Insight from the 2018 Nexus Conference at the University of North Carolina, Chapel Hill

by Vincent Virat

Here are the insights gathered from the 2018 Nexus Conference at the University of North Carolina, Chapel Hill, which examined how water, energy and food systems are interlinked and what this means for sustainability.
In April, the Water Institute at the University of North Carolina (Chapel Hill, USA) hosted the second Nexus Conference. The event embraced a “nexus” approach, focusing on the interlinkages that exist across and between water, energy and food systems, and how these interactions can better be understood and managed. By gathering a broad community of researchers, decision-makers and civil-society representatives from a range of sectors and disciplines, the Nexus Conference provided a space for collaboration and knowledge-sharing where the nexus community could build a common vision. Their vision will be discussed at this year’s High Level Political Forum on sustainable development. The conference was also an opportunity for the Future Earth Nexus Knowledge-Action Network to present its recently published Research and Engagement Plan. This article gathers some of the key insights from various participants.

The relevance of a water-energy-food nexus approach

Dr Louise Karlberg from the Stockholm Environment Institute highlighted the debate over the relevance of the nexus approach since the launch of the Sustainable Development Goals (SDGs) in 2015, a set of 17 sustainable development goals to be achieved by 2030 under the umbrella of the United Nations. Although the SDGs provide a broader and more integrated framework of action than a nexus approach, Dr Louise Karlberg argued that the nexus approach remains important as it is not possible to “carry the whole of the SDGs at all times”. A nexus approach is key to tackling complexity, especially when it comes to communicating findings to decision-makers.
Importance of optimisation, synergies and trade-offs

Nexus approaches encompass much more than just integration, including optimisation, synergies and trade-offs. According to Dr Mathew Kurian from the United Nations University, a water-energy-food nexus approach is crucial to undertaking the transformations needed for tomorrow. Such transformations are most notably needed in the energy and agricultural sectors, which while relying on water, provide two of the most fundamental resources for human development.

Engaging stakeholders

Engaging and ensuring that the concept is relevant for stakeholders is another challenge. Dr Minu Hemmati, a specialist in multi-stakeholder processes, argued that in order to be successful, nexus approaches should seek to include a wide array of actors, considering often-overlooked cultural and individual dimensions, as well as gender inequalities. Alf Wills, from the Department of Environmental Affairs of South Africa, suggested that entry points into the nexus must come from “your biggest constraint.” The constraint could be water scarcity, for example. From the key constraint, key connections to other systems must be identified to find synergies, avoid tradeoffs and in turn optimise the use of one’s resources. Vincent Virat, from the Future Earth Secretariat, presented one of the case-studies from the Nexus Knowledge-Action Network

Research and Engagement Plan, highlighting the challenges of participatory mechanisms for the nexus at the local level.
The urban dimension of the nexus concept

Conference organisers Felix Dodds and Dr Jamie Bartram chose to focus on the urban dimension of the nexus concept, where the nexus can be concretely applied, as cities and other local authorities are critical to achieving the SDG targets in an integrated way. As shown throughout the conference, this extends well beyond SDG 11 (Sustainable Cities and Communities) since 65% of the SDG targets can only be achieved with local actors. Looking at the nexus through an urban lens is even more important as a vast and increasing majority of the world population now lives in cities, with large implications for water, energy and food resources. Franziska Schreiber, from the think tank Adelphi, explained that cities tend to follow strong sectorial lines and rarely explore co-benefits, often because they lack knowledge, capacities and a clear mandate. There is therefore a strong need for frameworks to operationalise the nexus at the urban level, such as the International Council for Local Environmental Initiatives “Urban Nexus”. In turn, successful and upscalable local practices and experiences must be shared, such as urban farming and local energy production.

Development of infrastructure

As highlighted by Dr Mathew Kurian, infrastructure connects the academic world (e.g. studying soil mechanics, climate change etc.) to real-world issues of water, energy and food security and how such services are delivered (e.g. solar energy development, dam construction etc.). Nexus approaches can and should therefore play a key role in the development of infrastructure, particularly in medium-sized and fast growing cities, for which the delivery of water, energy and food is either underdeveloped or at risk.
Need for good data and models

Innovative planning and management mechanisms need to promote the social, political, environmental and economic sustainability of infrastructure development. To do so, they need to be based on sound evidence, in the form of data, and models which provide interpretations of this data. Indeed, good data and models are key to effectively manage water, energy and food resources and their governance. Furthermore, engaging the various stakeholders and actors relevant to the water, energy and food sectors and understanding the existing and non-existing linkages between them is integral to any nexus-related policy, as shown by Bassel Daher’s work on mapping nexus stakeholders interactions (Texas A&M University).

The role of capacity building

Dr Claudia Ringer from the FE³W Network, suggests that capacity building is crucial to successful implementation of nexus governance, such as the FE³W Network’s Risks and Options Assessment for Decision Making (ROAD). Projects like CLEWs (Climate, Land, Food, Energy, Water Strategies) establish the link between modelling tools and capacity-building, creating nexus assessments with stakeholders at various levels. Capacity building can also be illustrated in research initiatives like Dr
Capacity building can also be illustrated in research initiatives like Dr Amollo Ambole’s CoDEC project (ICSU, Nairobi University), which tackles energy poverty, human health and gender equality in informal urban African settlements, by bringing people back into the nexus as large panels of local stakeholders take part in the co-generation of data, the co-design of solutions and the building local capacities.

For further information
- Nexus 2018 Message
- Conference Program
- Conference Abstract Book, detailing the mentioned participants’ contributions