

CONFERENCE REPORT

Report: Emerging issues facing the water–energy–food nexus in the Middle East and Asia

The King Abdullah Petroleum Studies and Research Center (KAPSARC) and the Lee Kuan Yew School of Public Policy, National University of Singapore organized a workshop on ‘Emerging Issues Facing the Water–Energy–Food Nexus in the Middle East and Asia’ on 22 February in Singapore.

The workshop brought 21 domain experts together to discuss the challenges and issues facing the water–energy–food (WEF) nexus in the Middle East and Asia. Through 12 presentations and a special video presentation by Nestlé, emerging issues from the Middle East and Asia were explored across varying scales. Some of the presentations focused on emerging WEF issues in Saudi Arabia, China and Sri Lanka. Specific location-based case studies from Indonesia and Vietnam were also examined in closer detail. Beyond such micro-level analysis, issues from Asia and the Middle East were explored on a regional scale, while the remaining presentations explored these issues on a more global scale.

The workshop was premised and organized around four main themes: mobilizing water and energy for agriculture; financing water and energy infrastructure; the transboundary management of water and energy resources; and the emerging issues facing the WEF nexus in the Middle East and Asia. The first session examined the role of water and energy in Vietnam, Saudi Arabia and China with respect to agriculture. Specifically, decision-making frameworks, crop switching and solutions based on the nexus perspectives were presented and discussed.

The second session was broadly based on financing water and energy infrastructures. Case studies exploring the role of private companies like the Asian Development Bank (ADB) and Nestlé in financing water and energy infrastructures were discussed. Within the context of Saudi Arabia, the potential of desalination as a dominant water source was discussed and it was postulated that desalination could be one way forward to ensure the sustainability of water in country – and this was discussed in relation to food production and food security. Lastly, public–private partnerships and its role in financing the energy sector for poor, rural communities was also discussed.

The third session sought to illustrate the complexities involved in managing water and energy resources across space by examining the transboundary nature of these resources. Specifically, presentations examined the interconnectivity of such resources at a global scale, the trade of embodied water and, finally, hydro-politics within a regional scale (the Middle East and Asia).

The final session was catered towards highlighting macro-level issues that were emerging in both regions and, eventually, concluded with linking these issues with broader issues of policy formulation.

These presentations helped to steer discussions surrounding the homogeneity of issues – and associated solutions – across regions and countries. Moreover, as discussions on the WEF nexus tend to be limited within the micro-scale, these macro-level presentations shed some light on emerging issues at a regional and a global scale – and, thus, worked towards questioning the extent to which best practices in each region can be transferred despite geographical and economic differences. At the same time, these topics highlight the complexity of the WEF nexus and showcases how these emerging issues occur at different scales, magnitudes and emerge within varying political conditions. Hence, despite the homogeneity of issues faced by both regions, there is a need to account for these differences that might demand more specific measures as opposed to a one-size-fits-all approach. The focus on these two regions was strategic considering the type of unique conditions in these regions and the kind of impact it would have in relation to the WEF nexus. The Middle East is a water-scarce region and focusing on this region illustrates the need for more holistic policies that examine the interconnectivity between water and energy resources with the agricultural industry. On the other hand, Asia presents itself with a diversity of issues – where despite being a resource-rich region, it continues to face issues of limited water and energy supplies in some regions. Lastly, there is a need to account for the linkages between both regions in terms of agricultural and resource trade – and, thus, it further complicates the notion of a nexus especially when examined across global space.

Key debates

The absence of baseline data

Before the identification of emerging issues, there is a need for accurate data to identify current challenges and issues. One recurring theme was the issue of limited and inaccurate baseline data. Specifically, many speakers illustrated the challenges related with collecting data in their home countries, while some questioned the validity of data and argued for more stringent processes to account for the validity of baseline data. In large countries like China and India there is a need for baseline data at various geographical and governance scales to gauge correctly the existing situation to avoid the severe simplification with the use of only national-level data. Moreover, the issue of transparency was raised as participants discussed the various methodological issues with collecting data in some countries and, thus, some speakers felt there was a need to establish a national database. These suggestions point to the evolution of methodological thought amongst researchers, whom are questioning the epistemology of academic and research work and, in turn, turning a more critical eye to emerging issues related to the WEF nexus in the Middle East and Asia.

Debate on renewable energy

The actual merits of renewable energy were yet another area of discussion during the workshop. The actual benefits of renewable energy were discussed by the various participants, many of whom were interested in the actual benefits of using renewable energy. Some participants correctly identified the price of these alternative renewable resources as a major limitation – especially since the use of such alternative energy sources can have an impact on food prices. There was a need to consider the interconnections of the use of renewable

energy and its impact on the price of food – which might have colossal impacts on the food security for many food-importing nations. Therefore, the price of renewable energy remains as a key concern despite its possible benefits.

The promise of technology in the next decade


The evolution of technology and its impact on the WEF nexus was yet another area of debate amongst participants. Most of the discussion evolved around the emancipatory benefits of future technology and its role in alleviating water and energy-related issues in many countries. There was a generally optimistic stance in relation to the evolution of technology over the next few decades. However, some caution was thrown on the actual benefits for such new technologies. For instance, the presentation on desalination in Sri Lanka and Saudi Arabia resulted in a lot of follow-up discussions on the impact of these new technology on prices and the need for private-level investment for water and energy infrastructures. Moreover, a discussion on the replenishment of groundwater aquifers left the participants divided – some of whom felt there was enough technology effectively to utilize rainwater to replenish ground water stock, whereas others were more sceptical on the type of technology available and cautioned against its actual uses. Hence, despite the possibility of advances in technology in the water and energy sectors, there is a need to question the actual impacts of their advancements – more so, in questioning how these technological developments can or cannot be effectively utilized in these resource sectors. Beyond the actual impacts, there is also a need to understand the limits of existing and future technologies.

The issue of governance in the water and energy sectors

The workshop ended with a broader discussion on political issues relating to resource management. Specifically, many argued for the need to consider the role of governance structures in some countries and to consider its role in limiting research work. For example, there is a need to consider how the WEF nexus and its related issues fall under the purview of varying ministries – and the management of such issues becomes complicated and ridden with bureaucracy due to the lack of inter-ministry coordination in some countries. At this juncture, there is a need to account for the role and place of private actors in the water and energy sectors. In the absence of state-led interventions, private stakeholders have widened their presences in some communities and are becoming key investors for water–energy infrastructures. The inclusion of private stakeholders is important due to their involvement in energy infrastructure projects. For example, the research on water has been carried out by private players in recent years as opposed to government bodies and research institutes. The workshop ended with a call for a workshop organized for private and public stakeholders to meet with academics to discuss the issues related to the WEF nexus – and, thus, working as a more effective forum to address emerging issues.

To conclude, the workshop has worked to tease out varying emerging issues that are currently troubling the Middle East and Asia. Corresponding discussions have also worked to highlight various issues pertaining to the WEF nexus – particularly, the need for better baseline data and the role of governance within the water and energy sectors. These discussions point to the complexity of studying and theorizing the WEF nexus, especially since it

is an issue that is not only interconnected with other emerging issues but also remains highly variable across space. Nevertheless, the WEF nexus remains important and should be continuously studied since it showcases the various components and facets of these interconnected issues. In addition, the discussion surrounding governances illustrate the role of governing bodies and private actors within the WEF nexus. Considering the varying political conditions across the world (and within both regions), there is a need to consider the role of differing governance structures in shaping the outcomes of these WEF nexus issues. Shifting global and political structures have introduced private players into the water and energy sector, changing the role of the state – beyond its traditional role of being the sole provider in these sectors. Moving on, the role of private actors within the water and energy sector should be examined to understand fully their potential to resolve many of the emerging issues in relation to the WEF nexus in the Middle East and Asia.

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