



5th INTERNATIONAL CLIMATE CHANGE
ADAPTATION CONFERENCE

CAPE TOWN
SOUTH AFRICA 11-14 JUNE 2018

**Adaptation Futures Conference
18-21 June 2018, Cape Town, South Africa**



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1. What was the name of the event?

The Adaptation Futures Conference was held at in Cape Town, South Africa

2. Date Attended

18-21 June 2018

3. Venue

Cape Town International Conventional Centre

4. Officials who attended

- Emmanuel Letebele (Senior Professional Planner: Strategic Spatial Planning, Development Planning Department.)
- Sean O'Donoghue (Senior Manager: Climate Protection Branch)

5. Area of expertise

- Urban Development, Strategic Spatial Planning and Climate Change.
- Environmental Management.

6. What was the purpose of the event, the broad objectives and themes? Why was it of importance?

The Adaptation Futures is the biennial conference of the Global Programme of Research on Climate Change Vulnerability, Impacts and Adaptation (PROVIA). It is the premiere international climate change adaptation conference where people from countries around the world go to connect, learn and inspire!

Adaptation Futures 2018 provided an opportunity for international networking and dialogue with more than 1000 participants from academia, government, civil society and business, all aiming to take climate adaptation forward. Adaptation Futures 2018 aimed to use our setting on the African continent to attract more African and Global South delegates than ever before to the conference and forefront developing country adaptation contexts.

Adaptation Futures 2018 aims where to:

- Facilitate dialogue between research and government, civil society, international agencies and business
- Continue the shift from problem diagnosis to solutions and innovations
- Link adaptation action to sustainable development, investment and planning
- Have a strong focus on Africa and the Global South
- Provide attendance grants for delegates from developing countries
- Encourage the participation of early career researchers and practitioners
- Offer a variety of plenary and parallel sessions, round tables and side events
- Offer a vibrant Adaptation Expo

The conference brought together diverse actors working in climate adaptation to learn from and stimulate each other in what they do and how they do it: academic and applied researchers, professionals in consulting and other roles, policymakers and managers, civil society, business, those working in international bodies and multilateral bodies.

Conference themes

- Adaptation and development
- South-South and South-North knowledge and learning
- Adaptation and 21st Century challenges
- Collaboration, knowledge co-production and research into use
- Financing of adaptation and climate resilient development
- Learning from doing

The Adaptation Futures 2018 was the fifth in the Adaptation Futures international conference series on global adaptation. The conference aimed to facilitate **dialogues for solutions** between key actors from diverse perspectives and regions and attracted over 1300 scientists, practitioners, business leaders and policymakers from around the world. 183 sessions were held, including 160 innovative and participatory special sessions, designed and run by key stakeholder organisations. This was the first time the conference was held on the African continent. This setting was used to foreground developing country adaptation issues and increase developing world participation. Funding was raised to support the access of over 180 sponsored delegates from lower income countries and/or Africa.

7. What in your opinion are some of the KEY LEARNINGS that you came away with? In other words, what stood out for you? Were there any "aha!" learning moments that you can share with colleagues? What were some of the KEY OBSERVATIONS that were important or different?

The following learning's are drawn from the various sessions I attended at the conference:

a) Climate-proofing freshwater supply in salinizing deltas: the Zeeland freshwater laboratory.

By: Author/s: Esther van Baaren, J.R. Delsman, M. Karaoulis, P.S. Pauw, Deltares, The Netherlands; G.H.P. Oude Essink, Department of Physical Geography, Utrecht University, The Netherlands

According to Esther van Baaren et.al. urbanising deltas across the world face increasing pressure on limited freshwater resources by anthropogenic and climatic stresses. Safeguarding these resources is of eminent importance for economic activities and food production. Therefore, it is better to manage these assets, now and in the future. Integrating geophysical surveys with modelling tools leads to better understanding of the subsoil and groundwater systems under stress and supports scientists, water managers, water users and policy makers to develop sustainable water management strategies.

The freshwater laboratory of the Dutch Province of Zeeland experiences salinization and freshwater shortages first hand. Surrounded by saltwater estuaries and the North Sea, combined with mostly salinized groundwater resources, freshwater is scarce. It is both an agricultural and tourism hotspot, putting stress on the available freshwater resources. The agricultural sector already faces crop damage due to water deficit or high salinities. Future sea level rise and longer periods of drought will cause additional salinization of the groundwater. A sustainable water management strategy needs to be developed and implemented to secure the freshwater availability for future food production.

Climate-proofing freshwater supply entails:

1. Surveys to assess present-day available freshwater resources through combining an extensive airborne measurement campaign with numerous ground measurements;
2. Groundwater modelling to predict the effects of climate change, sea level rise and groundwater extractions on the freshwater resources;
3. The design and implementation, with local farmers, of subsurface measures to increase water availability;
4. Free access to the fresh and saline groundwater distribution and the organisation of field excursions and farmer's meetings to increase their knowledge and 5 embedding results in policy and regulations.

Key learnings derived from this session are as follows:

- First, an approach was presented that is used to derive an area wide 3D distribution of the present fresh groundwater resources. This validated, open and free dataset is used for knowledge based decision making and planning.
- Second, the benefits of tools to simulate the effects of climate change and point out areas vulnerable for climate change in terms of fresh water availability was presented.
- Third, the combined mapping and modelling gave insight in opportunities for adaptive subsurface measures to increase water availability for farmers. This led to the design and implementation of tailor-made measures to increase freshwater availability for farmers.

Water managers and policy makers of Zeeland used the mapping and modelling of the current and future fresh groundwater resources for water management plans, extraction permits and consideration of different measures. Farmers used the mapping of the freshwater resources to secure the water availability by sustainably using the groundwater. The results of the subsurface field tests together with the mapping results are used by farmers to develop local aquifer storage and recovery systems. This approach developed in Zeeland was applied in Belgium and can be an example for salinizing delta's worldwide.

b) Hybrid modes of governing for disaster risk management in Dar es Salaam and Nairobi.

By: Hayley Leck, King's College London (Presenter: Mark Pelling, King's College London)

Sub-Saharan Africa faces intensifying disaster risk and vulnerability to climate change impacts rooted in vast inequalities and environmental deterioration, with disaster risk in the region increasingly urbanized. In response, urban authorities are increasingly implementing new initiatives and interventions to support disaster risk reduction and climate adaptation, often through partnerships or networked arrangements that cut across formal and informal systems. Major international agreements such as the Sendai Framework for Disaster Risk Reduction and New Urban Agenda emphasize the role of partnerships and coordinated efforts of all stakeholders for realising sustainable urban development in all areas. Yet, these emerging initiatives are often fragmented, disparate and do not address underlying risk drivers.

In response to these issues and drawing from research undertaken as part of the Urban Africa: Risk Knowledge (Urban ARK) Programme in Dar es Salaam (Tanzania) and Nairobi (Kenya) this presentation aimed to develop current understandings of these emerging hybrid governance arrangements in the context of disaster risk, with a focus on urban scaled governance that can help build resilience. Specific focus was on the governance space between local community actors and organisations and local government/first level of political decision making. Investigation focused on recent collaborative initiatives and arrangements implemented for disaster risk management, particularly related to flooding.

The main method adopted was semi-structured in-depth interviews. Interviews were held with city practitioners, national government representatives, civil society and NGO representatives, as well as local community representatives. This approach was chosen to provide stakeholders with the opportunity to provide detailed insights and critical reflections, as well as reflect on historical and other relevant information discussed during interviews. Participants held diverse positions across environment, development and disaster risk related departments and institutions such as health and engineering. This facilitated analysis across scale and diverse sectors. Recent flood events have had significant impacts on these city's populations, particularly poorer residents in informal settlements, infrastructure and economies.

However, planning for and responses to these flooding events have tended to be fragmentary and lacking co-ordination across scales. Furthermore, the presentation offered insights into how alternative hybrid modes of governing for disaster risk reduction require further interrogation for their transformative potential for addressing risk accumulation in terms of whose interests they serve, which key actors are driving them, power inequalities and their outcomes. The presentation also offered insights into how these emerging hybrid modes of governing might reduce or exacerbate widespread fragmentation in governance across the city. This research provided important insights into the governance of disaster risk in Dar es Salaam and Nairobi and is particularly pertinent given that both cities are currently grappling with developing and implementing effective disaster risk policies and measures. The research has generated valuable insights into multiscale disaster risk governance in the study contexts. Findings were of relevance to academics, civil society, public- and private-sector actors concerned with breaking cycles of risk accumulation in African cities.

c) Implementation is the Adaptation Territory

By: Abrar Chaudhury, University Of Oxford, United Kingdom

According to Abrar Chaudhury, current efforts by nation-states to organise adaptation are characterised by a broad concern with defining, measuring and governing adaptation efforts, with surprisingly little on how these efforts are organized and implemented through the different participants across scales. The presentation responded to the Adaptation Futures' question, "How do we move from problem diagnosis to successful implementation in a multi-governance (national to local level) and multi-actor approach (state to non-state actors)?" by treating implementation itself as the adaptation space. The presenter argued that the answer lies in evolving the policy triangle between adaptation processes, implementation pathways, and polycentric governance within changing social-environmental systems ("territories").

The author investigated two basic issues in adaptation policy:

- 1) The framing challenges of defining and understanding the multi-dimensional "terrain" and
- 2) The challenges of organizing policy implementation through the triangle of adaptation process, pathway, and governance.

They stated that this is an important departure from current research on adaptation and marks a sustained application of processual and organisational approaches. Their multi-faceted approach enabled co-analysis of organisations, networks, logics, and drivers behind adaptation initiatives across national to local governance levels, and drawing practical lessons from the implementation efforts (so far) in various institutional contexts. These case studies drew from two interdisciplinary projects.

- 1) CCAFS-Oxford Systemic Integrated Adaptation (SIA) Program, which examined complex adaptive systems charged with improving food security for smallholder farmers, while reducing environmental degradation. SIA drew on extensive field research (300+ interviews, surveys, workshops) in two rural agricultural sites

(Nepal and Ghana), and expert dialogues, to clarify how adaptation is framed and implemented.

2) EU H2020 GREEN-WIN project, an international transdisciplinary research collaboration applying a solution-oriented approach targeted at understanding of links between climate action and sustainability, and overcoming implementation barriers for urban sustainability. GREEN-WIN used stakeholder workshops, surveys, interviews and action research in C-40 cities (Barcelona, Istanbul, and Shanghai) to generate insights about the conditions for win-win opportunities in climate mitigation/adaptation.

Results of both studies suggest that the implementation “gap” lies at the nexus of (mis)recognition and (dis)enablement of the three dimensions. The cases illustrated that implementation is not a simple territory to be learned, represented and administrated, but a living, dynamic terrain of interdependent processes. These must be continuously navigated through a synergistic focus on the organizational dimensions in specific social-environmental systems. Overcoming barriers to successful implementation and sustainable development lies in creating and sustaining this focus within an enabling polycentric organization, rather than traditional adaptation project- pathway-government links. In the GREEN-WIN project, the greatest potential for adaptation implementation comes through perceived win-win opportunities that arise from disruptive innovations or crises, and the responses to these opportunities through recognition and novel (re)organization of the “adaptation triangle.”

This work offered an empirically grounded reconsideration of both formal and informal adaptation initiatives in the organizational terrain of implementation. This stream was important for policy makers, planners, practitioners and others interested in implementing adaptation action from local to regional to national scales and through various organizational frames. The research provided the cross country and city comparison, synthesis, and generalizable lessons about assessing, organizing, and resourcing adaptation for effective implementation and robust action.

d) How effective are Nature-based Solutions to climate change adaptation? Assessing and mapping the evidence base.

By : Alexandre Chausson, Oxford University , United Kingdom

It is said that policy makers and practitioners working on climate change adaptation are increasingly seeking robust evidence on the ecological, social and economic effectiveness of nature-based solutions (NbS). In particular, knowledge is sought on how, and over what temporal and spatial scales, the natural environment effectively protects communities from the impacts of climate change, how climate hazards interact with other stressors to influence adaptation, and how cost-effective NbS are compared to engineered approaches. In recent years, there has been a rapid growth in studies investigating the use of biodiversity and ecosystems for adaptation, but the evidence remains scattered, hindering the mainstreaming of NbS into national climate adaptation policy and planning.

To address this, the author critically appraised and consolidated the large and dispersed evidence on the effectiveness of NbS to climate change adaptation, building on and updating a 2012 review and expanding the scope to incorporate NbS to food and water security. The author had a twofold approach :

- 1) to highlight knowledge gaps to stimulate further research, and*
- 2) to produce an evidence map categorizing studies investigating links between intervention type and adaptation outcome.*

This evidence map aided decision makers at the nexus of climate change, conservation and development planning by helping them to rapidly find and assess information most relevant to them. The author conducted a systematic review of the peer-reviewed literature on NbS effectiveness. A standardized keyword string was used to search peer-reviewed publication databases for original research, including impact

evaluations, as well as reviews and meta-analyses. Publications were screened through a stepwise application of inclusion and exclusion criteria at the title, abstract, and full text levels. Descriptive information was extracted using a set of pre-defined questions including basic information (e.g. location, ecosystem, impact addressed, intervention type, and adaptation target), type of evidence, description of the evidence (including social, environmental, and economic outcomes) and methodology employed. Using predefined categories this set of descriptive information was analysed for biases in the different categories.

The author identified major biases in terms of geography, type of ecosystem, evaluated outcomes (social, ecological, and economic), and intervention-type. The author posited that there is a strong emphasis on NbS to short-term hazards (disaster risk reduction) and coastal ecosystems (in particular mangroves), and a focus on ecological rather than socio-economic outcomes. Meanwhile, there is a lack of evidence on the effectiveness of NbS more long-term impacts, in marine, montane and grassland ecosystems, and on socio-economic outcomes (especially economic effectiveness to immediate large-scale threats). They further stated that few studies robustly compare the success of an NbS intervention relative to engineered or hybrid alternatives. They also uncovered large differences in study design, limiting the extent to which effectiveness can be compared quantitatively over different spatial and temporal scales.

Their systematic-map provided a much-needed snapshot on the state of the evidence-base, highlighting the urgent need for further quantitative studies on the socio-economic effectiveness of NbS, in particular to long-term climate change hazards and in non-coastal ecosystems, and over varying spatial and temporal scales. Communicating these and other key gaps was crucial to guide funding, research, and practice. The evidence map will facilitate science-based target-setting and scaling-up of NbS as national climate adaptation policies (Nationally Determined Contributions, National Adaptation Plans and National Adaptation Plans of Action) are revised over the next 2-5 years.

8. As a result of this event, what is the ONE CHANGE that you may consider making backing back at work, if any? What follow ups are envisaged?

To support the development of resilient cities, local government responses to climate change needs to be coordinated with and integrated into planning processes. By offering insight into the mechanisms that guide planning and implementation in our cities, we can provide decision-makers and practitioners with the opportunity to critically engage with these mechanisms and systems in terms of how they can either promote development in support of resilience, or hinder it. Mainstreaming of climate sensitive spatial planning through integrated development with all critical stakeholders, as well as spatial planning are central to adaptation and will play a critical role in enabling decision makers to anticipate change and promote resilience within urban spaces.

9. Please indicate details of useful CONTACTS AND NETWORKS that were established during the event?

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