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COMMUNICATING CLIMATE CHANGE

This synthesis report is drawn from presentations made on climate change communication at the Adaptation Futures Conference 2018 held in June in Cape Town, South Africa. It presents key challenges, opportunities and findings regarding the communication of accurate climate change information that aims to shift behaviour.

About Adaptation Futures
Adaptation Futures is the world's premier conference on climate change. Held every two years, the conference connects more than 1 000 scientists, practitioners, business leaders and policymakers from around the world to connect, learn and inspire. In June 2018, Adaptation Futures was hosted in Africa for the first time at the Cape Town International Convention Centre by the University of Cape Town's African Climate and Development Initiative, the South African National Biodiversity Institute and the United Nations Environment's Global Programme of Research on Climate Change Vulnerability, Impacts and Adaptation. Its goals were to facilitate dialogue between research and government, civil society, international agencies and business; to continue the shift from problem diagnosis to solutions and innovation; and to link adaptation action to sustainable development, investment and planning with a strong focus on Africa and the global south. For more information about Adaptation Futures and the African Climate and Development Initiative, visit www.acdi.uct.ac.za.

Mitigation versus adaptation

The global response to climate change has been to mitigate its effects by reducing the volumes of greenhouse gases emitted. Mitigation focuses on shifting from emission-intensive energy production to energy-efficient processes and renewable energy sources where possible. Regardless, however, of the effectiveness of this type of response, the effects of climate change are already being experienced. This means that people will need to adapt to living in an uncertain climate. Adaptation is understood as ways of reducing the vulnerability of natural and social systems to sudden change and enabling them to become resilient to the effects of global warming.

The adaptation context

Climate change caused by man-made greenhouse gas emissions is putting increasing strain on natural and social systems. Patrick Child, Deputy Director-General of Research and Innovation at the European Commission, noted at the opening session of the conference that incidences of extreme weather events are increasing and, citing a 2018 draft Intergovernmental Panel on Climate Change report, that without drastic measures taken to cut carbon emissions, it is unlikely that we will achieve the global goal of keeping a temperature increase below 1.5°C on pre-industrial levels, which was set in Paris in 2016.

The higher the increase, the more pressure there will be to adapt to changing climatic conditions. Child noted that the highest economic losses accredited to weather-related events were recorded in 2017. Ovias Sarmad, Deputy Secretary of the United Nations Framework Convention on Climate Change stated that 18.8 million people were displaced because of climate-change related events in 2017 – this translates to 32 people every minute. Niklas Hagelberg, Climate Change Coordinator for United Nations Environment, noted that while the 2016 Paris Agreement elevated adaptation to equal importance as mitigation measures, there is no practical equality in funding or implementation. And that while adaptation features in several of the Sustainable Development Goals, it is not adequately reflected in the associated indicators. Without rigorous and credible measuring of adaptation impacts it will remain difficult to attract private or public funding for projects.

The critical challenges facing the adaptation sector can be summarised as elevating the need for adaptation at the state and private-sector level, finding a way to accurately measure impacts, investing sufficiently in transdisciplinary research and development and sourcing the necessary funding for implementation. Above these, one of the biggest challenges is the difficulty in communicating climate change information in such a way that it shifts behaviour at the state, business, community or individual levels.

The climate change communication challenge

Climate change communication needs to encourage new ways of thinking and of understanding the world to bring about the necessary behaviour change. There are, however, significant challenges in crafting these messages because of the complexity of the message, the significant scientific uncertainty of climate change effects and the diversity of demographic groups in the world, each with particular world views and understanding. In addition:[1]

- The causes of climate change, such as greenhouse gas emissions, often cannot be seen or are only visible in remote and generally uninhabited regions.
- People tend to believe that individual actions cannot have global impacts, especially as these impacts are often not felt at the individual level.
- There are more immediate challenges: food, employment, housing and education.
- Any benefits to changing behaviour will only be apparent in the long term; there is no short-term incentive to shift the way in which we produce and consume.

People have an "apparently deep-seated psychological need to deny and suppress existential threats".[2] Climate change communication therefore needs to overcome spatial, emotional and time barriers.

A note on language and culture

Climate change messaging needs to use clear and accessible language, particularly because of the complexity of the issue and the uncertainty of climate change long-term modelling. The Africa Ministerial Conference on the Environment recommends developing appropriate climate change terminology in local African languages.[3] Scientific language can be exclusionary and its equivalent terminology is often not found in non-global languages.

Anna Steynor's, from the University of Cape Town's Climate System Analysis Group, research – **Understanding the operational context for climate services in African cities[4]** – notes that climate services are "often developed with a superficial understanding of the target audience and are dominated by western values and cultural norms." And how people receive climate messaging is very much influenced by their cultural, political, economic and behavioural norms. Existing institutional infrastructure can also enhance or impede effective climate change communication. In addition, the different aspects of climate change-related work tend to use the same terms but in different ways. Julia Barrott from the Stockholm Environment Institute presented on her study: **Overcoming disparities in language: Exploring varied use and interpretation of words in the Climate Change Adaptation (CCA) and Disaster Risk Reduction (DRR) fields**.[5] The study found that there are different understandings of the terms used in these fields often reflecting different approaches to adaptation and disaster risk reduction. Potentially this results in "confusing and misinterpretation of key issues and partially explains the large gap between research and action". The research will contribute contested terms to the Climate Tagger thesaurus in an attempt to broaden understanding of how terminology is used in different sectors and minimise confusion.

Climate change science is a rapidly evolving field as monitoring, measuring, evaluating and modelling techniques improve. Given the uncertainty of projections, it is critical that communication is ongoing and consistent in its use of terminology.

Communicating uncertainty

There is a high degree of uncertainty in climate projections for different regions. This makes it difficult for stakeholders to make decisions regarding adaptation measures,[6] and to communicate the need for these to constituents. In a study conducted by the Priestley International Centre for Climate – **Framing climate uncertainty: Frame choices reveal and influence climate change beliefs** – researchers note that the translation of uncertain numerical climate projections into "simpler but ambiguous verbal frames" is contributing to the polarisation of opinions about climate change.[7]

This despite the consensus on the causes and contributing factors to climate change being strong. People's underlying beliefs about climate and the environment also influence how they interpret the uncertainty of projections. The study evaluated participants' level of concern regarding climate change against their environmental values, political affiliation, levels of numeracy and education, age and gender. It found that how climate change messaging was delivered – choice of words and framing of the narrative – influenced how the audience perceived the likely severity of the consequences, and therefore their levels of concern.

The diversity of platforms, each with its own framing of uncertain climate projections, disseminating information on climate (media, social media, policymakers and peers) influences public perceptions of climate change and limits the necessary "basic level of agreement on scientific facts" needed to drive mitigation and adaptation behaviours. The study concluded that information should be supplied verbally and graphically – using accessible graphs and figures – to support informed decision-making by non-scientific audiences.

Importance of a shared vision

Seona Meharg of Australia National University and the Commonwealth Scientific and Industrial Research Organisation, Australia notes that her research **Using evaluation to identify and catalyse 'agents of change' for adaptive development**[8] highlights the importance of building shared visions. The study indicates that to bring about long-term and sustained change, researchers must build a shared vision and theory of change within their teams and with stakeholders. "Co-designing activities with an emphasis on communication, reflection, mutual learning and evaluation produce more flexible, respectful and inclusive project environments. This leads to better outcomes and opportunities for dispersal of lessons learnt…" This implies that project leaders are in some sense change agents with a sense of personal responsibility and purpose. The study found that while there are cultural differences in how people perceive their role in shaping the future, the sense of responsibility and purpose was common to all change agents.

Katharina Hölscher's work – **What does a sustainable and resilient future under climate change look like? Transformative visions for Europe in 2100**[9] – notes that for adaptation behavioural change to occur, communication must empower people to make what are often difficult choices. There is a need for a "different way of reflecting and communicating about the future to inspire, orient and attract action that will ultimately determine the rate and magnitude of climate change." The study co-created visions of a desirable future for Europe through an iterative and participatory process with a diversity of stakeholders at multiple scales. The aim was to establish commonality to find consensus on adaptation options.

This helps to mobilise people and resources and the visions are able to "serve as anchor points for the formulation and efficacy assessment of transition pathways that identify strategies and actions for the fundamental changes needed."

Use of compelling narratives

Ingrid Coninx from Wagneingen Research and Julia Bentz of the University of Lisbon provided feedback on the PLACARD study – **How to build successful narratives: A cookbook by PLACARD project**.[10] Findings of the study indicate that successful narratives that lead to the adoption of adaptation behaviour were simple in approach, focused on specific target audiences, communicated via existing and trust networks, outlined the benefits, connected to people's experiences and were illustrated through practices. The use of narratives to communicate climate change information is believed to be particularly relevant to building partnerships and collaboration, and to support implementation of adaptation behaviour.

Markus Berensson's work for the C40 Cities Climate Leadership Group, United Kingdom – **From science to policy: Communicating climate change in cities**[11] – focuses on translating climate science into narratives that will compel urban policy action in those cities without existing strategies in place to address climate change impacts. The findings indicate that urban climate communication must include hooks that describe how climate change will impact and potentially derail the city goals that are dear to policymakers. It must also include practical examples of cities that have adapted or not to give a human context to the climate data, as well as resources and solutions that city planners can implement and test. Messaging must be segregated for the varied levels within city leadership and management.

Emerging importance of co-created knowledge

Chris Jack of the University of Cape Town noted that traditional models of producing climate change information to feed into effective decision-making were inadequate. Particularly, when the system it was produced for is inherently complex, such as African cities that are rapidly developing with increasing levels of inequality and infrastructural challenges related to service delivery. Jack's research study – **Co-creation of urban climate risk narratives as trans-disciplinary knowledge production and exchange**[12] – explored the "co-construction of narratives of climate risk within developing world urban contexts as means of more effectively engaging with, learning from, and potentially influencing decision makers own understanding of their urban contexts". The research notes that people evaluate new information against their existing frames of understanding, and, therefore, may not respond appropriately to new risks. The study worked with climate risk narratives to help participants construct new narratives – typically involving the construction of the ideal future scenario.

The co-development of a new narrative based on multiple narratives encourages dialogue and challenges current understandings, as well as producing new forms of knowledge. The multiplicity of the narratives is not easy to communicate but it does provide an entry point into multiple world views.

The emphasis on co-producing knowledge with stakeholders is supported by Ajay Bhave's research **Robustness of adaptation options to deep uncertainty in the Waster-Energy-Food nexus in Malawi**.[13] This study emphasised that co-produced knowledge is more likely to be accepted and acted upon. Different communication techniques and platforms must be used to engage with stakeholder groupings. Barbosa's research – **Collaborative Co-production: what could be missing in climate change adaptation?**[14] – also stresses the importance of co-production of knowledge and "language" that is understood by all stakeholders in a particular context. Key findings indicated that the "effective uptake, implementation and impact of scientific outcomes in real life depend very much on the success of this cooperation and collaborative co-production." This practice can open up space for collaborative decision-making and action, as well as testing new forms of governance and policies to address complex problems.

<u>Importance of trust and the use of intermediaries</u>

Neha Mittal from the University of Leeds in the United Kingdom presented the findings of her study with the tea sector in Kenya and Malawi – **Time to tailor climate information for tea: Lessons from co-producing climate information in Kenya and Malawi**.[15] Findings included the need to identify what climate information is important for the stakeholder group and for consistent engagement to ensure that messaging is relevant. The importance of constant communication and transparency in providing information builds the trust necessary for adaptation activities. The study also found that co-production of climate information is key to growing credibility and a sense of ownership, and is therefore more likely to be used by stakeholders.

From Colombia University, James Hansen's research – **Can rural climate services meet context-specific needs, and still be scalable: Experience in Rwanda**[16] – found that while context-specific information made available through an online Maproom interface was useful, the most effective way to communicate the information was through intermediaries. In this case, a trainer-of-trainer approach engaged about 53 000 Rwandan farmers with more than 90% of farmers changing some aspect of their production following engagement. These trainers know the rural communities and can tailor the information accordingly.

<u>Use of graphic data</u>

Mittal further noted in her presentation on **Communicating climate change: Identifying climate change visualisations that are best understood by a user community**[17] that there is little work done on exploring how users understand and interpret scientific data. The study explored which types of graphical visualisations enabled user understanding and led to action. The study surveyed 112 national, local and sectoral planners in Zambia using different graphs and figures to evaluate the level of comprehension among the participants. Findings included the men were more confident than women in interpreting information presented in this way, and that information presented in minimums and maximums more easily understood than in percentiles, and that coloured bar graphs were easier to interpret over different scale, market and non-coloured bar graphs. The research also noted that people may have high levels of confidence regarding data they have misinterpreted. Information presented graphically must be unambiguous to avoid misinterpretation and thus miscommunication.

Innovative communication tools

Cheikh Mbow of START International is working with the Partnership for Resilience and Preparedness to find ways to present data within a narrative approach. **The PREPdata Africa Application**[18] contains curated sets of climate, exposure and vulnerability data sets and indicators for the continent, regional and community scale in Africa. The team is currently working on dashboards of indicators from which to create charts and graphs. The narrative approach is contained in a free-form Story page that has maps, charts and graphs embedded. This enables communication to different stakeholder groups. Practitioners and communities can provide feedback on the quantity and quality of the data, acting as a real-time feedback loop to keep the system up-to-date.

Fernanda Zermoglio's work for the **Adaptation Thought Leadership and Assessments project**[19] has helped distil complex climate data into actional information that retains its scientific rigour. The study has emphasised the need to include context and background to support accurate analysis, to facilitate feedback into the system to ensure accuracy and to provide "reasonable, specific, and actionable recommendations". Floris Boogaard, Hanze University Of Applied Science, Netherlands, presented on **Urban climate resilience European-African knowledge exchange toolbox: www.climatescan.nl**.[20] The study explores new innovating tools such as "climatescan" and "waterwindow" and their potential for implementation in Africa. The advantage of these tools is that they are collaborative, interactive, open source and provide additional material (photographic and video material).

This type of communication platform also appeals to the younger demographic (particularly female professionals) – under 35 years of age – which is an important target audience. Jackson Blalock's research work done for the **Washington Coastal Resilience Project[21]** aimed to help build capacity to prepare for sea-level rise. The project exemplifies "translational" science – a new field in which "scientists and planners engage with decision makers and stakeholders in order to identify solutions that are socially acceptable and politically practicable." The participatory and collaborative nature of the project has enabled place-specific and audience-specific co-production of web-based communications tools – interactive maps, compelling graphics and training programmes. These types of accessible communication tools available in a customisable toolkit have enabled consistent messaging to be relayed across different political and institutional structures.

Conclusion

An analysis of the presentations made at the Adaptation Futures conference regarding climate change communication indicates:

1. There is a need for a compelling and unifying framework for messaging that encourages behavioural change. This implies a visioning process for stakeholder groupings.
2. Co-creation of knowledge and participatory processes are more likely to yield messaging that drives the necessary adaptation processes.
3. Messaging must be tailored to specific audiences considering cultural, language and other demographic differences.
4. Communication must be consistent in its use of terminology and scientific basis.
5. Language must be clear and accessible to the target audience. To mitigate the risk of the communicator's framing of the message, verbal messages should be accompanied by accurate visually presented information.
6. Communication that aims to catalyse behavioural change must enable people to understand how climate change will affect them, provide attainable measures that they can take in response and support them with provision of current and easy to understand information. It must enable, engage, provide examples and give encouragement.[22]
7. Using trusted intermediaries is more likely to encourage adoption of adaptation behaviour. With the caveat that messaging trusted to intermediaries must be clear to mitigate the risk of not being able to control how the message is conveyed.

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[5] Barrot, J. 2018. Overcoming disparities in language: Exploring varied use and interpretation of words in the Climate Change Adaptation (CCA) and Disaster Risk Reduction (DRR) fields.

[6] Bhave, A. 2018. Robustness of adaptation options to deep uncertainty in the water-energy-food nexus in Malawi. Presentation at Adaptation Futures 2018. June 2018. Cape Town International Convention Centre. Cape Town.

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[8] Meharg, S. 2018. Using evaluation to identify and catalyse 'agents of change' for adaptive development. Presentation at Adaptation Futures 2018. June 2018. Cape Town International Convention Centre. Cape Town.

[9] Hölscher, K. 2018. What does a sustainable and resilient future under climate change look like? Transformative visions for Europe in 2100. Presentation at Adaptation Futures 2018. June 2018. Cape Town International Convention Centre. Cape Town.

[10] Coninx, I. & Bentz, J. 2018. How to build successful narratives – a cookbook by PLACARD project. Presentation at Adaptation Futures 2018. June 2018. Cape Town International Convention Centre. Cape Town.

[11] Berensson, M. 2018. From science to policy: communicating climate change in cities. Presentation at Adaptation Futures 2018. June 2018. Cape Town International Convention Centre. Cape Town.

[12] Jack, C. 2018. Co-creation of urban climate risk narratives as trans-disciplinary knowledge production and exchange. Presentation at Adaptation Futures 2018. June 2018. Cape Town International Convention Centre. Cape Town.

[13] Bhave, A. 2018. Robustness of adaptation options to deep uncertainty in the water-energy-food nexus in Malawi. Presentation at Adaptation Futures 2018. June 2018. Cape Town International Convention Centre. Cape Town.

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[15] Mittal, N. Time to tailor climate information for tea: Lessons from co-producing climate information in Kenya and Malawi. Presentation at Adaptation Futures 2018. June 2018. Cape Town International Convention Centre. Cape Town.

[16] Hansen, J. 2018. Can rural climate services meet context-specific needs, and still be scalable? Experience in Rwanda. Presentation at Adaptation Futures 2018. June 2018. Cape Town International Convention Centre. Cape Town.

[17] Mittal, N. 2018b. Communicating climate change: Identifying climate change visualisations that are best understood by a user community. Presentation at Adaptation Futures 2018. June 2018. Cape Town International Convention Centre. Cape Town.

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[20] Boogaard F. 2018. Urban climate resilience European-African knowledge exchange toolbox: www.climatescan.nl. Presentation at Adaptation Futures 2018. June 2018. Cape Town International Convention Centre. Cape Town.

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