

Fostering Culturally-Sensitive Climate Adaptation for Sustainable Development: A Living Lab in Figuig, Morocco

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Urban Living Lab

Timeframe: 2021 - ongoing



Italy

ILAUD, The International Laboratory of Architecture and Urban Design (Co-coordinator)

Morocco (hosting)

My African Competition

Municipality of Figuig

Université Internationale de Rabat (Co-coordinator)

UK

University of Westminster

The Netherlands

Wageningen University

Urban Challenges Tackled

Water scarcity and climate vulnerability

Social exclusion and inequality

Economic marginality

Cultural and institutional fragmentation

Funding

Municipality of Figuig

The foggara system, a traditional, gravity-fed irrigation infrastructure sustaining oasis agriculture in arid environments.



Scholars and students visiting the Oasis, June 2022.

The Oasis of Figuig, located in the Oriental Region of Morocco near the border with Algeria, faces critical challenges of sustained livelihood and rural depopulation, aggravated by climate change. Increasing water scarcity, and inefficient water management, may lead to desertification and agricultural production rapid decline. These pressures threaten not only the ecological survival of the oasis but also the socio-economic conditions and the cultural heritage that have sustained it for centuries.

The initiative aims to envision and co-design, with local stakeholders, pathways toward a more resilient and sustainable future for this unique oasis settlement.

Figuig: The Oasis of the Future is a research- and design-driven initiative launched in 2022 by a team of academics from the International University of Rabat, in collaboration with local and international partners, working alongside the local authorities of Figuig.

The project is guided by three main objectives: (1) to develop medium- to long-term scenarios for resilience and sustainability in Figuig, widening the participation of local stakeholders; (2) to translate technical and scientific knowledge on climate adaptation into accessible formats for the civil society; and (3) to identify concrete actions that address both climate adaptation and cultural resilience for sustainable development.

The underlying research found that current development and conservation efforts are often fragmented,

outdated, or reliant on extractive models of development. Due to overreliance on scattered external funding and limited decentralization, these approaches have frequently resulted in short-sighted strategies, excluding vulnerable groups. Framing Figuig as a Living Lab enabled the integration of traditional knowledge, local policy dialogue, and community priorities into a structured policy and planning processes. The initiative contributes to local sustainable development broadening the discussion on oasis resilience, climate justice, and participation in arid Mediterranean regions.

Funding for organising a local conference in Oudja and a participatory workshop in Figuig were provided by the Municipality of Figuig. Institutional support has been provided by: Region de l'Oriental, Agence de l'Oriental, Agence Nationale pour le Développement des Zones Oasiennes et de l'Arganier; Ministère de l'Agriculture, de la Pêche maritime, du Développement rural et des Eaux et forêts; Ministère de l'Aménagement du territoire national, de l'Urbanisme, de l'Habitat et de la Politique de la ville.

The Trans-Disciplinary Dimension

The project included:

1. a planning and design charrette, called the Climate Studio, lasting 6 days, engaging 21 students and 6 tutors, as well as local civil society to co-produce visions for the future;
2. a series of community workshops to develop a citizen pact (pacte citoyenne).

The process

The project involved a series of online preparatory meetings and a multi-stakeholder public conference held in Oujda, Morocco, in March 2022 to define the shared objectives of the Urban Living Lab of Figuig. A subsequent field visit led to the identification of key sites and themes that formed the basis for a programme of actions.

Overall, these these actions operationalised the project's strategic objectives through concrete, place-based activities. The Climate Studio, held in June 2022, culminated in a public presentation that outlined a shared vision for the future of the Oasis. A local action plan approved in 2023

was directly linked to key project outcomes, and further municipal fundraising led to obtain a Cities Alliance-funded project on women and water management, completed in 2025.

The project unfolded in a supportive environment, enabled by the proactive engagement of the Commune of Figuig, which secured high-level partnerships with the Regional Government and relevant ministries. However, the context remains politically sensitive, and tensions resurfaced after the workshop due to a controversial water privatization proposal, straining relations between local authorities and community associations (2023-2024). These dynamics delayed the continuation of the Urban Living Lab. Only recently local trust improved, paving the way for a potential follow up of the approved action plan through a participatory fashion.

Competences and Skills

The project brought together a multidisciplinary team of Moroccan and European planners, architects, landscape designers, and local development experts, combining the communication, coordination, and community-engagement capacities of My African Competition with ILAUD's neutral facilitation and knowledge-sharing expertise, while the academic tutors supported the design charrette by mediating between students and local communities.

The Open Science Dimension

Inclusivity

The overall project prioritised **inclusivity** by integrating local and indigenous knowledge through civil society engagement, particularly during the Climate Studio's exchange with local associations and interviews. Community voices shaped the vision, bridging

technical and lived experience. Outcomes included community mapping of water use and visibility of women's social practices. This engagement led to the development of a first draft of a 'Citizen's Pact' or 'Pacte Citoyen'.

Equity

The 'Climate Studio' emphasized **equity** by focusing on intergenerational and gender inclusion through the 'Culture and Inclusion' theme. It highlighted Figuig's community diversity and the empowerment

of vulnerable groups. Key outcomes included promoting women's roles via training and support for creative businesses. Youth engagement targeted income, education, and culture to reduce migration. The project also linked equity to sustainable water management and heritage protection, shaping inclusive policies that foster social resilience and equitable development.

Sustainability

The Climate Studio proposed a comprehensive **sustainability** vision for Figuig, integrating social, environmental, economic, cultural, and institutional dimensions through four interconnected narratives. It aims to create an inclusive, resilient, and regenerative oasis balancing tradition and innovation. Emphasizing the need to reduce ineffective public spending on scattered projects, the visioning exercise prioritized investments to ensure a coherent, long-term strategy and minimize resource waste.

The project provided students with an immersive, inter- and transdisciplinary learning experience through the Climate Studio, engaging with real-world challenges, and enhancing facilitation and communication skills. Strengthened cross-cultural understanding due to participation of Moroccan and international students from London and Wageningen.

Visit of the Municipality of Figuig and presentation of the Master Plan, March 2022.



The Knowledge Valorisation Dimension

- **Social value:** Empowered local associations as key actors in shaping a shared vision, challenging outdated development models and raising awareness of climate challenges. The inclusive co-design process also strengthened trust
- **Economic value:** Laid the foundation for future impact through the 2023 Cities Alliance Women and Sustainable Cities programme, promoting women's leadership in water governance.

Outputs & Impacts

Outputs

Academic Publication: *Climate Adaptation and Cultural Resilience. The Case of the Oasis of Figuig, Morocco.*

This publication provides an overview of the work on climate adaptation and cultural resilience in the oasis of Figuig, Morocco, offering interdisciplinary insights and design-based strategies emerging from a collaborative, place-based planning process.

Impacts

Further funded projects: The 2023 Cities Alliance Women and Sustainable Cities programme (poner link) was implemented in collaboration with local governments and women organisations in Figuig (Morocco), Kairouan (Tunisia), and Sebkhia (Mauritania). It aimed to empower women in water governance by ensuring they are not just beneficiaries but active decision-makers, equipped with the tools, data, and opportunities to lead, manage, and shape inclusive, sustainable water solutions for their communities.

An abandoned part of the historic Ksar in Figuig.



The Urban Living Lab of Figuig has acted as a catalyst for innovative local governance, enabling a series of participatory actions, from the “Climate Studio’ to the citizens” pact.

The visioning exercise carried out during the planning and design charrette helped identify key strategic priorities, including the need to empower women.

