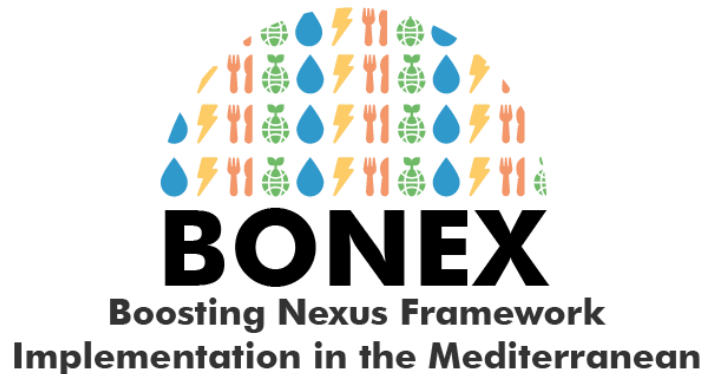




1st Stakeholder workshop in Lebanon



Workshop purpose

On January 24th, 2023, the BONEX project successfully hosted its first Stakeholders Workshop at the American University of Beirut (AUB). This event marked a significant milestone for the project, serving as a platform to bring together key players from across Lebanon to collectively address pressing issues concerning the Water-Energy-Food-Ecosystem (WEFE) Nexus.

Stakeholders attending to the meeting

The workshop witnessed the participation of a wide and diverse group of stakeholders, reflecting the interdisciplinary nature of the WEFE Nexus. Among the attendees were farmers, agricultural engineers, environmental scientists, energy professionals, and water experts, alongside representatives from non-governmental organizations (NGOs), entrepreneurs, policymakers, and professionals from the academic and private sectors. This rich diversity of participants was essential for ensuring a broad range of perspectives, as the challenges surrounding the WEFE Nexus in Lebanon are multifaceted and require collective action.

The event commenced with welcoming remarks, emphasizing the vital role of collaborative initiatives like BONEX in addressing Lebanon's growing challenges at the intersection of water, energy, food security, and environmental sustainability.

A key highlight of the keynote was the introduction of the Agrivoltaics Demonstration Project implemented at AUB's Advancing Research Enabling Communities Centre (AREC), located in the Beqaa Valley. The demonstration site integrates renewable energy production through solar panels with sustainable agriculture, illustrating the tangible benefits of WEFE Nexus approaches. This project serves as a practical model of how innovative technologies can simultaneously improve resource efficiency, boost agricultural productivity, and reduce environmental impacts critical issues facing Lebanon today. After the formal presentations, attendees had the opportunity to engage in informal networking sessions. These interactions provided a platform for farmers, engineers, entrepreneurs, and experts from different regions of Lebanon to connect, share experiences, and identify common challenges. The presence of stakeholders from various disciplines and backgrounds fostered meaningful dialogue and opened avenues for collaboration beyond the workshop.



Methods and results

The core of the workshop focused on facilitating an interactive discussion session aimed at capturing participants' insights regarding Lebanon's WEFE Nexus challenges. Facilitators encouraged attendees to share their personal and professional experiences dealing with water scarcity, high energy costs, food insecurity, and ecosystem degradation. Participants voiced concerns over several interconnected issues, including:

- The escalating energy crisis, driven by Lebanon's reliance on fossil fuels, soaring electricity costs, and limited access to renewable energy alternatives.
- Water contamination and scarcity, exacerbated by inadequate infrastructure, pollution of water sources, and inefficient water management practices.
- Environmental degradation, including soil erosion, loss of biodiversity, and unsustainable agricultural practices that threaten long-term food production.
- Economic hardships faced by farmers, particularly in rural areas, due to increased input costs, unreliable water supplies, and limited market access.
- These challenges highlighted the urgent need for integrated, cross-sectoral solutions that address the WEFE Nexus holistically. The open discussion format encouraged collaboration among participants, fostering a sense of shared responsibility for tackling these complex problems.

As a key outcome of the workshop, participants collectively developed a shared problem statement summarizing the most critical issues Lebanon faces concerning the WEFE Nexus. Building upon this, facilitators introduced a Causal Loop Diagram, a visual tool designed to illustrate the interconnections and feedback loops between the various challenges discussed. The diagram highlighted how energy shortages, water scarcity, environmental degradation, and food insecurity are deeply intertwined, reinforcing the need for systemic solutions rather than isolated interventions.

The creation of the causal loop diagram was instrumental in providing participants with a clearer understanding of the complex dynamics at play within Lebanon's WEFE Nexus. It also served as a foundation for identifying potential entry points for action, innovative solutions, and future research priorities. The workshop concluded with reflections from participants, many of whom expressed appreciation for the opportunity to engage in constructive dialogue with experts and stakeholders from across sectors. Several attendees emphasized that this type of multi-stakeholder engagement is essential for advancing sustainable development and resilience in Lebanon. Many expressed enthusiasm for continued collaboration within the BONEX project framework, including participation in future workshops, pilot projects, and knowledge-sharing events.

Overall, the first BONEX Stakeholders Workshop successfully achieved its primary objectives of raising awareness, promoting interdisciplinary dialogue, and laying the groundwork for future cooperation on WEFE Nexus issues in Lebanon. The event demonstrated the power of bringing together diverse voices to co-create solutions that are not only technically sound but also socially inclusive and contextually appropriate.

As the BONEX project moves forward, the insights and connections forged during this initial workshop will play a crucial role in shaping interventions that can enhance water, energy, food, and ecosystem security for Lebanon and the broader Mediterranean region.

