vulnerable people to ensure their perspectives on climate risk inform policy-making and local planning processes.

Supporting high-level political leaders and policy-makers

The workshop heard from some participants with experience linking researchers working on climate risk assessments with high-level policy-makers and COP negotiators to co-produce evidence-based positions. One organisation offered expertise in supporting political leaders at regional, national and international levels with technical advice and awareness raising around climate risk.

Building regional networks to share data and co-create learning

Knowledge-sharing networks already exist in several regions and participants offered to develop alliances with ARA. These networks can also provide access to scientific research and data on climate risk through open access databases and analysis. One organisation offered to help ARA build a database for mapping all recent climate risk management projects in Africa, by country and sector. Another offered access to a regional infectious diseases database.

Outlier Offers

“Outlier Offers” are those mentioned by just one or two participants. They include:

- Practical adaptation solutions to help smallholder farmers access irrigation and climate information
- Watsan solutions in flood-prone areas, such as floating latrines
- Education and activism for climate action awareness and advocacy
- Knowledge management at national level
- Participatory Impact Pathways Analysis – an opportunity for “negotiated climate resilience” to address ways to ensure benefits for different stakeholders
- Learning resources and materials on understanding climate risks and approaches to climate risk assessment (e.g. a "National Climate Risk and Vulnerability (CRV) Assessment Framework" from South Africa)
- Dialogue platform to build multi-stakeholder cooperation and experience-sharing with local risk assessments
- Producing policy briefs with the aim of generating recommendations for decision-makers
- Bridging the gap between scientists (local meteorological services) and practitioners, focusing on which information informs adaptation decisions, identifying climate information needs, then co-developing tailored products
- Seamless risk management approaches, using information about the past, present, short- and medium-term future
- Government policy dialogue in Bangladesh can be a model for others to follow

The [Adaptation Research Alliance \(ARA\)](#) is a global collaborative effort to catalyse increased investment in and capacity for action-orientated research that supports effective adaptation to climate change – primarily in developing countries – at the scale and urgency demanded by the science. The ARA's focus is on Results-Orientated Adaptation Research (ROAR) to better link knowledge to action. It is an initiative of the UK's Foreign, Commonwealth and Development Office (FCDO).

IIED organised five workshops for the ARA on Understanding Climate Risk: two global workshops on 31 January and 1 February 2022 and three regional workshops (Asia, Africa, Latin America) on 1-3 March 2022. IIED also organised a month-long learning assignment between the two sets of workshops. The workshops and learning assignment brought together participants from 57 organisations in 23 countries. This report presents the results.

International Institute for Environment and Development
Third Floor, 235 High Holborn, London, WC1V 7DN
Tel: +44 (0)20 3463 7399
Fax: +44 (0)20 3514 9055
email: info@iied.org
www.iied.org