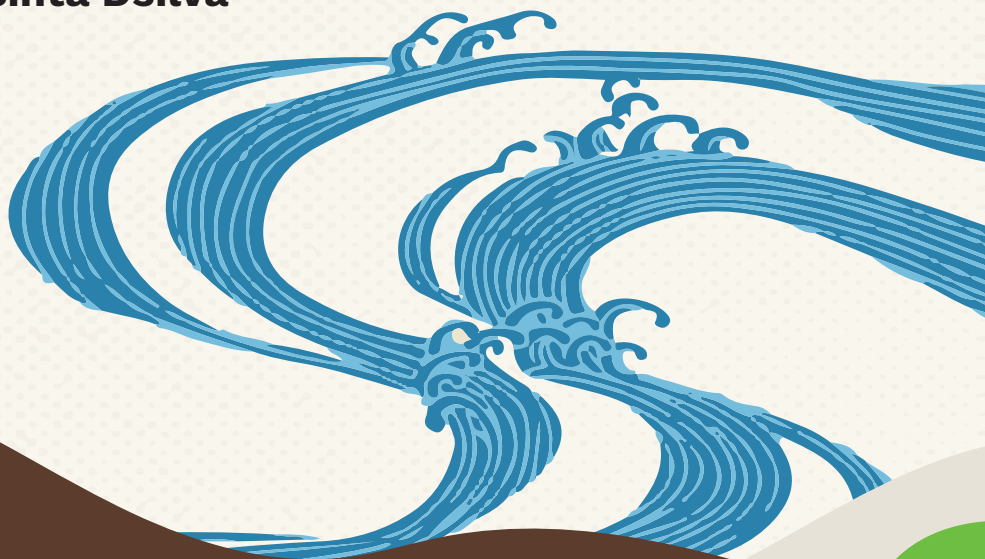
BLOOMING FUTURES: SUPPORTING THE UAE'S JOURNEY TOWARD A WELLBEING ECONOMY

Authors: **Nicole Weber, Najla Almatrooshi**
Research Lead: **Dr. Jacinta Dsilva**



GREENPEACE غرينبيس
SEE INSTITUTE
Sustainability through Research & Education
SORBONNE UNIVERSITY ABU DHABI

EXECUTIVE SUMMARY

The UAE stands at a pivotal moment. With its ambitious national visions and declining economic reliance on oil, the nation is poised to lead a transformative shift beyond decarbonization toward a regenerative wellbeing economy. This report offers a strategic framework to guide that transition, arguing that the UAE's future prosperity hinges on its ability to learn from a master innovator: nature itself.

We propose a dual framework to operationalize this shift:

1. **Biomimicry:** Leveraging 3.8 billion years of nature's R&D to design resilient, circular systems that thrive in scarcity, much like the UAE's own desert ecosystems.
2. **The commons:** Reviving Emirati and Islamic traditions of shared stewardship (amana) and collaborative governance (shura) to manage resources equitably and build social cohesion.

Our analysis reveals that while pioneering projects in the UAE, such as the Al Bahar Towers, demonstrate that this model works, they remain isolated examples. The main barrier is not a lack of vision or resources, but a series of systemic gaps: regulations that favor efficiency over empathy, financial models that prioritize short-term returns over long-term wellbeing, and urban planning that still defaults to environmentally inefficient, socially isolating sprawl.

This report provides an actionable roadmap to bridge these gaps. Key recommendations include:

- Mainstreaming biomimicry and commons principles into national policy and urban codes.

- Pioneering innovative financial instruments such as "Wellbeing sukuk" and green waqf endowments.

- Building capacity through knowledge commons and education reforms that blend traditional wisdom with modern science.

- Measuring what matters by co-creating a National Wellbeing Index that tracks ecological health and social cohesion alongside economic metrics.

The opportunity is profound. By embedding these principles into its economic DNA, the UAE can move beyond mitigating its environmental footprint to actively regenerating it, creating a prosperous, resilient, and inclusive model that is both authentically Emirati and globally relevant. This is the call to action: to build an economy that does not merely exist in the environment but functions like one.

TABLE OF CONTENTS

INTRODUCTION AND RESEARCH CONTEXT

As the global community faces converging environmental, social, and economic crises, the imperative to rethink prevailing economic models has never been more urgent. This report responds to that call by exploring how the United Arab Emirates (UAE), a nation historically shaped by a rentier economy,[1] can lead a paradigm shift toward a regenerative and wellbeing-oriented future. Rather than focusing solely on decarbonization or technological innovation, this research argues for a deeper systemic transformation: one that draws inspiration from nature and centers on collective wellbeing as the foundation of economic success.[2]

This research is situated within the broader framework of the Wellbeing Economy, which redefines prosperity beyond GDP to prioritize the flourishing of both people and planet. Within this paradigm, our approach is guided by two interlinked frameworks: biomimicry,[3] which draws on nature's 3.8 billion years of design evolution to inform resilient, circular systems; and the commons,[4] which places shared stewardship, equitable access, and community participation at the heart of economic life. Biomimicry can be understood on three interconnected levels. Form biomimicry looks to nature's physical structures, such as the honeycomb pattern, to inspire efficient design, as illustrated by the case study of the Al Bahar Towers in Abu Dhabi. Process biomimicry draws on natural processes like photosynthesis to guide sustainable production. Ecosystem biomimicry moves further, emulating entire systems such as forest cycles to design regenerative and resilient economies. Together, these frameworks provide practical and ethical foundations for building an economy that sustains and regenerates the conditions for life. This report emphasizes that true transformation lies at this ecosystem level, where the UAE can learn not just from individual species or processes, but from the collaborative dynamics that allow entire ecosystems, such as deserts, to thrive under extreme scarcity.

The UAE is particularly well positioned to pioneer such a shift. The country has already undertaken ambitious steps to diversify its economy, reduce its carbon footprint, and invest in green technologies and policies.[5] From the Net Zero 2050 strategy to large-scale renewable energy initiatives, the groundwork is in place. Yet to fully realize a regenerative economic model, we must go beyond mitigation.[6] We must ask: "What would it mean to design an economy that functions like an ecosystem?"

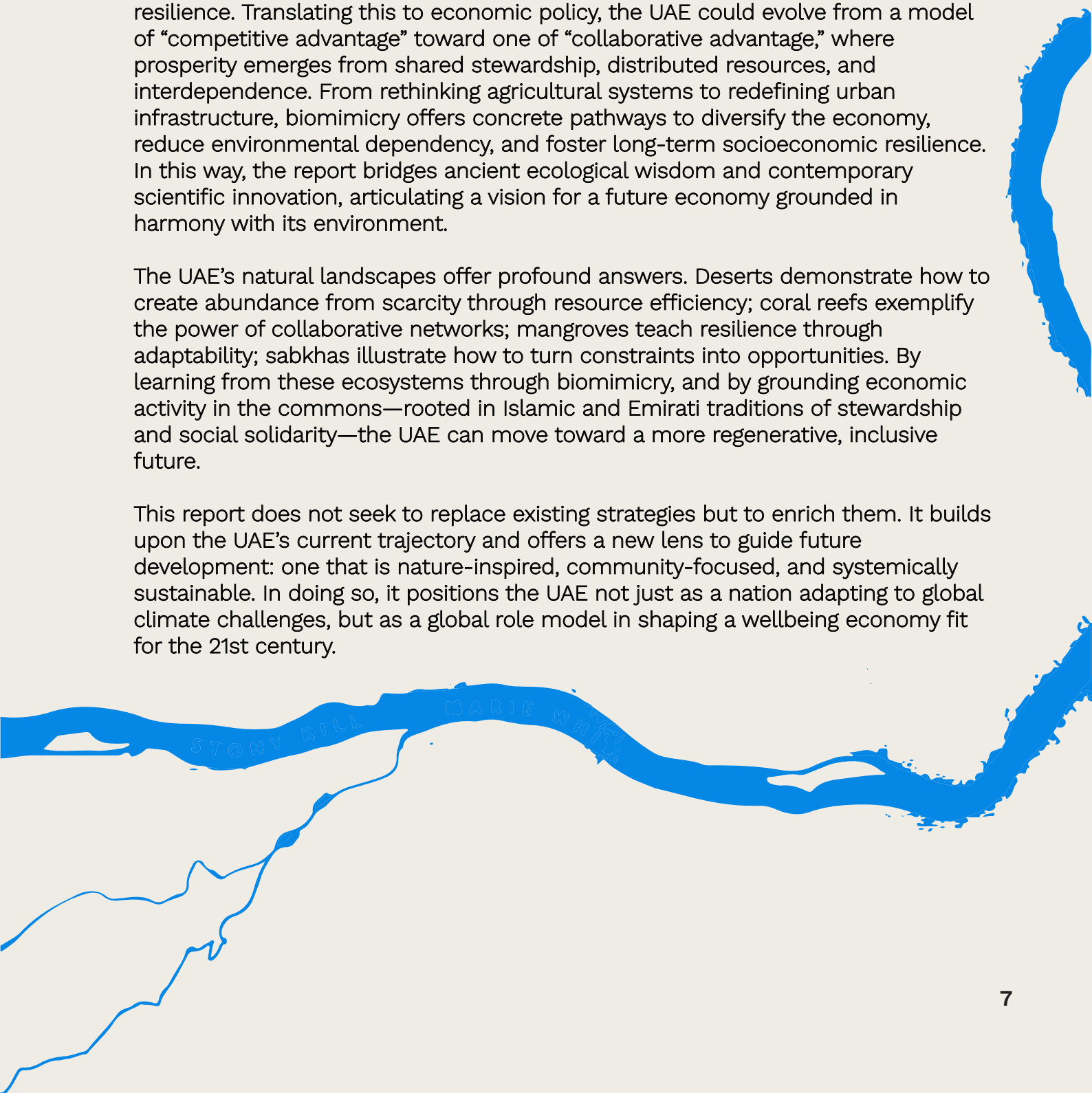
---

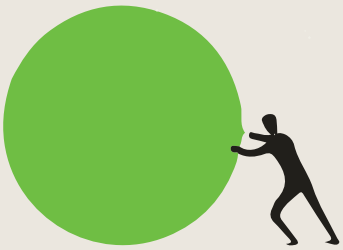
1 Beblawi, Hazem. "The Rentier State in the Arab World." Arab Studies Quarterly 9, no.4 (1987): 398–383. https://www.jstor.org/stable/41857943.
2 Wellbeing Economy Alliance. "Resources." Accessed September 2025 ,2. https://weall.org/resources.
3 Benyus, Janine M. Biomimicry: Innovation Inspired by Nature. New York: HarperCollins, 1997.
4 Ostrom, Elinor. Governing the Commons: The Evolution of Institutions for Collective Action. Cambridge: Cambridge University Press, 1990.
5 UAE Government. "The UAE Net Zero 2050 Strategy." Accessed September 2025 ,2. https://u.ae/en/about-the-uae/strategies-initiatives-and-awards/strategies-plans-and-visions/environment and-energy/the-uae-net-zero-2050-strategy.
6 Ibid.

This research therefore positions biomimicry not merely as a design tool but as a strategic framework for economic development—one that enables the UAE to shift from an extractive, rentier-based model toward a regenerative and wellbeing-centered economy. By drawing on ecological intelligence rooted both in natural systems and in pre-modern human adaptation, biomimicry introduces principles of circularity, resilience, and adaptive feedback that can inform sustainable economic practices. At the systems level, desert ecosystems offer powerful analogies for economic redesign. Even in the harshest conditions, survival depends less on competition and more on cooperation and diversity. Plants and animals share shade, nutrients, and even water-harvesting strategies to ensure collective resilience. Translating this to economic policy, the UAE could evolve from a model of "competitive advantage" toward one of "collaborative advantage," where prosperity emerges from shared stewardship, distributed resources, and interdependence. From rethinking agricultural systems to redefining urban infrastructure, biomimicry offers concrete pathways to diversify the economy, reduce environmental dependency, and foster long-term socioeconomic resilience. In this way, the report bridges ancient ecological wisdom and contemporary scientific innovation, articulating a vision for a future economy grounded in harmony with its environment.

The UAE's natural landscapes offer profound answers. Deserts demonstrate how to create abundance from scarcity through resource efficiency; coral reefs exemplify the power of collaborative networks; mangroves teach resilience through adaptability; sabkhas illustrate how to turn constraints into opportunities. By learning from these ecosystems through biomimicry, and by grounding economic activity in the commons—rooted in Islamic and Emirati traditions of stewardship and social solidarity—the UAE can move toward a more regenerative, inclusive future.

This report does not seek to replace existing strategies but to enrich them. It builds upon the UAE's current trajectory and offers a new lens to guide future development: one that is nature-inspired, community-focused, and systemically sustainable. In doing so, it positions the UAE not just as a nation adapting to global climate challenges, but as a global role model in shaping a wellbeing economy fit for the 21st century.





This report is structured to move from context to action. It begins with an introduction outlining the research background and objectives, followed by an analysis of the UAE's existing strategic landscape, including Vision 2031,[7] Vision 2071,[8] and Net Zero 2050,[9] alongside post-oil economy challenges and opportunities.

The conceptual framework integrates the Wellbeing Economy paradigm, biomimicry, and commons-based governance. The methodology section clarifies the approach, leading into detailed UAE case studies on biomimetic models and urban commons, supplemented by a regional best practice from Egypt. The gap analysis identifies barriers to adopting these approaches, while also suggesting concrete, strategic recommendations for embedding biomimicry and commons into the UAE's wellbeing economy. The report concludes by positioning the UAE as a potential regional model for a locally rooted yet globally relevant transition.

---

7 UAE Government. "Vision 2031." Accessed September 2, 2025. https://u.ae/en/about-the-uae/strategies-initiatives-and-awards/strategies-plans-and-visions/vision-2031.
8 UAE Government. "Vision 2071." Accessed September 2025 ,2. https://u.ae/en/about-the-uae/strategies initiatives-and-awards/strategies-plans-and-visions/vision-2071.
9 UAE Government. "Net Zero 2050." Accessed September 2, 2025. https://u.ae/en/about-the-uae/strategies-initiatives-and-awards/strategies-plans-and-visions/environment and-energy/the-uae-net-zero-2050-strategy.

Our focus in this report is on urbanism and architecture, which is both strategic and data-driven.[10] Desk research and site analysis indicate that most implemented biomimetic and commons-based initiatives in the UAE originate in the built environment, where innovation in both form and governance yields environmental, social, and economic benefits.

The report reveals that the UAE possesses a powerful, yet underutilized, confluence of strategic ambition, financial capacity, and a deep-seated cultural heritage of ecological adaptation. Pioneering case studies such as the dynamic façade of Al Bahar Towers in Abu Dhabi, the passive cooling of the Masdar Institute, the community governance of The Sustainable City, and the traditional wisdom of the aflaj system demonstrate that the principles of a wellbeing economy are already taking root. However, these initiatives remain isolated exemplars rather than an integrated systemic norm. A significant gap persists between aspirational policy and on-the-ground implementation, characterized by a regulatory framework that prioritizes technological efficiency over ecological empathy, investment models that favor short-term returns over long-term regenerative value, and knowledge systems that often overlook vernacular intelligence in favor of imported solutions.

To bridge this gap, this report recommends a fundamental rewiring of approach across six key dimensions: embedding biomimicry and commons-based governance into policy and regulatory frameworks; building institutional capacity through interdisciplinary education and knowledge commons; aligning finance with Islamic principles of stewardship to create innovative instruments such as Wellbeing sukuk; reintegrating cultural and social narratives of sustainability; developing holistic monitoring systems that measure wellbeing beyond GDP; and fundamentally reorienting urban planning toward biomimetic, pedestrian-first, and community centered design. The following roadmap provides concrete strategies to operationalize these recommendations, translating the UAE's national visions into a tangible, resilient, and inclusive wellbeing economy

10 See Section 4 below (Case Studies).

1.UAE CONTEXT AND STRATEGIC OPPORTUNITY

A. THE UAE'S NATIONAL STRATEGIES: VISION 2031, 2071, AND NET ZERO 2050

The UAE's contemporary development trajectory is shaped by three flagship national visions: the UAE Centennial 2071,[11] the National Strategy for Wellbeing 2031,[12] and the Net Zero by 2050[13] strategic initiative. Together, these frameworks mark a decisive shift in national priorities from oil-based economic growth toward a more diversified, inclusive, and environmentally resilient future.[14] Yet, realizing this transformation will require more than technological innovation or incremental policy reforms. It demands a structural reimagining of how the economy,[15] society, and environment are interrelated and co-constituted.

This is precisely where the Wellbeing Economy framework offers valuable insights. As a systemic paradigm, it enables the design of economic and social systems that regenerate rather than deplete, and that place human and ecological wellbeing, not GDP growth, as the ultimate measure of success. This report adopts the concepts of biomimicry and commons to operationalize the Wellbeing Economy framework, providing actionable approaches for translating national visions into grounded, future-ready development models.

11 UAE Government. "Vision 2071." Accessed September 2 , 2025. https://u.ae/en/about-the-uae/strategies-initiatives-and-awards/strategies-plans-and-visions/visionab-2071.
12 UAE Government. "National Strategy for Wellbeing 2031." Accessed September , 2025. https://u.ae/en/about-the-uae/strategies-initiatives-and-awards/strategies-plans-and-visions/social affairs/national-strategy-for-wellbeing-2031.
13 UAE Government. "Net Zero by 2050 Strategy." Accessed September 2, 2025. https://u.ae/en/about-the-uae/strategies-initiatives-and-awards/strategies-plans-and-visions/environment and-energy/the-uae-net-zero-2050-strategy.
14 Walker, Stephen. "Rentier State Theory 50 Years On: New Developments," Frontiers in Political Science 5 (2023). https://doi.org/10.3389/fpos.2023.1120439.
UAE Government. "Vision 2071." Accessed September 2, 2025. https://u.ae/en/about-the-uae/strategies-initiatives-and-awards/strategies-plans-and-visions/visionab-2071.
15 Wellbeing Economy Alliance (WEAll), "What is a Wellbeing Economy?" accessed September 2 , 2025, https://wellbeingeconomy.org.

I. POST-OIL ECONOMY DYNAMICS AND SPATIAL CHALLENGES

The UAE's current economic and urban landscape can be understood through the lens of late rentierism theory.[16] While the nation has made significant strides in diversifying its economy and reducing reliance on hydrocarbon revenues, the legacy of the late rentier model remains embedded in physical and spatial planning.[17] Urban development in the UAE is often characterized by low-density villa sprawl and automobile-oriented infrastructure, particularly in government-allocated suburban housing schemes.[18] While this model does not capture the diversity of all Emirati neighborhoods—many of which continue to sustain denser fareej-style communities or hybrid forms—the prevailing suburban typologies raise significant environmental concerns. High reliance on mechanical cooling, extensive boundary walls, and car dependency contribute to elevated energy consumption and carbon emissions.[19] Studies of residential layouts in Dubai and Abu Dhabi further show that such patterns intensify urban heat islands and reduce walkability, thereby amplifying ecological stress in already vulnerable desert environments.[20]

This existing spatial configuration presents not only challenges but also strategic opportunities for transformation. While aspects of car-centric infrastructure and suburban sprawl reflect continuities of the rentier legacy, they also highlight clear entry points for reimagining urban development in line with ecological imperatives. Recent research on urban and suburban landscapes in Dubai shows how concepts such as the "minute city" framework can bridge theory and practice by ensuring essential services remain accessible within short walking or cycling distances, even in low-density settings.[21] Dubai, in particular, has begun to integrate such principles into selected neighborhoods, linking urban design more closely with human wellbeing and environmental performance.[22]

16 Gray, Matthew. A Theory of 'Late Rentierism' in the Arab States of the Gulf. Occasional Paper No. 7. Doha: Center for International and Regional Studies, Georgetown University School of Foreign Service in Qatar, 2011. See also Schmid, Dorothée, and Anaïs Özyavuz. Persistence and Evolutions of the Rentier State Model in Gulf Countries. Paris: Institut français des relations internationales (Ifri), April 2015.
17 Beblawi, Hazem. "The Rentier State in the Arab World." Arab Studies Quarterly 9, no.4 (1987): 398–383.
18 X-Architects, National Housing – An Opportunity for Change. Abu Dhabi, 2009.
19 Beck, Martin. "Whither Rentierism Following the 2014 Oil Price Decline?" The Extractive Industries and Society 9, no.1 (2022): 100972, https://doi.org/10.1016/j.exis.2021.100972. See also Schmid, Dorothée, and Anaïs Özyavuz. Persistence and Evolutions of the Rentier State Model in Gulf Countries. Paris: Ifri, April 2015.
20 Al Blooshi, Latifa Saeed, Abdelgadir Abuelgasim, Ahmad Nassar, and Taoufik Ksiksi. "Impact of Desert Urbanization on Urban Heat Islands Effect."
21 Alawadi, Khaled, Rim Anabtawi, and Ghalya Alshehhi. "The Minute City: Between Theory and Practicality in Suburban Landscapes." Journal of Arabian Studies. Published online February , 2025. https://doi.org/15487733.2024.2444007/10.1080.
22 Ibid.

By leveraging its strong planning capacities and environmental ambitions, the UAE is well positioned to advance socio-ecological integration through participatory and ecologically responsive design. Strengthening urban resilience, shared stewardship of resources, and ecological awareness—dimensions increasingly framed in what scholars term ecological democracy[23]—can serve as a foundation for aligning spatial planning with the values of a wellbeing economy. In doing so, the UAE can reinforce its leadership in sustainable innovation and set new standards for holistic development in the region and beyond.

---

23 Bourg, Dominique, and Kerry Whiteside. Vers une démocratie écologique : Le citoyen, le savant et le politique. Paris: Éditions du Seuil, 2010.

II. COMMONS AS PART OF THE UAE'S DNA: REVIVING TRADITION FOR A LOCALLY ROOTED, GLOBALLY RELEVANT SUSTAINABLE FUTURE

To understand how people and the environment have interacted in the UAE over time, we need to take a long-term view that shows enduring patterns of adaptation to nature and reliance on natural resources. In the pre-modern era, communities in southeast Arabia adapted to climatic volatility and topographic diversity through mobility, subsistence diversification, and deep ecological attunement. As early as the Bronze Age, however, the region's integration into transregional exchange networks began to shape its economic orientation toward raw material extraction and export—a logic that persisted from pearling economies to contemporary hydrocarbon rentierism.[24]

Archaeological and historical evidence suggests that inhabitation of ecologically marginal zones, such as the Abu Dhabi Islands or the Hajar Mountains, was rarely sustainable but was driven by external market demand for pearls or cultivated goods. Such settlements waxed and waned with global demand, underscoring a pattern of opportunistic extraction and external dependency, which at times led to overexploitation, such as the collapse of the pearling industry in the 1930s.[25]

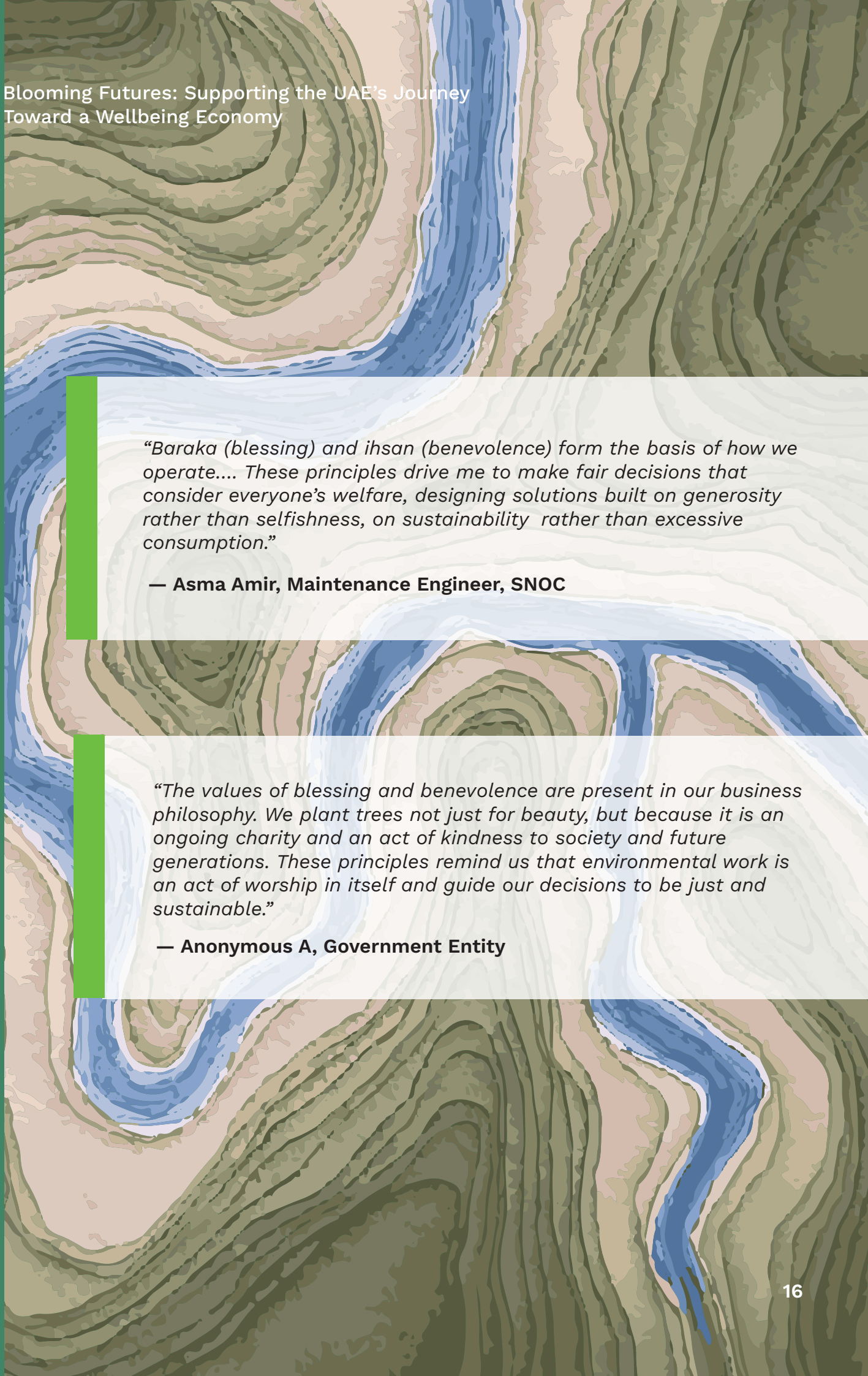
24 Burt, John A. A Natural History of the Emirates. Cham: Springer, 2024 637–734.
25 Heard-Bey, Frauke. From Trucial States to the United Arab Emirates. London: Longman, 1996 , 223.

Importantly, these adaptive strategies were not inherently exploitative. The small population size and limited technological power ensured that, despite resource pressures, human–environment interactions remained relatively balanced. However, the shift to large-scale, industrial resource extraction in the 20th century broke this equilibrium. Today, as we face ecological limits and systemic fragilities brought about by fossil-fueled economies, there is an urgent need to rediscover modes of living that are ecologically coherent and culturally grounded.[26] In this context, the relevance of commons-based governance[27] becomes particularly salient in the UAE and the wider Gulf region. As the nation confronts ecological vulnerability and the need to transition beyond hydrocarbon dependency, revisiting traditional systems of community resource management can yield powerful[28] insights. One such example is the aflaj[29] system, a network of ancient, community managed irrigation channels designed to equitably distribute water in arid environments. Rooted in collective stewardship and embedded in local knowledge, the aflaj system offers more than historical interest: it provides a living example of ecological adaptation, equitable governance, and sustainable use of shared resources.

In this sense, the aflaj model embodies core principles of both biomimicry and the commons. It mimics natural hydrological flows to distribute resources efficiently, while reinforcing social cohesion through shared responsibility and negotiated access. Moreover, its ethical underpinnings align with Islamic principles such as amana (trusteeship), shura (consultation), and maslaha (public interest),[30] demonstrating that commons-based approaches are not imported concepts but deeply rooted in regional traditions.

Thus, the commons emerge not merely as a theoretical model but as a culturally embedded and ecologically intelligent practice—a bridge between environmental necessity, ethical tradition, and collective imagination. Reviving and adapting such models in contemporary contexts offers a viable pathway toward a regenerative wellbeing economy that is both locally grounded and globally relevant.

26 Steffen, Will, et al. "Planetary Boundaries: Guiding Human Development on a Changing Planet." Science 347, no.6223 (2015): 1259855.
27 Ostrom, Elinor. Governing the Commons: The Evolution of Institutions for Collective Action. Cambridge: Cambridge University Press, 1990.
28 Al-Mansoori, Khaled. The Post-Oil Strategy of the UAE: An Examination of Diversification Strategies and Challenges. ResearchGate, 2025..
29 Burton-Page, J. The Aflaj of Oman: A Study in Water Management in an Arid Region. Muscat: Ministry of National Heritage, 2002.
30 Leveau, Rémy. Islamic Environmental Ethics: Principles and Practices. Paris: Éditions Karthala, 2015.



"Baraka (blessing) and ihsan (benevolence) form the basis of how we operate.... These principles drive me to make fair decisions that consider everyone's welfare, designing solutions built on generosity rather than selfishness, on sustainability rather than excessive consumption."

— Asma Amir, Maintenance Engineer, SNOC

"The values of blessing and benevolence are present in our business philosophy. We plant trees not just for beauty, but because it is an ongoing charity and an act of kindness to society and future generations. These principles remind us that environmental work is an act of worship in itself and guide our decisions to be just and sustainable."

— Anonymous A, Government Entity

III. THE UAE'S PATH TO A POTENTIAL LEADER OF A WELLBEING ECONOMY

The UAE's Wellbeing Strategy 2031 expands the definition of happiness beyond individual satisfaction to include social connectivity, environmental health, and urban livability.[31] It calls for a "whole-of-life" model, where mental health, civic trust, and ecological quality are interdependent. Actualizing this vision requires a reckoning with persistent spatial segmentation:

- Villa culture fosters private isolation rather than neighborhood bonds.[32]
- Highways and malls dominate public space, sidelining walkability and informal gathering.
- Low-density suburbanism, while aesthetically ordered, spreads infrastructure thin and disconnects people from nature and from one another.

This urban model reproduces a fragmented understanding of wellbeing, one where individual happiness and mental health are increasingly measured and addressed, yet collective and ecological flourishing remain largely unrealized.[33] Initiatives such as the **Dubai Happiness Meter,**[34] the UAE Wellbeing Observatory,[35] and the formation of Local Wellbeing Councils provide important policy instruments to track and promote wellbeing across sectors. However, to avoid the risk of these mechanisms becoming technocratic and individualistic in focus—centered on data collection, sentiment analysis, or service satisfaction—they must be paired with structural urban reforms that foster nature-based systems and community integration. True ecological wellbeing cannot be achieved through indicators alone. It must be place-based and experiential, rooted in landscapes that invite interaction between humans and ecosystems. Without such grounding, wellbeing risks being reduced to a personal psychological state rather than a shared condition co-produced through social, spatial, and ecological relationships.

31 UAE Government, UAE National Wellbeing Strategy 2031. Abu Dhabi: Government of UAE, 2023.
32 Elsheshtawy, Yasser. Dubai: Behind an Urban Spectacle. Abu Dhabi: American University in Cairo Press, 2010, 70–65.
33 Raworth, Kate. Doughnut Economics. London: Penguin, 67–45 ,2017.
34 Dubai Statistics Center, "Dubai Happiness Meter." 2022. https://www.dsc.gov.ae.
35 UAE Ministry of Community Empowerment. "UAE Wellbeing Observatory." 2023. https://www.moce.gov.ae/en/.

B. CLIMATE CHANGE PRESSURES AND ADAPTIVE HERITAGE IN THE UAE

Despite its longstanding adaptation to harsh desert conditions, the UAE now faces intensifying pressures due to climate change.[36] Regional projections indicate significant increases in temperature and humidity, prolonged hot seasons, more intense rainfall events, rising sea levels, and a higher frequency of extreme weather phenomena such as cyclones, floods, and sandstorms. These shifts pose complex and interlinked risks to the country's environment, economy, infrastructure, and public health, particularly as cooling demand, water scarcity, and biodiversity loss are expected to intensify.

In response, the UAE has taken proactive policy measures, including the National Climate Change Plan 2050 and the National Climate Change Adaptation Program, aiming to build long-term resilience while supporting a transition toward a green, low-emissions economy. In a regional first, the UAE has solidified its climate leadership by enacting Federal Decree-Law No. 11 of 2024, the nation's inaugural climate law.[37] This landmark legislation introduces key mechanisms such as a mandatory emissions monitoring, reporting, and verification (MRV) system and sector-specific adaptation plans. Together, these tools reflect the UAE's firm commitment to climate action at the national level and enhance its role as a pioneering voice in climate governance across the MENA region.[38]
Crucially, climate adaptation is not new to the region. For centuries, Emirati communities developed and relied upon effective strategies rooted in the natural logic of their environment. Vernacular forms such as the Bedouin tent, designed for thermal balance, and the wind tower (barjeel), a passive ventilation and cooling system, reflect a deep ecological intelligence embedded in traditional architecture.[39] Likewise, the Ghaf tree (Prosopis cineraria), a traditional landmark of the UAE's landscape, has demonstrated remarkable resilience to harsh climatic conditions and scarce water availability over centuries.[40] Its deep roots and shade providing canopy not only support local biodiversity but also offer inspiration for nature-based solutions in urban planning and architecture, making it a living model for integrating ecological intelligence into contemporary design.

---

36 MOCCAE, National Climate Change Plan of the United Arab Emirates 2050–2017. Abu Dhabi: MOCCAE, 2017, 4. https://u.ae/-/media/Documents-2024/National-Climate-Change-Plan.pdf.
37 UAE Government, "Federal Decree-Law No. (11) of 2024 on the Reduction of Climate Change Effects." UAE Legislation, August 2024 ,28. https://uaelegislation.gov.ae/en/legislations/2558/download.
38 Greenpeace MENA, "UAE's Landmark Climate Law Takes Effect, Marking a Bold Leap Toward Regional Climate Leadership." Greenpeace, June 2025 ,24. https://www.greenpeace.org/mena/en/uaes-landmark climate-law-takes-effect-marking-a-bold-leap-toward-regional-climate-leadership/.
39 Al-Sayegh, F. Traditional Architecture in the UAE: A Study of Environmental Adaptation. Abu Dhabi: UAE University Press, 2019, 50–45.
40 United Arab Emirates Ministry of Climate Change and Environment. Ghaf Tree Conservation Guidelines. Abu Dhabi: MOCCAE, 2020, 5–3. https://www.moccae.gov.ae/en/ghaf-conservation.

"I wish we could replant palm trees and indigenous ghaf, sidr, and samar in our homes and cities as before... every house used to have a palm tree, and seeing them today brings joy and belonging to Emiratis."

— Asma Amir, Maintenance Engineer, SNOC

2.CONCEPTUAL FRAMEWORK: THE WELLBEING ECONOMY PARADIGM

As the UAE charts a post-oil economic development path, the concept of a wellbeing economy offers a transformative framework. [41] Rather than measuring progress solely through GDP, a wellbeing economy prioritizes human and ecological flourishing, social cohesion, and long-term resilience. [42] This approach is especially relevant in contexts like the UAE, where rapid modernization has strained natural ecosystems and fragmented social life.

Two key entry points for operationalizing this vision are biomimicry and commons-based governance.

Biomimicry encourages design and innovation inspired by nature's adaptive intelligence, drawing lessons from desert ecosystems and vernacular practices that have historically thrived under scarcity and stress. This can inform sustainable urban planning, architecture, and climate adaptation strategies rooted in the region's ecological realities. [43]

At the same time, reviving commons-based governance—where natural and cultural resources are stewarded collectively—offers a model for equitable and inclusive participation. Systems such as the aflaj irrigation networks are not just historical artifacts but living examples of cooperative management rooted in values like amana (trusteeship), shura (consultation), and maslaha (public interest). These principles reflect a deep compatibility between Islamic ethics and ecological stewardship. [44]

Together, biomimicry and the commons provide actionable strategies for embedding the UAE's development agenda within landscapes that support both human wellbeing and environmental regeneration, shifting from extractive logics toward a more balanced and resilient future.

The transition toward a wellbeing economy represents a paradigmatic shift in how prosperity is conceptualized, measured, and pursued. [45] Traditionally centered on Gross Domestic Product (GDP), economic success has long been equated with output and consumption. Since the 1970s, economists, social scientists, and policy analysts have increasingly questioned the adequacy of GDP as a measure of national progress, noting that it overlooks critical dimensions of societal wellbeing, environmental sustainability, and social equity. Early critiques emerged from the book Limits to Growth, [46] which highlighted the ecological and resource constraints of continuous economic expansion. These were later reinforced by initiatives such as the Human Development Index, [47] the OECD's Beyond GDP

---

41 Luciani, Giacomo. The Rentier State in the Arab World. London: Croom Helm, 1987, 15–3.
42 Wellbeing Economy Alliance (WEAll), "What is a Wellbeing Economy?" Accessed September 2,2025 . https://wellbeingeconomy.org.
43 Beatley, Timothy. Biophilic Cities: Integrating Nature into Urban Design and Planning. Washington, DC: Island Press, 2011, 90–75.
44 Leveau, Rémy. Islamic Environmental Ethics, 110–115.
45 Raworth, Kate. Doughnut Economics, 45–67.
46 Meadows, Donella H., et al. The Limits to Growth. New York: Universe Books, 1972.
47 United Nations Development Programme (UNDP). Human Development Report. New York: UNDP, 1990.

framework, and the work of Stiglitz, Amartya Sen, and Fitoussi (2009), [48] as well as Raworth (2017), all of which advocate for multidimensional metrics that capture human, social, and ecological flourishing. [49] Today, as we confront the intersecting crises of climate breakdown, biodiversity loss, and social fragmentation—and face diminishing returns from purely technological solutions [50] —there is growing consensus that economies must be reoriented toward sustainability, participation, and care.

Traditional economic theory has long been grounded in the concept of homo economicus [51] —an idealized, rational actor motivated purely by self-interest and utility maximization. [52] However, this narrow conception of human behavior has been widely critiqued for overlooking the social, ethical, and ecological dimensions of economic decision-making. [53] The wellbeing economy paradigm challenges this model by reimagining economic actors as ecological and social beings whose rationality includes care, stewardship, and interdependence.

This reimagining finds powerful resonance within Islamic environmental ethics, which underpin the UAE's approach to ecological regeneration. Islamic cosmology frames nature (tabi'ah) as a living sign (ayah) of divine order, where humans are custodians (khalifah) rather than dominators of the earth. Concepts such as amana (trusteeship) and ihsan (excellence) align closely with the principles of a regenerative wellbeing economy, situating economic actors not merely as isolated individuals but as moral agents within a sacred ecological web. Integrating these ethical foundations provides a culturally rooted alternative to homo economicus, one that supports the UAE's vision of sustainability grounded in both innovation and tradition.

This research situates itself within this evolving discourse, arguing that GDP is no longer a sufficient or ethical metric for national development, especially in climate-vulnerable regions such as the Gulf. It draws on frameworks such as the Genuine Progress Indicator, [54] Natural Capital Accounting, [55] and the OECD's Beyond GDP initiative, [56] all of which advocate for multidimensional systems that measure not only economic activity but also ecological integrity, social cohesion, and subjective wellbeing.

---

48 Stiglitz, Joseph E., Amartya Sen, and Jean-Paul Fitoussi. Mismeasuring Our Lives: Why GDP Doesn't Add Up. New York: New Press, 2009.
49 UNDP, Human Development Report (1990); OECD, Better Life Initiative: Measuring Well-Being and Progress (Paris: OECD Publishing, 2011); Stiglitz, Joseph E., Amartya Sen, and Jean-Paul Fitoussi, Mismeasuring Our Lives: Why GDP Doesn't Add Up (New York: New Press, 2009); Hoekstra, Arjen, Human Appropriation of Net Primary Production: Patterns, Trends, and Impacts (Amsterdam: Elsevier, 2019); Raworth, Kate, Doughnut Economics (op. cit.).
50 Jackson, Tim. Prosperity Without Growth: Economics for a Finite Planet. London: Earthscan, 2009.
51 Smith, Adam. The Wealth of Nations. London: Methuen, 1776.
52 Ibid.
53 Herbert A. Simon, Models of Man: Social and Rational (New York: Wiley, 1957).
54 Kubiszewski, Ida, et al. "Beyond GDP: Measuring the Progress of Societies." Ecological Economics 93 (2013): 57–68.
55 United Nations, System of Environmental-Economic Accounting (SEEA). (New York: UN, 2014).
56 OECD, Better Life Initiative: Measuring Well-Being and Progress. Paris: OECD Publishing, 2011.

Importantly, this reorientation demands a theoretical reimagining of the economic actor itself. The figure of homo economicus, traditionally conceived as a rational, utility-maximizing individual, must be reconstructed to reflect new rationalities where caring for the environment and collective wellbeing is not antithetical to self-interest but central to it. In this revised paradigm, rational behavior integrates ecological awareness, long-term responsibility, and ethical interdependence, resonating with theories of rational choice tempered by social justice.

The goal of the wellbeing economy is thus not merely to redistribute material wealth, but to develop holistic measures of progress that honor the complexity of human and ecological systems now and for future generations. These indicators must be co-created through inclusive, participatory processes, ensuring that development reflects lived realities across different communities and not just aggregated market outcomes.

> *"Wellbeing cannot be reduced to individual comfort... it is built on harmonybetween the health of the community, the person, and the natural environment."*
>
> **— Noora Hammadi, Sustainability Engineer**

A. BIOMIMICRY AS A HOLISTIC FRAMEWORK FOR THE WELLBEING ECONOMY

Considering the growing inadequacy of conventional techno-centric models to address the multifaceted crises of climate change, ecological collapse, and socio-economic inequality, this research advocates for the adoption of biomimicry as a holistic framework that can reorient development pathways toward regenerative and wellbeing-centered futures. Biomimicry—where bio in ancient Greek stands for "life" and mimicry stands for "imitation"—is defined as the conscious emulation of nature's models, systems, and strategies. It offers an epistemological and methodological shift: it invites us to treat nature not as a passive resource to exploit, but as an active teacher of resilience, circularity, and balance. Nature is thus viewed as having intrinsic value, rather than being reduced to an instrument or tool used by humanity.

It is important to distinguish biomimicry from biophilic design. While both approaches engage with nature, their purposes differ: biomimicry emulates nature's forms, processes, and systems to enhance performance, resilience, and sustainability, whereas biophilic design focuses on fostering human wellbeing through emotional, psychological, and sensory connections with natural elements.

This framework supports the report's core objective of envisioning a post-rentier, wellbeing-centered economic model for the UAE—one that transcends GDP-centric growth by positioning ecological intelligence as a strategic driver of policy and business innovation. Inspired by both the adaptive efficiency of local ecosystems and the cooperative logic of traditional commons-based systems, this model leverages biomimicry not merely as a design philosophy but as a regenerative blueprint for building resilient, inclusive, and climate-aligned economic structures in the UAE.

Nature has already solved many of the challenges humanity faces today, from efficient resource distribution to adaptive design and cooperative behavior. Rather than pursuing ever-expanding technological "fixes" that may deepen systemic fragility, this report proposes a return to the principles that have allowed biological systems to survive for over 3.8 billion years—principles that are inherently compatible with the ecological ceiling and social foundation discussed in Non-anthropocentric Wellbeing Economy frameworks. [57]

Recent empirical mappings of biomimicry research to the Sustainable Development Goals identify biomimicry's active contributions to SDGs 3 (health), 6 (clean water), 7 (clean energy), 9 (resilient infrastructure), 14 and 15 (marine and terrestrial ecosystems), and 17 (partnerships). [58] Two major thematic clusters emerge: one focused on socio-ecological health and partnerships, and another on circular solutions in water, energy, and infrastructure systems. These align with the UAE's climate vulnerabilities, its policy ambition toward green infrastructure, and the national agenda's articulation of social wellbeing and intergenerational justice (e.g., UAE Vision 2071 and the National Wellbeing Strategy 2031).
Framing biomimicry as a holistic framework allows this research to move beyond design aesthetics or isolated technical adaptations. It instead positions biomimicry as an epistemological framework for planetary stewardship, enabling a redefinition of progress rooted in reciprocity, adaptability, and harmony with ecological limits.

---

57 Benyus, Janine M. Biomimicry: Innovation Inspired by Nature. New York: HarperCollins, 2002.
58 R. Raman et al., "Mapping Biomimicry Research to Sustainable Development Goals," Sustainable Technology and Entrepreneurship 2, no. 100055 :(2023) 3, https://doi.org/10.1016/j.stae.2023.100055.

B. THE COMMONS IN ECONOMIC GOVERNANCE

The notion of the commons, defined as resources collectively governed by and for a community, has seen a significant resurgence in both academic and policy discourse, particularly in the context of environmental sustainability, post-rentier transitions, and participatory governance. As articulated by Fraser and Mande (2023) in their WEAll briefing on The Commons in a Wellbeing Economy, such governance models are increasingly viewed not only as corrective to market failures or state inefficiencies but as foundational to the institutional architecture of a wellbeing-oriented economy. [59] Their work extends the foundational contributions of Elinor Ostrom and David Bollier by mapping the applicability of commons-based governance across ecological, urban, digital, and financial domains. [60]

What distinguishes commons frameworks from conventional models is their emphasis on decentralized and context-responsive governance. Authority is not imposed from above but negotiated within communities themselves, anchored in shared values, place-based knowledge, and lived reciprocity. This orientation reflects a broader epistemological and political shift: one that values stewardship over ownership, interdependence over extraction, and horizontalism over technocracy. [61] It also resonates with theoretical currents in ecological democracy, [62] which advocate for greater democratic agency in environmental decision-making, particularly in societies facing mounting climate-related pressures and social fragmentation.

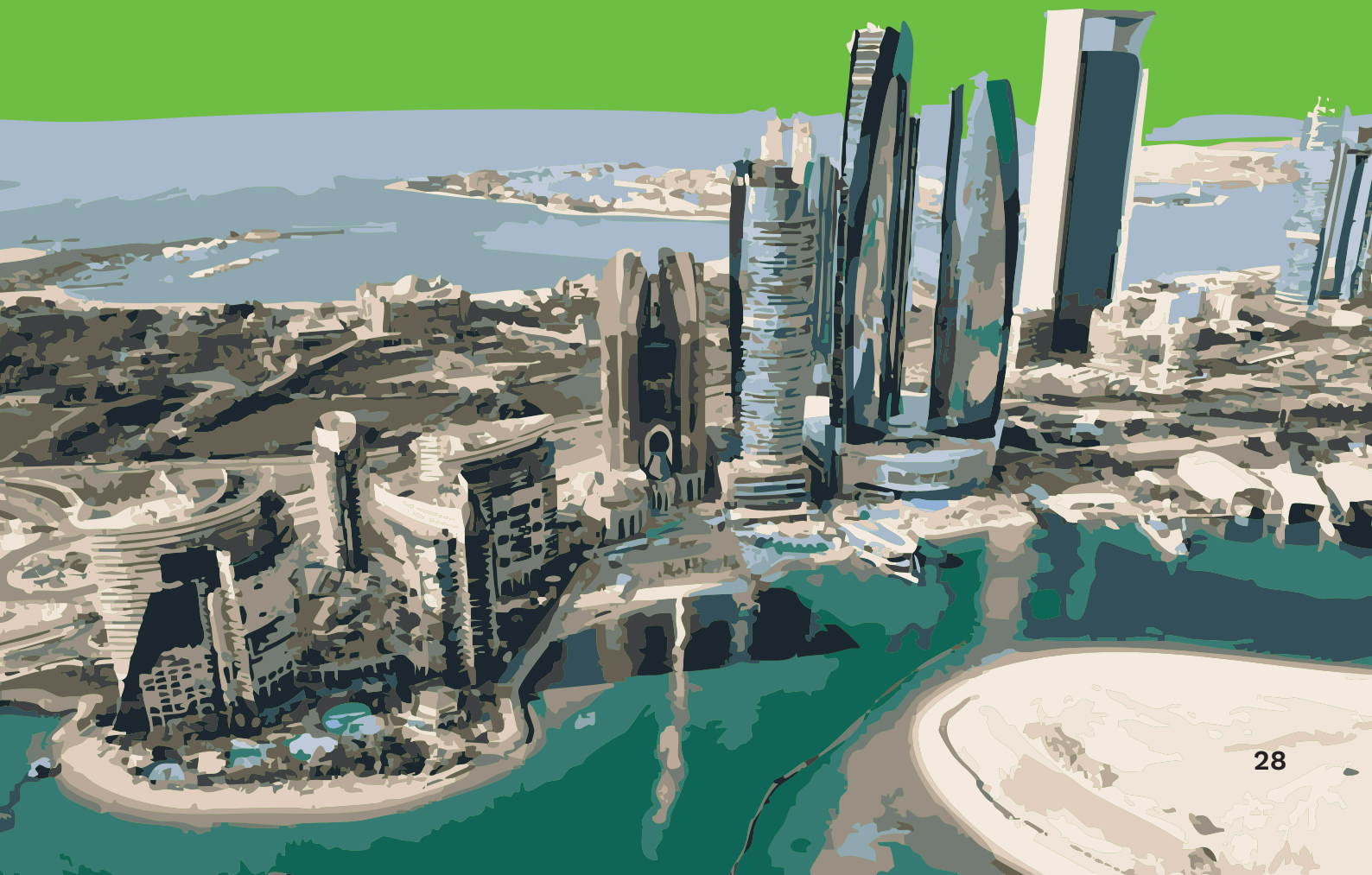
59 Fraser, Molly, and Rhiannon Mande. The Commons in a Wellbeing Economy. Wellbeing Economy Alliance (WEAll), 2023, briefing paper.
60 Ostrom, Elinor. Governing the Commons: The Evolution of Institutions for Collective Action. Cambridge: Cambridge University Press, 1990.
61 Mackintosh, John P. The Idea of Technocracy. London: Routledge, 1974, 15–12.
Mackintosh defines technocracy as governance dominated by technical experts and decision-making based on specialized knowledge rather than participatory or democratic processes.
62 Whiteside, Kerry H. Precautionary Politics: Principle and Practice in Confronting Environmental Risk. Cambridge, MA: MIT Press, 2006; Bourg, Dominique, and Kerry Whiteside. Towards an Ecological Democracy. Cham: Springer, 2016.

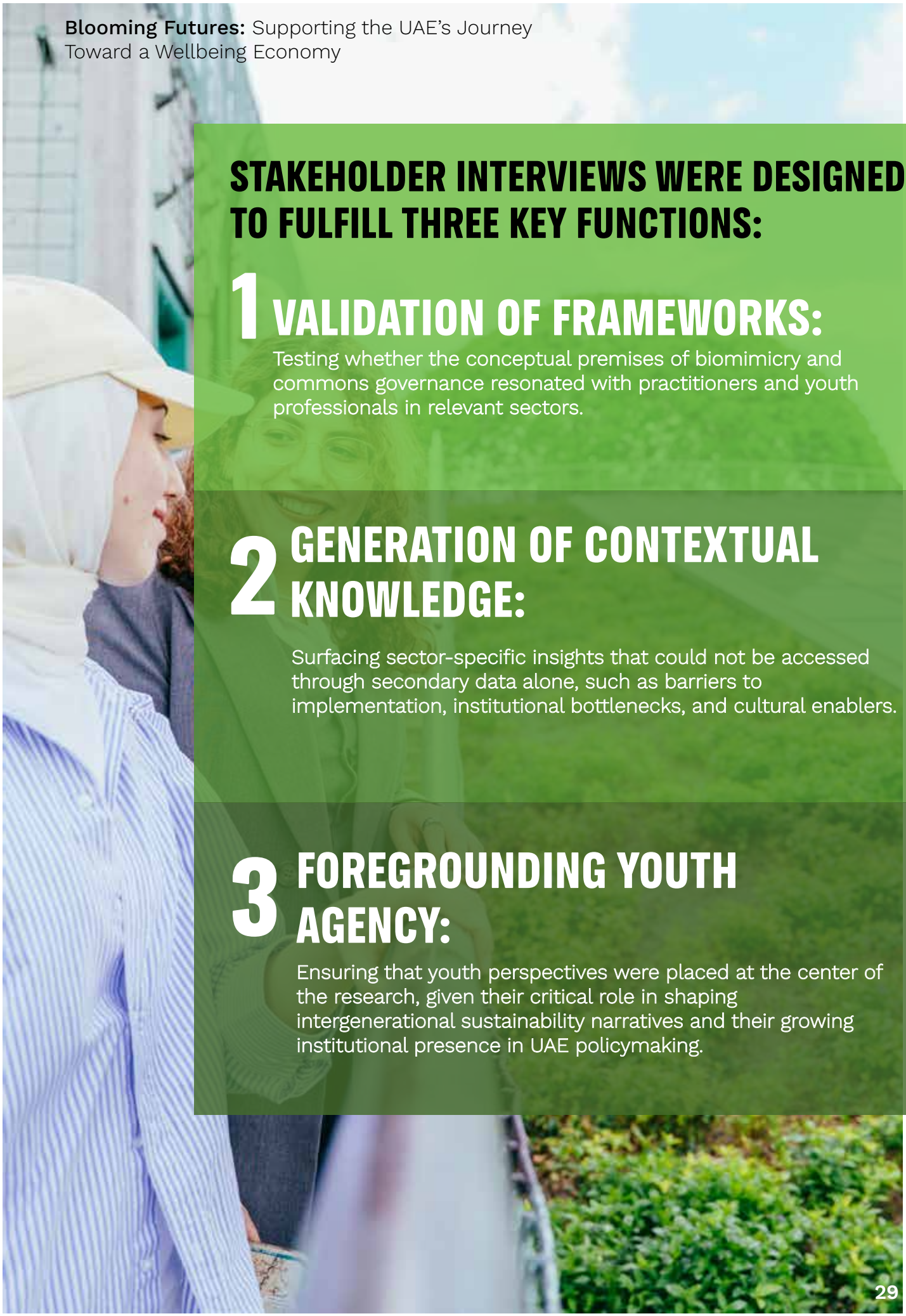
3.METHODOLOGY

This report adopted a multi-methods research design integrating desk-based policy analysis, qualitative data collection, and participatory stakeholder engagement. The desk review encompassed a systematic examination of United Arab Emirates policy instruments that explicitly reference the wellbeing economy, nature-based solutions, biomimetic methods, and commons-based design. This was complemented by a targeted review of case studies implementing biomimetic design principles within the UAE, including illustrative cases such as Masdar City, The Sustainable City, Expo City, and Al Bahar Towers, to establish a baseline of existing nature-inspired practices.

To capture experiential knowledge and sector-specific insights, semi-structured interviews were conducted with policymakers, industry leaders, and sustainability experts. Drawing upon these findings, case studies were developed to document commons-based business models and nature-aligned innovations in practice. A gap analysis was subsequently performed to identify policy and implementation areas where biomimetic principles and commons could enhance the efficacy and coherence of current wellbeing-related strategies.

In addition to the desk research and document analysis, this study employed qualitative stakeholder interviews as a central methodological tool. The purpose of these interviews was not only to validate and enrich the theoretical frameworks of biomimicry and commons-based governance but also to ensure that the findings reflect the lived experiences, aspirations, and constraints of those most engaged in advancing sustainability in the UAE.





STAKEHOLDER INTERVIEWS WERE DESIGNED TO FULFILL THREE KEY FUNCTIONS:

1 VALIDATION OF FRAMEWORKS:

Testing whether the conceptual premises of biomimicry and commons governance resonated with practitioners and youth professionals in relevant sectors.

2 GENERATION OF CONTEXTUAL KNOWLEDGE:

Surfacing sector-specific insights that could not be accessed through secondary data alone, such as barriers to implementation, institutional bottlenecks, and cultural enablers.

3 FOREGROUNDING YOUTH AGENCY:

Ensuring that youth perspectives were placed at the center of the research, given their critical role in shaping intergenerational sustainability narratives and their growing institutional presence in UAE policymaking.

The deliberate focus on youth was crucial. By privileging their voices, the research sought to illustrate how the next generation interprets, challenges, and advances sustainability frameworks in ways that blend tradition with innovation. This aligns with international scholarly emphasis on youth as "epistemic agents" in climate governance and wellbeing economies. [63] A purposive sampling strategy was employed, aimed at capturing diversity across both sectoral expertise and personal experience. Five participants were selected based on their active engagement as youth professionals or students in domains directly relevant to the study:

Information Technology and Governance (digital commons, service innovation)

Oil and Gas / Energy Transition (legacy sector adapting to sustainability)

Agriculture and Food Security (biomimetic and ecological practices)

Renewable Energy and Sustainable Engineering (built environment and energy systems)

By spanning these sectors, the interviews provided a mosaic of perspectives that together reflect the multi-dimensional character of a wellbeing economy. All participants were themselves part of youth initiatives, councils, or professional tracks, ensuring that their views embody both technical expertise and generational identity.

To accommodate differing schedules and commitments, the research team opted for a written, semi-structured format. This format offered two advantages: first, it gave participants time to reflect on complex, open-ended questions, resulting in more nuanced and conceptually rich responses; and second, it eliminated logistical barriers of time zones and availability that often limit live interviews.

---

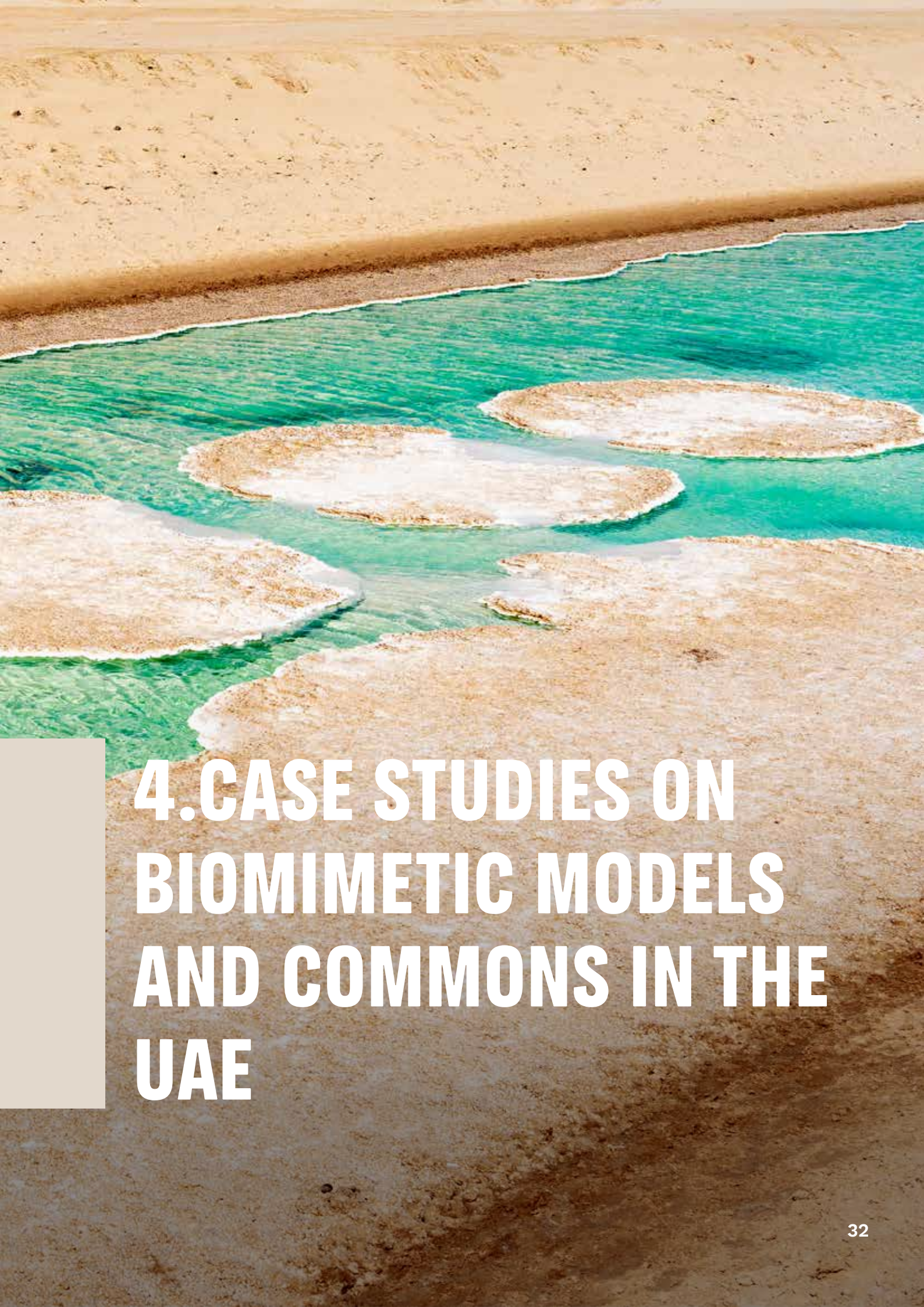
63 Tafon, Ralph, and F. Paige Saunders. "Toward Transformative Youth Climate Justice: Why Youth Agency Is Important and Six Critical Areas for Transformative Youth Activism, Policy and Research." PLOS Climate 4, no. 4 (2025) : e0000472. https://doi.org/10.1371/journal.pcml.0000472.

Participants were also provided with the option to remain anonymous or be cited by name and professional role. This ethical measure enhanced trust, encouraging candid expression while respecting privacy. Where consent was granted, responses are attributed directly to the participant; where anonymity was preferred, responses are treated collectively. This dual approach balanced scholarly rigor (through attributable citation) with research ethics (through protection of participant choice).

The interview material was analyzed qualitatively, with particular attention to themes of biomimicry practice, commons governance, cultural integration, definitions of wellbeing, and youth agency. These insights were not treated as isolated anecdotes but were systematically coded and triangulated against secondary sources and conceptual frameworks. Quotations from participants are used in the report to exemplify or challenge theoretical claims, thereby grounding abstract frameworks in lived realities.

Collectively, these interviews served as an empirical anchor for this report. They confirmed that biomimicry and commons-based governance are not merely theoretical constructs but lived practices emerging in different domains of Emirati society. Moreover, by privileging youth voices, the interviews highlight how cultural continuity, ethical principles, and innovation are reinterpreted by a rising generation to chart pathways toward a wellbeing economy. Please see Annex I for a list of stakeholder interview participants.

Finally, the research incorporated a stakeholder validation process through a multi-actor roundtable discussion. This participatory mechanism served both to validate the findings and to foster cross-sectoral dialogue, thereby enhancing the practical applicability and legitimacy of the proposed recommendations. To validate and stress-test the preliminary findings, a multi-stakeholder Expert Validation Roundtable was convened on September 2025 ,24. The roundtable, which gathered nine experts from governmental and non-governmental institutions, provided critical qualitative feedback on implementation barriers and bridges, the insights from which have been directly woven into the final gap analysis and strategic roadmap.



4.CASE STUDIES ON BIOMIMETIC MODELS AND COMMONS IN THE UAE

As the United Arab Emirates pivots from a hydrocarbon-reliant economy toward a diversified, innovation-driven development model, architecture and urban planning have come to embody both economic momentum and aspirational identity. In 2024, Abu Dhabi's real estate sector expanded by 4.2 %, contributing over AED 41.7 billion, or about 3.5 % of the emirate's GDP, while the construction sector grew by 11.3 %, reaching AED 107.4 billion and accounting for around 9.1 % of GDP. [64]

Given the sector's scale, symbolic value, and environmental footprint, it offers a uniquely strategic entry point for embedding biomimetic design and commons-based approaches into the UAE's development vision. In a region defined by extreme aridity and escalating climate risks, biomimicry enables architects and planners to design buildings that are both efficient and profoundly adapted to local environmental conditions. [65] Projects such as Masdar City demonstrate how vernacular design elements—wind towers, shaded corridors, compact neighborhoods—can be reinterpreted through biomimetic frameworks to advance regenerative urbanism. [66] Importantly, this does not imply a wholesale return to traditional methods, such as mud-brick construction or dismantling modern infrastructure. Rather, it calls for a thoughtful integration of time-tested, locally grounded principles into contemporary urban planning.

Why turn to imported European expertise when centuries of local knowledge already offer climatically and culturally appropriate solutions? These ideas, far from radical, are common-sense strategies that respond naturally to the region's climate and social norms. By embracing them, architects and planners can craft neighborhoods that are environmentally resilient, culturally coherent, and socially inclusive.

Crucially, the UAE's Third NDC (NDC 3.0) [67] sets ambitious, sector-specific emissions reduction targets for 2035, including a 79 % cut in emissions from the buildings sector. [68] This underscores the pivotal role of the built environment—and by extension, architecture and urbanism—in achieving the nation's climate mitigation ambitions.

Our focus on urbanism and architecture is thus directly relevant to the UAE's economy. This sector demonstrates rich potential to position the UAE as a global leader in sustainable urbanism, transitioning toward a wellbeing economy beyond the post-oil model.

In the following subsections, we present selected case studies from the UAE and the broader region that exemplify this convergence. Identified through desk-based research for their tangible sustainability outcomes and cultural adaptability, these models include locally grounded innovations such as X-Architects' critique of imported suburban villa typologies, alongside regional exemplars that the UAE could adapt to accelerate its ecological and social transition. [69]

---

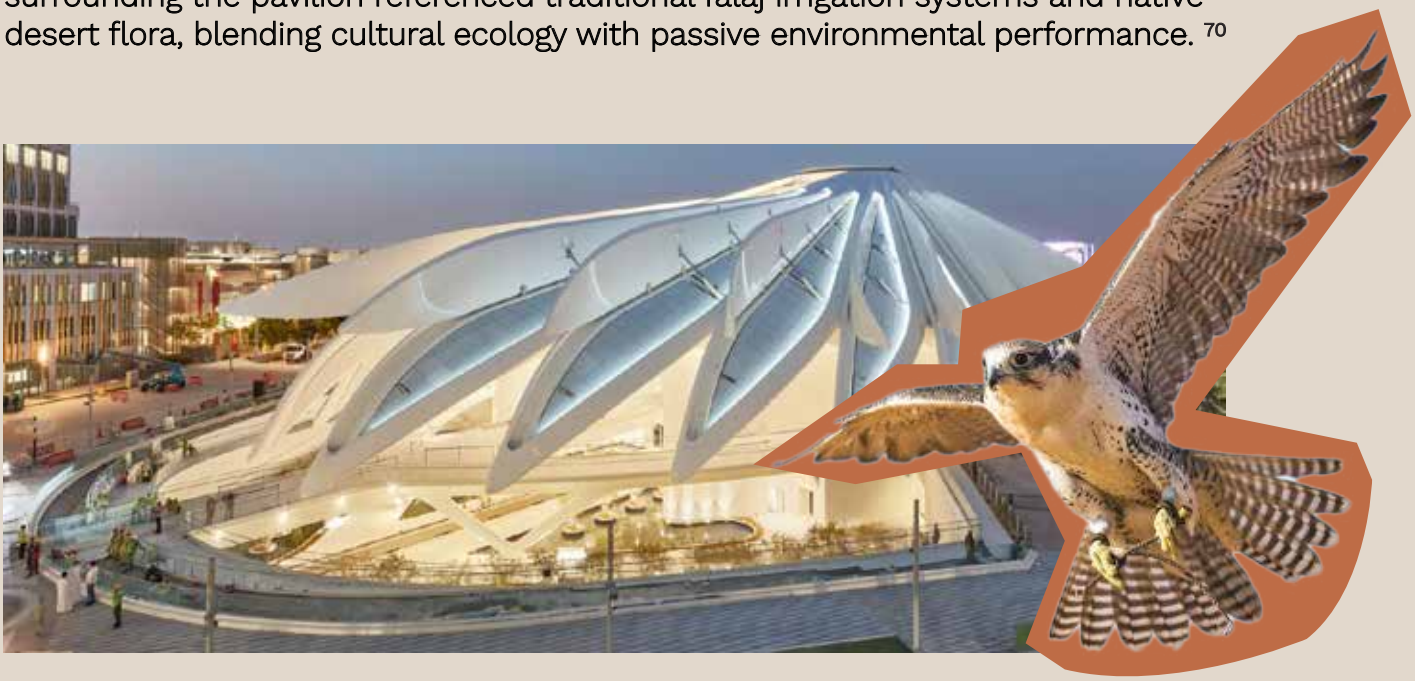
64 Statistics Centre – Abu Dhabi (SCAD). Abu Dhabi: SCAD, 2025. https://www.scad.gov.ae .
65 Benyus, Janine M. Biomimicry: Innovation Inspired by Nature. New York: HarperCollins, 2002.
66 Reiche, Danyel. "Energy Policies of Gulf Cooperation Council (GCC) Countries: Possibilities and Limitations of Ecological Modernization in Rentier States." Energy Policy 38, no.5 (2010) : 2395–2403. https://doi.org/10.1016/j.enpol.2009.12.031.
67 United Arab Emirates. Third Nationally Determined Contribution (NDC 3.0). Abu Dhabi: Ministry of Climate Change and Environment, November 2024. https://unfccc.int/sites/default/files/11-2024/UAE-NDC3.0.pdf .
68 Enerdata. UAE Energy and Emissions Report 2024. Paris: Enerdata, 2024. https://www.enerdata.net.
69 X-Architects. National Housing – An Opportunity for Change. Abu Dhabi, 2009.

A. BIOMIMETIC CASE STUDIES IN THE UAE

i. Case Study: Expo 2020 – Biomimicry and Biophilic Design as Climate and Wellbeing Infrastructure

Expo 2020 Dubai showcased a range of architectural innovations rooted in biomimicry and biophilic principles, offering real-world examples of how design can serve both ecological function and human wellbeing. Several national pavilions integrated passive cooling, closed-loop systems, indigenous materials, and culturally embedded spatial logic, positioning the event as a temporary city of the future and a strategic demonstration of regenerative urbanism.

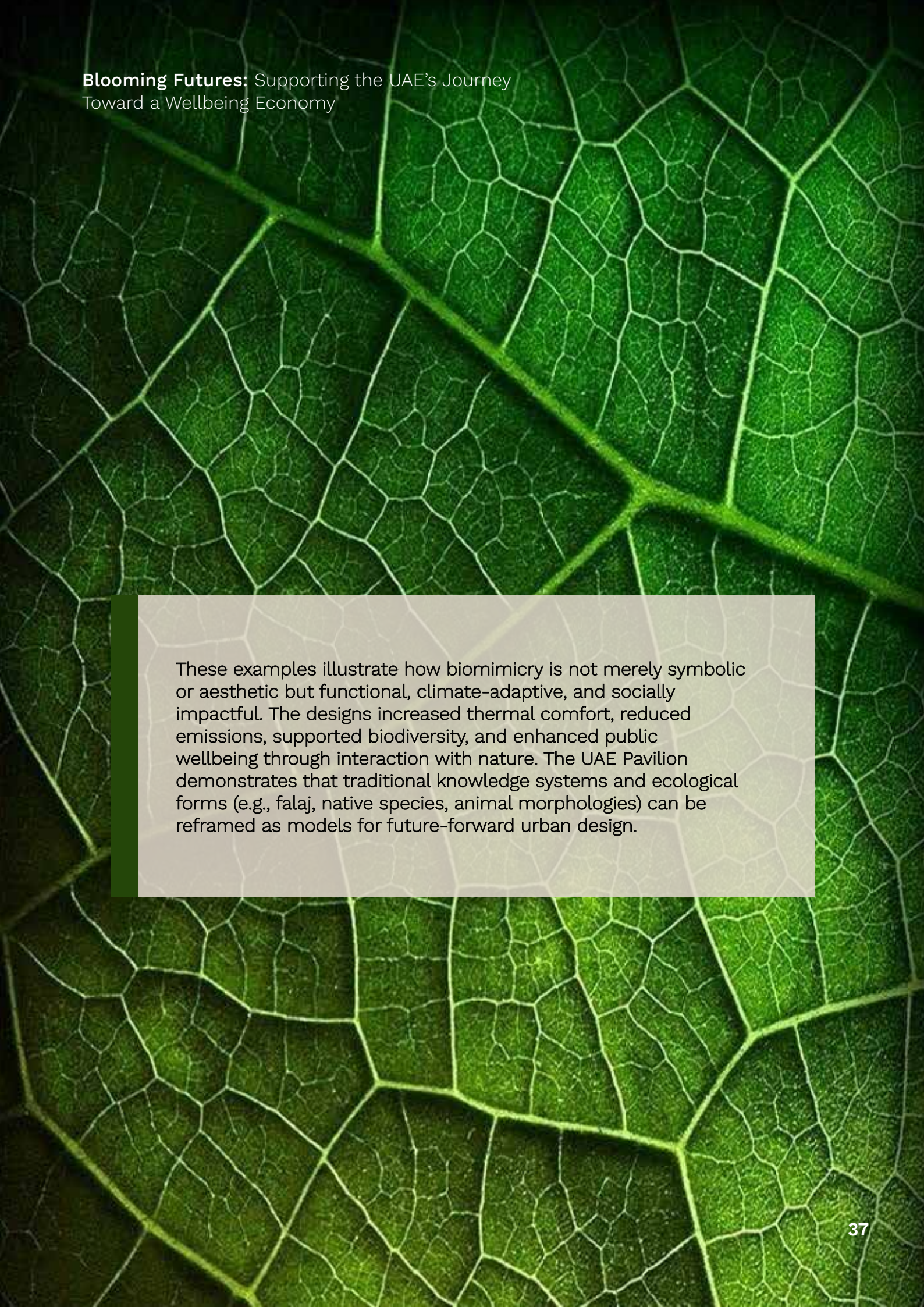
One prominent example is the **UAE Pavilion,** inspired by the form and function of a falcon's wings. The kinetic roof system not only evokes cultural symbolism but also provides shading and supports photovoltaic energy generation. Landscaping surrounding the pavilion referenced traditional falaj irrigation systems and native desert flora, blending cultural ecology with passive environmental performance. [70]



70 Ibrahim, Iman, and Balsam Munadhil Al-Chaderchi. "Exploring Sustainable Approaches at Dubai Expo 2020: A Blend of Biophilic and Biomimicry Designs." Revista Habitat Sustenable (2023) 13. Received October 12, accepted November 2023 ,28. https://orcid.org/3494-0374-0003-0000.

The Netherlands Pavilion introduced a vertical biotope combining food, water, and energy systems. It integrated a mushroom farm with transparent solar panels and fog-catching technology to create a self-sustaining microclimate. Its structure used reclaimed steel and site-sourced sand, representing a circular material philosophy highly relevant to the UAE's desert context.

Similarly, **the Singapore Pavilion** deployed vertical forest strategies, misting pathways, and sensory landscaping to create shaded, biodiverse, and interactive urban space. The Belgium and Terra pavilions applied passive design, desert ventilation principles, and water harvesting to reduce energy use and improve microclimatic comfort.



These examples illustrate how biomimicry is not merely symbolic or aesthetic but functional, climate-adaptive, and socially impactful. The designs increased thermal comfort, reduced emissions, supported biodiversity, and enhanced public wellbeing through interaction with nature. The UAE Pavilion demonstrates that traditional knowledge systems and ecological forms (e.g., falaj, native species, animal morphologies) can be reframed as models for future-forward urban design.

ii. Case Study: Masdar Institute – Biomimicry and the Commons as Foundations for a Wellbeing Economy in the UAE

The Masdar Institute of Science and Technology, located in the heart of Masdar City, Abu Dhabi, stands as a compelling case of how biomimetic architecture, cultural and traditional heritage, and urban commons can converge to form a holistic and sustainable urban model in the UAE. This case is central to our argument that the Emirates, through deliberate and innovative design strategies, have the potential to become a global leader in the adoption of biomimicry for climate adaptation and social wellbeing. [71]

Developed as a flagship research institution within one of the world's first planned zero-carbon cities, the Masdar Institute integrates indirect biomimicry principles into both its form and structure, optimizing natural systems for energy efficiency and climatic adaptation. [72] Drawing inspiration from desert organisms and vernacular architecture, the Institute's design echoes the thermoregulatory strategies of biological systems, such as the self-shading structure of cactus ribs (sikka) and termite mound ventilation. The wind tower (barjeel), an element deeply rooted in traditional Emirati architecture, is reinterpreted in high-tech form to passively cool public courtyards and improve airflow, reducing the urban heat island effect. Similarly, the perforated façades are designed with morphological logic akin to animal skins, regulating solar penetration while maintaining visual privacy and cultural aesthetics.

71 Abo El-Azm, Faysal M. "Indirect Biomimicry Impact on Form & Structure to Obtain Sustainable Architecture: Biomimetic Model Case Study, Masdar Institute of Science and Technology [MIST]." International Journal of Intelligent Systems Applications in Engineering 12 (2024): 913. .
72 Case Study: Masdar Institute. Middle East Architect. "Masdar Institute is being developed in phases... serves as a microcosm of the fabric of the city as a whole."

What distinguishes the Masdar Institute within the broader scope of sustainable design is its ability to merge technological innovation with cultural continuity. The architecture does not merely imitate nature; it learns from and co-evolves with it, creating a model that respects the region's socio-environmental history while projecting a vision for the future. This aligns with the report's overarching goal of advocating for a biomimetic turn in design and urban planning—one that centers wellbeing, environmental intelligence, resilience, and circularity rather than extractive efficiency alone.

Moreover, the Institute embodies the ethos of the urban commons: its shaded walkways (sikka), interconnected courtyards, and shared public spaces foster a sense of community and inclusion, demonstrating how built environments can be designed not only for sustainability but also for social cohesion. This aspect resonates with the United Arab Emirates' "Year of Community," in which the reinforcement of social bonds and shared public life has been positioned as a central national objective. This makes the Masdar Institute an exemplary embodiment of how biomimicry can serve as a structural and ethical framework for advancing a wellbeing economy.

In the context of the UAE, where rapid urbanization and climate vulnerability intersect, Masdar's model illustrates how biomimetic architecture—grounded in both ecological intelligence and cultural context—can respond to environmental imperatives while fostering more-than-human forms of coexistence. It reinforces the idea that biomimicry is not simply a technical fix but a paradigm shift: a regenerative approach that integrates ecological logic into design, governance, and daily life. The Masdar Institute thus demonstrates the UAE's potential to lead a global movement toward climate-resilient, culturally relevant, and economically just urban futures, aligning directly with the core objectives of this report.

iii. Case Study: Al Bahar Towers Abu Dhabi

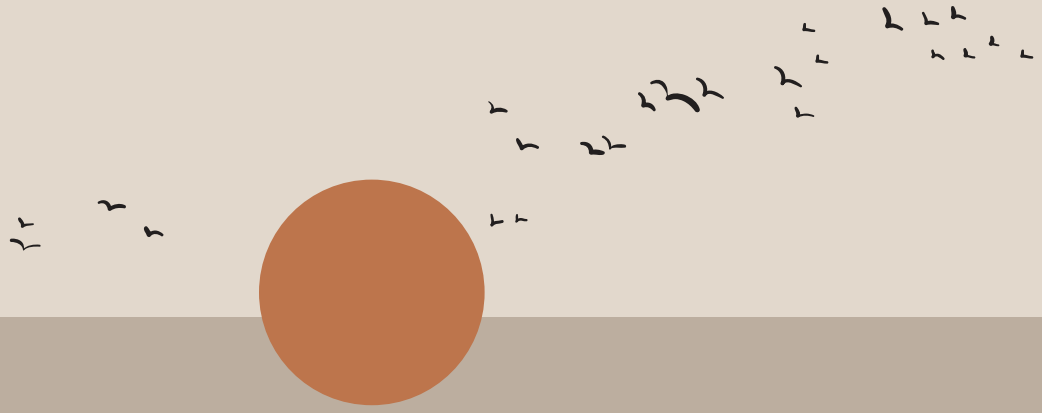
In our report, we highlight how architecture can serve as a living bridge between cultural heritage, environmental stewardship, and technological innovation. The Al Bahar Towers in Abu Dhabi embody exactly this vision: a striking example of how biomimicry and traditional Islamic design converge to create buildings that breathe with their environment rather than fight against it. [73] These towers are not simply skyscrapers; they are dynamic organisms, showing how extreme climates can inspire solutions rather than impose limitations.

Standing in the heart of Abu Dhabi, the twin towers feature a responsive façade that has redefined sustainable architecture in the region. Inspired by the traditional mashrabiya—a wooden lattice screen historically used for shade and privacy—the towers integrate a groundbreaking "dynamic skin" composed of over 2,000 umbrella-like panels arranged in a honeycomb pattern. [74] These panels open and close throughout the day, following the sun's path to minimize heat gain, reduce energy consumption by more than 50 %, and cut annual CO_2 emissions by 1,750 tons. [75] Rather than relying on tinted glass or heavy mechanical cooling, this façade allows natural light to fill the building while maintaining comfortable temperatures and unobstructed views.

The architectural form itself is guided by Islamic geometric composition, aligning with the Abu Dhabi 2030 Plan's ambition to merge cultural identity with environmental responsibility. [76] The towers' circular plan reduces solar exposure, while sculpted forms narrow at the base and crown to improve aerodynamics, structural stability, and energy performance. Roof-mounted photovoltaics and sky gardens on the sunniest southern elevations further reduce energy demand while creating shared internal green spaces.

73 AHR. Al Bahar Towers: Responsive Façade Design. 2012.
74 Ibid
75 Masdar. Sustainable Design Case Study: Al Bahar Towers. 2013.
76 Abu Dhabi Urban Planning Council. Abu Dhabi Vision 2030 Framework Plan. 2014.

By translating centuries-old Islamic principles of unity and harmony into an intelligent, algorithmic design, the Al Bahar Towers demonstrate that modern buildings can be culturally grounded, climatically adaptive, and structurally resilient all at once. The honeycomb-like structural grid provides strong seismic performance, natural bracing, and aerodynamic stability while forming the scaffold for this kinetic façade. [77] More than a landmark, these towers represent a new architectural ethic: one where sustainability is not an added feature but the very DNA of the design.



"One of the best things is directing buildings according to the sun's movement andusing courtyards for natural ventilation."

— Noora Hammadi, Sustainability Engineer

77 AHR. Al Bahar Towers: Responsive Façade Design. 2012.

iv. Traditional Wind Towers in Al Fahidi – A Biomimetic Legacy of Passive Cooling

In the historic Al Fahidi district of Dubai, traditional wind towers, locally known as barjeel, stand as architectural testimonies to a time when environmental adaptation guided design. These vertical, four-sided structures, found on the rooftops of 19th-century homes, are among the earliest and most effective examples of biomimetic architecture, emulating natural airflow systems to achieve passive cooling in extreme desert climates. Inspired by wind-catcher technologies from ancient Egypt and Persia, some dating as far back as 1300 BCE or earlier, barjeel structures leverage pressure differentials and natural ventilation to regulate indoor temperature, reportedly lowering it by up to 10°C compared to external heat. [78] The towers function by capturing cooler air through elevated openings and funneling it into living spaces, while simultaneously allowing warmer interior air to escape. Materials evolved over time from palm fronds to more resilient coral and sea stone, reflecting an ongoing local dialogue with the environment.

While traditional barjeel wind towers in Dubai exemplify early passive cooling inspired by nature's principles, contemporary architectural research has begun to advance and adapt these systems to meet the needs of modern urban environments. Though historically efficient, traditional windcatchers face limitations, including dust ingress, inefficient air circulation under low wind conditions, and susceptibility to pests. [79] To address these issues, modern designers have embraced biomimetic innovation, introducing a new generation of adaptive, high-performance windcatchers.

For example, rotating-head windcatchers enable omnidirectional airflow capture and integrate daylighting via transparent materials. Others, such as wet-surface and wet-column windcatchers, mimic natural evaporative cooling methods, enhancing performance in low-wind environments. These designs demonstrate superior performance, with simulations indicating significant temperature reductions and lower energy loads for ventilation. [81] [80]

78 Heritage Dubai. Al Fahidi Historical Neighbourhood: Wind Towers and Traditional Architecture. 2021.
79 Seidabadi, M., et al. "Limitations and Adaptations of Traditional Windcatchers in Arid Climates." 2023.
80 Bahadori, M. N., et al. "Advanced Windcatcher Systems: A Biomimetic Approach to Passive Cooling." 2023.
81 Soltani, S., et al. "Simulation Studies on High-Performance Windcatchers in Hot-Arid Regions." 2024.

The downdraft evaporative cool towers, Air Tree structures in Madrid, and the Bluewaters rotating windcatchers in Dubai represent further iterations where mechanical systems, intelligent controls, and evaporative strategies are merged to reduce reliance on conventional air conditioning. Notably, commercial windcatchers can decrease indoor temperatures by up to 14–12°C, depending on climatic conditions, with integrated PV-powered fans and louvers to maximize airflow efficiency. [82] Additionally, systems such as Earth-to-Air heat exchangers and solar chimney integration reflect how vernacular cooling methods can be amplified through hybrid environmental technologies. [83]

These examples confirm that the essence of biomimicry lies not in replication but in reinterpretation, where traditional ecological intelligence meets innovative materials, simulations, and climate-responsive technologies. The UAE—with its high dependence on cooling energy and a real estate sector contributing %9.2 to national GDP in [84] 2024 —stands at a crucial juncture to redefine sustainable urbanism through such strategies. Reviving and adapting wind towers within contemporary contexts not only echoes historical architectural resilience but also positions the Emirates as a pioneer of sustainable, nature-inspired urban planning in desert environments.

82 Calautit, J., et al. "Commercial Windcatchers and Energy Performance in Desert Climates." 2022.
83 Moosavi, S., et al. "Hybrid Environmental Technologies: Earth-to-Air and Solar Chimney Systems." 2021.
84 Dubai Land Department. Annual Real Estate Market Report. 2024.

Regional Positive Practice – Egypt: Biomimetic Desert Architecture Inspired bythe Dromedary Camel

In response to the increasing thermal stress and energy demand in arid regions, Zekry developed a biomimetic architectural prototype in Egypt's Sinai Desert that takes inspiration from the physiological and morphological adaptations of the dromedary camel. [85] The project reinterprets key camel traits—such as thermoregulation, water conservation, and elevated body structure—into building form and material strategy.

The building is raised above ground level, mirroring the camel's long legs, to promote airflow and reduce heat conduction from the soil. 86 Its form is shaped to minimize solar exposure, and its façade system integrates a layered passive cooling structure: a hydrogel layer simulating sweat evaporation and an aerogel insulation layer modeled after camel fur, which reduces heat gain while allowing water vapor to escape. Additionally, the camel's nasal structure, which condenses water from exhaled air, inspired a hygroscopic façade design to regulate interior humidity and reduce water loss. [87]

A digital simulation of the prototype, conducted using Climate Studio and Rhinoceros Grasshopper tools, revealed a 50 % reduction in energy consumption for cooling compared to the baseline residential model, particularly during peak summer months. This case demonstrates the potential of problem-based biomimicry as a design methodology for extreme environments. By embedding principles derived from nature into building systems, the design achieves both energy efficiency and climatic resilience, offering a model for passive design strategies in hot, arid regions facing intensifying climate vulnerability.

85 Zekry, A. Biomimetic Desert Architecture: Adaptive Building Systems Inspired by the Dromedary Camel. Cairo: Ain Shams University Press, 2025.
86 Fathy, Hassan. Architecture for the Poor: An Experiment in Rural Egypt. Chicago: University of Chicago Press, 1973.
87 Schmidt-Nielsen, Knut. Animal Physiology: Adaptation and Environment. 5 th ed. Cambridge: Cambridge University Press, 1997, 185–178.

B. URBAN COMMONS

i. Aflaj System Case Study: Water as a Commons in a Wellbeing Economy: Integrating Traditional Systems, Biomimicry, and Participatory Governance

The transformation toward a wellbeing economy requires a fundamental rethinking of natural resource governance. The prevailing models, predominantly market-driven and state-administered, often externalize ecological harm, concentrate control, and obscure local knowledge and community agency. Two recent frameworks by the Wellbeing Economy Alliance (WEAll)—The Commons in a Wellbeing Economy [88] and Water in a Wellbeing Economy [89] —advance a normative vision in which water is reframed as a commons: a collectively governed resource, sustained through principles of equity, care, and ecological regeneration.

Within this context, this research foregrounds the aflaj system, a centuries-old communal water management practice in the Arabian Peninsula, particularly in Oman and the United Arab Emirates, as a living example of commons-based governance. The aflaj represent a decentralized, non-extractive, and ecologically embedded form of irrigation management that predates modern water policy but aligns closely with both commons theory [90] and water ethics principles. 91 Water is allocated not through market commodification but through communal deliberation and customary law, often led by a locally elected ʿarif (water master), who oversees equitable and timely distribution.

This system offers a biomimetic blueprint for sustainable water infrastructure. Functionally, the underground channels mimic natural hydrological flows, reducing evaporation, leveraging gravity, and maintaining aquifer equilibrium, consistent with biomimicry principles such as local attunement, feedback sensitivity, and non-linear design. 92 By emulating ecological systems, aflaj maintain long-term sustainability and responsiveness to the arid desert environment, embodying the very ecological circularity promoted in nature-based solutions 93 and circular water economies. 94 Moreover, the aflaj system resonates with the growing discourse on ecological democracy, a governance mode that recognizes both the rights of nature and the procedural inclusion of all affected stakeholders.

88 Fraser, C., and Mande, C. The Commons in a Wellbeing Economy. Wellbeing Economy Alliance, 2021.
89 Rao, K., and Coppell, K. Water in a Wellbeing Economy. Wellbeing Economy Alliance, 2021.
90 Ostrom, Elinor. Governing the Commons: The Evolution of Institutions for Collective Action. Cambridge: Cambridge University Press, 1990.
91 Jennings, Bruce, et al. Water Ethics: Foundational Readings for Students and Professionals. Washington, DC: Island Press, 2009.
92 Benyus, Janine. Biomimicry: Innovation Inspired by Nature. New York: Harper Perennial, 2002.
93 United Nations World Water Assessment Programme (WWAP). Nature-Based Solutions for Water. Paris: UNESCO, 2018.

As Rao and Coppell (2021) argue, participatory stakeholder governance, Indigenous custodial rights, and recognition of the "true value of water" are essential to rethinking access and stewardship in the Anthropocene. [95] The aflaj fulfill these criteria: decisions around water access historically incorporated gendered labor divisions, reciprocal obligations, and intergenerational fairness. Their customary rules reflect not only functional resource allocation but also deeply embedded social values that transcend transactional relationships.

The integration of such systems into contemporary governance models has significant potential. In regions grappling with water scarcity, climate-induced variability, and rapid urbanization, decentralizing water governance through aflaj-like models could increase resilience, restore civic agency, and reduce infrastructure stress. Additionally, incorporating traditional water governance into urban and rural planning aligns with calls for participatory water budgeting, rainwater harvesting schemes, and greywater reuse systems—solutions highlighted across WEAll's frameworks. In urban contexts, this might include aflaj-inspired distribution networks integrated with water-friendly architecture (e.g., sponge cities, bioswales), or even digital commons platforms that crowdsource water data and oversight through community engagement.

Furthermore, by framing the aflaj not only as historical practice but as a living commons, we challenge the artificial separation between "modern" and "traditional" governance. The resilience of such systems supports Elinor Ostrom's argument that commons are not inevitably doomed to "tragedy" but can outperform both market and state solutions under certain conditions. [96] The aflaj system, therefore, provides a relevant empirical anchor for re-embedding water governance within local contexts, ecological intelligence, and participatory legitimacy.

> *"The traditional Emirati aflaj system reflects our ancestors' wisdom in managing water collectively and fairly. It's a model we can revive today with a new spirit in agricultural policy."*
>
> **— Mansoor Al Hosani, Horticultural Science Student**

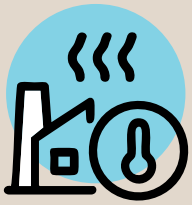
95 Rao and Coppell, Water in a Wellbeing Economy (op. cit.).
96 Ostrom, Elinor. "A Polycentric Approach for Coping with Climate Change." World Bank Policy Research Paper No. 5095, 2009 .

ii. The Fareej Case Study on National Emirati Housing

This case study examines the disconnect between current national housing typologies in the UAE and the country's cultural, environmental, and social contexts. Based on site investigations, historical research, and community surveys, X-Architects present a critical analysis of the imported suburban villa model, emphasizing its incompatibility with both the climate and the Emirati social fabric. [97] Contemporary suburban housing in the UAE, particularly government-allocated villas, has prioritized private space over communal life, producing a series of social and environmental issues:

Insular urban design:

Large plots and high boundary walls limit social interaction and eliminate transitional public spaces such as shaded streets, courtyards, and communal plazas.

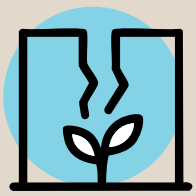


Environmental inefficiency:

Villas often feature large, unshaded windows, exposed concrete surfaces, and reliance on mechanical cooling, contributing to higher energy consumption.

Car-centricity:

Basic daily tasks such as grocery shopping or attending mosque require vehicular travel. The absence of integrated services results in increased emissions and reduced walkability.



Neglected interstitial spaces:

Desert strips between homes are unprogrammed and underused, often becoming dumping grounds or unsafe passageways.

97 X-Architects. Al Sufouh Cultural Centre: Rethinking Housing in the UAE. X-Architects Research, 2009.

A striking environmental cost was highlighted: the cumulative length of boundary walls from planned villas would reach over 6,500 km, enough to stretch from Abu Dhabi to Johannesburg. [98] Similarly, one resident's weekly car commute to the mosque could result in over 600 kg of CO_2 emissions per year, illustrating how poor spatial planning undermines sustainability and daily wellbeing. [99]

The architects contrast present-day models with the historical Emirati fareej: a dense, shaded, pedestrian-oriented housing typology built around courtyards, sikkak (narrow alleys), and barahas (public squares). These spatial logics supported both privacy and community interaction while offering passive thermal comfort and promoting walkable neighborhoods. Post-oil urbanization and the adoption of Western suburban planning erased these elements in favor of auto-dependent layouts and fully enclosed villas. This transformation reflects a loss of cultural continuity, undermining values central to Islamic urbanism, such as the Hadith that states: "Each person in a community should take care of seven neighbors around him." [100]

98 X-Architects. National Housing Typologies Report. Abu Dhabi, 2009.
99 Calculations based on X-Architects survey data (2009).
100 Al-Bukhari, Muhammad ibn Isma'il. Sahih al-Bukhari, Hadith Collection on Neighbourly Rights.

iii. The Sikka Approach — Restoring Commons-Based Walkability in the UAE

The sikka (plural: sikkak) is one of the smallest yet most profound elements of urban design in the Arabian Peninsula. These narrow pedestrian corridors once formed the connective tissue of historic Emirati neighborhoods, linking homes to community facilities, markets (barahas), and public gathering spaces (mayadeen) through shaded, human-scaled pathways. Rooted in Islamic architectural principles and vernacular adaptation to climate, sikkak exemplify a commons-based approach to urban space: they are shared routes designed not for vehicles or commerce, but for community use, safety, and comfort. [101]

Historically, sikkak were deliberately oriented to provide thermal comfort in harsh desert environments. Their high aspect ratios and narrow widths, framed by relatively tall courtyard walls, created continuous shade, while their alignment with prevailing winds enabled passive cooling and natural ventilation. [102] Studies of traditional neighborhoods such as Al Bastakiya in Dubai show that these "organic" urban forms often achieved superior microclimate regulation compared to modernist, orthogonal layouts imposed under colonial and post-oil planning paradigms. [103] Temperature distributions in these vernacular districts were smoother, pedestrian corridors cooler in summer and autumn, and street networks more socially cohesive than their automobile-oriented successors. Far from being unplanned or chaotic, these environments displayed careful civic reasoning and climatic intelligence embedded in local building traditions.

Today, Gulf cities face a sharply contrasting reality: auto-centric urban growth, fragmented pedestrian networks, and escalating health and mobility challenges. In Abu Dhabi, however, traces of the sikka system have been reintegrated into superblock developments as pedestrian "shortcuts" that link residential clusters internally. Research by the Masdar Institute and others demonstrates that sikkak dramatically improve pedestrian route directness and encourage walking even in a car-dominated context. [104] These corridors restore the logic of the commons by prioritizing human movement over vehicular traffic, reconnecting residents to neighborhood facilities, and supporting social interaction at a scale that feels both intimate and safe.

---

101 Ragette, Friedrich. Traditional Domestic Architecture of the Arab Region. Stuttgart: Edition Axel Menges, 2003.
102 Hakim, Besim. Arabic-Islamic Cities: Building and Planning Principles. London: Routledge, 1986.
103 Mazouz, S. "Urban Morphology and Microclimate in Historic Dubai." Journal of Arabian Studies 4, no. 2 (2014): 135–152.
104 Masdar Institute. Pedestrian Networks and Sikka Integration in Abu Dhabi Superblocks. Research Report, 2017.

From a governance perspective, sikkak also represent shared civic infrastructure, neither fully private nor strictly state-controlled. In traditional fareej (neighborhood) systems, their upkeep was an informal communal responsibility, reflecting the communitarian privacy of Arab-Islamic urbanism: homes opened inward to courtyards for family autonomy, while outward-facing corridors provided safe public passage. 105 Reviving this principle within contemporary planning can anchor commons-based approaches to mobility, ensuring that streets are designed around people rather than cars, and that residents are co-stewards of their shared spaces.

105 Al-Salloum, Y. The Fareej and Its Civic Order: Social and Spatial Practices in Gulf Urbanism. Dubai: Gulf Research Center, 2017.

iv. Case Study: The Sustainable City, Dubai — A Living Model of Commons-Based Urban Governance

The Sustainable City (TSC) in Dubai illustrates how a master-planned, developer-driven community can integrate commons-based principles while delivering high environmental performance. Conceived and managed by Diamond Developers, TSC was designed using the One Planet Living framework to combine social, ecological, and economic sustainability. Unlike conventional real-estate projects that treat sustainability as a marketing feature or a collection of technological add-ons, TSC demonstrates how urban design, biodiversity stewardship, and resident participation can align to create a genuinely regenerative community. [106]

At its core, TSC incorporates net-zero energy housing, extensive rooftop solar (40,000 panels generating 10 MW), passive-cooling architecture, and highly water-efficient infrastructure designed for Dubai's extreme climate. Cars are excluded from residential streets, fostering pedestrian movement, cycling, and shared electric-cart transport. A central "green spine" containing biodomes, herb gardens, and car-free public spaces acts as both an ecological corridor and a social commons, where residents interact, share resources, and co-create solutions. This spatial design deliberately cultivates human relationships as part of its sustainability strategy, echoing findings from research on intentional communities where physical layout supports collective responsibility for shared resources. [107]

Governance is a distinguishing feature of TSC compared to other top-down eco-developments. Although initiated by a private developer rather than through grassroots organizing, the community actively cultivates resident engagement and stewardship. A six-month biodiversity study by Emirates Nature–WWF and SEE Institute recorded 86 plant species, 32 bird species (including migratory species attracted to TSC's ponds and vegetation), and active bat populations such as the Kuhl's pipistrelle. These findings were generated not only through expert ecological surveys but also through citizen-science initiatives—residents documented over 500 wildlife observations on platforms such as iNaturalist and eBird. This participatory monitoring deepened ecological awareness among a highly multicultural population, demonstrating how even a developer-led community can adopt commons-style governance mechanisms. [108]

---

106 Sanguinetti, Silvia, Ali AlWaer, and Ashraf M. Salama. The Sustainable City in Dubai: An Urban System in Transition. Abingdon: Routledge, 2019.
107 Ibid.
108 Judas, Jean, Afra Al Dhaheri, and Tatiana Antonelli Abella. The Sustainable City Biodiversity Baseline Study. Dubai: Emirates Nature–WWF and SEE Institute, 2021.

empowerment characteristic of grassroots ecovillages or co-housing projects. [109] Ecologically, TSC highlights both achievements and challenges in building regenerative urban environments in arid regions. Landscaping combines native and non-native plant species, creating habitats for insects, birds, and bats, although the dominance of introduced species raises concerns about long-term ecological resilience. Water quality assessments revealed high alkalinity and elevated phosphate concentrations in artificial ponds, requiring adaptive management to sustain freshwater biodiversity. Light pollution, invasive species such as the red-eared slider turtle, and imbalances in species composition show that technological design alone cannot guarantee ecological stability. Yet these challenges are addressed transparently through ongoing research, resident education, and management interventions, providing a model of adaptive urban governance. [110]

Overall, The Sustainable City demonstrates that urban sustainability requires more than green technologies or certification schemes. It depends on fostering a shared ethic of care, where residents become co-stewards of local ecosystems and community spaces. By aligning environmental design with participatory governance, TSC embodies the principles of a living commons: resources are not only protected but actively co-managed by those who benefit from them. This case underscores that resilient cities, especially in the Global South where urban growth is rapid, must empower communities to take shared ownership of ecological systems, moving beyond purely technocratic or market-driven solutions to create urban environments that are regenerative, inclusive, and culturally rooted.

109 Sanguinetti, AlWaer, and Salama, The Sustainable City in Dubai (op. cit.).
110 Judas, Al Dhaheri, and Abella, The Sustainable City Biodiversity Baseline Study (op. cit.).

5.A STRATEGIC ROADMAP TO A WELLBEING ECONOMY: EMBEDDING BIOMIMICRY AND THE COMMONS INTO THE UAE' S DNA

A. WHY BIOMIMICRY &THE COMMONS

The UAE's transition to a wellbeing economy cannot be achieved by treating sustainability as an aesthetic layer; it requires a structural shift that learns from nature's operating system and restores shared stewardship of resources. Biomimicry and commons-based governance provide that shift. They translate nature's ecological intelligences—circularity, interdependence, feedback loops, adaptability, and decentralized regeneration—into practical rules for how we design buildings and neighborhoods, grow food, manage water, finance innovation, and measure prosperity beyond GDP. This is consistent with the report's framing that prosperity must be re-anchored in human and ecological flourishing, not throughput, and that policy should be guided by nature-inspired design and community stewardship rather than extractive logics.

This vision resonates with the Emirati identity and the UAE's policy and environmental aspirations. It builds on national visions (Wellbeing 2031, Centennial 2071, Net Zero 2050) while addressing persistent "late-rentier" spatial and governance legacies: car-centric layouts, privatized land use, and technocratic fixes that overlook lived, place-based resilience. Biomimicry and the commons align with vernacular intelligence (barjeel wind towers, sikkak, aflaj), offering a culturally rooted pathway from mitigation to regeneration.

This section therefore seeks to achieve two objectives. First, it identifies where current systems fall short of a nature- and commons-aligned horizon across six dimensions: policy and regulation, capacity and knowledge, finance and markets, cultural and social integration, monitoring and data, and urban planning. Second, it pairs each gap with actionable recommendations by sector (built environment, agriculture and food systems, governance and finance, society and culture, and urban planning), drawing on UAE case evidence to show feasibility. To support these objectives, stakeholder interviews are integrated throughout using short quotations and call-outs, grounding the findings in practitioner experience and ensuring that insights reflect co-creation rather than a purely top-down blueprint. Together, this sets a clear rationale for why the gaps matter and how the recommendations contribute to the UAE's wellbeing strategy and structural regeneration.

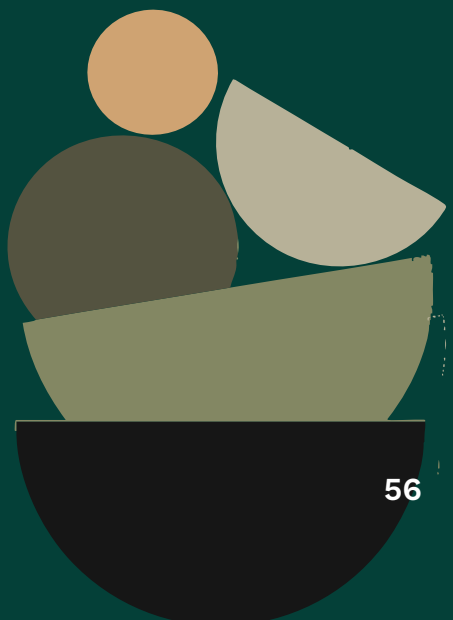
Importantly, this roadmap does not start from zero. Across the region, pioneering examples show that biomimicry and commons principles are already gaining traction: from Egypt's biomimetic desert architecture inspired by the dromedary camel to Saudi Arabia's large-scale mangrove restoration programs, to the UAE's own revival of aflaj irrigation systems in Al Ain. These signals of progress demonstrate that embedding nature's intelligence into development is not only possible—it is already happening. The task now is to scale and systematize these practices within the UAE's wellbeing economy.

B. GAP ANALYSIS AND RECOMMENDATIONS: BARRIERS AND BRIDGES TO INTEGRATING BIOMIMICRY AND COMMONS-BASED APPROACHES

While the UAE possesses the resources for transformation, it lacks the systemic design principle that nature uses to create resilience. Biomimicry demonstrates that sustainable systems emerge through three levels: form biomimicry, which mimics nature's designs; process biomimicry, which emulates nature's methods of manufacturing and energy use; and ecosystem biomimicry, which replicates nature's integrated systems of cooperation, feedback, and regeneration. At present, many sustainability efforts in the UAE remain anchored at the level of form—for example, green buildings inspired by natural shapes or efficiency-focused technologies—without advancing toward the deeper systemic transformations required at the ecosystem level.

This gap analysis highlights that while the UAE possesses strategic ambition, financial resources, and technical expertise, its sustainability model risks remaining symbolic rather than structural. Biomimicry and commons-based governance are not simply design trends; they represent ecological intelligences that anchor the UAE's wellbeing economy in resilience, cultural rootedness, and global relevance.

Case studies such as The Sustainable City in Dubai and the fareej urban clustering proposal show that vernacular logic and nature-based systems already exist locally. Yet these approaches remain isolated pilots rather than embedded planning norms. Without clear policy mandates, financing incentives, interdisciplinary training, and monitoring systems, these models will not scale fast enough to meet Centennial Vision 2071 or Net Zero 2050 targets (Diamond Developers, 2020; X-Architects, 2022).



Stakeholder interviews conducted as part of this research further confirm these findings: practitioners, academics, and policymakers consistently pointed to fragmented governance, limited knowledge transfer, and risk-averse investment patterns as barriers to deeper adoption of regenerative urbanism and agriculture. These insights underscore the urgency of shifting from aspirational sustainability rhetoric to practical institutional mechanisms.

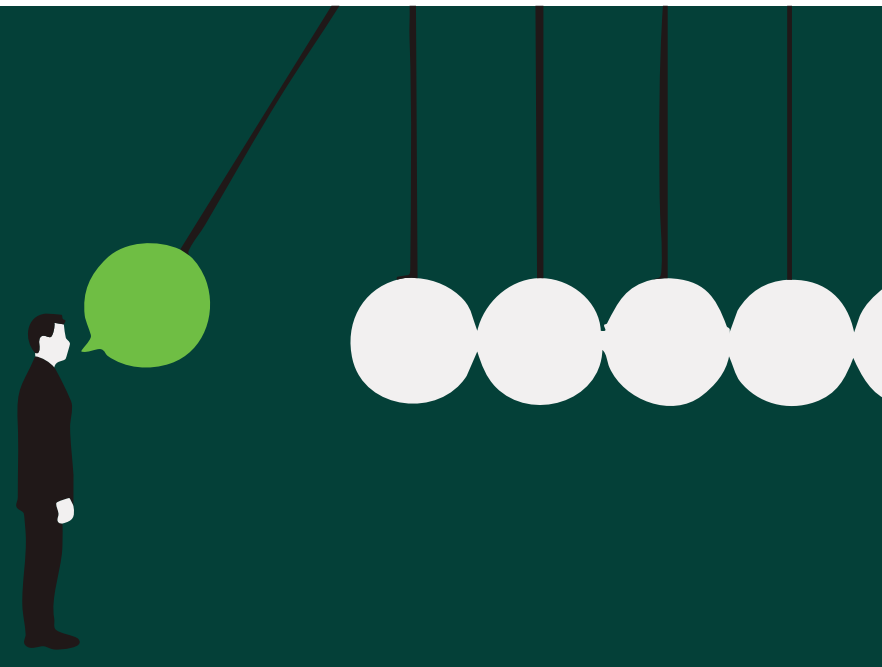
Research findings from case studies and policy review reveal that while the UAE has made strong sustainability commitments, its transition to a wellbeing economy is still framed largely in technocratic and market terms rather than ecological and community-centered terms. Six cross-cutting gaps emerged from this report:

i. Policy and Regulatory Frameworks

- Biomimicry and commons principles remain voluntary aesthetic choices, not mandated planning requirements. While building codes prioritize energy efficiency metrics, they ignore nature-inspired principles such as adaptability, decentralization, and circularity. Vernacular wisdom is celebrated culturally but rarely codified in zoning or procurement laws.
- As highlighted by validation roundtable participant Marwa Nahlawi (Diamond Developers), the challenge does not lie in the lack of principles in theory, but in the absence of a policy mandate to cascade these principles to all sectors. This creates an implementation gap where even master-planned communities may lack human-scale accessibility in practice.

"The regulations are there for efficiency, but not for empathy—for the building, not for the ecosystem around it."

— Anonymous A, Sustainability Manager



Gap: There is no comprehensive regulatory mechanism embedding biomimicry or commons governance within UAE urban development frameworks.

What the UAE can do to fill this gap:

● Policy Mainstreaming: Integrate biomimicry and commons-based governance as core pillars within the implementation frameworks of UAE Centennial 2071, Net Zero 2050, and the National Climate Adaptation Strategy.

● Break Silos: Establish inter-agency Biomimicry Taskforces. To embed biomimicry into national sustainability efforts, formal working groups should meet monthly, with mandatory representation from environment, urban planning, heritage, health, and education sectors. Each ministry would designate three representatives to ensure intergenerational perspectives. These taskforces would review all major sustainability initiatives through a biomimicry lens, identifying opportunities where nature-inspired solutions can enhance resilience, efficiency, and social outcomes.

● Create a Central Hub: Establish a Nature-Based Solutions Council or an Urban Biomimicry Lab under MOCCAE to coordinate cross-sector innovation, drawing inspiration from Bourg and Whiteside's "Assembly of the Future" model.

● Develop mandatory codes: Introduce Urban Biomimicry Codes requiring passive cooling, circular material flows, and commons-based zoning for shared, pedestrian-friendly spaces.

● Phased Regulatory Integration:

> ***Phase 1 (Guidelines):*** Develop voluntary Urban Biomimicry Design Guidelines.
>
> ***Phase 2 (Incentives):*** Offer fast-tracked permitting and density bonuses for projects that adopt these guidelines.
>
> ***Phase 3 (Mandates):*** Enact mandatory Biomimicry Codes for new developments, requiring passive cooling, circular material flows, and fareej-style commons-based zoning.

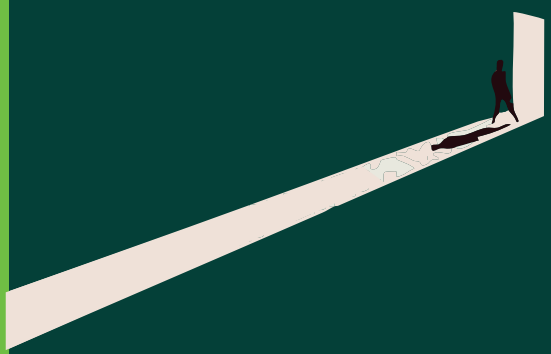
● Identify and leverage existing policy vehicles, such as the near net zero building code mentioned by validation roundtable participant Faisal Ali Al Rashid (Dubai Supreme Council of Energy), as entry points for biomimicry standards, ensuring a more efficient and cohesive regulatory environment.

"Young people today are looking for genuine platforms to make an impact, not just token committees or PR campaigns. Many feel their ideas are applauded in name but seldom translated into actual policy or funding. What youth need is space to experiment, to fail and try again without being constrained by old models. Institutions must move from control to empowerment."

— Alhasan Farj Allah, Executive Director, DTEra

ii. Institutional Capacity and Knowledge Systems

- Expertise is concentrated in isolated hubs like Masdar City. Interdisciplinary collaboration is fragmented, and curricula lack applied training in ecological design and traditional knowledge, producing a generation of experts who are often strangers to their own heritage.



"We learned about LEED in university, but not about the aflaj. We are experts in global systems but sometimes strangers to our own."

— Mansoor Al Hosani, Horticultural Science Student

Gap: A skills and knowledge gap prevents biomimicry and commons approaches from moving beyond pilot scale into systemic application.

What the UAE can do to fill this gap:

● **Curriculum Reform:** Mandate the integration of applied modules on Khaleeji ecological knowledge and biomimicry into university programs for engineers, architects, and policymakers, in addition to integrating biomimicry as a core topic across educational levels, from schools to universities. This aligns with discussions during the validation roundtable, in which participants emphasized the need to institutionalize the concept to build foundational knowledge.

● **Foster Innovation Ecosystems:** Collaborate with Sheraa, SRTIP, Dubai Future Foundation, and Hub71 to create biomimicry accelerators and grant programs focused on desert tech, regenerative designs, and passive systems.

● **Build a Knowledge Commons and UAE Desert Strategy Database:** Launch a bilingual (Arabic/English) Digital Majlis platform as an open-source repository for case studies, design prototypes, and policy tools. This would document 500+ local species adaptations and translate them into actionable building codes, urban design standards, and policy innovations. By linking biological insights (e.g., the Arabian oryx's thermal regulation) directly to practical applications, and enabling continuous feedback and knowledge sharing, this platform creates a nationwide learning loop, fosters replication of successful nature-inspired solutions and drives systemic, regenerative sustainability across the UAE.

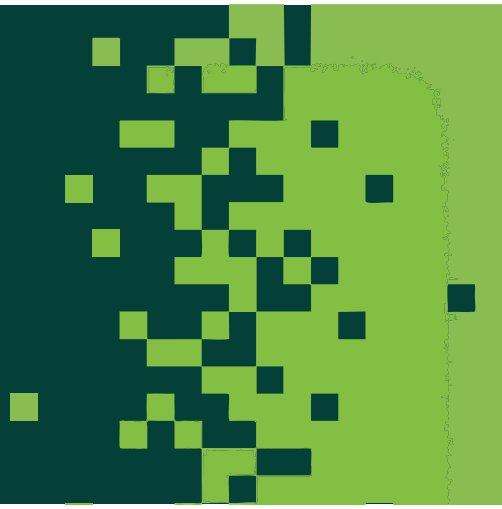
> As recommended by validation roundtable participant Eva Ramos Perez Torreblanca (Environment Agency - Abu Dhabi), launch a bilingual (Arabic/English) digital platform of locally relevant case studies. This directly addresses the identified knowledge gap and makes biomimicry accessible to a wider audience of policymakers, designers, and students.

● **Youth Engagement:** Empower Emirati youth to become champions of biomimicry and commons stewardship through dedicated national programs and leadership opportunities. Leverage existing platforms such as the UAE's Youth Councils and **Youth Circles** to integrate biomimicry themes into dialogues, community projects, and volunteer programs, ensuring young people actively apply traditional ecological knowledge in real-world contexts. Launch youth-focused innovation challenges and incubators—building on initiatives such as Masdar's **Youth 4 Sustainability,**

which connects young talent with experts and training opportunities—to support student-led desert-tech start-ups, regenerative design projects, and nature-inspired solutions. By embedding youth leadership across education, innovation, and knowledge-sharing, the UAE can cultivate a generation of engineers, designers, and policymakers fluent in local ecology and biomimicry, driving a long-term shift toward regenerative sustainability.

"Sharing communal resources and community shura councils are models that can be digitalized. Imagine 'digital aflaj' to share software resources or a 'data majlis' to craft tech decisions collectively and transparently."

— Alhasan Farj Allah, Executive Director, DTEra



iii. Finance and Market Incentives

- Investment patterns favor short-term, easily quantifiable returns and disadvantage regenerative projects with higher upfront costs and broader wellbeing benefits. Islamic finance tools such as waqf and musharakah, which are inherently aligned with commons principles, remain underutilized.

- Validation roundtable participants, like Dr. Nada Sayarh (SP Jain School of Global Management), identified significant financial and administrative obstacles for accessing sustainability spaces and initiatives, which can stifle innovation and broader participation. This underscores the need for financial models that de-risk and incentivize regenerative projects.

Gap: There are no targeted fiscal incentives to reward biomimetic or commons-oriented development in the UAE.

What the UAE can do to fill this gap:

Develop a Shariah-Compliant Guidelines for Nature-Inspired projects: Partner with national Shariah boards to create standards explicitly recognizing biomimicry and regenerative principles as aligned with Islamic teachings. Standardize Shariah-compliant structures for biomimetic urban projects, such as energy-efficient buildings, water-harvesting systems, and urban food forests inspired by local ecosystems. [111]

- Strategic Capital Deployment: Mobilize sovereign and strategic funds (e.g., Mubadala, Dubai Green Fund) to finance biomimicry urban pilot zones, retrofitting programs, regenerative design hubs, and startups.

- Establish perpetual Waqf Endowments: Create dedicated waqf funds to support regenerative urban projects, using the UAE's mosque solarization model as a template. Potential initiatives include:

    - Community cooling systems inspired by termite mounds.
    - Urban food forests mimicking desert oasis ecosystems.
    - Water-harvesting infrastructure based on fog-catching beetles.

- Ensuring transparent governance and involving community stakeholders in fund allocation would strengthen accountability and engagement. [112]

- Pioneer Outcome-Based Instruments: Issue "Wellbeing sukuk" (green bonds) tied to outcomes against a National Wellbeing Index, creating direct incentives for holistic results.

- Launch a Living Finance Initiative (where nature teaches economics): Develop ecosystem-specific financial instruments aligning economic incentives with ecological stewardship and community wellbeing, such as:

    - **Coral Banking Waqf:** Communities own coral reefs through waqf structures. Revenue from diving tourism and blue carbon credits funds perpetual reef restoration.

---

111 Greenpeace. "Islamic Finance: A Powerful Solution for Climate Action." Campaign page. https://www.greenpeace.org/international/story/71412/islamic-finance-a-powerful-solution-for-climate-action/.
112 Ibid.

- **Desert Bloom Sukuk:** Returns linked to rainfall cycles, reflecting desert rhythms and teaching patience and delayed abundance.
  Proceeds finance regenerative desert infrastructure, urban greening, and water harvesting.

- **Mangrove Musharakah:** Community–ecosystem partnerships where mangrove forests and local communities are treated as legal partners sharing the ecosystem's protection value. Investments fund shoreline protection, carbon sequestration, and mangrove restoration.

Reframe the ROI Argument: Commission studies quantifying the long-term public savings (energy, health, social services) of regenerative projects, demonstrating that short-term ROI models are ultimately more costly.

Case Study — Ummah for Earth Alliance (Grassroots Climate Mobilization):

At the heart of community mobilization stands Ummah for Earth (U4E), a groundbreaking faith-based climate alliance launched in 2020 by Greenpeace MENA and partners. This coalition has grown to encompass 48 allies, 33 organizations, and 15 influential individuals, spanning Africa, MENA, Southeast Asia, Europe, North America, and Pakistan—creating a truly global Muslim climate movement.

U4E's remarkable reach and impact demonstrate the power of faith-aligned climate action. In just five years, the alliance has: Reached more than 78 million young urban Muslims through digital campaigns and on-the-ground activities; Engaged 48 million users through social media platforms; and Mobilized over 200,000 concrete climate actions. These numbers represent not only statistics but also a fundamental shift in how Muslim

The alliance's flagship initiatives showcase practical applications of Islamic environmental values: Solarizing Mosques Project: Retrofitting mosques with solar panels; Green Hajj Guide: Helping pilgrims reduce environmental impacts during the world's largest annual gathering; Climate Justice Camps: Bringing together young Muslim climate activists from 20 countries for training and network building; and United for Climate Justice Ship Tour: Connecting coastal communities facing sea-level rise with climate advocates, creating powerful narratives of frontline impacts.

These initiatives embody core Islamic values of khilafah (stewardship), mizan (balance), and hikmah (wisdom), demonstrating that environmental action flows naturally from faith principles. U4E's diverse partnership network includes environmental organizations working at the intersection of faith and ecology, humanitarian groups such as Islamic Relief Worldwide bringing development expertise, academic institutions like the Center for Islamic Studies at Indonesia's Universitas Nasional providing intellectual rigor, and youth organizations ensuring next-generation leadership.

iv. Cultural and Social Integration

- The sustainability narrative is dominated by "smart city" technologies, disconnecting it from the deep ecological intelligence of Emirati heritage. This limits public buy-in and fails to leverage powerful cultural touchstones such as Islamic environmental ethics (amana, ihsan).

"Sustainability here feels high-tech and imported. We need to show it's also low-tech and local, like our grandparents' houses."

—Asma Amir, Maintenance Engineer, SNOC

Gap: Cultural and social narratives around sustainability remain disconnected from policy, limiting public buy-in for commons-based planning.

What the UAE can do to fill this gap:

- **Community Co-Creation:** Fund "Fareej Labs" where citizens collaborate with designers to co-create vernacular retrofits, shaded sikkak, and public commons.

- **Inspire New Generations:** Launch national design competitions in schools and universities focused on nature-inspired climate resilience in the local context.

- **Root in Cultural Values:** Explicitly and consistently link Islamic environmental ethics (amana, shura, maslaha) to biomimicry and wellbeing economy principles to ensure cultural legitimacy.

- **Showcase Living Models:** Promote the sikkak network as a premier design model that integrates cultural heritage, social cohesion, and ecological adaptation.
- **Ensure Authentic Youth Inclusion:** Empower youth councils with real decision-making authority. As Alhasan Farj Allah noted, institutions must shift "from control to empowerment."

- Move beyond symbolic inclusion by creating empowered pathways for youth, as exemplified by validation roundtable participant Maya Haddad's (Ajman University) initiatives involving student-led sustainability magazines and hackathons. This fosters genuine impact and ownership and translates applause for ideas into actionable policy and pilots.

Example: Sikkak networks—pedestrianized and passively cooled—integrate cultural heritage, social cohesion, and ecological adaptation, creating a tangible model of the urban commons.

"Ihsan is the basis of my work in designing government services... to facilitate access to services without complication, in line with the concept of tayseer (making things easy) and serving people honorably."

**— Alhasan Farj Allah,
Executive Director, DTEra**

v. Monitoring and Data Systems

- Evaluation focuses narrowly on energy and CO_2, missing holistic wellbeing outcomes like ecosystem health or social cohesion.

- Furthermore, validation roundtable participants Adele Guidot and Amna Elnour (UN Global Compact UAE) highlight the need to identify existing regulatory mechanisms to build upon, rather than creating new entry ways , highlighting the importance of strategic policy integration.

Current evaluation frameworks focus too narrowly on energy performance and CO_2 reduction, overlooking broader wellbeing outcomes such as microclimate comfort, ecosystem regeneration, and social cohesion (MOCCAE 2023). Without indicators to assess these dimensions, there are no feedback loops to replicate and scale successful vernacular or biomimetic models.

"We measure kilowatts saved, but not communities formed or degrees of shade provided. We manage what we measure."

— Anonymous A, Sustainability Manager

Gap: No national monitoring system exists to evaluate regenerative urbanism or commons-governance outcomes.

What the UAE can do to fill this gap:

- Co-create a National Wellbeing Index: Partner with the UAE Wellbeing Observatory to design a comprehensive, multidimensional index measuring:

  Ecological health: (biodiversity, ecosystem services, soil and water quality)
  Social cohesion: (community participation, access to public spaces, social networks.)
  Resource circularity: (material reuse, water and energy efficiency, waste reduction).

- Integrate Citizen Science and Community Data: Implement citizen-science initiatives to crowdsource environmental and social data, such as tree canopy growth, pollinator populations, or neighborhood use of public spaces. Engage local communities as active stewards, creating participatory feedback loops that increase data granularity, transparency, and public trust.

● Embed Feedback Loops for Adaptive Management: Use data from the Wellbeing Index and citizen-science projects to evaluate the effectiveness of biomimetic and commons-based interventions. Continuously adjust design standards, urban policies, and funding mechanisms based on measured ecological, social, and economic outcomes rather than short-term technical metrics.

vi. Built Environment: Biomimetic Architecture and Urban Planning

- The urban landscape is defined by environmentally inefficient and socially isolating villa sprawl.
- Validation roundtable participants stressed that successful implementation requires a supportive ecosystem. Marwa Nahlawi (Diamond Developers) emphasized that the solution lies in 'mandating and incorporating the principles in the early stages of a project', while Dr. Nada Sayarh pointed to the necessity of the right 'ecosystem to support the initiative'.

Gap: The UAE's urban landscape remains dominated by environmentally inefficient and socially isolating villa sprawl. These layouts are characterized by high energy demand, car dependency, and fragmented communities. Existing planning approaches rarely integrate climatic, ecological, or cultural intelligence, missing opportunities to foster esilience, wellbeing, and social cohesion.

What the UAE can do to fill this gap:

● Adopt Passive Design Codes: Draw inspiration from desert species and traditional Emirati architecture, including:

Wind towers for natural ventilation.
Shaded courtyards for microclimate regulation.
Thermal-mass walls to stabilize indoor temperatures.

113 X-Architects. National Housing – An Opportunity for Change. Abu Dhabi, 2009.

- Retrofit Existing Developments: Prioritize natural ventilation, shading, and material performance over mechanical cooling. Encourage upgrades that reduce energy consumption while enhancing occupant comfort.

- Urban Biomimicry Innovation Zones: Pilot walkable, low-carbon neighborhoods with natural cooling systems and interconnected public commons, in collaboration with Sheraa, SRTIP, and Dubai Future Foundation.

- Incentivize Local and Bio-Adapted Materials: Provide subsidies and tax breaks for developers who meet ecological performance targets.

- Develop a Biomimicry & Commons Integration Toolkit for policymakers anddevelopers, providing clear guidelines for incorporating these principles during the feasibility and master planning stages of all major projects.

Case Study: Fareej Commons-Based Clustering [113]

- Smaller residential plots (e.g., 625 m²) arranged in shared clusters.
- Common gardens and shaded sikkak replacing unused side strips.
- Pedestrian-first layouts reducing car dependency.
- Designated community zones (mosques, playgrounds, gardens) within walking distance.
- Gender-sensitive spatial layering balancing privacy with social cohesion.

These interventions restore the urban qualities of pre-oil Emirati settlements, reduce energy demand, foster community cohesion, and reflect both climatic and cultural intelligence. By moving away from sprawling villa developments toward biomimetic, community-centered urban design, the UAE can create resilient, socially vibrant, and ecologically intelligent cities.

113 X-Architects. National Housing – An Opportunity for Change. Abu Dhabi, 2009.

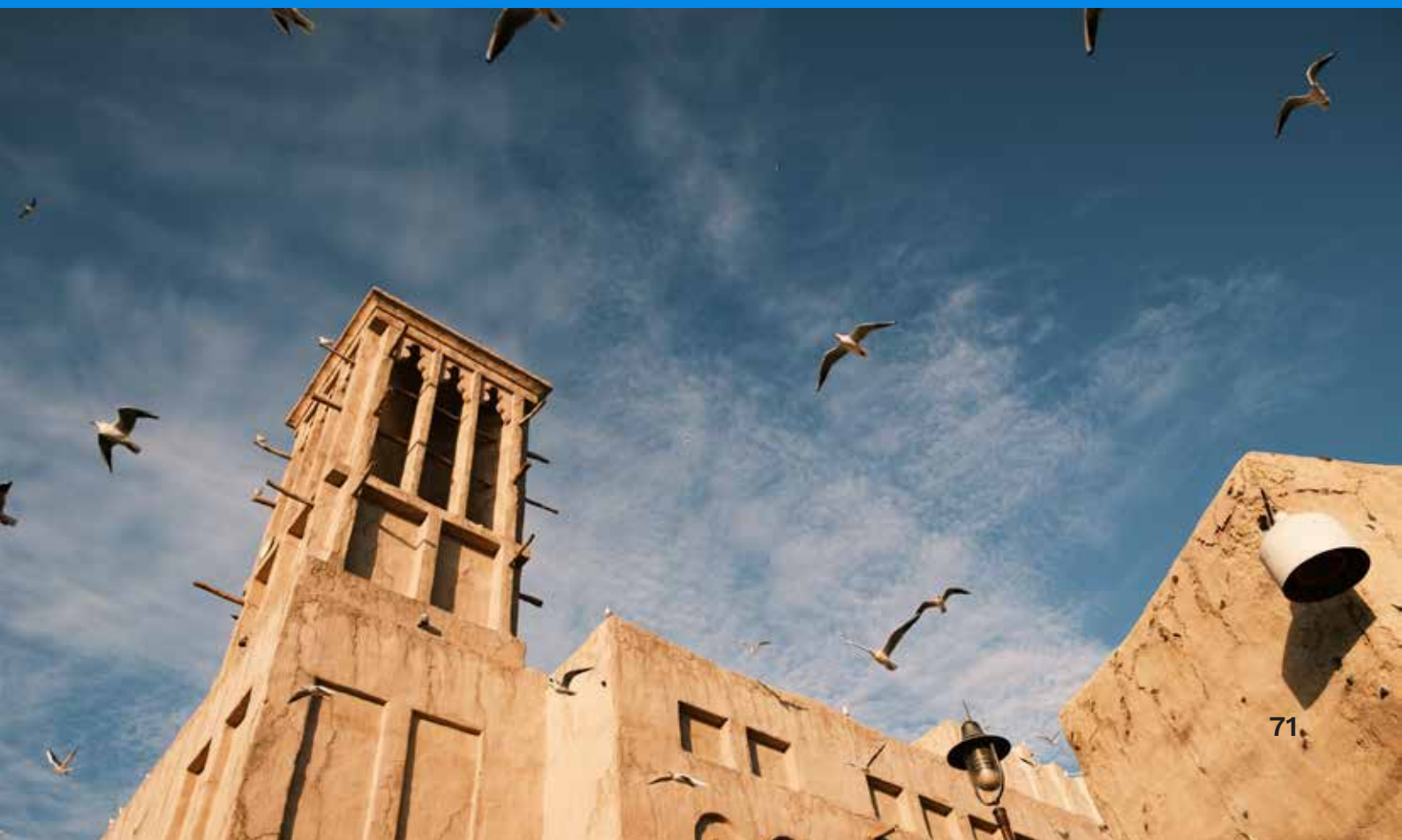
6.CLOSING NOTE: UAE AS A REGIONAL MODEL FOR WELLBEING ECONOMY TRANSITION (CALL TO ACTION)

The United Arab Emirates stands at a pivotal moment. The transition to a post-extractive wellbeing economy demands more than symbolic gestures of sustainability; it requires a deep structural rewiring of our development DNA. This report has argued that such a transformation is not only necessary but profoundly aligned with the UAE's heritage and ambitious national visions. The path forward is one of integration— weaving the ecological intelligence of biomimicry and the shared stewardship of the commons into the very fabric of our policies, cities, and culture.

The evidence is clear. From the adaptive genius of the barjeel and aflaj to the contemporary innovations of the Masdar Institute and Al Bahar Towers, the UAE already possesses a powerful, though fragmented, blueprint for a regenerative future. The case studies of The Sustainable City and the fareej model reveal a growing appetite for communities that are not only efficient, but alive: socially cohesive, ecologically embedded, and culturally resonant.

The gaps identified in policy, finance, knowledge, and cultural narrative are not failures but opportunities—precise entry points for the systemic shift we propose. This is not a call to reinvent the wheel, but to remember that we already have a blueprint: 3.8 billion years of research and development in the natural world, and centuries of adaptive wisdom in the UAE's own traditions.

The following vision and scenarios are offered as an invitation to co-create a call to action for policymakers, stakeholders, developers, educators, youth, and citizens to build upon the foundations laid in this report.



i. Vision: The Biomimicry Futures Hub UAE and Regenerative Scenarios

To catalyze this shift, we propose the establishment of the Biomimicry Futures Hub UAE, a cross-sectoral, nationwide "think and do tank." This would not be a new siloed institution, but a collaborative platform bridging policy, research, design, and community. Functioning as a living laboratory, the Hub would test, refine, and scale nature-inspired principles. Key initiatives would include:

- Masdar 2.0: Evolving the existing model into a next-generation regenerative city pilot—demonstrating circular material flows, biomimetic passive cooling at district scale, and an urban system that thrives like a desert ecosystem, creating abundance from scarcity.

- Cultural Ecology Labs: Establishing centers within heritage sites such as Al Fahidi and Al Ain Oasis. These labs would merge traditional ecological knowledge (aflaj management, passive cooling, native species cultivation) with cutting-edge sustainability science and design, ensuring this wisdom is not archived but actively applied.

- Urban Biomimicry Codes: Collaborating with the Supreme Council for Planning and municipal authorities to co-develop the next iteration of planning guidelines. These codes would move beyond energy efficiency to mandate nature's logics: facilitating airflow, enabling material circularity, and designing for symbiosis between buildings, people, and ecosystems.

The Hub would actively partner with innovation ecosystems such as Sheraa (Sharjah), SRTIP, Dubai Future Foundation, and Hub71, leveraging their incubators, climate-tech accelerators, and public–private partnerships to scale biomimetic solutions nationwide.

ii. Illustrative Scenarios: Pathways to a Tangible Future

To make this vision concrete, we can imagine these regenerative scenarios unfolding across the UAE:

- **Regenerative City:** Urban neighborhoods where buildings breathe like termite mounds, shade is cast by canopies inspired by the Ghaf tree, and water is managed through community-based aflaj-inspired networks. This scenario translates the built environment recommendations into standard practice.

- **Living Desert Corridors:** Ecological networks weaving through and between cities, connecting mangroves, sabkhas, oases, and traditional agroforestry systems. These corridors enhance biodiversity, buffer urban areas from climate impacts, and serve as living classrooms for heritage conservation and cultural continuity.

- **Urban Fareej 2.0:** A revival of community-centered, walkable neighborhoods. Inspired by the vernacular fareej, these districts feature shaded sikkak, pedestrian-first layouts, and shared communal spaces that naturally foster social cohesion. This scenario embodies climate-adaptive urban design that is as socially intelligent as it is environmentally sound.

These scenarios are achievable futures, built by combining the enduring wisdom of the UAE's past with the innovative spirit of its present. They demonstrate that a truly regenerative, prosperous, resilient, and inclusive UAE is within reach. By embracing biomimicry as our framework and the commons as our governance model, the UAE can step into its potential as a global leader—showcasing a wellbeing economy that is both locally rooted and globally relevant.

ACKNOWLEDGEMENTS

This report was produced through a partnership between Greenpeace Middle East and North Africa, Sorbonne University Abu Dhabi, and SEE Institute. We extend our special thanks to Dr. Jacinta Dsilva (SEE Institute) and Dr. Clio Chaveneau (Sorbonne University Abu Dhabi) for their invaluable expertise and guidance.

This research would not have been possible without the generous contributions of theinterviewees, who shared their time, expertise, and insights across diverse sectors of theUAE's sustainability landscape.

Each of these voices has enriched the study with grounded perspectives, bridging theoryand practice, and helping to illuminate the pathways toward a wellbeing economy rooted in biomimicry and commons governance.

A special acknowledgment is also due to **Abdullah Al Remeithi, President of the AjmanYouth Council,** for his unwavering efforts in facilitating access to the above-mentionedinterviewees. His commitment to enabling youth-driven research and dialogue has beeninstrumental in ensuring that this work reflects diverse and engaged perspectives.

ANNEX I: STAKEHOLDER INTERVIEW PARTICIPANTS

NAME	ROLE / AFFILIATION	SECTOR
Alhasan Farj Allah	Executive Director, DTEra.ae	Information Technology
Asma Amir	Maintenance Engineer, Sharjah National Oil Corporation (SNOC)	Oil & Gas
Mansoor Al Hosani	Horticultural Science Student, United Arab Emirates University	Agriculture
Noora Hammadi	Sustainability Engineer (DEWA)	Energy & Sustainability
Anonymous A	Sustainability Manager	Governmental entity

ANNEX II: VALIDATION ROUNDTABLE PARTICIPANTS

NAME	POSITION	INSTITUTION
Nawal Yousif Alhanaee	Director of Future Energy	Ministry of Energy and Infrastructure
Tariq Al-Olaimy	Islamic Finance Advisor	Greenpeace MENA
Faisal Ali AL Rashid	Demand Side Management Senior Director	Dubai Supreme Council of Energy
Eva Ramos Perez Torreblanca	Director, Environmental Policy Analysis and Economics	Environment Agency - Abu Dhabi
Adele Guidot	Program Lead	UN Global Compact UAE
Amna Elnour	Program Coordinator	UN Global Compact UAE
Maya Haddad	Senior Sustainability Manager	Ajman University
Nada Sayarh	D. Director Sustainability ERS, ESG, CSR	SP Jain School of Global Management (Dubai)
Marwa Nahlawi	General Manager	Diamond Developers

GREENPEACE
غرينبيس

SEE INSTITUTE
Sustainability through Research & Education

SORBONNE UNIVERSITY ABU DHABI