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Catalysing climate-resilient action in human settlements through knowledge

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Abstract:

To date, the scientific community has produced an abundance of information regarding the vulnerability of inhabited areas to climate change, along with the required tools, methods and processes to build resilience. However, this continuously expanding body of knowledge has not been equally accessible for various communities around the globe. Unevenness of access to such knowledge persists and several challenges continue to present barriers to effective planning and implementation of climate adaptation actions in towns, cities, and villages. Vulnerable communities are often left uninformed, and even when information is available and accessible, it may not address the unique challenges of each group of stakeholders.

In this light, the Nairobi Work Programme, which is the knowledge-for-action climate resilience network of the United Nations Framework Convention on Climate Change, seeks to identify the most urgent knowledge challenges that hinder adaptation actions in human settlements, as well as opportunities for innovative collaboration processes to address them. This document summarizes the discussion from the “*Catalysing Climate-Resilient Action in Human Settlements through Knowledge*” co-event that was attended by various representatives from policy-makers and knowledge providers such as universities, research centres, NGOs, and others.

Keywords:

Adaptation, human settlements, knowledge support, resilience, science-policy partnership.

1. Introduction

Human settlements can be defined as any inhabited areas ranging from the big, densely populated cities such as New York and Jakarta, to small villages and coastal towns in the Solomon Islands.¹ Each inhabited unit encounters increasing threats from climate change that are unique to its ecosystem and socio-economic conditions. Consequently, information and knowledge play a pivotal role in ensuring that efficient and effective strategies are implemented in building resilience.

To date, the scientific community has produced an abundance of information regarding the vulnerability of human settlements to climate change, as well as the required tools, methods and processes to build resilience in human settlements. Consequently, we have an understanding of disaster risk management to address extreme events such as torrential rain and storm surges. Some research is also ongoing on slow-onset events such as drought and sea level rise. However, this continuously expanding body of knowledge has not been equally accessible for various communities around the globe. Vulnerable communities are often left uninformed. Even when information is available and accessible, it does not address the unique challenges faced by each group of stakeholders.

In this light, the Nairobi Work Programme (NWP) seeks to identify the most urgent knowledge challenges that hinder adaptation action in human settlements, as well as opportunities for innovative collaborative processes to address them. This objective aligns with NWP's mandate under the United Nations Framework Convention on Climate Change (UNFCCC) to conduct activities that generate knowledge in support of countries' adaptation action on human settlements, and in a way that contributes to the achievement of Sustainable Development Goals (SDGs).²

Therefore, the “*Catalysing Climate-Resilient Action in Human Settlements through Knowledge*” co-event was designed to diagnose these challenges and opportunities at both the national and sub-national level. Based on that discussion, this article distils key insights that can be useful for policy-makers, practitioners and individuals interested in taking action so as to address knowledge challenges and build resilience in human settlements at different scales.

¹ According to OECD's Glossary of Statistical Terms, “The term ‘human settlements’ is an integrative concept that comprises: (a) physical components of shelter and infrastructure and (b) services to which the physical elements provide support, that is to say, community services such as education, health, culture, welfare, recreation and nutrition.”, accessed July 5, 2017, <https://stats.oecd.org/glossary/detail.asp?ID=1266>

² FCCC/SBSTA/2016/L.9, at http://unfccc.int/documentation/documents/advanced_search/items/6911.php?priref=600008969#beg

2. Knowledge Challenges that Hinder Climate Resilience in Human Settlements

Regardless of the abundance of information that we have today, uneven access to such knowledge persists and several challenges continue to hinder effective planning and implementation of climate adaptation actions in cities, towns and villages. Understanding these obstacles is key in addressing them. The co-event highlighted three areas that require focused attention:

2. 1. Accessibility and action-ability of Information

The approach used in communicating information was highlighted as one of the major issues. It has been perceived that existing information has not been well-translated into formats that are accessible and actionable by stakeholders. For example, information often lacks the financial analysis that could support decision-making process for policy-makers. Inclusion of simple cost-benefit analyses such as a direct comparison between the cost of activities compared to the current and future costs of projected climate change impacts are perceived to be useful. Moreover, costs associated with accessing knowledge can and have created gaps in the capacity to respond to climate change between communities with different levels of resources.

2. 2. Role of Traditional and Indigenous Knowledge

Traditional and indigenous knowledge generally refers to knowledge systems embedded in the cultural traditions of indigenous peoples, or local communities. Traditional and indigenous knowledge usually encompasses information about traditional technologies of subsistence (e.g. agriculture, fishing, hunting and gathering), as well as ecological knowledge that is useful in building resilience against climate change. Inclusion of local know-how and wisdom can strengthen a community's capacity in adapting and responding to climate change.

2. 3. Contextualization of Information

While knowledge on the resilience of human settlement is growing, stakeholders often struggle in making sense of this information. As a result, many fail to utilize this information to their advantage. For example, early warning system for heavy rain alerts or future projection of drought may not be directly understood by indigenous people whose livelihood depend on agriculture. Therefore, contextualizing information by translating it in how new season patterns are likely to affect indigenous peoples' crops can increase the usability of information.

Efforts to contextualize should also go beyond language. For example, certain communities, such as those living in rural areas, often have issues in understanding the technicality of climate challenge unless they are directly communicated in their language and translated into terms they can relate to. Therefore, understanding cultural and socio-economic features of a community unit should be an inseparable part of the process.

3. Key stakeholders to engage

Sensitivity towards the different needs and backgrounds of stakeholders is critical in ensuring that information is accessible and actionable. Since demand-driven distribution of information is generally more effective, it would be helpful to understand which communities need which information and knowledge the most.

3. 1. National and subnational policymakers

Supportive regulations and public infrastructure are two key elements in building resilience in cities, towns and villages. When publications containing important information regarding best practices and approach are not easily understood and accepted by policy-makers, they are less effective in enabling change. Among others, issues of language and cost for access have been identified as preventing policy-makers to fully benefit from knowledge and information. In some regions, the use of monetary value to standardize and make information comparable has been perceived as a useful approach.

3. 2. Households

Households are one of the key beneficiaries of climate resilience programs, and yet they are not adequately targeted as part of climate resilience information campaigns. Oftentimes, conversations only take place at policy-level, leaving a gap in awareness regarding the need for long-term adaptation action at household and community-level.

3. 3. Farmers

Farmers comprise a critical group whose core livelihood sources are being affected by climate change. Among others, shift in seasons and weather patterns present a real, day-to-day risk for agricultural production. Meanwhile, they are not always equipped with the necessary information. For example, information on unusual rainfall frequency dispatched by meteorological department in Africa is often not understood by local farmers. Contextualization of information can address this problem.

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3. 4. Trust networks

Individuals that are connected by a similar interest or background, known as a 'trust network', can also be engaged to further strengthen community understanding for climate adaptation. For example, New Orleans has incorporated the subject of climate change awareness into school programmes and part of children education, which has led to substantial benefits in terms of general awareness among the population.

4. Types of knowledge support needed for success

This section further discusses the types of knowledge support that is required based on experiences of policy-makers.

4. 1. Use of narratives to translate information

Among others, the use of narratives as a tool to translate knowledge into accessible information for households has been highlighted. Knowledge providers should be encouraged to think about ways information can be framed so that it is more actionable and understandable by household members. This also has the potential to bridge silos between subnational governments and community members. For example, 'sea level rise' jargon can be reframed as percentage of likelihood for water to flood the streets, and possible levels of the water in the street, as this would be more understandable to households.

4. 2. Innovative tools to communicate information

Other than narratives, researchers can also use communication tools that help contextualize big data and dense information into digestible products. Some also suggested infographics that accompany policy briefs as a good approach to relay key ideas and important figures. Gamification of information where users can measure their knowledge is another area that would be interesting to explore.

Other than content, the choice of the medium to share information is also important. For example, farmers that do not have access to 24-hour electricity and internet can benefit from portable information like cards or boards, or similar physical medium that is presented in a local language, can be easily transported, and endures rainy seasons.

4. 3. Educational system

The use of academic curriculum has also been discussed as a sustainable mechanism to bridge the knowledge-to-action gap. As an example of best practice, participants highlighted the Educational Partnerships for Innovation Communities (EPIC) Network that directly connects universities and communities.³ The EPIC Network enables faculty members to work with a specific community to advance sustainable development and the quality of life in that area. Its approach differs from traditional partnership where one academic works with one government representative. Instead, it provides an interface where faculty members from multiple disciplines can collaborate with different teams of the municipality or local government on a joint-project.

4. 4. Inclusive dialogue

Finally, several participants mentioned the need to make stakeholders meetings more inclusive, including through holding more dialogues in suburban or periphery areas to complement those held in cities or in more developed regions.

5. Cross-cutting recommendations

Having broadly assessed the challenges to bridge the knowledge-to-action gap, the key stakeholders to engage, as well as the different types of knowledge support that could be implemented, several recommendations in designing future endeavours were mentioned during the open discussion:

5. 1. Improve relationship between policymakers and researchers

Some participants noted some previous resistance from policy-makers to research findings, as well as frequent ignorance about their specific knowledge needs in relation to resilience in urban settlements. Consequently, some policy-makers may not feel the need for formalizing partnership between a government unit and a knowledge provider.

In this regard, several solutions to improve the relationship between government officials and knowledge providers have been suggested. First, knowledge providers need to recognize the institutional knowledge of government agencies and adequately include it in the design of their research. Additionally, knowledge providers can use seminars to communicate research outputs to local and national governments as well as the general public.

³ See <http://www.epicn.org/> for more information.

Finally, researchers are encouraged to work with their target groups since the early stage of their research to be able to effectively cater to their specific needs. Among others, this could help researchers identify the right medium of communication and the best design of tools through an iterative dialogue. While such approach may result in multiple, often contradictory demands from practitioners with different backgrounds, the overall outcome from the inclusive process yields positive results in understanding the target groups' aspirations.

5. 2. Inter-disciplinary cooperation

Integration between hard science and social sciences has been shown as increasingly critical. There is a need to establish inter-disciplinary cooperation where environmental scientists and engineers can work with sociologists, economists, and anthropologists in developing certain tools or frameworks that are digestible for stakeholders.

An example of effective tools that foster inter-disciplinary cooperation is to develop collaborative processes through which students from diverse backgrounds and disciplines work with communities to respond to some of the local governments' knowledge needs. Students can collaborate and interpret knowledge into locally relevant information for local communities. These processes also bridge the gap between knowledge producers and the knowledge users who make decisions on adaptation action at the local level.

5. 3. Utilizing networks

Finally, policy-makers can utilize knowledge networks to respond to their knowledge needs. Since government officials do not necessarily have the time nor the skills, the Global Adaptation Network (GAN) can respond to knowledge needs as an on-demand service to deliver situation-specific information.⁴ Currently, GAN has four pilot projects where it operates as a facilitator that ensures a people-to-people information gathering or sharing process. GAN delivers information in a format that is relevant to the situation.

⁴ Read more about Global Adaptation Network: <https://sustainabledevelopment.un.org/partnership/?p=7387>

References:

- Further information on the activities of the Nairobi work programme on human settlements and adaptation can be found on the dedicated webpage of the Adaptation knowledge portal :
<http://www4.unfccc.int/sites/nwp/Pages/HS-page.aspx>
- The Adaptation Knowledge portal also provides a wealth of information and knowledge on adaptation and climate-resilience: www4.unfccc.int/sites/NWP

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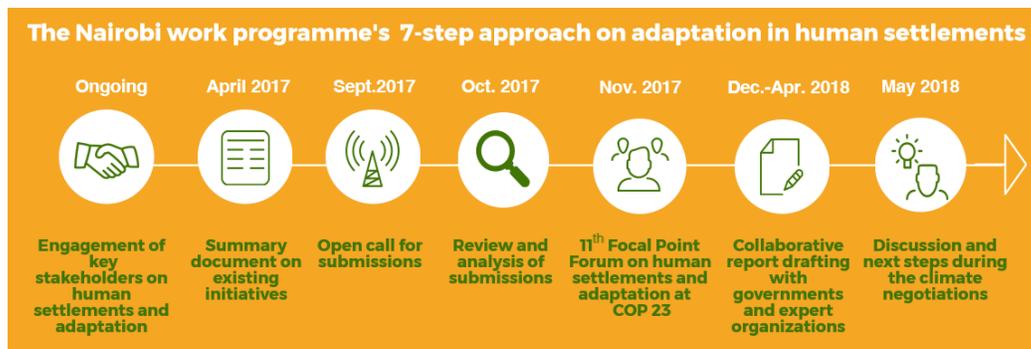


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Annex:

Mandate of the Nairobi Work Programme:

The Nairobi Work Programme (NWP) is a knowledge-for-action climate resilience network. It has been mandated by all countries that are Parties to United Nations Framework Convention on Climate Change (UNFCCC) to conduct activities that generate knowledge in support of countries' adaptation action on human settlements. It aims to support enhanced adaptation action and contribute to the achievement of Sustainable Development Goals. These activities include are part of the 7-step approach below:



NWP's activities on adaptation in human settlements

They include:

- Drafting a summary of existing initiatives in the field of human settlements and adaptation (May 2017)
- A call for submissions (September 2017), the organization of a Focal Point Forum on human settlements and adaptation, featuring speakers from national and subnational governments, as well as from expert organizations (November 2017 during COP 23)
- A synthesis report based on the key findings of the submissions and outcomes of the Focal Point Forum (May 2018)

Opportunities for Organizations to Get Involved with NWP on Human Settlements:

- Join the Nairobi work programme and be informed of engagement opportunities that are specific to your organization: <http://www4.unfccc.int/sites/NWP/pages/Join.aspx>

- Before 20 September 2017, make a submission to share information, good practices, lessons learned and available tools and methods on key focus areas: <http://www4.unfccc.int/sites/NWP/Pages/HKS-page.aspx>
- Participate in the 11th Focal Point Forum on adaptation and human settlements during COP 23, in November 2017, in Bonn (Germany). If you are interested, contact: nwp@unfccc.int.

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