

### BOOK OF ABSTRACTS

















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#### The Environment and Sustainable Unit - ESDU

### Middle East Landscape Forum

Designing Transformative Change for Productive Landscapes October 20 – 22, 2022, in Beirut, Lebanon

The first Middle East Landscape Forum in the MENA region was organized by the American University of Beirut (Lebanon), Nürtingen-Geislingen
University (Germany), the German-Jordanian University (Jordan) and the Royal
Society for the Conservation of Nature (Jordan) with support of the German Academic
Exchange Service (DAAD). The landscape forum served as the main dissemination event of the Middle East Partnership for Productive Landscapes (MeProLand).
MeProLand was a capacity-building project targeting young academics in Syria, Lebanon and Jordan to develop their competence for transformative change.

#### **Landscape Forum Focus**

This forum brings seeds of positive change together to form a transformative ecosystem of people and their ideas. We discuss strategies, models and business ideas that aim at enhancing the sustainable and productive dimension of landscapes in the Middle East and North Africa (MENA). Your contributions may emerge from practice, research or education.

Productive landscapes stand for multiple value generation that is possible on the same territory. The concept is closely linked to ecosystem services and includes the tangible and intangible value of the landscape and its ecosystems. Ecosystem Services, commonly defined as benefits people obtain from ecosystems, are grouped into four broad categories: provisioning (provision of food, fresh water, fuel, and other goods), regulating (such as climate, water and disease regulation, and i.e. pollination), cultural (such as educational, spiritual, cultural values, heritage as well as recreation and tourism) and supporting (such as nutrient cycles or soil formation). Climate change, pollution, over-exploitation, and land-use changes are some of the drivers of ecosystem loss. Sustainable development is a key to preserving the tangible and intangible value of the landscapes and their ecosystems, at the same time providing physical, social, and economic well-being. The Middle East Landscape Forum will be an interdisciplinary platform to reflect on the dimensions of the productive landscape, share experiences and best practices, and create a network for transferability of knowledge in the region and beyond.



#### The Middle East Social Innovation Lab – MESIL

The Middle East Social Innovation Lab – MESIL – stands for a cooperation of German, Jordanian, Lebanese and Palestinian universities and NGOs.

MESIL partners collaborate to achieve innovation and curriculum development of higher education study programmes in the Middle East.

Within that frame, we work towards to following goals:

- Introduce interdisciplinary courses on social innovation and entrepreneurship
- Empower and qualify higher education teachers and young academics to act within transformative educational settings
- Improve the cooperation of universities with local communities to strenghen their role in the local and regional innovation system for sustainability
- To address local sustainability challenges by envisioning new models, cooperations and business ideas that reconcile environmental and social needs with viable economic approaches
- To mainstream sustainable development competences in higher education: systems thinking, futures and anticipatory thinking, values thinking, strategic thinking, collaboration and interpersonal competence

In order to achieve these goals, the MESIL group has been implementing the following activities since 2019:

- Interdisciplinary and intercultural open online courses on community-based social innovation and entrepreneurship
- On-site educational workshops addressing local community and landscape challenges in Jordan, Palestine, Lebanon and Germany.
- Capacity building in the form of staff training and coaching and provision of course materials and methodical templates
- Expanding regional target audiences, in particular by integrating young academics from Syria as specific capacity building target audience (supported by the **MeProLand** project)
- Knowledge sharing and networking during local workshops and the Middle East Landscape Forum

Since 2019, this initiative has received significant funding by the Germany Academic Exchange Service. The programme 'Higher Education Dialogue with the Muslim World' supports the core MESIL activities. The outreach to Syrian young academics and the Middle East Landscape Forum are supported by the programme 'Higher education cooperation with Jordan and Lebanon to support Syrian higher education staff' under the project title 'Middle East Partnership for Productive Landscapes' (MeProLand).

#### Scientific Committee



Professor Simon Bell is a Forester and Landscape Architect and currently head of the Department of Landscape Architecture at the Estonian University of Life Sciences. He is interested in aspects of the wider landscape, such as forests, rural and wild landscapes as well as the peri-urban zone. This includes planning and design aspects, forest landscape aesthetics, urban forestry, urban blue spaces, outdoor recreation and the health and well-being benefits of exposure to nature in such areas. Accessibility by people from a range of backgrounds to such landscapes has also been a feature of his research and practice. Simon was educated in forestry at The University of Wales, Bangor

(now Bangor University), landscape architecture at the University of Edinburgh and took his doctorate in landscape architecture at the Estonian University of Life Sciences. His recent publication: Urban Blue Spaces: Planning and Design for Water, Health and Well-Bein (routledge.com)



Salma Nashabe Talhouk is a Professor of landscape horticulture in the Department of Landscape Design and Ecosystem Management (LDEM), in the Faculty of Agricultural and Food Sciences (FAFS), at the American University of Beirut (AUB) in Lebanon. Her focus is on community stewardship of natural resources, digital technology and nature conservation, and cultural ecosystem services. She has published over 50 peer-reviewed articles, supervised / co-supervised 70 graduate students, taught 15 different courses, and produced more than 30 short documentaries on local green initiatives in Lebanon. She participated, presented, or organized more than

400 technical sessions, conferences and workshops. Talhouk is the founder of the AUB Nature Conservation Center; she served as LDEM chairperson, and as FAFS Associate Dean. Currently, Talhouk is founder and chair of the AUBotanic, she is a member of Ecosystem Services Partnership steering committee, and she is leading the development of Daskara, a nature and culture phone application.

Dr. Ali Chalak has earned his B.Sc. degree in Agriculture from the American University of Beirut



(AUB) in 2000, and completed his M.Sc. in Tropical Agricultural Development at the University of Reading, UK, in 2001. He then went on to complete a Ph.D. in Applied Economics at Imperial College London, Wye Campus, UK, in 2008. Dr. Chalak worked in consulting in the UK between 2006 and 2009, where he was involved extensively in economics and customer research conducted for a variety of water and wastewater companies and other utility and infrastructure providers in the UK and Europe. Dr. Chalak joined the Faculty of Agricultural and Food Sciences at

AUB as faculty member in 2009, and is currently Associate Professor of Applied Economics. His main research interests lie in the areas of agricultural and food economics, health policy, nonmarket and environmental valuation, applied choice analysis, transportation economics, and agrarian political economy. He remains actively engaged in independent economics consulting for both local and international clients from the private, public and voluntary sectors. Dr. Chalak's research and consulting have yielded several publications in peer-reviewed journals.

Dr. Ellen Fetzer holds a doctoral degree in landscape architecture from Kassel University,



Germany. The focus of her work at Nürtingen-Geislingen University is on advancing higher education in the fields of social innovation and sustainable landscape development. Over the past years, ERASMUS+ projects have substantially contributed to her curriculum development initiatives. Next to her teaching and research activities at Nürtingen-Geislingen University, Dr. Fetzer is currently president of ECLAS, the European Council of Landscape Architecture Schools.

Prof. Dr. Dirk Funck is a lecturer for Multichannel-Retailing, Sales, Social Innovation and



Methodical Basics at Nuertingen-Geislingen University in the south of Germany. His interests in research and transfer lie in the topics of "Medium-Sized Retail", "Sustainable Community Development" and "Social Innovation". He is leading the DAAD-funded projects "Middle East Social Innovation Lab" (MESIL) and "Middle East Productive Landscapes" (MeProLand). After his studies, doctorate and research activities at the University of Göttingen, Dirk spent 8 years in leading positions in medium-sized retail cooperation. In 2011, he was appointed professor at the University in Worms. In 2014, he moved to Nuertingen-

Geislingen University. Dirk was elected Chairman of the Advisory Board of the Rid Foundation for Medium-Sized Bavarian Retailers in 2011. He also works for the foundation as a trainer and coach.

Professor Agnieszka Jaszczak, Head of the Department of Landscape Architecture



(University of Warmia and Mazury in Olsztyn, Poland), Ph.D. in landscape architecture 2005, habilitated doctor 2013, professor of UWM 2021. She was visiting professor at European universities, including Vytautas Magnus University, Kaunas (Lithuania), Georg-August-Universität Göttingen (Germany), University of Technology Bratislava (Slovakia) from 2010 to 2022. She carries out research within the disciplines of architecture and urban planning. Author of over 200 scientific publications and a dozen international scientific and educational projects. Author of over 70 interventions in landscape architecture, including projects of the revitalization of public spaces in cities. She

presented paintings and photographic works at 15 solo and collective exhibitions abroad (including Italy, Germany, and Lithuania) and in Poland. Main research interests: urban and rural planning, revitalization of public spaces, the concept of livability and well-being, green therapy, development of cittaslow towns, nature-based solutions, and sustainable tourism.

Dr. Kumru Arapgirlioğlu - Urban and Environmental Planner and lecturer at Bilkent University.



Her research interests include environmental studies from theory to practice, human attitude, participation, and decision-making in relation to urban environments, conflicts, and ethics. She is one of the founder members of the Science and Scientific Philosophy Circle (BİLFEL), between the years 2000-2016. Her specific interest areas are the European Landscape Convention; European Urban Charter; local governments, environmental management, ethics, and public lands. Recently, she works on sustainability issues as regards social responsibility and public health; health and urban open spaces;

landscape integrity and human well-being; food security, productivity, cities, and urban agriculture as a regenerative tool for transforming the cities.

Leen A. Fakhoury, Industrial professor at GJU, Jordan, with an academic experience of 30



years; heritage specialist with more than 30 academic publications, and has participated in regional and international conferences. President for CulTech (NGO) & member of the board of ICOMOS (Jordan). Her professional experience covers the Preparation of Urban Regeneration and Tourism Development Plans for the City of Madaba, Irbid, and Kerak / Jordan. Architect heritage expert & team leader for Taibet Zaman project, a product of (Jordan Tourist Investment) for the reuse of the traditional village into Taibet Zaman, awarded the 1996 Tourism for Tomorrow Award by British Airways. In addition, Leen served as a Consultant and researcher for the Risk Management Plan of Petra

organized by UNESCO office in partnership with K-Leuvan University/Belgium 2012. Team Leader/Heritage specialist for "Heritage for Development: investing in people for the protection and management of historic city centres" (H4D), ENPI-EU project in partnership with the Centre for Cultural Heritage Preservation/Bethlehem, and RehabiMed Association/Spain (2012-2014).

Maria Gabriella Trovato is an Associate Professor in the Landscape Architecture for Global



Sustainability program at the Faculty of Landscape and Society, Norwegian University of Life Sciences, Norway. She is a licensed Architect and a Landscape Architect with a PhD in Landscape Architecture: Parks, Gardens, and Spatial Planning (UNIRC and the University of Naples, 2003). Maria Gabriella's most recent researches focus on Landscape in Emergency, EuropeAid project on Landscape Assessment and waste management, HORIZON 2020 on Migration governance, MEDSCAPES project funded by the ENPI/CBCMED, Landscape Atlas for Lebanon, and on FLRM (Forest and Landscape

Restoration Mechanism) project funded by FAO and MOA.

As chair of the IFLA working group Landscape Architecture Without Borders (LAWB), she works on the Landscape in emergency research theories and practices. In the past nine years, she focused on Syrian informal settlements (ISs) in Lebanon, exploring landscape methodologies that could permit the definition of a flexible, relational and creative strategy capable of managing continuous changes and transformations.

She has worked in several countries, teaching landscape architecture at undergraduate and graduate programs, seminars, and design workshops in Europe, Canada, Africa, and the Middle East.

Beata Dreksler is an Assistant Professor of Landscape Architecture at the American University



of Beirut, Department of Landscape Design and Ecosystem Management. She holds a Ph.D. in Landscape Architecture from Warsaw University of Life Sciences – SGGW, Poland. She has more than 20 years of experience as a landscape architect in Europe and Central America. She worked on different projects: landscape planning and management, natural reserves, urban parks, and residential development. In 2017 she won the First Prize for The Best Public Space in Poland in a competition organized by the Society of Polish Town Planners and the Association of Polish Cities. She works on applications of digital technologies in landscape architecture and planning

Katarzyna Rędzińska (Ph.D.) is a landscape architect. She works as an assistant professor at



Warsaw University of Technology, Faculty of Geodesy and Cartography, Department of Spatial Planning and Environmental Sciences in Poland. Her research focuses on integrated landscape planning, the identity of landscape, green infrastructure, ecosystem services, and climate change adaptation. She is an author/co-author of eighteen projects in landscape architecture, two of them awarded.

She is a member of the Association of Architects of the Polish Republic and the Society of Polish Town Planners.



### **Expanding horizons: The transformation of landscape architecture**

October 20, 2022 I 10:00-11:00 AM

Jala Makhzoumi

American University of Beirut

#### **Abstract**

Landscape architecture is changing. Scholarship by ecologists, geographers, anthropologist and social scientists, has come to expand the meaning of landscape beyond the visual and scenic to embrace ecosystem and environment, to frame heritage and identity and to contest human rights. Scholarship across disciplines, in turn, inspires and guides research and practice, enabling landscape architects to respond to the growing complexity and unpredictability of the world we inhabit. In my talk, I trace these influences, explore ways in which they have enriched the discourse of landscape architecture. I argue that landscape architects in the Middle East are in a unique position to balance concerns for environmental health and social justice and coordinate interdisciplinary collaboration in the aim of securing just and sustainable futures.

Jala Makhzoumi is adjunct professor of landscape architecture, American University of Beirut, co-founder and president, Lebanese Landscape Association, founding partner of UNIT44 that explores place and culture responsive, ecologically sensitive and community driven design solutions. Her areas of expertise include ecological planning, landscape heritage conservation, post-conflict recovery and sustainable urban greening. Jala is recipient of the 2021 International Federation of Landscape Architecture Sir Geoffrey Jellicoe Award for her outstanding contribution to education and practice. In 2019 she received the European Council of Landscape Architecture Schools Lifetime Achievement Award.



## Recreation and the unplanned. Stories of appropriation and change.

October 20, 2022 I 16:00-17:00 PM

Julie Weltzien

Agrarian Landscapes in GIZ

#### **Abstract**

Years and years of conflict and unrest, droughts and flood events, the lack of coherent planning schemes, land speculation and private land ownership have caused largely uncontrolled urban sprawl and huge demographic shifts in the Middle East.

The growth of urban centers causes land conversion, with results like loss of biodiversity, water scarcity, erosion and air pollution, garbage disposal issues to name a few.

At the same time, with the increase of traffic and intense construction activities, traditional meeting points, play areas etc. have largely vanished or have become too dangerous to use. Opportunities for recreation in green spaces, social meeting points, play areas, outdoor sports activities have become near to non-existent. The pandemic with its home and neighborhood confinement has once again emphasized the importance of accessible open spaces and has increased the pressure on the few that exist.

The lack of public open space has led to various (creative) ways of spatial appropriation that demonstrate the sheer need, while responses of the planning authorities are slow.

What can we as landscape architects do in such a difficult context?

Landscape Architecture as a transdisciplinary profession beyond the technical, provides the opportunity to read the needs and transform them into a functional and flexible system that allows people and nature to co-exist.

Good examples that include neighborhood initiatives and the civil society can help to build networks, confidence and incite change through positive examples. The talk will try to inspire and address the issues from various angles.

Julie Weltzien is a landscape architect and currently, a Project Manager for Biodiversity and Ecosystem Services in Agrarian Landscapes (funded by the International Climate Initiative, Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection, BMUV implemented in India, Kenya, and Tajikistan), in GIZ (Gesellschaft für Internationale Zusammenarbeit GmbH). She grew up in Germany, Lebanon, and Syria and studied Landscape Architecture in Berlin, Hannover, and Edinburgh. She worked as an assistant professor at the American University of Beirut and later realized DAAD funded stay in Berlin, Hybrid Platform (subject: landscape choreography). In 2014 she Joined GIZ Jordan and was a Project Manager for the Improvement of Green Infrastructure in Jordan through Labour Intensive Measures, funded by the Special Initiative on Forced Displacement, the Federal Ministry of Economic Cooperation and Development (BMZ), and the Ministry of Environment, Jordan. She has a special interest in human–landscape interaction and relationships.



# Governance design: cocreating the codes of landscape, identity and democracy.

October 21, 2022 I 9:30-10:30 AM

Jascha Rohr

Cocreation Foundation

#### **Abstract**

Cocreation is a design process by which human and non-human entities such as landscapes or cultural elements interact to let new innovative and transformative solutions emerge. If it comes to the question of how narratives and identities are build, how power is distributed, how decisions are made, by which procedures, protocols and codes interactions are organized, we are in the realm of governance design. Governance Design is a new discipline to focus on the design of spacial, procedural, cultural and political framework conditions for the emerging worlds we want to life in. If we organize governance design in cocreative ways, results will be new inclusive and transparent models of how we want to life with each while acknowledging our cultural and spacial heritage, while embracing and advancing future possibilities for a normatively better life.

In the workshop following the keynote we will explore how to code governance for some vital questions and challenges deriving from the projects participants are working on. We will do this as an in-a-nutshell cocreative governance design exercise.

Jascha Rohr is a philosopher, co-founder and managing director of the Institute for Participatory Design, and founder of the Cocreation Foundation. Jascha is a visionary process artist, practical intellectual and thinking activist. He is driven by the question of why we as human beings are the only species capable of destroying our own basis of life. Jascha is looking for ways to turn our individual and collective potential into positive pathways towards a better future by learning to be creative together, or simply put: cocreative. As cocreatives, we can succeed in shaping the great transformation that lies ahead if we want to live in peace, freedom and ecological health and abundance with 10-12 billion people on this earth. To this end, he is further developing approaches such as Participatory Design, Cocreation, Governance Design and the Field-Process-Theory.

### Lebanon Cultural Landscape at Risk: The Case of Anfeh

#### Maria Gabriella Trovato

Norwegian University of Life Sciences, Oslo, Norway

#### **Abstract**

Unique among the countries of the Middle East, Lebanon is a mélange of diverse peoples, cultures, and religious creeds. For centuries, it lay at the crossroads of civilizations with a history marked by the ancient Egyptians, Phoenicians, Greeks, Romans, Byzantines, Arabs, European Crusaders, Mamluks, and the Ottomans (Wiener, 2017). As a result, Lebanon's cultural landscape is the hallmark of the land of history and culture, an expression of a dynamic collaboration among natural and social identities.

The paper reports on the experience conducted in 2016-2017 at LDEM as part of the Cultural Landscape Design studio (LDEM 204). The studio introduced students to the process of research, planning, and design of the cultural landscape of Anfeh, a small coastal village in the North governorate of Lebanon. The study was anchored on the cultural landscapes theory as defined by Carl Sauer as 'fashioned from a natural landscape by a culture group' (Sauer, 1925). It helped us articulate an approach to the planning and management of Anfeh using landscape as a process to protect the cultural and ecological infrastructures for an expanding human settlement. Furthermore, the research tied to the UNESCO Recommendations on Historic Urban Landscape (HUL) (2011) recognizes the fundamental role of cultural heritage and landscape for sustainable local development. It highlights the opportunity of adapting heritage to the present needs of society. The studio adopted a methodology that entailed experiments in landscape characterization and landscape planning and design to produce schemes for future intervention in the contest of cultural landscapes. As a result of the studio, the students' work was a collection of local place-specific solutions. Landscape strategies have been explored to couple with the challenges of the site proposing design interventions that suggest beneficial relationships between settlement form, culture, society and ecological environment.

## Anfeh's Layered Cultural Landscape: A Case Study for a Comprehensive Conservation and Management Strategy.

#### Nadine Panayot

American University of Beirut, Beirut, Lebanon

#### Abstract

The presentation will start with an overview of Anfeh's multilayered assets and resources, including geographical, natural, and cultural. The socioeconomic contexts will then be studied, followed by a brief historical background focusing on the archaeological work conducted on land and underwater.

The assessment and documentation of all these parameters paved the way to the successful registration of Anfeh's cultural landscape on the UNESCO indicative list in 2019.

However, it will also demonstrate how the archaeological team's innovative approach resulted in the declaration of "Hima" (protected area, in Arabic), which will undoubtedly facilitate the site's inclusion on the World Heritage List.

Indeed, the "Hima" concept combines good governance with a bottom-up approach, giving civil society the authority to engage in discussions and determine the development of an appropriate and tailored conservation strategy, as specified in operational guidelines for the implementation of listed WH sites.

## Landscape and Memory of a Place The Case of Fariouz's Childhood House in Zokak el Blat

#### Nada Habli

Lebanese University, Beirut, Lebanon

#### Abstract

People tend to become attached to landscapes of certain places because of certain memories and the nostalgia which it contains. The value of these places that we acquire in our memories is immeasurable and vital. If the memory of the place is lost, the role of the memory itself will no longer play in our conscious lives.

This study focuses on reflecting Fairouz, the Lebanese icon, soundscapes throughout her career path and at milestone events and location. Fairouz's Childhood House in Zokak el Blat is set to be transformed into a museum by the government. To connect people to the museum and revive the memory of the place, place attachment tools should be used through the 3 dimensions of the PPP to create the people-place bonding.

Place attachment plays important role in saving a city's heritage. Preserving the city through an lcon like Fairouz strengthens the attachment and helps in promoting the meaning of the places and their history. To trigger the memory of the place, recognizable gestures and scene arrangements are used to enable views and users to "hear through seeing" and "to make sound visible" through sensorial means by using tools like smell, sound, traces, rhythm, texture and old heritage features. With the interaction with the public, people will sense the importance of their existence and involvement in saving their heritage.

As conclusion, the involvement of the public in reviving the memory of the place is the main lead character in the saving scenario for if these activities didn't exist, the places will not blend back to the society and become part of their culture. In addition, the whole area will be under the light for its heritage and help in preserving the other neglected structures that played important role in creating the Beiruti culture.

## Traces in the Design of Landscape Experience: Traces of Ancient Rome

<u>Sevgi Gormus</u><sup>1</sup>, Serhat Cengiz<sup>1</sup>, Bulent Yılmaz<sup>1</sup>, Anıl Akin Tanrıover<sup>2</sup>, Gaye Taskan<sup>1</sup> <sup>1</sup>Inonu University, Malatya, Turkey. <sup>2</sup>Bursa Technical University, Bursa, Turkey

#### Abstract

Today, one of the spatial tools of experiencing the landscape is traces. Trace refers to the road(s) that are prominent in the land with functions such as trade, transportation and travel, which have a unique and historical character. In recent years, traces have been seen as an important area of experience and a socio-economic resource for tourism on a global, regional and local scale, due to its possibilities to present different themes such as nature and culture together. In this context, traces are seen as a means of protecting natural and cultural landscapes, improving regional incomes, employment and development, as well as improving the quality of life of local people, depending on regional and local goals. While the concept of experience, as a noun, defines the emotional, spiritual, psychological or learning state that results from a dynamic process of an individual's participation in activities, as a verb, it expresses the transformation process experienced in the past, which embodies the participation of people and has a result. Depending on the purpose and content of the concept of trace, its definitions and scope may be different. In this study, the concept of trace is assessed with the historical landscape character analysis approach (HLC) over the ancient Roman roads within the scope of the experience of the jointness of the landscape layers. In this context, experiencing the landscape through traces is considered more than a process that creates and reinforces the memory of the existence of the joint landscape.

## Embodied Mindful Landscape Perception: A New Method for Transformative Educational Experiences

Dorota Fleszar, Beata Dreksler

American University of Beirut, Beirut, Lebanon

#### Abstract

Among various ecosystem services, landscape offers non-material benefits to people, called "cultural services." Nature-based opportunities for inspiration, discovery for learning and aesthetic appreciation, sense of belonging, recreation, and enjoyment of landscape in general all play an important role in maintaining mental and physical health as well as a good sense of wellbeing. As such, scholarship of landscape as a multilayered environment requires a multidisciplinary approach.

We posit that focused work at the intersection of landscape design and analytical writing is a beneficial tool in the instruction of both disciplines. We assess the value of walkabouts in improving student's understanding of landscape by means of bodily experiences combined with analytical writing which till date has not been typically correlated with bodily experiences of landscape.

We introduce an instructional method of embodied mindful landscape perception (EMLP), where mindfulness is understood as slow, extended, repetitive, and perspective-switching. Its cornerstone instructional activities include walking, landscape observation stops, guided writing, and read-alouds. We base our conclusions on the results of "landscape narratives.narrative landscapes", a workshop we conducted in March 2022 in the Jabal Moussa Biosphere Reserve with ten volunteer AUB students. Its outcomes indicate that EMLP has strong potential of offering transformative educational experiences in which landscape perception changes from that of still scenery to a live organism, one rich in discernable identities and multilayered heritage. Similarly, the experience of writing shifts from a flat academic requirement to more of an embodied knowledge-making activity tied to identity and prior experiences. Our findings suggest that embodied mindful landscape perception can effectively assist students in crossing important disciplinary thresholds in landscape design and academic writing and beyond.

# An Initiative for Informal Botanical Learning Through Ancillary Botanic Gardens: A Case Study of the AUB Ancillary Botanic Garden.

Salma Talhouk, Ranim Abi Ali

American University of Beirut, Beirut, Lebanon

#### Abstract

The city of Beirut and many other urban landscapes developed without vision and planning now face a severe lack of public spaces. With the over-abundance of privatized land, the idea of encouraging semi-private landowners to invest in open green spaces has become a practical alternative to focusing on what very little remains of green spaces in cities like Beirut. Botanic gardens are institutions with a high amount of prerequisites and are too challenging to be considered as an attractive investment for landowners, therefore Ancillary Botanic Gardens (ABG) offer a less intimidating option to land and business owners interested in modifying their spaces to fit a secondary environmental-friendly function that can help attract local communities to their spaces. ABG is a new category of botanic gardens (ABG) which aims to provide informal botanical education while enhancing the well-being and inclusion of local surrounding constituencies through botanical activities and volunteer programs. AUB, through becoming a member of the Botanic Garden Conservation International, officially declared itself an ABG and formed a committee to help keep its botanic standards and direct its botanical programs and activities. Today, the campus contains 10,759 species of plants with 166 of them being tree species. Around 600 labels were installed and maintained on campus, directly linking the campus trees to aub's already established plant database. AUBotanic organizes tours, and has around 500 tour visitors every year, with visitors ranging from school children to adult groups. AUBotanic also launched a botanical docent volunteer program which involves the training of volunteers on botanical knowledge for the purpose of assisting in tour giving, maintenance, and other campus projects which enhance the botanical experience.

# The Revival of a Dilapidated Water Pond in the Jabal Moussa Biosphere Reserve - Educating Through Civic and Responsible Practice

Salaheddine Al Wazzan, Vanessa El Khoury, Dima Al Hassanieh, <u>Mounir Mabsout</u>
American University of Beirut, Beirut, Lebanon

#### Abstract

The study is concerned with the rehabilitation of a dilapidated pond in the Jabal Moussa Biosphere Reserve, along with landscaping of the surrounding area to include a bird-watching sanctuary. The pond was previously "opened" for industrial purposes by an abandoned quarry, which the Association for the Protection of Jabal Moussa (APJM) is proposing to revive and integrate within the reserve ecosystem. The initiative is led by the Nature Conservation Center at the American University of Beirut (AUB), in partnership APJM, with external and internal university collaborators.

The present work focusses on Civil Engineering (CE), working inter-disciplinarily with other university units, mainly Landscape Architecture. In this case, a team of CE students, supervised by departmental faculty, conducted a detailed study on the reserve history and cultural value, and on existing geographical, geological, meteorological data, complemented where needed by onsite surveys and laboratory testing using state-of-the art visual cameras and data-acquisition equipment. Close coordination with Landscape was in place to reach an optimal pond layout/terracing and material/fabric selection to accommodate birds' habitation and vegetation lasting throughout the seasons. All pond data and surrounding were properly digitized and input into a dedicated modeling software that analyzed the watershed and the amount of water that timely accumulates and stores in the pond, accounting for evapotranspiration and ground seepage losses.

This community-based project, while technically aiming at addressing a conventional water-resources subject, had an instrumental experiential and cross-disciplinary learning component that engaged research and academia into meaningful practices. This adheres to the aspired missions of many universities to become civically responsible institutions, integral with academic excellence today.

The paper will present the processes adopted in the study with its synchronies and synergies, learning experiences put into practice, constraints encountered in unconventional settings and conditions, all leading to useful outcomes generated from the study.

## The Nature Bus: Play, Learn and Reconnect to Nature ( قعي بطل ا صاب: قعي بطل ا صاب علم وات بطب ل طبيعة)

Ranim Koleilat, Abdulrahman Trabulsi

The Nature Bus, Beirut, Lebanon

#### Abstract

The Nature Bus is a pop-up studio offering nature-inspired activities for children and their families for the aim of promoting connection and love towards nature, what is known as "Biophilia". The Nature Bus offers meaningful positive encounters with nature through unstructured open-ended play opportunities that will teach children to use elements of nature in various productive and creative ways.

The time children spend playing outdoors has remarkably changed in the last 15 to 20 years. Extensive studies made it clear that cultural aspects, societal norms, and parental concerns for safety issues, all play a major role in directing children's contact with nature. In addition, the recent Covid pandemic amplified children's lack of access to the natural world hence increasing the "Nature Deficit Disorder". As a result, The Nature Bus was created as an entry point to promote nature play and improve the well-being and health of our children, and to encourage a better quality of life for our community. The idea of a movable entity provides easy access to the "naturalized environment" and nature play in various locations around the country most importantly in urban cities.

The Nature Bus can be considered part of productive landscapes as it directly links to the cultural ecosystem services and indirectly to the provisioning, regulating and supporting services through acting as a foundation for developing future eco-citizens with environmentally responsible behaviors and attitudes. When children are exposed to nature and are given the opportunity to interact with it, feelings of attachment towards the space/elements will build up. This sense of attachment will mature into love and hence feelings of care and protection will be fostered. The Nature Bus will be helping to craft future generations who are able to think in sustainable ways for adapting and mitigating climate change.

### The Impact of Cultural Landscape of Water on Well-Being and Health Promotion

Shina Sad Berenji, Zahra Sadeghi, Neda farsiastaneh

Tarbiat Modares University, Tehran, Iran, Islamic Republic of

#### Abstract

Water, especially in the hot and dry climate of Iranian cities, is an element whose presence in the urban landscape has a significant impact on promoting a sense of health and the quality of urban life. The contemporary Iranian landscape lacks a suitable and defensible model for water use. However, in the Iranian garden's cultural landscape, the structural pattern of the presence of water follows the characteristics derived from cultural values. As a result, this study aims to see how the structural model of water present in the Iranian garden and contemporary parks in Tehran affects the creation of a sense of health and well-being among users in these two types of landscapes. Three Iranian gardens and five contemporary parks serve as case studies. This study falls under the category of applied research. Field studies and map analysis were used to study the physical structure of water, and additional information was gathered using library resources. The data collection method is based on a social survey of users of these landscapes to assess their sense of health. A correlation is a data analysis method. The results show that the way water is displayed in the Iranian garden, which is rooted in culture, is more desirable and has a higher score in providing respondents with a sense of health. As a result, this study for contemporary landscape designers provides water display patterns that play a more prominent role in creating a better mood for people.

# The Cultural Impact of Architectural and Urban Transformations on the Image of the City

Wafaa SharafAldeenAboFakher

Ettijahat, Damascus, Syrian Arab Republic

#### Abstract

Damascus (2019-2020) is witnessing accelerating transformations at the level of its image and identity. Such transformations affect the city's architectural layout, which, in turn, bears witness to its history and identity. In this light, the research focuses on a significant pillar of the city's architecture, Shukri al-Quwatli Street and the adjacent buildings undergoing functional and physical transformations after they had been put up for financial investment, as the latter does not conform with the buildings' identity, history.

The research showcases existing buildings as a cumulative cultural product and raises two main questions: How does a building, as an architectural structure, express society's culture? How do changes in buildings, due to planning and design policies, affect the cultural state of society? This aims to highlight the boundaries of the relation between the material (buildings) and the non-material (the city's image) aspects of the city, and to lay the general foundations for preserving the identity of the place.

The research starts with an introduction on the concept of architecture as a cultural product, and the relationship between architectural transformations and society. The research then splits into two main sections. The first theoretical section lays out the definition, causes, and... . In the second section, the research focuses on the case study on Shukri Al-Quwatli axis and some of its built elements.

Upon completing the literature review and analyzing the required data, the research culminated in numerous findings, including paying attention to the urban fabrics in which we live, as they inspire and absorb the culture that future generations will inherit. This research specifically addresses life rituals within urban spaces, which have significantly changed over time due to major urban transformations. The research concluded by shedding light on the need to activate the role of local organizations in spreading awareness.

### The Lebanon Mountain Trail – A catalyst for Rural Tourism

Omar Sakr, Souheir Assi Mabsout, Claudine Abdelmassih, Alia Fares, Julie Lebnan Lebanon Mountain Trail Association, Beirut, Lebanon

#### **Abstract**

The Lebanon Mountain Trail (LMT) is the first long-distance 470 km hiking trail in Lebanon connecting/crossing 76 towns from Andqet to Marjaayoun at 570 to 2,073 msl altitude. The trail transects one World Heritage Site (Qadisha Valley), four Nature Reserves, two Biosphere Reserves, five Protected Areas, six Important Bird Areas, ...

The LMTA values rural tourism by advocating local people empowerment in partnership with public and non-governmental organizations (municipalities, ministries, local groups, tour operators, accommodations providers, ...). It has gradually become a reference organization in trail development and a catalyst for new and side trails, trail-based education, and mountain research.

With the increased demand for hiking during the past few years in the aftermath of the COVID pandemic and economic instability worldwide, adding to current social unrests in Lebanon, many new uncontrolled trails were developed by various municipalities and non-specialized NGOs, funded by various international agencies. This did not generally adhere to proper standards (presently lacking from current legislations), and so did not ensure protection of natural and heritage environments, or subscribe to adequate sustainable management and maintenance practices, with no end foreseen to this phenomenon.

In response to this urgent matter, and as a "good" exercise for trail development, the LMTA took upon itself to play a key role in organizing this sector at the national level by launching a number of relevant initiatives such as the development of national Lebanese trail standards. Further to this, the LMTA recently signed an MoU with the Ministries of Culture and Tourism to preserve tangible and intangible heritage sites in remote areas, and to advocate for new laws and standards related to trails and cultural landscape, all in the aim of supporting local communities through training, education and innovation, and of promoting sustainable rural tourism, which is elaborated in this talk.

## Productivity and Survival on the Fringe: A Quest for Agro-Landscapes of Ankara, Turkey

Kumru Arapgirlioglu

Bilkent University, Ankara, Turkey

#### Abstract

Capital Ankara, as a case study, affords a good example for understanding the transformation of agro-landscapes of a fast growing city. Ankara, founded on the fertile highlands of Anatolia, with its geographical location and ecological characteristics, variety of climate zones, availability of water resources, and productive landscapes, has offered a place to survive for many civilizations. Throughout its high pace urbanization, the city sprawled towards the periphery, as a result agricultural production and activities, the rural practices transformed their uses against other competing urban usages. This transformation taking place on the outskirts of the city created two main problems: degrading the rural cultural landscape and lowering down the agricultural productivity. Consecutively, by 2020 the conditions created by covid-19 coupled with long-lasting burdens of climate change once more reminded Ankara and the world cities of the importance and the fragility of the agricultural and rural support systems those fed cities. These developments turn into complicated problems waiting to be solved by central and local governments; as they are also result of global conditions, need to be confronted internationally and required cooperation and collaboration of the global community. This paper aims to question the transforming agro-landscapes of Ankara under the mentioned problems, narrowing down to the topics of productivity and survival on the fringe. The main guest will lie on to seek "how to create resilient agro-landscapes around the cities" towards achieving more productive, interactive, supporting communities; which will also provide more ecologically resilient, socially and environmentally connected fringes; and "how to enhance a new synergy among rural and urban" acknowledging the mutual dependence of two socio-cultural systems. The discussion will be based on the data and results achieved during the research and analysis done and the site studies realized within the borders and on the rural periphery of Ankara since 2012.

### **Urban Agriculture Process in Turkey**

Meryem Bihter Bingül Bulut, Tuba Gizem Aydoğan, Öner Demirel Kırıkkale University, Kırıkkale, Turkey

#### **Abstract**

The changing and transforming urban paradigm with increasing population since the beginning of the 1900s marks a new era in which cities are conceptualized in planning practices. Increasing environmental problems and climate change have turned cities into islands of congestion that are far from livable environments. The efforts of different disciplines to re-create the deteriorated and lost natural values in and around the cities have been shaped by strategic approaches as key elements of the renewal of cities in terms of ecological, social and economic sustainability. In parallel with this, performance indicators and metrics have been defined in cities, and various indexes and design guides have been developed. For the climatization of the cities, blue and green infrastructure have laid the groundwork for the creation of sustainable cities, and green network elements called critical habitats (urban forests, afforestation areas, groves, orchards, green road applications, ecological corridors, naturalized river corridors, urban agriculture) gardens, urban parks and thematic parks, botanical gardens, pedestrianized street applications, and wetlands) have been defined.

In this paper, urban agriculture practices, which are considered as a part of the green network and which will enable food production to meet the needs of the increasing population, and which will build a bridge between the built environment and open spaces, are discussed with a broad perspective. This approach, which started as the hobby gardens, public gardens, roof balconies and terrace plantings created in limited areas in the city, showed development and progress in a way that covers all the green network elements of the city such as urban parks, gardens of public institutions next to the urban forests and garden settlements. Within the scope of this study, the practices of urban agricultural gardens within the big-city macroforms are discussed and also other permaculture applications to increase urban biodiversity are included.

### A Socio-Economic and Hyrdo-Climatic Assessment of the Water-Energy-Food System: The Case of Kherbet Qanafar in the Bekaa Valley

#### Rania Bou Said

American University of Beirut, Beirut, Lebanon

#### Abstract

n Lebanon, the agriculture sector is facing challenges, such as financial unsustainability, lack of adequate legislative protection and aid, and limited access to resources (McKinsey, 2018). According to the International Water Management Institute, half of the farmers in Bekaa suffer from water shortages (2020), while others over irrigate by 300%, (Comair, n.d.), with over 60% of the water used for irrigation pumped from aquifers (FOA, 2015).

This research aims to improve the livelihood of farmers after assessing the biophysical, sociopolitical, and economic factors from an environmental and participatory multi-scaled lens, i.e., farmers, groundwater sellers, and the water user association, using the environmental security livelihood approach. The main objectives are to (1) determine the impact of (a) climate and (b) poli-economic events on cultivation, water availability and water pricing through the usage of remote sensing data and newspapers, and (2) assess on farm agriculture, water and energy practices and developmental projects, using surveys and interviews. After integrating all the interlinkages affecting the livelihood of small farmers, it is now possible to propose socio-political and economic solutions and develop best water practices to balance between nature conservation and farmers' needs through decreasing water and finite energy consumption to maximize yield, increasing overall yield revenue, and conserving water resources. Moreover, the participatory approach followed will allow farmers to propose developmental solutions and allow us to test these solutions under climate change scenarios, using climatic, hydrological and agriculture models, allowing us to reach our goal of improving farm revenue and preserve water resources by disseminating best water and energy practices while considering future climate change scenarios.

# Building Outside the Ecosystem Services and Goods Divide: Opportunities for Edible Green Infrastructure in the MENA Region

Will Thomson

City College, New York, USA

#### Abstract

Urban areas in the MENA region are grappling with how to grow and develop in a sustainable way that can be resilient in the hotter and drier climate they're facing. Green Infrastructure (GI) has become one of the major tools for building this kind of urban climate adaptation. Vegetative GI like urban trees, greenways, bioswales/rain gardens, and green roofs and walls, are one of avenues of expanding GI in the region, however there few institutional mechanisms to expand GI in the region beyond individual and Non-Governmental Organization projects and initiatives (Beyond Trees, 2020; Unaslyvia, 1952). This current lack of institutional infrastructure for GI could however be an opportunity to expand the scope, functionality, and equity within existing models of GI infrastructure in North America and Europe.

McClain et al. have pointed out planners and urban ecosystems managers like urban foresters in North America have a long-standing bias of seeing GI like urban forests only for their ecosystem services rather than their productive value, and has in turn led what Gobster called a 'museumification of nature' (2012; 2007). While there have been advances in breaking out of this dichotomy, such as recent ideas of edible and food productive Green Infrastructure, in the institutions expanding GI in North America this bias is deeply ingrained. This can be seen in institutions like the offices of Parks and Recreation, planning, and environmental protection in many North American cities. Here lies the opportunity for planners, designers, and advocates in the MENA region to build systems of GI development for ecosystem services as well as products like food, timber, and fiber from urban GI. While there are many opportunities for this, my research focuses on expanding the ideas of food productive GI within urban forestry in Beirut, Lebanon as part of the AUBotanic initiative.

# Ecosystem Services and Their Contribution to the Sustainable Development Goals: A Case Study from Lebanon

Michele Citton<sup>1</sup>, Meshach Oderele<sup>2</sup>, Salma Talhouk<sup>2</sup>, Georges Mitri<sup>3</sup>

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#### Abstract

Environmental Richness in relation to Ecosystem Services (ES) is a keystone for sustainable development, particularly in rural areas. Worldwide, Ecosystem Service Mapping is positioning itself as a powerful decision-making tool to address sustainability from a local to a global scale. While International Organizations and Researchers developed many tools to evaluate environmental richness and deprivation from a socio-economic perspective, few studies have unlocked the potential of ES Mapping for this purpose. To our knowledge, no such studies are reported from the Middle East.

Lebanon is at the center of a compounded humanitarian and environmental crisis linked to the permanence of more than 1,5 million refugees from 2011, followed by a complex economic and financial crisis starting 2019. The emergency and stabilization response from International organizations prioritizes funding and interventions for most vulnerable administrative units based on a Multiple Deprivation Index combined with the status of refugee population. This approach, mostly demographic driven, does not fully explore opportunities for sustainable development in rural areas.

This study aims to evaluate the potential for development at a national scale in Lebanon through ES Mapping and compare the results to the Lebanon Vulnerability maps developed by UN.

The mapping of 8 selected ES (food, water, habitat, climate regulation, pollination, recreation, aesthetic value) was performed primarily using the InVEST (Integrated Valuation of Ecosystem Services and Trade-offs) toolkit from the Natural Capital project and ARIES (ARtificial Intelligence for Environment and Sustainability) while an in-house method was employed for modeling the food production contribution from grazing animals.

The contribution of the eight ESs to the sustainable development goals (SDGs) was calculated with a weighted sum operation. The weighting was derived from the matrix of ES contribution to SDG from Woods et al. (2018).

The findings and the implications of our analysis will be presented during the conference.

### Exploring the Potentials of Birdwatching as a Cultural Ecosystem Service in Lebanon

<u>Alexandra Schiller</u>, Dr. Salma Talhouk, Ranim Abi Ali American University of Beirut, Beirut, Lebanon

#### Abstract

Observing resident and migratory birds has become a form of ecotourism for large sectors of society since the beginning of the twentieth century. The realisation of the recreational value associated with bird watching has contributed to the local economy, improved local interest in biodiversity conservation, and helped raise awareness of ecosystem services specifically in relation to bird species. Lebanon is one of the countries with an abundant bird population due to its location along the eastern Mediterranean flyway. Hundreds of thousands of different migrating bird species such as raptors, pelicans, and storks pass through each autumn and spring season. However, the rate of bird poaching is extremely high in Lebanon. The objective of this study is to determine the youth perceptions of birds in Lebanon and determine whether there is an interest in birdwatching as an alternative recreational activity to bird hunting. The study is conducted at the American University of Beirut as the campus has been declared an official bird sanctuary since 2003. Due to its urban greenery and landscape, the AUB campus has been a resting place for migrating birds. By exploring youth perceptions and relationships with nature, specifically bird watching, researchers will gain a better understanding of the interaction between young generations and nature.

## TheOtherForest: A Tool for Ecological and Social Regeneration Providing Much-Needed Ecosystem Services in Cities

Adib Dada

theOtherDada, Beirut, Lebanon

#### Abstract

Green spaces provide essential ecosystem services to the urban fabric by influencing individuals' interactions with their environment and contributing to their wellbeing. This presentation will highlight theOtherDada's efforts to reclaim degraded land and create shared spaces for humans and other life to thrive. What began as a tiny 200m2 Miyawaki forest planted in May 2019, has grown into a much larger initiative by the Other Dada to bring biodiversity into the city and beyond, with more than 3500 m2 reclaimed and 10500 saplings planted in urban landfills. Using the Miyawaki method, theOtherDada recreates local forest ecosystems which become completely self-sufficient, requiring no watering nor maintenance within 3-years. Native trees and shrubs are planted to form dense communities attracting biodiversity not often seen in urban contexts, addressing the sister crisis to climate change; biodiversity loss, the Other Dada starts by restoring degraded land and form living soil, which once healthy, is able to sequester more carbon than the forest itself. The forests also counter air pollution, of which Lebanon suffers the highest death rate in the region. Forests are planted in schools, public parks and leftover lands within the city, and in private projects to replace conventional, resource-intensive landscaping, theOtherDada activates these spaces for education and healing, partners with organizations such as urban farms and art collectives, and encourages communities to appropriate these spaces. Working with local plant nurseries, biomass providers, contractors, and hiring individuals to help water and maintain the baby forests, the Other Dada creates jobs and supports local businesses. Today, ten forests planted by theOtherDada rewild the urban landscape and rekindle local communities' connections to nature. Along Beirut River, theOtherDada's first Miyawaki forest is bringing back some of the biodiversity that the river once hosted, and helping to recharge the underground aguifers that once provided drinking water to the people of Beirut.

# A Productive Urban Landscape: a Method to Improve Cultural Ecosystem Services

Zahra Sadeghi, Shina Sad Berenji

Tarbiat Modares University, Tehran, Iran, Islamic Republic of

#### Abstract

The human-nature relationship is defined in terms of "Cultural Ecosystem Services." CES as the intangible benefits of the ecosystem includes the values that people perceive in green space and has a significant impact on improving the quality of life of urban dwellers. Although urban parks provide the most important place for the integration between man and nature in the urban environment, research in Tehran (the capital of Iran) shows that the CES in the parks, especially in the subjective dimension, is very weak. A sense of belonging, spiritual, and semantic relations with the urban green spaces have not been formed between the users. Therefore, the study intends to provide solutions to improve the perception of CES by examining the capabilities of a productive landscape. The present research is applied in terms of purpose and data collection in library and field observation. Information analysis is qualitative and descriptive-interpretive. The findings indicate that a productive landscape at different scales can have a significant impact on people and urban green space. Participation in the management of a productive urban landscape, the benefit of products, and the creation of an event-oriented and memorable place are significant factors of a productive landscape that are effective in creating values of CES, especially in terms of sense of place, inspiration, awareness, and cultural heritage. In general, generating an environment of human activity in the context of the natural layer of the productive landscape leads to more and better communication with the urban ecosystem.

### A Bustan in Marrakesh: Sustainable Traditions and Rural Economies of the Future

#### Abdallah Tabet

OLIN, Philadelphia, USA. University of Pennsylvania, Philadelphia, USA

#### **Abstract**

This conversation will cover an ongoing project we were commissioned to study and implement in 2015, covering 500 acres of an abandoned plantation in the countryside of Marrakech, and converting it into contemporary leisure and productive landscapes.

We carefully researched current and past agricultural methods and techniques in the area, to establish guidelines for more sustainable yet economically viable techniques. An interim exercise was to study a parcel and test a "yielding point threshold", through which a diversified production increases production and profit, without distressing the land itself. Diversifying the plantations also permits planning for various habitat restoration, and the creation of multiple jobs through cash crops, and their packaging and processing industries. Various buildings are proposed to manage this farm: several outposts for access and services, a coop and oil press in the abandoned stables, staff and owner residences throughout the property, outlooks for observation and data recording, etc.

We also developed water reservoir typologies that would create aquatic habitats for endangered and migratory species of birds, while providing irrigation water from the aquifer, stormwater, and greywater. This evolution is primordial to the region, as hydrological resources are shrinking rapidly, resulting in a massive exodus of farmers off their lands.

Lastly, we will discuss our exploration of various methods of microeconomics to create a strong socioeconomic hub around this farm and establish a model to be used in the region.

This led to a large interdisciplinary master plan for the area, for a self-sustaining agricultural landscape embracing traditions in order to transition to the future.

### Virtual Reality as a Tool for Participatory Planning

<u>Ibrahim Dhaini</u>, Beata Dreksler American University of Beirut, Beirut, Lebanon

#### **Abstract**

Virtual reality (VR) is a fast-developing technology where a computer-generated environment gives the user the perception of being in a real world. A recent interest is emerging in using VR as a tool in the fields of landscape planning and design. The aim of this research was to test the validity of VR as a tool for participatory planning in biosphere reserves. The case study is Jabal Moussa Biosphere reserve in Lebanon, a country where planning takes a strictly top-down trajectory with little involvement of local communities in the decision-making process. The paper examines practices, approaches for participatory planning and analyzes the local context of Lebanon and the studied reserve in terms of legal framework, participation, and citizen involvement. Based on the literature and context analysis, a participatory workshop was made to test the studied tool. The workshop had a diverse group of participants from the American University of Beirut. Two parallel workshops took place: a VR workshop as a tool to be tested. and a physical model group as a traditional tool. In both workshops, participants were asked to co-design an abandoned quarry in Jabal Moussa Biosphere Reserve. This structure of the workshop enabled a comparative assessment to study the added value that VR can potentially bring in terms of user experience, landscape perception, interactivity, and participation. The research contributes by studying a new way to experience landscapes remotely in an era of digital advancement. It studies a potentially interactive way for local communities to contribute to the decision-making process and help in shaping future landscapes from the comfort of their chairs.

### Rural Development in Buffer Zones of Lebanese Biosphere Reserves: Challenges and Opportunities of Different Governance Frameworks—A Comparative Case Study of Jabal Moussa and Shouf Biosphere Reserves

#### Aya Hamze

American University of Beirut, Beirut, Lebanon

#### **Abstract**

Buffer zones are where human and ecological activities overlap. The buffering function of the buffer zone has a high complementarity value (Schalkwyk, 2019), because it emphasizes and protects the role of the core zone yet allows for the shift to the transition zone. However, little research has been done on the buffer zones of biosphere reserves in Lebanon. There are two active biosphere reserves in Lebanon, (1) Shouf Biosphere Reserve, which has a buffer zone of 54 sq km. (about 10,000 football fields) constituting of 15 villages, and (2) Jabal Moussa Biosphere Reserve, which has a buffer zone of 17 sq km (about 3,000 football fields) that contains 6 villages (Abu Izzeddine, 2012).

The aim of this research is to answer the following question: How do governance models/ policies of biosphere reserves affect rural development in buffer zones?

The methodology that will be used to answer the above question is the comparative case study approach. It will be developed to analyse and synthesize similarities, differences, opportunities, and challenges in rural community development in the buffer zones in two Lebanese Biosphere Reserves: Jabal Moussa and Shouf. It will be tackled from three perspectives (1) Land use, (2) Policy and Governance and (3) Socioeconomic assessment.

The objectives of the Study are:

- Understanding the dynamic of land use in buffer zones and changes in landscape patterns provoked by the establishment of the reserves.
- Analyze and compare the effects of policies and governance of biosphere reserves on rural communities' development (limitations and opportunities).
- Assess the perception of rural communities in the buffer zones and the role of the biosphere in impacting life quality/ socio-economic situation.

# A Framework to Create Collaborative Infrastructures or more Just, Ecological and Transformative Urban Design – Lessons from Beirut.

#### Nikolett Puskas

University College London, London, United Kingdom

#### Abstract

A particular framework was developed as part of a PhD research and tested in two cities: Budapest and Beirut. It aimed at facilitating deeper levels of participation (based on Arnstein's participatory ladder, 1969) of multiple stakeholders (e.g. municipality, NGOs, charities) and amongst them, people as key users of public spaces. The approach addresses notions around novel ways to redefine what is 'value' in a place-based manner, facilitate inclusion and diversity and alternative ways of knowledge co-creation, addressing the right to the city and right for environmental justice. The framework includes gamification as methology and valuable tool to facilitate those notions. Furthermore, empirical knowledge around nature-based solutions (NbS) that are small-scale, low-cost, off-grid and build-it-yourself in order to enable communities to employ these in the future. The approach also facilitates bringing together multiple stakeholders and developing solutions that address the place-based co-defined values of particular communities, thus providing better chance for long-term sustainability and maintenance. In an article with Abunnasr (2021) we argued for the need for more real-world case studies that employ deeper levels of participation in urban planning and development focusing on NbS as a way to better develop and manage urban biodiversity and generate case studies that can inform policymaking and changes that need to happen to deconstruct existing barriers.

My PhD and framework addressed all the above complex challenges and I would like to present the practical employment of this framework in Beirut, and some lessons we can learn from this case study. Furthermore, demonstrate the additional benefits of such approach to academic research with a brief overview of consecutive projects rooted from this research.

# Collective Valleys: Reimagining Lebanon's Contested River Corridors

# Joude Mabsout

Massachusetts Institute of Technology, Cambrdige MA, USA. Sasaki Associates, Boston MA, USA

### Abstract

With the increase of illegal and corrupt resource extraction projects across Lebanon's landscapes, river valleys are faced with privatization, destruction and fragmentation. Historically prominent hydrological and cultural connectors from Mount Lebanon to the Mediterranean Sea, the rivers are currently threatened by a national dam strategy, resulting in failed dams, dried out ponds, and massive governmental debt. A trend in corrupt water infrastructure facilitated the monopoly over water by different political factions across the valley-section, from illegal boreholes along the coast to concretized rivers. With the depletion of aquifers, the utilization of dams for the private gain of the ruling class, and the rising threat of climate change, it is imperative to investigate alternative methods of preserving and activating river valleys as watershed systems with ecological, cultural and social value.

Based off of a grassroots movement that successfully pressured the World Bank to withdraw its funding of the Bisri Dam project in September 2020, this research investigates the different ways 'landscape' has been used as a medium for protest and community building. This project takes inspiration from these collective acts of reclaiming the landscape to imagine a new vision of governance for river valleys that goes beyond the lens of property lines. The expropriated land in the Bisri Valley provides a unique opportunity to re-imagine the rural commons as a multi-scalar and decentralized network within the river watershed. By proposing a strategy that utilizes a design toolkit for communities to collectively preserve, rehabilitate and cultivate the valley, this research seeks to initiate a conversation on how natural boundaries and collective action can reshape our perception of governance across productive landscape systems.

# Multifunctional Spaces and Interventions for the Dynamic Containment, Profitable Management, and the Fundamental Enjoyment of the Riverflow Across the Municipality

Luis Alfonso Aquino Serrano<sup>1,2</sup>, Joel Valencia Camacho<sup>1</sup>

<sup>1</sup>Universidad Autónoma de Querétaro, San Juan del Rio, Mexico. <sup>2</sup>Sociedad de Arquitectos Paisajistas de México, Mexico City, Mexico

### Abstract

The repeated events of an overflow of the riverbeds that cross the Municipality of San Juan del Rio, Queretaro in the last couple of years, have made evident the severe environmental problems that affect the city. In October of 2021, 14 suburbs and around 3,500 residential units were heavily damaged by the overflow of the two main riverbeds that cross the Municipality, and around 650 citizens were evacuated. In addition to the complete lack of Green Infrastructure, the constricted riverbanks, the deficiency of permeable surfaces, the increased logging, the stress to the aquifer caused by the Industrial facilities development and the precarious real state expansion, and the complete absence of Public Spaces have caused a decadent and dangerous environment for the inhabitants of this small town.

The author after obtaining the dual diploma of the International Master in Landscape Architecture program from the HSWT and the HfWU, and a couple of years of experience in Riverfront and Promenades design with WGF Nurnberg, and pressured by the fact that his family was affected directly by these events goes back to his hometown and with the support of the coordinator of the Architecture Faculty, establish the subjects of Landscape Architecture and Water Sensitive Urban Design in the Bachelor's basic program of the Autonomous University of Queretaro campus in San Juan del Rio. Thus to coordinate the present Master Plan, this instrument will assess the Secretary of Sustainable Development of the current Administration for the following interventions. The Project is rooted in the principles of Water Sensitive Urban Design, the Repertoire of the book River. Space. Design written by Martin Prominski, Antje Stokman and their team, and the Catalogue of the Nature-Based Solutions for Urban Resilience created by the GFDRR and the World Bank Group.

# Understanding the Local Water-Culture in Water-Sensitive Urban Design: A Case Study in Malatya, Türkiye

Merve Feyza Ergan, Sevgi Gormus Cengiz Inonu University, Malatya, Turkey

# Abstract

Water scarcity, which is one of the global challenges, has the greatest impact in urban areas with high population density and impermeable surfaces. Water-sensitive planning and design approaches are being developed in order to ensure the existence and continuity of cities in the face of water scarcity. One of the most important aspects of these approaches is the water culture of the society. Culture has a direct impact on how water values are perceived and used. Understanding the local context is critical for assessing current and future risks to water systems. After understanding, categorizing or codifying cultural values, it is necessary to identify the methods and means of incorporating these values into the decision-making process. Malatya, a Turkish province, was chosen as the case study area for this study, which aims to understand local water culture practices in water-sensitive urban approaches. Experts from institutions involved in water management in the city were interviewed. The expert's views on local water management were transformed into cognition maps after the interviews were coded. The cognition maps obtained enabled the main codes of the local context to be obtained and the basic cognitions related to water culture to be explained in the formation of the vision of Malatya city's transition to a water-sensitive city. When the codes were examined, it was seen that the expressions for evaluating the local water culture were limited. It has been determined that water culture is not important due to water policy.

Sustainable Design and Governance Institutions in Confronting Climate Emergencies and Creating Sustainable Built-Environment in Coastal Informal Settlements C-IFS. Case Study: Ouzai /Jnah, Coastal Southern Suburb of Beirut.

<u>Bahaa Bou Kalfouni</u>, Dorota Wojtowicz-Jankowska Gdansk University of Technology, Gdansk, Poland

## Abstract

In the past decade, Lebanon has witnessed a series of events that contributed to weakening its infrastructure and threatening its society, facts such as rapid urbanization, conflicts, immigration (Syrian refugees), weak government system and corruption, economic crises and inflation (The 17 October Protests), the Covid-19 pandemic, and man-made disasters (the 4th of August 2020 blast in the port of Beirut). These issues along with the impact of climate change have greatly increased the vulnerability of poor urban communities to environmental threats, particularly to informal settlements located in coastal areas C-IFS. These settlements are especially weak due to their weak structural quality and sufficient infrastructure deficiency to alleviate the consequences of any natural event. The study provides a bold multidisciplinary approach. Speculates on the possible sustainable solutions through urban, architecture, and landscape design visions and sustainable policies recommendation for institutions. The study involves analysis of qualitative and quantitative data that formulate the foundation of the presented visions as future imperatives for a healthy coastal landscape in the southern suburbs of Beirut and human settlements by unfolding socio-spatial justice, health inequalities, and climate resilience that ranges from microscale improvement to providing usable and accessible city-wide ecological urban settings. Advocating for transformative action addressing equitable, resilient, and inclusive Beirut city, through rethinking spaces and human's future of societies.

# Renewable Energy Landscapes in Arab Countries: (Un)Just Transitions?

# Mona Khechen

American University of Beirut, Beirut, Lebanon

### **Abstract**

A key factor in the global fight against global warming and climate change, the transition from fossil fuels to renewable energies (biomass, solar, wind, and geothermal) requires huge tracts of land. Only 8 percent of the area needed to meet the target of net-zero emissions by 2050, set by the 2015 Paris Agreement on climate change, is expected to consist of rooftop installations. Everything else will need ground space and would have significant impacts on land use and many landscapes globally. To minimize the impacts on the landscape, territorial planning and landscape experts encourage innovative shared land uses that combine energy infrastructure with other functions where possible (e.g., eco-tourism, mobility, sports).

As elsewhere, there is considerable potential for deploying renewable energy technologies in the Arab region. To date, several countries have developed solar and wind atlases and launched projects that address renewable power generation. Their initiatives differ in objectives, scope, scale, budget, regulatory frameworks, and local governance approaches. This paper will examine and reflect on some of these initiatives vis-à-vis questions of land use planning, community engagement, social innovation, local economic development, and land tenure rights.

Cases to explore include the solar power initiative of the Municipality of Abbassieh in South Lebanon, Tunisia's TuNur solar project, and the eco-utopian Neom city project in Saudi Arabia. Unlike the modest Lebanese example, which responds to an emergency need, the latter two projects are high-profile mega projects. Both are promoted as sustainable and integrated initiatives that aim to maximize local socio-economic impacts while benefiting the environment. Both however involve "green grabbing" and social injustices. Considering this, the paper will underscore the on-going international debate that stresses the importance of just environmental and social safeguard policies to secure the livelihoods and tenure rights of local communities against forced displacement triggered by climate action.

# Ecotourism as a Resistance Tool: Al-Walajeh Village as a Case Study

<u>Yanah Enayah</u>, Dana Musaffer, Alia Jamhour Birzeit University, Ramallah, Palestine

### Abstract

In order to achieve the sustainable development objectives, spatial planning must be implemented. There is a risk of identity loss as well as cultural, ecological, and social losses in Palestinian villages because of the current political climate in these areas. Resistance is discovered to guide the planning in dealing with these risks, using particular ways and tactics, under the phrase of planning. Bethlehem governorate in the West Bank is the subject of the study, particularly Alwalajeh village. On the basis of a theoretical framework that focuses on the project's needs and an informational framework that connects both, the data gathering framework is created. This study will focus on the Al-Walajeh in Bethlehem governorate in order to propose a new rural ecotourism proposal that incorporates the community with its surroundings.

The project mainly focuses on analysing the study area, defining the guidelines for ecotourism and resistance planning following with sectoral analysis and SWOT Analysis, that created the vision and concept for the area that was clarified by the program, zoning and master plan.

# Forest and Landscape Restoration Guidelines: Regaining Landscape Resilience, Ecological Functionality and Human Well-being

Pedro Regato<sup>1</sup>, Nizar Hani<sup>2</sup>

<sup>1</sup>Freelanse Consultant, Madrid, Italy. <sup>2</sup>Al-Shouf Cedar Society, Maasser, Lebanon

### Abstract

With its mountain terrain, steep slopes, and high population density, Lebanon is particularly vulnerable to the impact of deforestation, land degradation, and desertification, exacerbated by the impact of climate change.

The response of the Shouf Biosphere Reserve was through the Forest Landscape Restoration (FLR) programme, in 2012, which promoted innovative and climate-adaptive knowhow and landscape-wide interventions for the restoration of ecosystem services, biodiversity conservation, and sustainable rural development, in close collaboration with local communities and other socioeconomic actors.

It places special focus on the empowerment of the weakest sectors of the rural society, namely women and young unemployed, and promotes value chains of high quality products linked to biodiversity, and specific tourist measures for the valorization of the natural and cultural heritage.

This resulted in eight FLR principles, applied in an integrated way and translated into practice taking into consideration the local context of the Shouf-West Beqaa landscape.

They focus on the entire landscape, addressing the root causes of landscape degradation, with a common vision for multi-functions for multi-benefits, maintaining and enhancing natural ecosystems within the landscape, using various approaches for an economic cost-benefit view, actively engaging stakeholders, government, and local communities in decision making, on incorporating scientific innovation and capacity building, and finally on enhancing the resilience of the landscape. As restoration progresses, information from monitoring activities is integrated into management plans and transferred into a learning process.

The results were monitored and evaluated, and the data collected yielded excellent results, leading to a partnership with the Ministry of Agriculture and other practitioners in Lebanon.

This also led to enlarging the scope of the restoration program, extending it to other important habitats of the Shouf Biosphere Reserve and its buffer zone, such as abandoned and degraded stone terraces and other agricultural and grazing lands subject to traditional farming practices.

# **Beirut | Post-disaster recovery**

# Rachelle El Khoury

Hochschule für Wirtschaft und umwelt, Nürtingen, Germany. Weihenstephan University of Applied Sciences, Freising, Germany

### **Abstract**

Beirut, a city that has undergone several tragedies from an earthquake accompanied by a tidal wave, a Lebanese civil war, a war with Israel, and finally a deadly explosion.

The people of Lebanon and Beirut have increasingly been pushed to the edge of no return, with the country now facing widespread, infrastructural instability, economic collapse, environmental disasters, and human health concerns during the deadly Coronavirus pandemic. In the field of Landscape Architecture, the potential of creative ideas through, planning, design, social and ecological considerations is a promising venture in problem-solving the challenges that now face the country and city.

The thesis' core aims are to offer hope for the community of Beirut through low-cost sustainable landscape interventions. Primary areas of consideration are the emphasis on the needs of the people and providing a vision that empowers Beirut's inner core to become a leader of change through landscape archetypes inspired by the evolutionary past of the city. This vision will be achieved through the mission of changing the behavioral patterns of Beirut through a biophilic design of decontaminating the ecosystem, protecting the natural flow, connecting the city, remembering the cultural history, repairing the damaged sites, and promoting a socio-economic collaboration through the landscape.

Consequently, a concept map for the city of Beirut is produced by overlaying the six landscape dynamics of the project's mission. Logically, the port area is chosen as a focus area to adapt to the needs of the people and provide a safe natural place of seclusion while creating a sublime experience beyond the daily routine of the community. The vision is achieved through a strategic gradual perennial planting scheme. The natural shelter park will serve as a model of change to remedy the defects and be a model of change for further development.

# Monitoring Native Mediterranean Plant Species Performance Under Extensive Green Roofs: Beirut Case Study

Monika Fabian, Salma Talhouk

American University of Beirut, Beirut, Lebanon

# Abstract

Citizens of Beirut, a city on the Eastern shore of the Mediterranean, have started to look into green roofs as one of the viable options for urban greening. As a result, many of the recently constructed buildings have adopted existing technologies and successfully designed intensive green roofs. These initiatives however are mainly implemented in economically advantaged parts of the city including hotels and restaurants. On the other hand, the majority of Beiruti neighborhoods lack the finances and physical roof infrastructure to accommodate intensive green roofs. Our study aim is to explore sustainable urban greening by assessing the performance of native coastal species under extensive green roof conditions. Field expeditions were made to semi natural sites along the littoral and seeds, plants, and voucher specimens were collected from a total of 50 native and/or naturalized species growing in rocky outcrops or sand dunes. Seedlings were planted in container modules to accommodate a 7 cm depth of potting mix and studied for 6 month. The performance of fifteen geophytes under extensive green roof conditions was also explored. A random design with of eight replications per species was established on the roof. Bulbs were not irrigated nor fertilized throughout the experiment, which lasted four years (2015-2019). Horticulture measurements included plant height, number of leaves, and number of shoots, flower shoot height, and number of flowers. We will report on the findings of both experiments including plant spread, height, foliage color and texture, date of bloom, and survival.

# **POSTERS**



**Designing Transformative Change** for Productive Landscapes

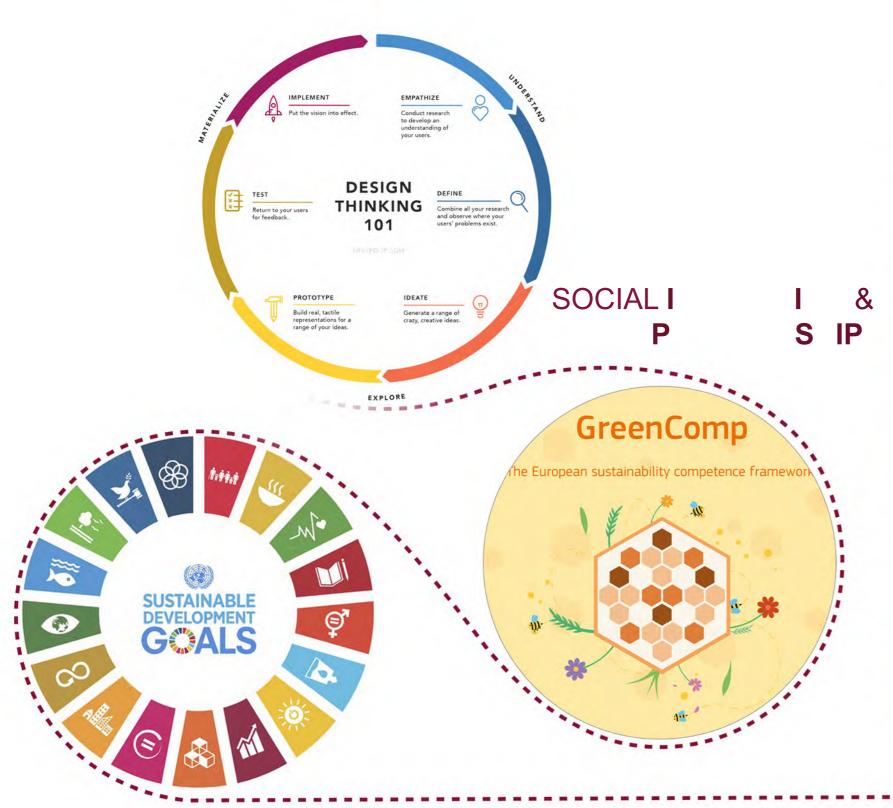
OCTOBER 20-22, 2022 | BEIRUT - LEBANON

# MeProLand-Middle East Partnership for Productive Landscapes

Transdisciplinary qualification program in collaboration between HFWU, GJU, and AUB



# ain Princi les



Transdisciplinary qualification of students and young academics - especially with syrian background - for sustainable community development in the Middle East.







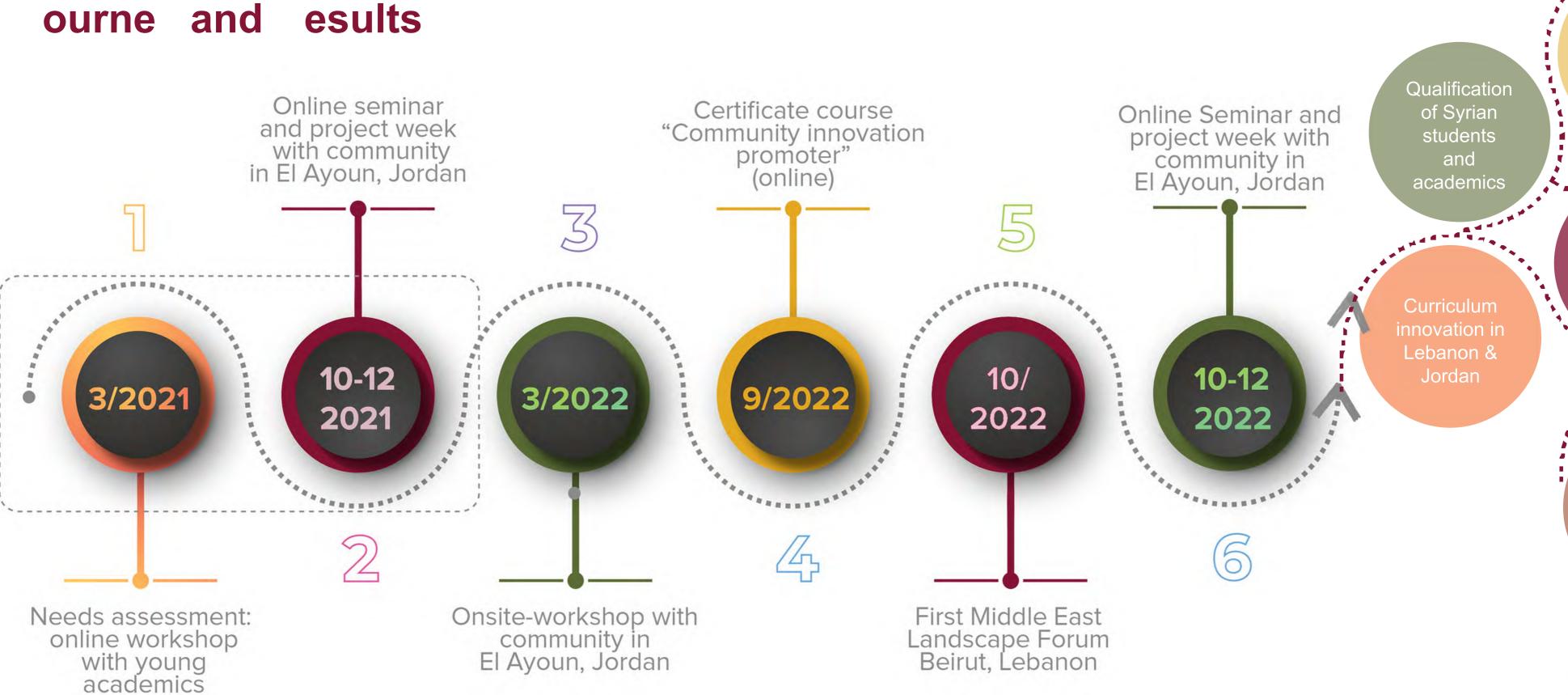






Community Innovation Lab -

oun



Qualification of Lebanese &Jordanian students and academics

Establishment of a local living lab in Al-Ayoun - Jordan

or more info



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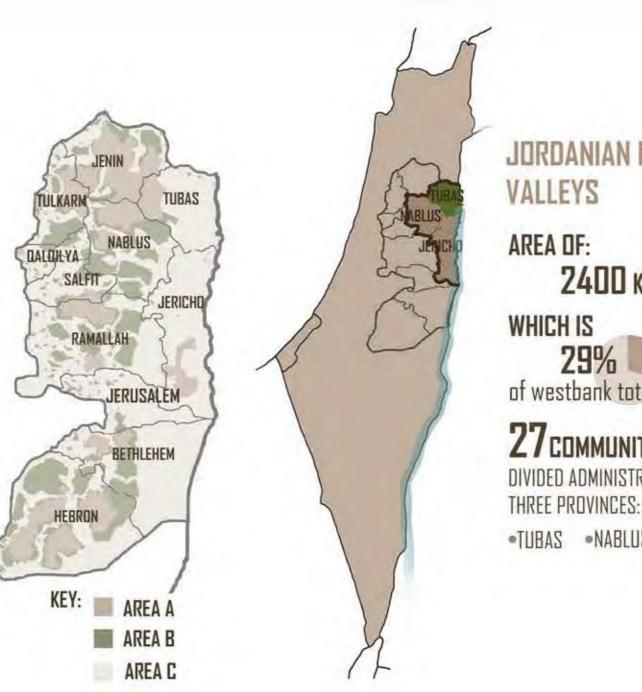
**Designing Transformative Change** for Productive Landscapes

OCTOBER 20-22, 2022 | BEIRUT - LEBANON

The Palestinian Northern Valley: Between Challenging Outmigration and National Agricultural Economy Bissan Abu muhsin, Dina Nabhan







Tubas governorate **JORDANIAN RIVER** 2400 KM2 of westbank total area **27**COMMUNITIES DIVIDED ADMINISTRATIVELY INTO TUBAS CITY •TUBAS •NABLUS •JERICHO DISTANCE BETWEEN STUDY SITE AND OTHER LOCATIONS

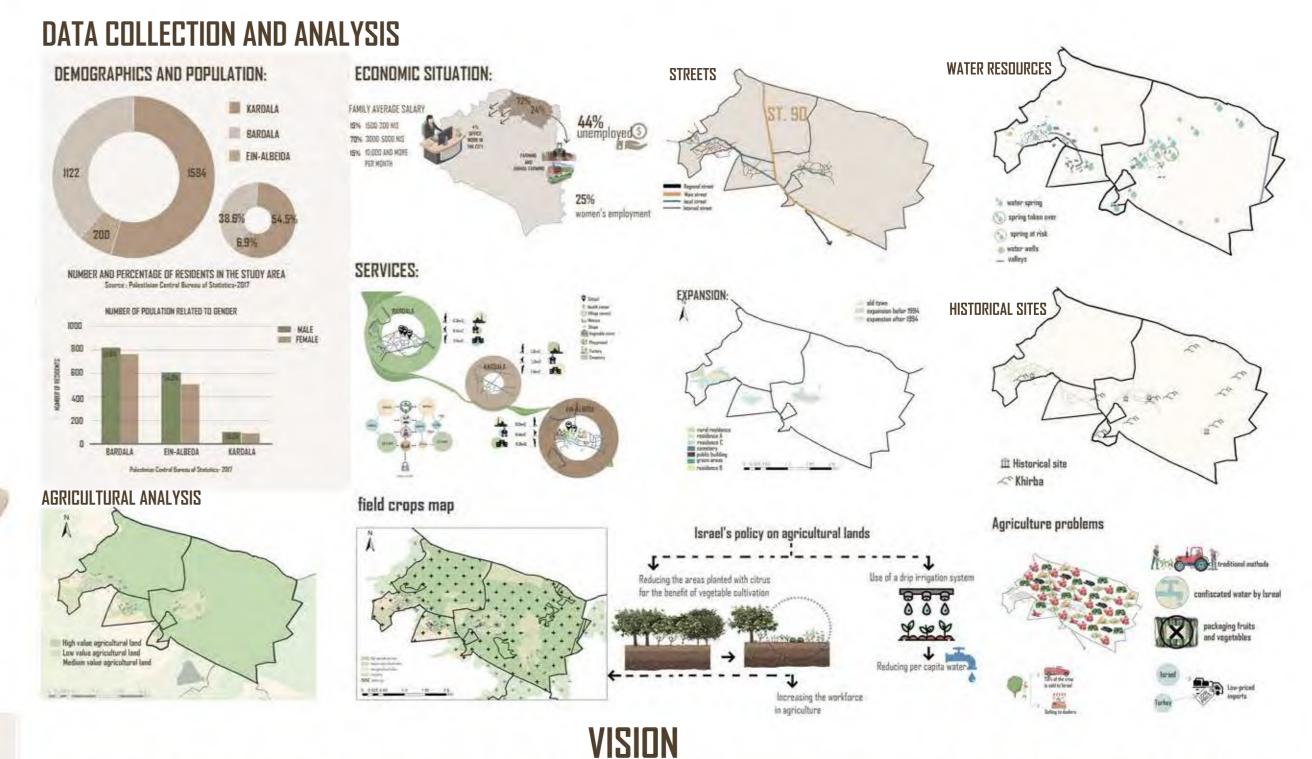
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# **Problem Statment**

The northern Jordan valley is exposed to several violations by the Israeli occupation, resulting in many Palestinians' displacement from their land to neighbouring communities. In addition to

ricultural management, lack of employment opportunities, and bad living conditions which created an economic dilemma. In addition to social segregation and connectivity issues.





• Israeli settelments and military bases Attractive landscape and sites for • Lands with high agricultural value residents and tourists. ·Villages with no structural plan and bad Water and land confiscation Areas with rich natural features, · Land soil is suitable for many water springs and biodiversity. different types of crops and plants Lack of social and physical connection between the three villages. Nouth immigration to surrounding cities. Human force and farmer's · Storng relations bleween each village Shortage of financial resources. •Residents turnout into Occupation violations agriculture. · Weak connection with tubas city. · Weak crops and goods distribution. Agricultural Development

It is strengthening the northern Jordan valley to be a vibrant rural area that meets the needs of its citizens and preserves its distinctive rural character. In light of local economic activities focused on agricultural practices and sustainable exploitation of cultural and natural resources to be the new hostess for the national agricultural economy. AGRICULTURAL MANAGMENT

Crops management

Using advanced technologies in agriculture

Create educational hubs

cost-effective solutions for agricultural production

Develop and market sustainable

Touristic trails that combine culture and landscape.

Create new employment opportunities

# SOCIAL AND URBAN DEVELPMENT

encouraging the development of well-designed affordable housing

Creating urban hierarchy - polycentricity concepts on a different level as strengthening

Developing the rural infrastructure, rural roads' connectivity, creating a coherent transportation system with a connected street pattern, pedestrian, and green pathways.

Protecting, and responding to, the character of the natural environment

Creating a mixed-used district with a walkable distance, distributing services, and enhancing transportation and accessibility.

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# EUROPEAN COUNCIL OF LANDSCAPE ARCHITECTURE SCHOOLS







& Ecosystem Management

# MIDDLE EAST LANDSCAPE FORUM

**Designing Transformative Change** for Productive Landscapes

OCTOBER 20-22, 2022 | BEIRUT - LEBANON

# Green Infrastructure: A Retrofit to the Pedestrianization of Beirut's Congested Streets

Aya Hamze / Ghida Sbytte / Ibrahim Dhaini

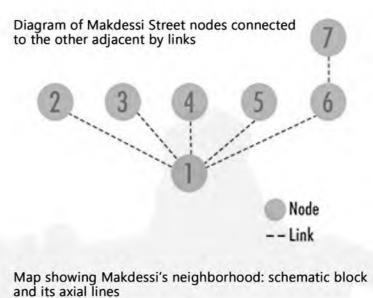


# INTRODUCTION

- Contemporary Beirut faces severe problems in urban planning. Streets in Beirut do not accommodate pedestrians properly since the sidewalks are too narrow for citizens to navigate. The car-crowded streets are filled with sound and noise pollution killing any room for pedestrian activity. This is where the idea of pedestrianizing selected streets in Beirut and transforming them into car-free social hubs is proposed.
- For Beirut, pedestrianizing zones on its own is not enough. It would still lack the element of attractiveness and functionality. From here, the role of green infrastructure comes in. The design of this system makes cities of the future more liveable for its citizens on aesthetic, social, economic and environmental dimensions.

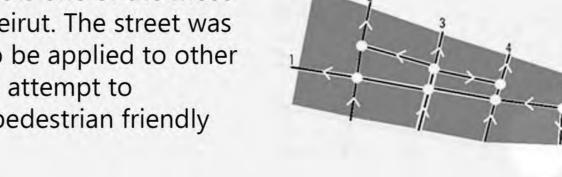


- Makdessi Street was selected as a sample to study this concept, since it is one of the most active streets in Hamra, Beirut. The street was selected as an example to be applied to other streets across Beirut in an attempt to transform the city into a pedestrian friendly city.









# **OBJECTIVE**

The objective is to propose green infrastructure as a retrofit to the pedestrianization of Beirut's congested streets in order to enhance urban health and social well-being, provide social integration and landscape multifunctionality, and integrate mobility and transport solutions.

# **METHODS**

Quantitative: Surveys, case studies and statistics done in the urban context regarding health factors, social factors, etc. all of which is fundamental for this urban transportation research.

Qualitative: Interviewing locals and debates done by scholars and academics in this field.

# ENHANCING URBAN HEALTH AND SOCIAL WELL-BEING

- Green infrastructure can be implemented in a way to offer space for physical activities. Open spaces boost emotional well-being, reduce stress and improve mental and physical health.
- The implementation of green infrastructure in car-free zones offer physical environment that boosts the social interactions, social networks and preserve the social capital. It acts as an inviting meeting space for the community.

# PROVIDING SOCIAL INTEGRATION AND LANDSCAPE MULTIFUNCTIONALITY

- Car-free zones get citizens on foot and give them a different viewpoint of the surrounding streetscape and offer people the opportunity to have intercultural socialization.
- Green infrastructure, in its various forms, can be used in these spaces as a tool to ensure social interactions.

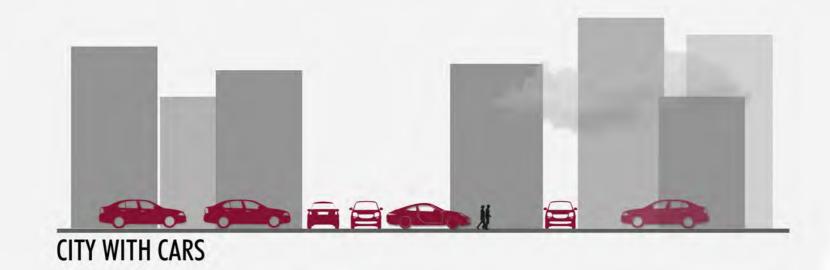
# INTEGRATING MORE TRANSPORT AND MOBILITY SOLUTIONS

- Green infrastructure offers citizens of Beirut various solutions to the occurring mobility crisis of the city. Its merits can encompass both, pedestrian and vehicular transportation. It generates higher aesthetics to the pedestrian streetscape in addition to generating green streets that retrofit the urban transportation infrastructure.
- Green infrastructure comes as a strong tool to serve urban transportation infrastructure.

# ARGUED DRAWBACKS OF GREEN INFRASTRUCTURE & CAR-FREE ZONES

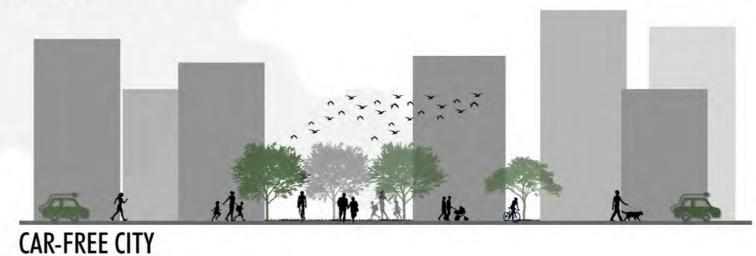
- Improper planning of green infrastructure and pedestrian zones can have ramifications on the city rather than benefits.
- Green infrastructure is perceived as a complicated task, it requires expenditures of many resources such as investment in money and space, and it needs maintenance on the short and long run.
- Advocates of cars argue that cars are an essential way of transportation in the city for residents, tourists and especially for elderly and people with limited physical ability.





# CONCLUSION

- -The car-free city paves the way for healthy, creative and strong communities.
- -This new concept will turn into a groundbreaking form of urban regeneration and will take Beirut citizens away from their daily struggles with transportation and the unhealthy urban environment surrounding them.
- -The implementation of green infrastructure will provide accessibility, connectivity, integration, public health, social inclusion, and landscape multi-functionality in order to enhance these car-free zones. This can open doors to various urban sociology and landscape design projects that tackle major problems in Beirut's cityscape; and thus, enhancing the city even further.



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SCHOOLS









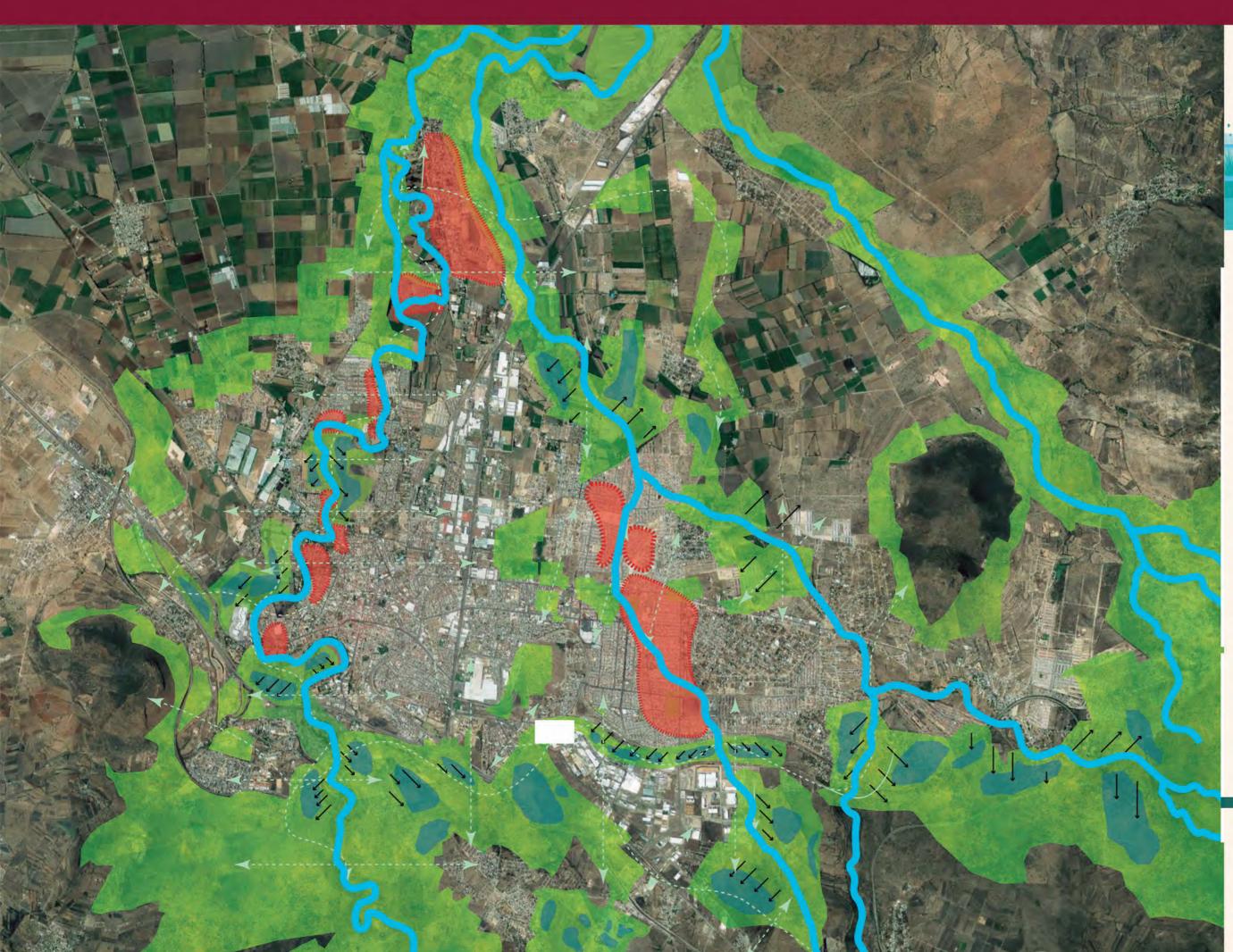


**Designing Transformative Change** for Productive Landscapes

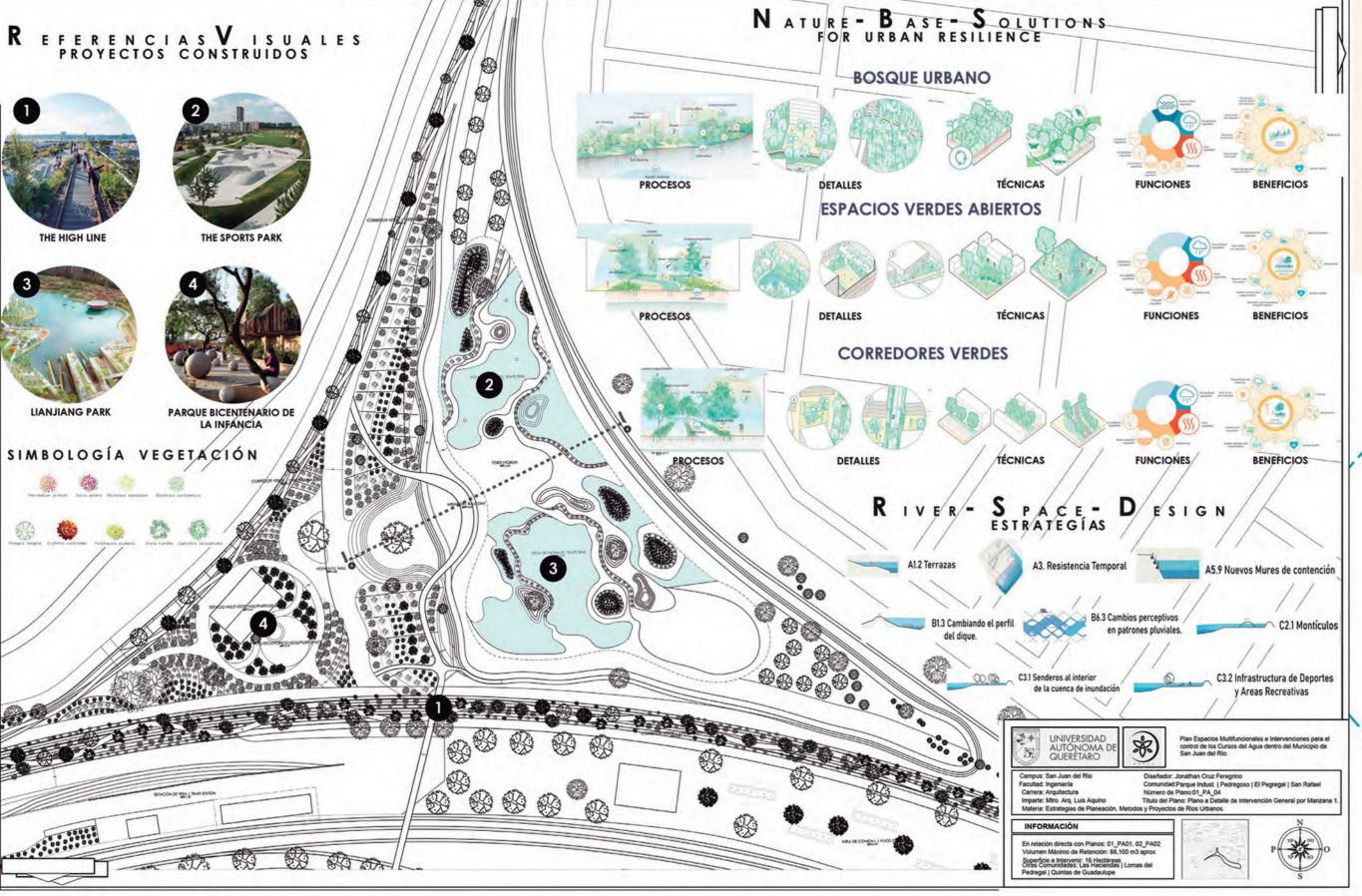
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Masterplan: Multifunctional Spaces and Interventions for the Dynamic Containment, Profitable Management and Fundamental Enjoyment of the Riverflow across the Municipality. M.L.Arch. Luis Aquino; M.Arch. Joel Valencia Camacho.





Up. Concept of the Plan of Multifunctional Spaces and Interventions for the Dynamic Containment, Profitable Management and Fundamental Enjoyment of the Riverflows across the Municipality of San Juan del Rio, Queretaro. Down. Example of the design of an Area based on the principles of the Catalogue of the Nature Based Solutions for Urban Resilience and the Catalogue of River. Space. Design by Martin Prominski, Antje Stokman and Susanne Zeller. (Indicated with a white square on the map)



# THE New PARADIGM THE PARADIGM

THE CURRENT USAGE OF WATER

THE BUSINESS OF GREY INFRASTRUCTURE









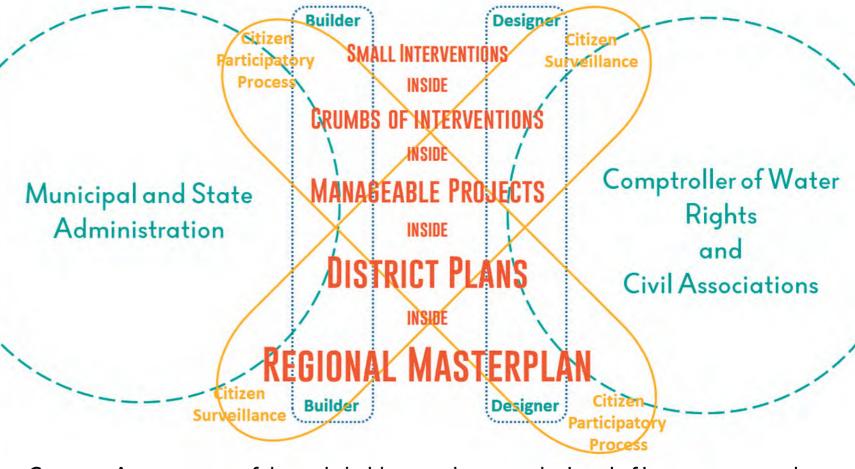


TO CELEBRATE AND PROFIT THE ABUNDANCE



INTERCONNECT AND INTEGRATE

Philosophical Concept to break the existing system that contains the Waterflows inside most of the Municipalities in Mexico. We aim to break the paradigms with this new vision.



Concept: Arrangement of the stakeholders in relation to the Level of Interventions to the Waterflows in non-reliable public administrations.

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**Designing Transformative Change** for Productive Landscapes

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# Therapeutic and Social Role of Urban Allotment Gardens in Poland and Turkey

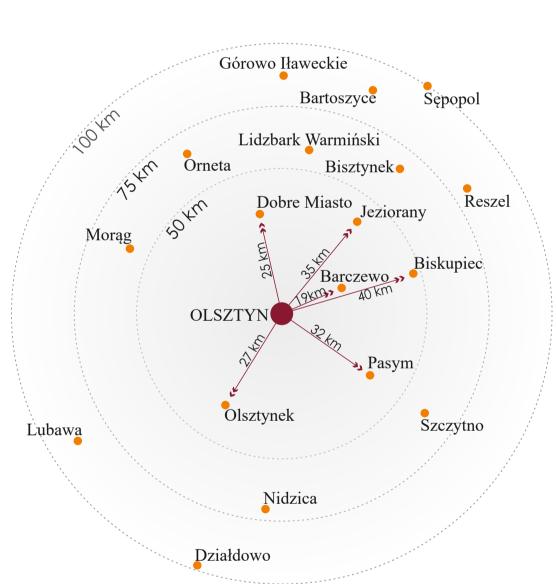
Agnieszka Jaszczak<sup>1,2</sup>/ Ewelina Pochodyła<sup>1</sup>/ Cemile Ece<sup>3</sup>/ Efnan Ezenel<sup>3</sup>

Architecture, University of Warmia and Mazury in Olsztyn, Poland/ <sup>2</sup>Department of Business and Rural Development Management, Vytautas Magnus University, Lithuania/ <sup>3</sup>Faculty of Tourism, Eskisehir Osmangazi University, Turkey

One of the forms of urban agriculture in Poland and Turkey are urban allotment gardens. A common and characteristic feature of such allotment gardens is the production of food products mainly on a small scale and for personal needs (vegetables, fruits, herbs), but also non-food products (ornamental greenery). Other functions of allotment gardens are health-promoting, therapeutic and social ones. All activities related to working in the garden have a positive impact on the quality of life of users. Physical activity has a positive effect on health, while establishing social contacts and shaping the urban space and the surrounding landscape are also of key importance. The importance of urban allotment gardens increased especially during the pandemic of COVID 19, while activities related to urban agriculture in the context of the social function (urban community gardens) are becoming more and more popular in Poland.

# POLAND **OLSZTYN**

Allotment gardens in Olsztyn are located in thirty complexes covering a total of 230 ha of the city, which is 3% of its area. The gardens are scattered throughout the city. Some are located in the vicinity of lakes and forests, others are located on investment areas or with large housing estates "behind the fence". The beginnings of the oldest modern allotment gardens in Olsztyn date back to 1962-1964. The largest group of plots in the city, with an area of approx. 64 ha, is located in a depression. In the area covered by the research, the following were designated: complexes of family allotment gardens; orchards; tree and shrub nurseries; experimental plants / gardens; greenhouse production; home gardens; farmlands.







# Main roads Allotment gardens Parks and forests Water bodies (lakes, river)

# CITTASLOW ASSOCIATION

Allotment gardens are also located in small towns belonging to the Cittaslow association and located around Olsztyn. The assumption and the very idea behind their creation are similar to those in Olsztyn, but the scale and the way of using them are slightly different. Gardens in Cittaslow towns are more productive than recreational or decorative. While the function of allotment gardens in Olsztyn has changed, especially in recent years, from production to recreational, in Cittaslow towns, there is a need for garden users to produce small crops for consumption. This is in line with the philosophy of slow life and slow food.

# TURKEY ESKIŞEHIR

Production gardens in Eskişehir are characterized as hobby gardens and volunteer gardens on an area of 9,066 m<sup>2</sup> for the use of residents. Gardens are designed by municipalities, and applications are made for the use of gardens and allocated to individuals. The gardens are designed in city centers, user-friendly and close to transportation areas. The area of individual plots is 68 m<sup>2</sup>. In this area, there is a small wooden cabin and planting area that people can use. The main users are the elderly, relatives of veterans and martyrs, disabled individuals and their relatives. The most commonly grown species are seasonal vegetables and fruits. While pepper, tomato, eggplant, zucchini and seasonal greens are grown in summer vegetables, cabbage, cauliflower, broccoli and carrots are grown in winter vegetables. Of the fruits, there are apple and quince trees in some gardens, while strawberries, raspberries and blackberries are usually grown.















Main roads

Allotment gardens

Parks and forests

Water bodies (lakes, river)



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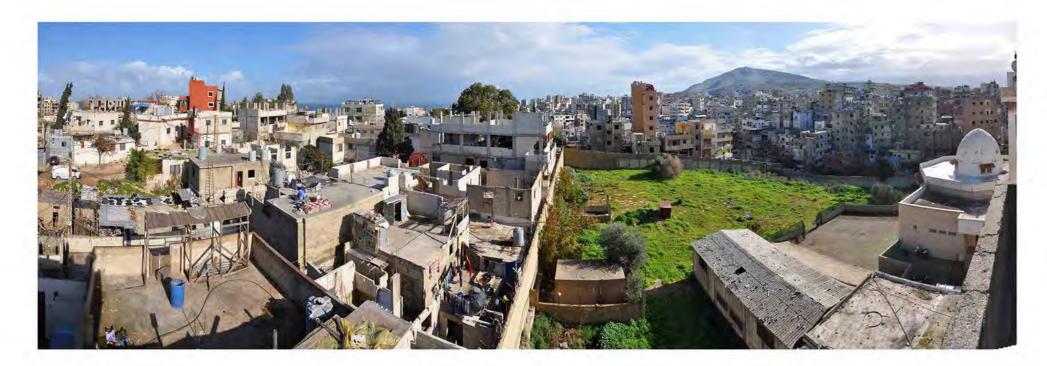
**Designing Transformative Change** for Productive Landscapes

OCTOBER 20-22, 2022 | BEIRUT - LEBANON

# Integrating Landscape Ecology in Urban Morphology: Towards New Ecological-Cultural Patterns of Urban Forms in Mediterranean Suburbs

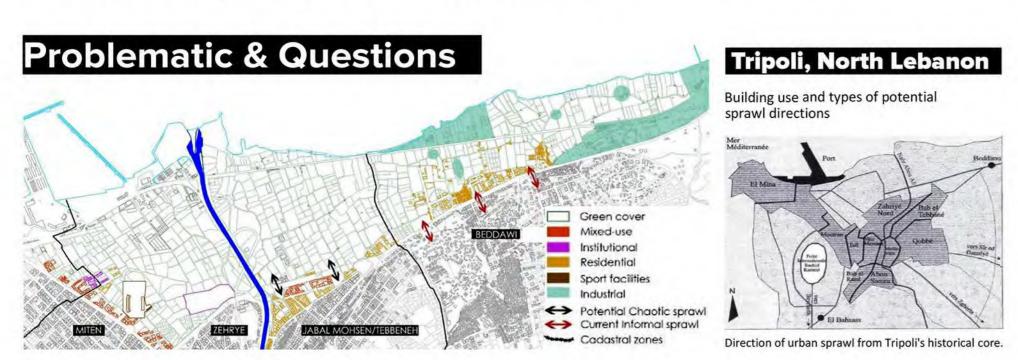


Sandy El Sabsabi



# Research Aim & Significance

- 1- The study shows how Mediterranean contexts can respond to the deterioration of their cultural and ecological landscapes in urban peripheries.
- 2- This research challenges skepticism towards the adaptability of urban form in complex suburban contexts, influencing the extent to which places can preserve unique identities and adapt to new ecological needs.
- 3- The study shifts towards greater emphasis on both spatial, cultural and natural integration of ecological landscape with urban morphology in such settings.
- 4- This study rethinks ecological landscape design as an urban tool supporting sustainable densification strategies that shapes current and forthcoming urbanization of agricultural and green lands, in similar suburban settings.



Patterns of both formal and informal settlements on the district's periphery showcase fragmented urban forms lacking in district and architectural scales ecological and cultural spatial qualities.

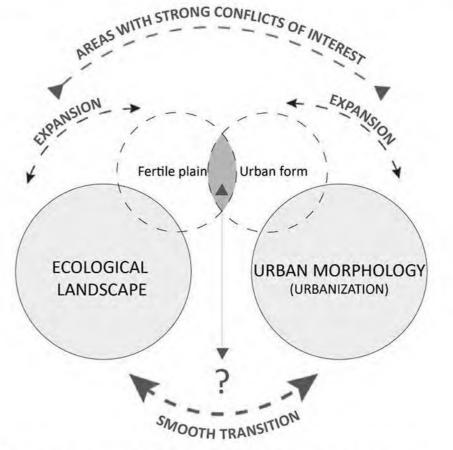
- To what extent urban forms can adapt and co-evolve by maintaining socio-cultural and physical dimensions of the existing ecological landscape? What level of sub-urban density can be achieved with ecologically designed urban forms? Accordingly, what models of spatial constructs and urban fabrics respond to ecology?
- How the reintegration of agriculture adds to the spatial qualities and cultivate new design and practices from the intrinsic character of the locale?
- How ecological landscape design with placemaking attributes can stand as urban tools that favorize the sustainable aspect of densification strategies?

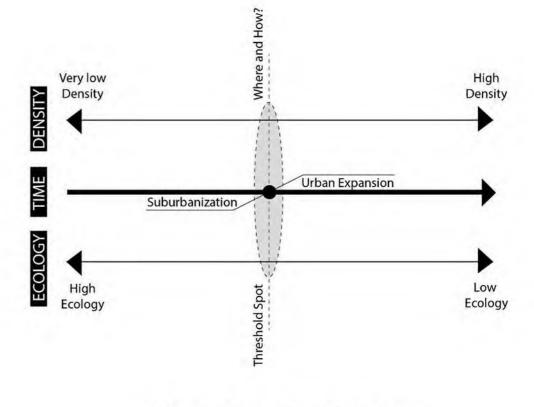




# Urban links

# Theoretical framework and Methodology





Conceptual illustration of Urbanization and Ecological Landscape: Questioning Intersecting ground.

Ecology and Density change through time. Where and how to mediate between the two?

	Spatial Structure	Time	Scale	Complexity	Type-Typology	Connectivity
Urban System	Physical Mental cultural	City as process	From the plot scale to city than regional scale	Cities are composed of different superimposed layers	1-Buildings and open spaces types 2- Relation between form and society	For people
Landscape System			The landscape is a complex mosaic composed of different interconnected ecosystems	1-Vegetative patch type- wetland patche type 2- Relation between form, society, and nature	For wildlife habitat and people	
Outcome	ne Cities are urban >>>> city>> landscape within the landscape matrix		The city should be analyzed through its layers to form a holistic understanding of its structure	Extract different Typologies of urban and landscape units	Provide connectivity for people and other species	

Cross cutting themes between urban design and landscape ecology (Source: An Ecological Approach to Riverfronts Revitalization: The Case of Abu Ali River Corridor in Tripoli)

Spatial morphology in Landscape ecology Natural overlap Urban morphologies.

- 1- Looking into essential concepts in landscape spatial structures with essential variables in urban morphology.
- 2- Emphasizing the socio-cultural aspect of both ecological landscapes and urban fabrics (biotic dimension).
- 3- Concluding strategies and guidelines from the literature + the case study analysis of ecological, spatial and cultural evolutions of the fertile plain and suburbanization processes.

Tools: Mix of modeling, empirical analysis, spatial synthesis, qualitative investigation:

Urban morphology, Satellite imagery and OSM Data, GIS, analytical maps, info graphs, and archival documentation, interviews, field validation, mental maps, focus groups, observations, and other site documentation tools.

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# AMERICAN UNIVERSITYOFBEIRUT

**FACULTY OF AGRICULTURAL** & FOOD SCIENCES

Department of Landscape Design & Ecosystem Management

# MIDDLE EAST LANDSCAPE FORUM

Designing Transformative Change for Productive Landscapes

OCTOBER 20–22, 2022 | BEIRUT - LEBANON

Sustainable Design and Governance Institutions in Confronting Climate Emergencies and Creating Sustainable Built-Environment in Coastal Informal Settlements C-IFS. Case Study: Ouzai /Jnah, Coastal Southern Suburb of Beirut.

Bahaa Bou Kalfouni / Dorota Wojtowicz-Jankowska

# THE BICANTIAL STREET OF THE BEILD AND THE BE

# **ABSTRACT**

In the past decade, Lebanon has witnessed a series of events that contributed to weakening its infrastructure and threatening its society. facts such as rapid urbanization, conflicts, immigration (Syrian refugees), weak government system and corruption, economic crises and inflation (The 17 October Protests), the Covid-19 pandemic, and man-made disasters (the 4th of August 2020 blast in the port of Beirut). These issues along with the impact of climate change have greatly increased the vulnerability of poor urban communities to environmental threats, particularly to informal settlements located in coastal areas C-IFS. These settlements are especially weak due to their weak structural quality and sufficient infrastructure deficiency to alleviate the consequences of any natural event. The study provides a bold multidisciplinary approach. Speculates on the possible sustainable solutions through urban, architecture, and landscape design visions and sustainable policies recommendation for institutions. The study involves analysis of qualitative and quantitative data that formulate the foundation of the presented visions as future imperatives for a healthy coastal landscape in the southern suburbs of Beirut and human settlements by unfolding socio-spatial justice, health inequalities, and climate resilience that ranges from microscale improvement to providing usable and accessible city-wide ecological urban settings. Advocating for transformative action addressing equitable, resilient, and inclusive Beirut city, through rethinking spaces and human's future of societies.

"As planners, we are experiencing a paradigm shift in our role, critical to contemporary urban challenges from building design to managing cities"

"Cities can save our planet, lets rethink planning"

Bahaa Bou Kalfouni







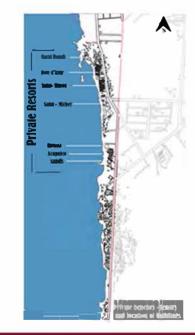


The inability of cities to respond to these Significant Challenges within the planned urban framework led to the development of Informal settlements / disadvantaged neighborhood as a path and alternative to city building

This research focuses on waterfront informal settlements as they are considered the most vulnerable and sensitive to the impact of climate change. This paper discusses a case related to an informal settlement located on the Mediterranean coast in the southern suburbs of Beirut known as Al-Ouzai/Jnah. This brought attention based on various aspects. First, given the importance of urgently responding to the threats to the urban poor (social, economic, and environmental), particularly in areas (coastal zone) that are highly vulnerable to the impacts of climate change. In addition to its strategic location on the outskirts of the capital, Beirut, the largest urban and commercial center in the country, and its extension along with the airport, which is seen as the first image of travelers coming to Lebanon and an important factor associated with its historical spatial transformation from a recreational area to a poor urban environment. These matters are worth discussing in terms of improving the quality of living in these areas in the existing situation and mitigating the natural risks. The research presents sustainable design solutions dedicated to urban design, architecture, and landscape measurements. These solutions are inspired by six successful interventions that occurred at the international and national levels. These interventions were selected due to the comprehensive outcomes (social, economic, and environmental) that were achieved and approved. The strategies picked from these projects are considered to be applicable lessons in the case of Al-Ouzai/Jnah, due to the possible similarities of the challenges.









Location of Southern Suburbs	Case stu	dy locatio	n		Beach res	orts 1960s			C-IFS 20	22
	Table 1. Interventions responding to landscape focus design and techniques.				Table 2. Interventions responding to spatial developments of internal settlements.					
		-2	Group 1					Geoup 2		
Mothodolody	Project	Action	Terthologre	Rooth	Factor Achieved	Project	Action	maign	Results	Factors Achieved
Methodology  Two main methods are adopted in this paper. The first method is based on a literature review of publications, official documents, and plans. Another	Keast Park— (Australia) [34]	Transformation from countal dune to the built environment	Boardwall, that protects the restand dute landace pe.  Greenspare—par k. and merking area.  Optificany translationers for community physical activities	Di plane the leargation and exceller a multiple community (achidine and artivities, presented a circulary server of community own philos and anglephones. Resultanzablan tops phanive to active riphine back plane.	Environmental Social	Mangadahan Compley. No de Jantim—dirajin [10]	Regression, building, new cots and laulation	Charring one social facilities chi d'ordre militaling sche d, bloom, begla segmen faller and squinen fluidilling the "Mangraph's " these chibin.	Creation of the new "Rambla" (connection space to be a connection of treatment of treatment of activa- tables.  Public space is a social interaction tellularities of delivered	Les instituentel Social Les estraie Analysischentel
advantage of this methodology is that it allows us to carefully select and analyze six implemented projects from	Qinhuangdao Beach Transformation— (China) [17].	Rehabilisation of damaged natural environment	Arranging a boardwalk that is rick along the aboretion, linking different patches of plant coreamistics, it also functions as a soil conservation installation that protects the shorteline fastes the crossion caused by the oran wind and waves.  Eco-triendly boses were designed using Elevalians and riprap technique that allows the boardwalk to "foot" above the dance and sevetland.	Rehabilitation of the damaged natural environment restored				Rehabling healten'	epperbassive	
published reports and articles (document analysis). These are selected based on the possible similar nature of the case study. This specific nature was identified and explored and refers to the second method u s e d .				and unrelied the beauty of the site to tourists and local residents. Drambornation of a former degraded beach into an ecologically healthy and aesthetically affective lands: ape	Environmental  Social Reconstruction of Nahr 13-Bared Refuge Canp—Gebassed   65,	Reconstruction of destroyed camp	Rebuilding dwellen' homes, commercial or nice, thempers beginnering new state at her man and Charries and promisers species and promisers species and promisers species and promisers species and promisers species and promisers		Instrumental Social	
The second method involves a sile visit where photographs were taken, and unstructured interviews were c o n d u c l e d.  These two actions led to the formulation of a SWOT analy-				Facilitates the initiatives of rebuilding a harmonious relationship between man and nature through ecological design.		Carp Street		discreasing physical and active fellows over present consideration. Printing consideration and consumers of the fire of the construction of the const	Margaration and a secondary sold internation (margaration)	4.00
sis (phenomenological study). The combination of the analysis of the selected intervention from the first method and the SWOT analysis contributes to a speculative visions approach. These speculative sustainable development concepts are going to be a challenge, so visioning is a valuable way to testT these ideas in a place where action would be challenging.	Coasiline Nourishment, Ashdod Port-Ashdorion Marina—Haifa Bay—thrach [19]	Mitigation of coastal envision, displacement of and to the atmed backes.	Flacement of sand on the encoded share to making the above to making the above to making the above to making the above to the sand prevent in the formulation of the coast to protect the are a against observed of sand problem) from a superior sand is (infollower inland) to feed the back to be received to account one of infollower inland) to feed the back to be received to account one of infollower evenion to occurring.	Representation of a new dipystoch to entigible or entigible or consideration by consideration by adding mitable and to their and be offered to the entitle of the entitle o	En seculturido Social Ferromaic	Rehabilitation of Old Saids residential seighberhood- (Lebanos) [41]	Rehabilitation of historical neighborhood— valverable selven assis	Alleriumg part huming craditives for the submitted learning conditives for the submitted learning conditives for the submitted learning beauty from high place of derivation for the submitted and production as their requirement of the submitted learning and learning	lactionary on armono within the comments of the comments of the comments of the control of the c	

# Landscape <u>Design</u> Vision

The vision can be achieved through ecofriendly installations as follows
Sand dunes—the Geotextile sand tube method

Boardwalks merged with vegetation—floating on the sand .dunes, offer a pleasant safe path along the shore
Rip rap stone—bridge foundations, steep slopes, and other shoreline structures to protect against scouring and .erosion

Beach nourishment—for the northern part—a wider and higher beach can provide storm protection for coast structures, create new habitat and enhance the beach for recreation

Fishing docks—encourage fishing activity, by providing .safer multifunction platforms for hook fishing Flood defense wall—such structures protect areas of human habitation, conservation, and leisure activities from the action of tides, waves, and possibly even tsunamis, and .protect the coast from erosion

Harbor regeneration—organize parking for fishing boats and yachts, provide a vivid area for social interaction and a transportation opportunity—improve the connection between zones located on the coast from the north to the south of Lebanon

# **Architecture Design Vision**

Façades and balconies are refurbished and painted in bright colors

Degraded structures—rebuilt and expanded

as required

Balconies and open roofs rich with
greenery—encourage residents to practice
urban farming activities and create a healthy

.environment
Buildings' thresholds and circulation—cross
ventilation is dramatically increased, creating
an efficient solution to face a hot and humid

climate during the summertime
Construction material—range across plastic,
timber, brick, and concrete, available and
suitable for the culture, climate, economy,
density, and geography meet the
basiccriteria: low cost and easily

•transported

# **Urban Design Vision**

Improve streets and narrow alleys: Asphalt, sidewalk, ditches and crack treatment, main surface water drainage, implementing bollards to stop cars from plowing into crowds, solar LED streetlights. Alleyways are lined with colorful pot plants, streets are available for

)services (e.g., emergency services and supply stores Upgrade open spaces: Open spaces are transformed under the criteria of equity, quality, accessibility, and security, aiming to increase cultural vitality

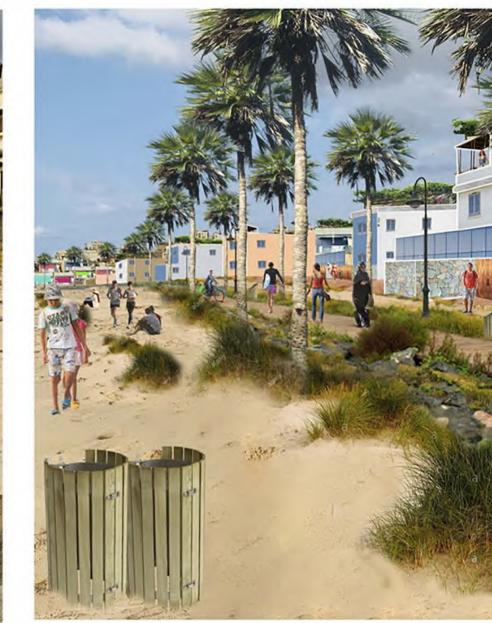
aiming to increase cultural vitality

Encourage urban farming concept: planting fruit-bearing trees and plants (e.g., date palm, apple, pear, cherry, peach, loquat, fig)—relying on herbal farming on open roofs and

Public services: Activate public services (clinics, libraries, schools, community centers, workshop spaces, kindergartens). Reconstruction existing services and proposing new public buildings that contribute empowering the socio-economic structure

Enabling the concept of multifunctional spaces, in which residents tend to share open space





CURRENT SITUATION

VISION: INNOVATIVE DESIGN TECHNIQUES / ECO- FRIENDLY ENGINEERING SOLUTIONS

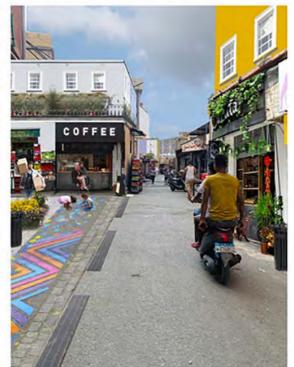




CURRENT SITUATION

VISION: INNOVATIVE DESIGN TECHNIQUES / ECO- FRIENDLY ENGINEERING SOLUTIONS









CURRENT SITUATION

VISION, STREET TRANSFORMATION

IN COLLABORATION WITH:

CURRENT SITUATION

VISION, INTERIOR SPACES TRANSFORMATION

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# TODE E EAST PANDSCAPE FORUM

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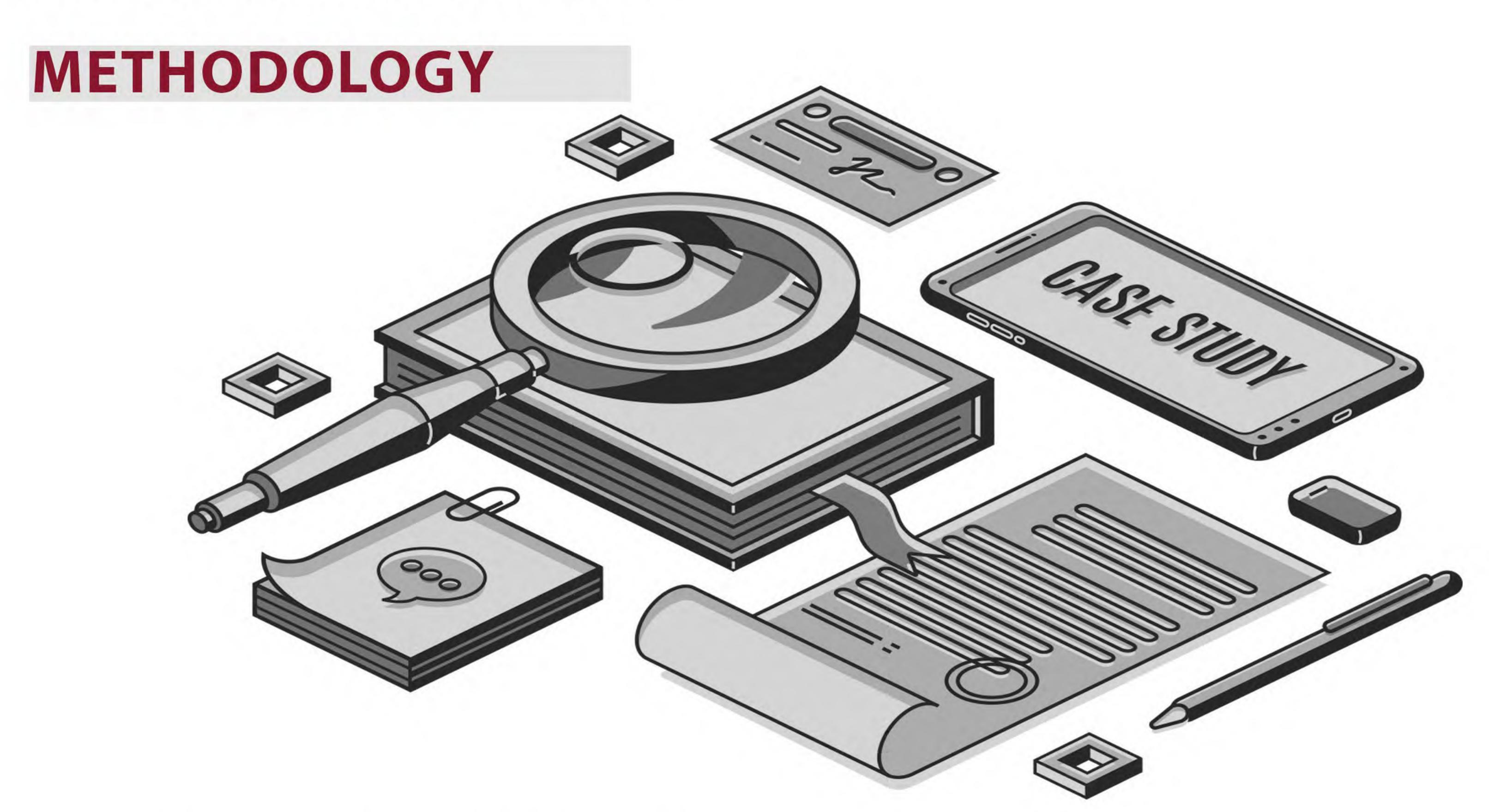
# PERSIAN GARDENS AS THE PRODUCTIVE LANDSCAPE FOR MIDDLE EASTERN EDIBLE CITIES

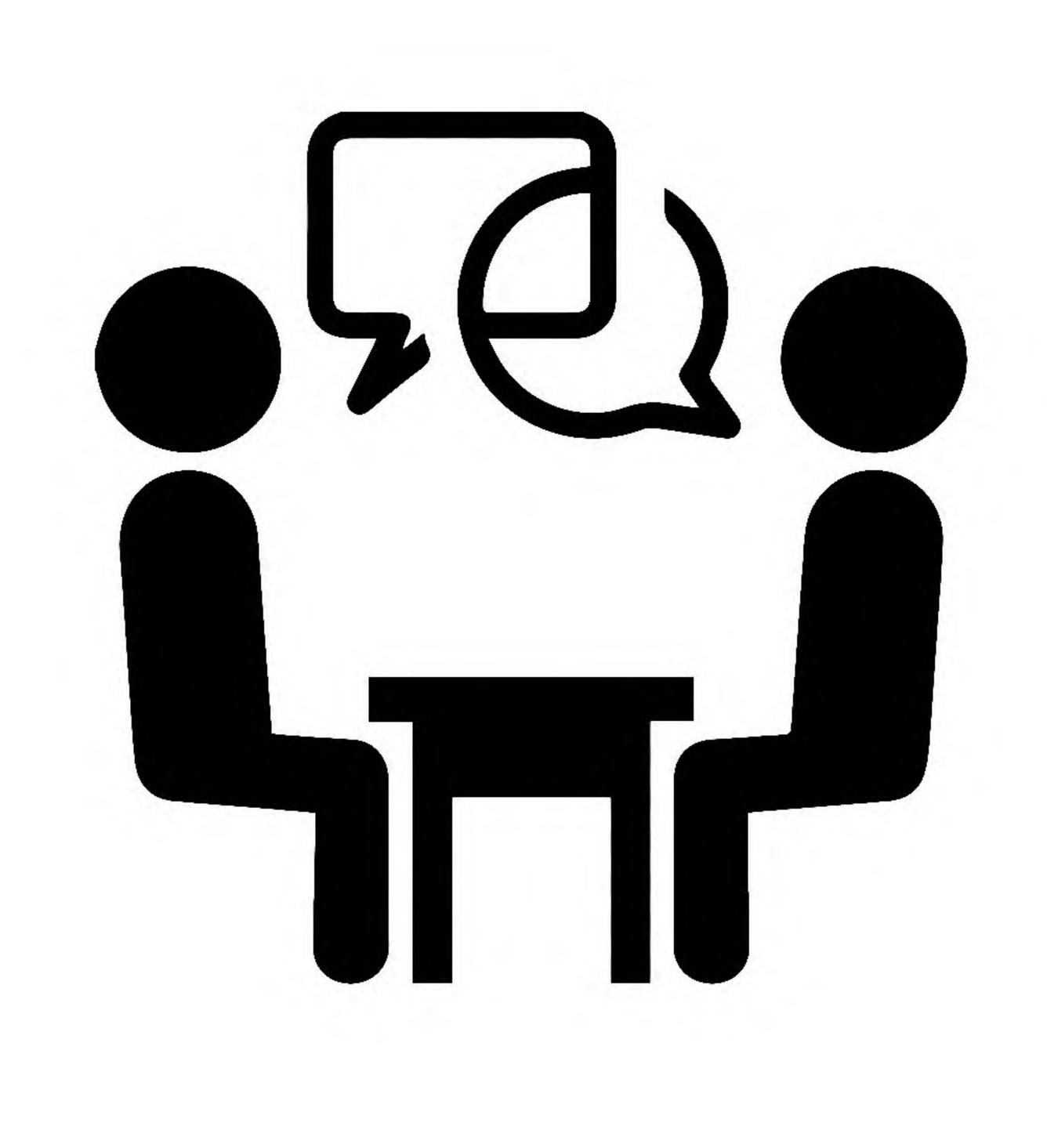
Alessio Russo<sup>1</sup> & Mohammad Reza Khalilnezhad<sup>2</sup>



# ABSTRACT

In the last 50 years, Persian gardens evolved from multi-functional to mono-functional landscapes. Historically, Persia's gardens HOUSED A VAST NUMBER OF FOOD PLANTS, BUT IN RECENT DECADES, THE NUMBER OF EDIBLE SPECIES IN ROYAL GARDENS HAS DRASTICALLY DECREASED. THE MOVEMENT OF EDIBLE CITIES IN LARGE PARTS OF THE GLOBE MAKES THE LANDSCAPE ARCHITECTS THINK ABOUT THE ROLE OF TRADITIONAL FOOD GARDENS IN REVITALIZING FOOD CITIES. IN THIS ARTICLE, WE LOOKED AT WHETHER IRAN'S PERSIAN GARDENS MAY BE USED AS A FOUNDATION FOR MAKING CITIES EDIBLE AGAIN.  $\mathbf{A}$ LTHOUGH, IN THE LAST  $\mathbf{50}$  YEARS, PRACTICALLY ALL OF THE URBAN EDIBLE LANDSCAPE, INCLUDING GARDENS AND AGRICULTURAL FIELDS, HAS BEEN TURNED TO GREY INFRASTRUCTURES, THERE ARE STILL CONSERVED VESTIGES OF PERSIAN ANCIENT GARDENS IN IRANIAN urban green spaces for public use. Some of these ancient places have made room for the edible landscape, while others have lost AGRICULTURAL LAND. THUS, PLANNING THE SPECIFIC STRATEGIES AND PLANS TO RENOVATE THE PRODUCTIVE LANDSCAPE OF PERSIAN GARDENS THROUGH THE ENGAGEMENT OF CIVIC SOCIETY WILL ASSIST THE PERSIAN GARDENS TO BE EDIBLE AGAIN, BEYOND MAKING THE CITIES EDIBLE. MOREOVER, PROMOTING THE CULTURE OF GARDEN PLANNING BEYOND JUST BEING REGARDED AS A LANDSCAPE OF PLEASURE IS ANOTHER GOAL THAT WORTH. ON THE OTHER HAND, THE ATTENTION OF MUNICIPALITIES AND THE MINISTRY OF HOUSING AND URBAN DEVELOPMENT OF IRAN TO URBAN AGRICULTURE AND PLANTING FRUITFUL PLANTS IN PARKS HAVE STRENGTHENED PUBLIC INCENTIVES TO DISCUSS URBAN AGRICULTURE IN IRAN. THIS IS WHERE THE PERSIAN GARDEN SHOULD BE CONSIDERED AS AN URBAN AGRICULTURAL CENTRE BEYOND ALL ITS ARTISTIC AND HISTORICAL VALUES. THESE GARDENS WILL NOT ONLY BE A PLACE OF CROP PRODUCTION, BUT BEYOND PRODUCTION, THEY WILL BE CENTRES FOR URBAN CULTURE REFORM AND LIFESTYLE MODIFICATION AND FOOD PRODUCTION LIFESTYLE TRAINING.





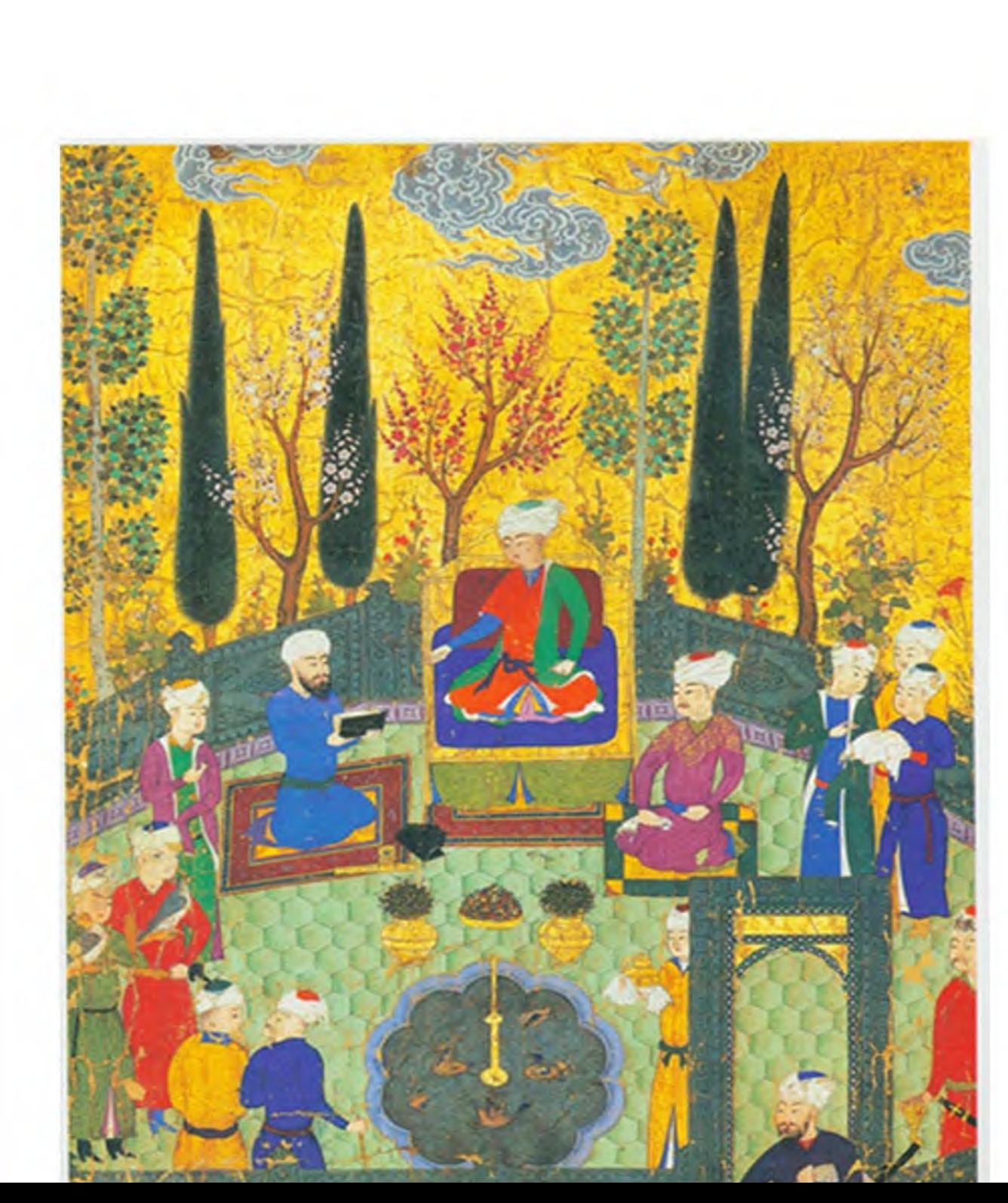


- 2. INTERVIEWS
- 3. CASE STUDIES

The selected case studies Akbarieh, Chehel Sotun, Dolat Abad, Fin, Pahlavanpur, and Shahzadeh gardens are registered as World Heritage Sites by UNESCO







# CONTACTS







DR A. Russo

RESULTS

Site context

Flexibility

Wholeness

Social life

Focal point

Fencing

Plants arranged in rows

Raised garden beds

Formal landscape

Decorative plants for

Works of art

DR M. R. KHALILNEZHAD 2 University of Birjand, Iran

# 1 University of Gloucestershire, UK

Appropriateness						Design Guidelines	Specific Guideline/Feature	Role of Green Heritage in Urban Gardening Development in the Persian Garden
Akbarieh	Chehel Sotun	Dolat Abad	Fin	Pahlavanpur	Shahzadeh		Site layout and design	Separation of production from non-agricultural space. Guiding the visitor to the central spot by planting structural plants.
√ √ ×	<b>√</b> ✓	√√ ×	√√ ×	×	×		Permanency of design	Groves of mature trees. Thematic gardens such as fruit, medicinal, and indigenous gardens.
\\ \\ \\	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	\\ \\ \\	\\ \\	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓		Functional guidelines	Flexibility	Implementing a resilient design by utilizing resistant indigenous species.  Adapting to seasonal variation by utilizing the appropriate indigenous plants.
✓	✓	✓	✓	✓	<b>√</b> √		Wholeness	Distinguished from the urban context due to agricultural scenery.
			√ √ √ √ √ √				Social life	Accommodating visitors who are diverse in terms of age, gender, and cultural background due to the production of a variety of fruits.  Integrating children's play in agricultural ceremonies. Social programs related to gardening and production. Participatory process for collective gardening.
✓	✓	✓	✓	✓	✓		Fencing	Huge vegetation on the garden's periphery.  Dense planting along the axes.
<b>√</b> √	<b>√√</b>	11	<b>V</b>	<b>√</b> √	<b>√</b> ✓		Plants arranged in rows	Ornamental planting in rows around the axis. Planting fruit-bearing trees in rows.
11	<b>//</b>	<b>//</b>	<b>//</b>	<b>√√</b>	11	Attractivefeatures	Non-edible plants for decoration	Existence of a variety of flowers, ornamental bushes, and trees.
11	11	11	11	<b>√</b> √	11		Formal landscape design	Formal landscape design along the main axis, around the mansion, and in the private yards.
11	11	11	11	11	11		Integration of conifers	Planting pine and cedar trees.

Socio-cultural appropriateness of the Persian Gardens for PRODUCTIVE URBAN GARDEN DEVELOPMENT, X: CANNOT BE ACCOMMODATED AMANI-BENI, M. ET AL. (2021)

PLANTS' FUNCTIONAL AND ATTRACTIVE ROLE IN REALIZING URBAN GARDENING IN THE PERSIAN GARDEN AMANI-BENI, M. ET AL. (2021)

# PRODUCTIVE LANDSCAPES IN PERSIAN GARDENS







DOLAT ABAD GARDEN

Designing Transformative Change for Productive Landscapes

OCTOBER 20-22, 2022 |BEIRUT - LEBANON

# High-value medicinal and aromatic plants as an alternative to tobacco farming: a case study in Lebanon / Sabrina Ulmasova

Abstract



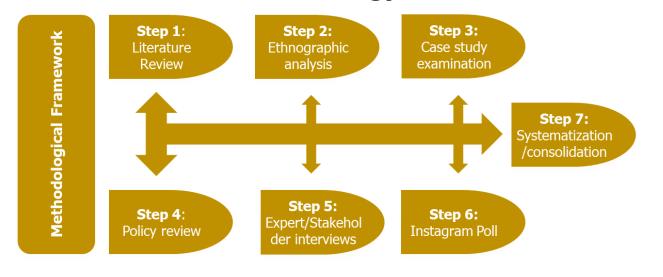
# **Introduction & Aim of the Study**

Long-term unbalanced exploitation of natural landscapes for the economies of scale production, with the use of harmful agrochemicals, short fallow periods, and mono-cropping leads to degraded soils (Shepard 2013). One of such soil-degrading crops that was intensively supported for economies of scale production for centuries - is tobacco leaf.

# TOTAL EXPORTS IN MILLION USD 77.8 Oranges, Apples Lemons, Limes 41.1 Potatoes, Tomatoes, Cucumbers, Gherkins 16.1 Live Sheep, Goats Guts, Bladders, Stomachs for Animals Meat, Edible Offal 18.1 Flour, Meal, Powder, Flakes, Granules, Pellets Rice, Wheat, Muslin, Cereal Goods

The present study aims to analyse whether cultivation of high value medicinal and aromatic plants (HVMAPs) for their cultural and provisioning ecosystem services is a viable option to switch to from tobacco farming.

# Methodology



# **History of Tobacco Industry in Lebanon**

Originally introduced by the European merchants, tobacco became popular in agriculture since 16th century (Birdal 2010).



An estimated 9,000 hectares most of which are located in the South are cultivated with tobacco (Salti, Chaaban et al. 2014). According to FAO census data, the average size of the tobacco farmland is 1.4 ha.



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#عيترون #تبغ #دخان #زراعة\_التبغ #زراعة\_الدخان #زراعة #لبنان

agriculture #cultivation #tobacco

Can cultivation of HVMAPs for *provisioning* and cultural ecosystem services be a viable alternative?

Can we create destinations of therapeutic tourism on herbal landscapes?

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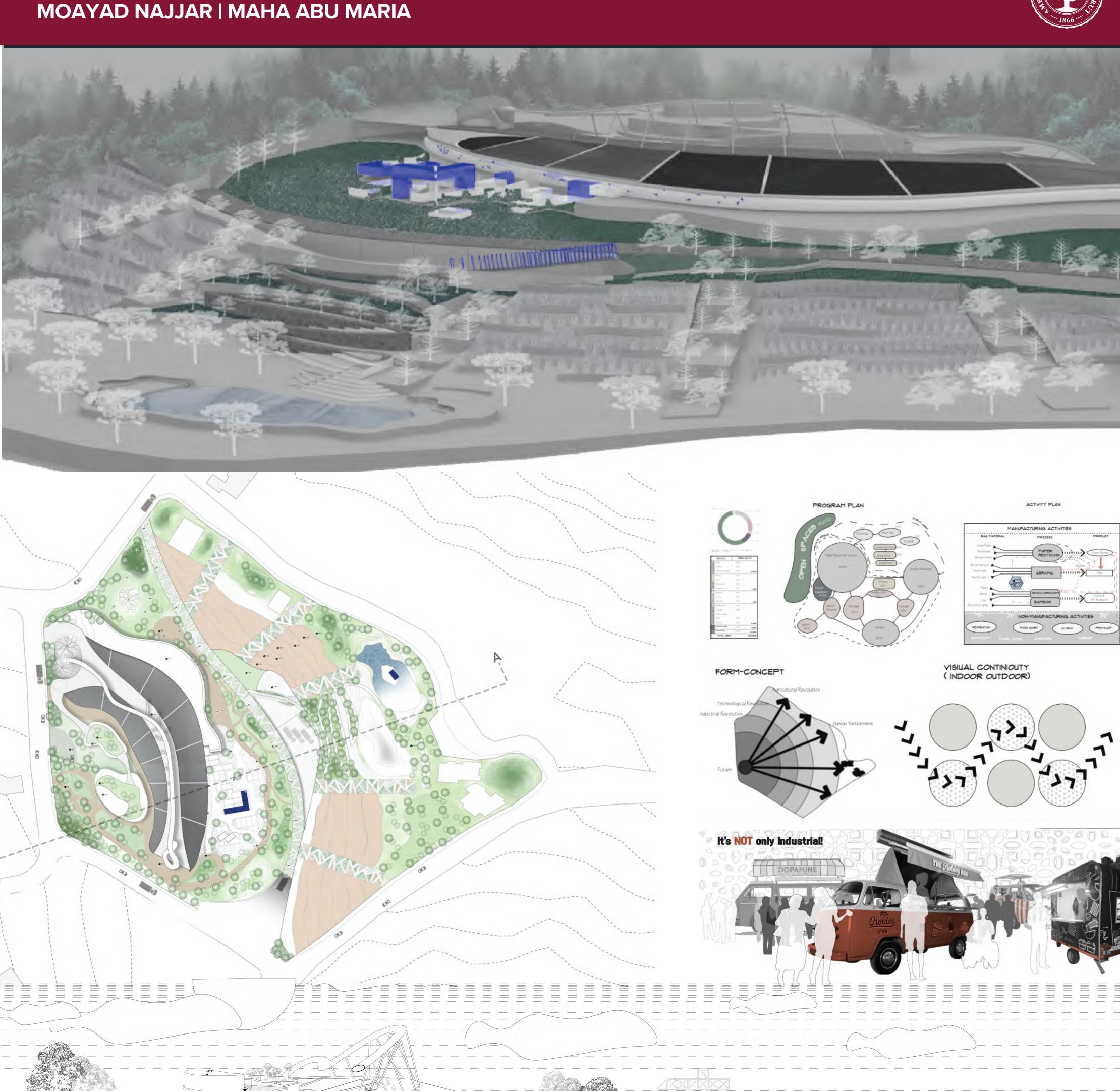


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# BAMBOO INDUSTRIAL PARK





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# The Environment and Sustainable Development Unit - ESDU



# INTRODUCING ESDU

The Environment and Sustainable Development Unit (ESDU) is a regional R&D center hosted at the Faculty of Agricultural and Food Sciences of the American University of Beirut since 2001.

ESDU has been engaged in various regional capacity building, rural livelihoods, and food security initiatives.

The Unit focuses on participatory development and capacity building through knowledge management and sharing, appropriate technologies, and impact analysis with particular attention to smallholder farmers, women, and youth in rural areas.

ESDU has been promoting, through large community development projects, sustainable rural livelihoods all over Lebanon.

In 2013, ESDU established the Food Heritage Foundation (FHF), a non-profit organization, aiming at promoting Local Food Systems and conserving Lebanon's culinary heritage and indigenous knowledge.

ESDU has been working closely with FHF to ensure the sustainability of the impact of ESDU's projects.

# THEMATIC AREAS

Livelihoods at work - Serving local communities through a people-centered approach

**Exploring Solutions, Defying Uncertainties** – Promoting the local food system and addressing challenges of small-scale farmers

**ESDU for vulnerable communities** – Enhancing resilience of vulnerable local communities and refugees, building their capacities on sustainable agriculture and food production

Keepers of the Land - Recognizing the role of local communities (with a special focus on women) in preserving the land

# YEARLY IMPACT

ESDU has been implementing projects throughout Lebanon aiming at promoting the local food system, enhancing resilience of small-scale producers in times of crisis, promoting sustainable best practices and fostering food security.



10,000 direct beneficiaries participated in capacity building projects



8,500 vulnerable households received hot meals



farmers were supported in the sustainable management of their lands



coops/SMEs supported



coops/SMEs sustainably linked to ESDU's marketing channels, engaging more than 250 direct beneficiaries



established demo-plots/living labs

# THE PROJECTS' MAJOR APPROACHES

Sustainability

**Innovation** 

**Participatory** approach

**Circular Economy** 

Seed to Table

Gender Mainstreaming

# EXAMPLES OF ACHIEVEMENTS REFLECTING **ADOPTED APPROACHES**

# **LIVING LABS**

Living labs are an innovative way to structure research and promote and upscale innovation through validation and testing.

A living lab is set in a real-life context acting as an open-innovation ecosystem with a user-centric approach with the aim of generating innovative solutions and sustainable value for all stakeholders including local communities.





# MARKETING CHANNELS **ESTABLISHED** AND SUSTAINED BY FHF

# **FOOD & ROOTS**

Food and Roots is a socially engaged brand of traditionally innovative locally grown Lebanese food refined to fit modern life. It aims at marketing products of small-scale producers following strict quality control procedures.

# **AKLETNA**

Akletna is a network of community kitchens with a central kitchen located in Beirut. It aims at promoting the culinary heritage through daily lunch boxes and catering while supporting small-scale producers from whom the raw ingredients are being purchased.





# **DARB EL KARAM**

Darb el Karam (Path of Generosity) is a network of food trails aiming at supporting small-scale producers through rural and food tourism while offering visitors the chance to know more about the cultural and culinary heritage, participate in agricultural activities and meet the local producers.

# FARMERS MARKET - SOUK AL SOUK (SAS) AND THE GOOD FOOD HUB

SAS is a mobile farmers market aiming at supporting small-scale farmers by creating direct rural-urban linkages and raising awareness on healthy eating habits and the importance of supporting local producers.

The Good Food Hub is a multidisciplinary venue, located in Beirut, aiming at promoting the local food system and supporting small-scale farmers through marketing events and capacity-building activities.

# **GREEN AND HONEST CERTIFICATION**

ESDU established the basis for the Green and Honest Certification tailored to small-scale producers. To assess the farmers'/producers' production practices, promoting climate-smart, ethical and environmentally friendly practices.

# **SPONSORED BY:**













