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Urbanism in Flux

Smart and Sustainable Cities as Spaces for Regional Cooperation in West Asia and the Arabian Peninsula

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Table of Contents

List of Tables

List of Acronyms and Abbreviations

CO_2	carbon dioxide
ESD	education for sustainable development
GCC	Gulf Cooperation Council
KPI	key performance indicator
MENA	Middle East and North Africa
STS	smart transportation systems
UHI	urban heat island
WAAP	West Asia and the Arabian Peninsula

Cities generate 75% of global CO_2 emissions from energy use, with rapid urbanization projected in West Asia and the Arabian Peninsula (WAAP).[1] By 2050, over 5.6 billion people in the WAAP region are expected to live in urban areas, mainly in Gulf Cooperation Council (GCC) countries. Urbanization poses challenges like housing shortages, congestion, pollution and inefficient public transport. In response, GCC countries are developing smart cities, such as Saudi Arabia's NEOM and the UAE's Masdar City, aiming for high quality of life and economic growth. However, these projects face issues like social inequalities, infrastructure deficits and environmental impacts. Despite technological advances, obstacles to sustainable development persist. Regional cooperation is crucial to addressing these challenges and fostering sustainable urban growth through initiatives that emphasize cultural heritage, environmental education and community engagement, promoting socio-economic and environmental resilience.

Introduction

Cities are responsible for 75 percent of all carbon dioxide (CO_2) emissions from energy use. The global population is expected to reach around ten billion by 2050, with over two-thirds resident in urban areas. Between 1990 and 2018, the population of global megacities increased 3.5 times; it is estimated that in 2050, more than 5.6 billion people will live in cities producing more than 226 gigatons of CO_2 (Belaïd & Arora 2024). A hotspot in global urbanization is the Middle East and North Africa (MENA) region, with its urban population projected to grow by 25 percent from 2020 to 2030 (Belaïd et al. 2024: 296). While in the 1960s, only 40 percent of the MENA population lived in cities, by 2020 the percentage had already increased to 60 percent. The urban population in this region is anticipated to rise by 30 percent between 2020 and 2030 (United Nations 2019), and by 2050, 90 percent of the Gulf Cooperation Council (GCC) countries' populations will live in cities (Elian & Kisswani 2024). Saudi Arabia's urban population grew from 9.3 million in 1980 to around 32 million in 2018 (Abi Farraj 2023) and is expected to further increase from 83 percent in 2023 to 90 percent by 2030, reaching a total population of 38.5 million (Aldegheishem 2023). Similar developments are also observable in the UAE, where Dubai has experienced a significant population growth from 1.5 million in 2007 to 3.1 million in 2014 (World Population Review 2024). In Qatar, Doha's population was 2.38 million out of the country's total population of 2.86 million in July 2024 (National Planning Council 2024).

1 The WAAP region consists of the six member states of the Gulf Cooperation Council (GCC), Saudi Arabia, the United Arab Emirates (UAE), Qatar, Kuwait, Oman and Bahrain as well as Iran, Iraq and Yemen.

This rapid urbanization marks a significant socio-economic and socio-cultural transition for all WAAP societies. As cities become hubs for business, culture and politics, new concepts of urban livability and well-being are gaining attention in Gulf public discourse. Megacities such as Dubai and Riyadh symbolize Gulf urbanism and currently face challenges in sustainable housing (Asfour 2022), public transportation (Mehbub Anwar & Abu Toasin Oakil 2024) and ensuring well-being for residents. Many urban dwellers struggle with socio-economic issues such as urban sprawl (Floater et al. 2014); inadequate infrastructure; and environmental problems that limit access to healthy living spaces, such as urban heat islands (UHI) (Aburuzaiza 2022) and pollution (Pineo 2022). Additionally, the urban design in many Gulf cities often emphasizes consumerism over sustainable and ecological human development (Dodge 2012).

In addition to the GCC, Iraq and Iran are also experiencing rapid demographic growth and increasing urbanization, which in turn contributes to housing shortages, congestion and pollution. Furthermore, Iran's capital Tehran is susceptible to natural disasters, as the city is regarded as the most earthquake-prone metropolis worldwide due to its location within the Alpine-Himalayan mountain range (Kamranzad 2020). A significant challenge associated with urbanization in Iraq is the proliferation of informal settlements, which provide a refuge for low-income households. The marginalized population residing in these areas are particularly affected by inadequate basic services, including access to water, sanitation, electricity, educational facilities and healthcare. These challenges are compounded by the presence of sectarian violence. Many of the residents are internally displaced persons, having fled the prevailing terror group 'Islamic State'. As well, the intensifying sectarian tensions between the disparate religious and ethnic groups are engendering social divisions and a diminution of national unity and integrity (UN-Habitat).

A further country experiencing the combined effects of urbanization and conflict is Yemen. The country's urban development is currently oriented primarily toward overcoming water and electricity shortages, which diverts attention from green and healthy urbanization. The devastating military conflict, ongoing since 2014/15, has seriously destroyed or damaged wide parts of the national infrastructure and caused a humanitarian catastrophe. Thus, urban centers such as Yemen's biggest cities Aden, Sana'a and Ta'iz are increasingly in need of a more reliable provision of electricity and water, as well as more resilient utility infrastructure, due to the accelerated pace of urbanization (UN-Habitat 2020). With limited government attention, local initiatives are assuming greater importance in these contexts, although they frequently lack the requisite human capacity and resources.

Smart Cities: No 'One Fits All' Solution

The interest in smart cities (also named knowledge city, sustainable city, intelligent city, ubiquitous city, digital city and information city) (Belaïd et al. 2024: 296) has grown since the 1990s (Petrucci & AlSheikh 2022), with corresponding efforts to develop sustainable urbanism concepts (Soderstrom et al. 2020). In literature, cities are defined as smart "when investments in human and social capital, traditional (transportation) and modern communication infrastructure fuel sustainable economic growth and a high quality of life, with a wise management of natural resources, through participatory governance" (Caragliu et al. 2009: 70). Traditionally, smart cities have focused on cloud computing; machine-to-machine communication; digital technology; smart devices and grids; energy-efficient urban infrastructure; and the integration of new technologies, such as the Internet of Things, artificial intelligence, 5G and Big Data (Ramli, Azizi & Thurairajah 2024). Ideally, such cities should improve the well-being of the individual, "and technology is just a tool that is used mainly to serve citizens" (Belaïd & Arora 2024: 298). In order to achieve such goals, smart cities should not only adapt to technological and digital solutions but should provide agile governance; advanced infrastructure such as clean and efficient transportation; sustainable resource management; comprehensive inclusive culture; and urban living aiming at providing social cohesion as well as vibrant economic growth (ibid: 305).

Across the WAAP region, smart city concepts have been integrated into the national development plans, with a specific regional focus on the GCC (see Table 1). Recently, Saudi Arabia and the UAE have incorporated smart city initiatives into their urban development strategies, launching numerous projects. In particular, NEOM's smart city project The Line in Saudi Arabia has raised tremendous international awareness as well as spurred controversial debates. With estimated costs of USD 500 billion, The Line is planned to originally extend for 170 km with a height of 500 meters, including an automated transportation system with air taxis and a high-speed rail network. It has also been announced that the city would run only on renewable energy (Jaat 2023). There has been slow progress in many Saudi initiatives, alongside announcements that some projects are expected to be downgraded (Fattah and Martin 05.04.2023). But via a new smart city strategy announced in 2022, Saudi Arabia aims to introduce 50 smart city initiatives – including smart parking, environmental preservation, waste disposal systems, housing management and urban planning – by 2030 (Abi Farraj 23.12.2023).

Even earlier than Saudi Arabia, the UAE notably became a leader in smart city development, with significant initiatives such as Abu Dhabi's Smart Solutions and Dubai Smart City. Established in 2006, Abu Dhabi's Masdar City was

framed as the world's first carbon-neutral city with a total investment volume of USD 20 billion (Flint 14.02.2020), including a smart transportation system consisting of a driverless personal rapid transportation system, autonomous shuttle services and the first electric eco-buses. Other regional examples for new urban development initiatives include Lusail City in Qatar; Kuwait's Saad Al-Abdullah smart city which was introduced in 2019 and is estimated to cost USD 4 billion; and the Duqm Special Economic Zone in Oman. In Bahrain, ten smart cities are planned to be developed. Iran has implemented a plan for the integration of smart city technology as part of the Smart Tehran program, which was awarded the World Smart City Award in 2019. In some countries, such as the UAE, projects include environmentally sustainable foci, including waste reduction, sustainable construction, energy efficiency and renewable energy, water management, rain-harvesting and community engagement, incorporating concepts such as the circular economy based on the 4R principles (reduce, reuse, recycle and remove) (Hasan 2023). Notably, sustainable awareness has also become part of the popular lifestyle of younger generations in the region.

Table 1: Smart City initiatives in the GCC region

Country	**Development plan**	**National strategy**	**Initiatives and programs**	**Focus**
Bahrain	Bahrain Economic Vision 2030	National Development Strategy	National eGovernment Strategy	Infrastructure, innovation, quality of public services, business environment, e-government networks
Kuwait	New Kuwait 2035	Kuwait National Development Plan	eGovernment Program	Advanced IT infrastructure, human capital, effective public services, sustainable diversified economy
Oman	Vision 2020; Vision 2040	National Program for Enhancing Economic Diversification	Oman	IT industry development, society, e-governance services
Qatar	National Vision 2030	National Development Strategy	Qatar e-Government 2020; Lusail Smart City Vision	Efficiency of public services, quality of life, digital economy

Country	Development plan	National strategy	Initiatives and programs	Focus
Saudi Arabia	Vision 2030	National Transformation Program	Smart Cities Program	Quality of public services, advanced digital infrastructure, digital economy platform
UAE	UAE Vision 2021	UAE National Agenda 2021	National Innovation Strategy; Dubai Smart Government; Smart Dubai 2021; Abu Dhabi Economic Vision 2030	Quality of Life standards, e-government, energy, high-tech sustainable economy, digital transportation and environment

Source: Elian & Kisswani 2024: 350.

Despite the growing tech-optimistic euphoria in promoting smart sustainable cities (Harrison and Donnelly 2011) as the future solution for urban development, significant challenges persist in achieving sustainable urban development. Focusing on technology, smart cities often exacerbate social inequalities and isolation of marginalized social groups instead of emphasizing accessibility, affordability and acceptability. Due to hot temperatures, walkability has often been neglected in recent urban planning, with WAAP cities largely designed for vehicles rather than pedestrians. Deficiencies in public transportation, green spaces, affordable housing and access to recreational areas present serious obstacles and significantly impact on local populations. This is despite the fact that green spaces (in Sana'a, for example) fulfill a multitude of societal roles. Extending beyond their environmental, ecological and economic functions, they also serve as vital social and aesthetic resources (AlShawesh & Al-Abyad 2022).

Additionally, shortages in e-governance, administrative capacities, expertise and human capital development further hinder sustainable urban development. Overreliance on digital technologies that often require vast quantities of critical materials (David & Koch 2019: 4422) further challenges the hyper-optimism regarding smart cities. The high demand for these critical materials puts additional pressure on the local communities located near critical resources-rich regions in Africa or Asia, thus contributing to their social and economic exploitation (Sambidge 24.07.2023). For instance, giga projects such as The Line are in dire need of critical minerals such as platinum, lithium, nickel, cobalt and zinc to manufacture electric vehicles, wind turbines, solar panels and other technologies central to clean energy transition (Dou 2023). Surrounding flora, fauna and other ecosystems are also impacted by such giga projects (Yusuf and Abdulmohsen 2023: 608). The current 'techno-optimism'

could divert attention away from existing social and technological challenges by presenting technology as a 'silver bullet' that can solve climate change-related problems: "This unwavering faith in the transformative capacity of technology to halt the climate crisis has overlooked the behavioral, cultural, and social factors that affect our economies, lifestyles, and climate action pathways" (Moneer 04.06.2024). Furthermore, such smart cities could become non-places and ghost towns, as their architectural design does not fit the daily living conditions of local populations and neglects the social fabric and the cultural connectiveness of inhabitants (Lee 2022).

Cities like Riyadh face escalating car traffic and inadequate infrastructure and public services (Alamoudi 2023). Due to the perception of the public bus system as inefficient, slow and of limited coverage, many residents rely on cars, resulting in chronic traffic congestion (Al-Mulhim 25.03.2013). Transportation solutions in many Saudi cities have often focused on mobility rather than on accessibility, resulting in urban sprawl. The Riyadh metro project, a multi-billion-dollar initiative started in 2014, has faced repeated delays and is not yet operational (Nereim & Martin 05.04.2021). Metro stations are often poorly connected to bus lanes and the lack of park-and-ride options limits regular access to public transportation. Moreover, car-sharing options, cycling lanes and other smart transportation systems (STS) – such as real-time traffic updates, on-demand transportation, smart ticketing and smart parking systems – are still limited. In Doha, the metro mainly serves expatriates and Qatari nationals continue to rely on cars, while gentrification in certain districts displaces long-term residents due to rising living costs. Iran is facing significant obstacles in the implementation of STS. The sanctions regime, in conjunction with restricted access to technology and knowledge available abroad, contribute to this challenge. The existing infrastructure in Iran is outdated, presenting another significant challenge to the integration of advanced systems. Furthermore, there remains a degree of skepticism toward new technologies among the general public. A comparable scenario is unfolding in Iraq, and the prevailing political instability there is a significant challenge in securing the financial resources necessary for such initiatives. In Yemen, the ongoing conflict has resulted in significant challenges to the improvement of infrastructure. Destruction due to the war as well as a surge in checkpoints along conflict lines have led to an increase in transportation costs and a reduction in the mobility of people and goods (Al-Tairi 17.03.2022).

Nevertheless, countries such as Saudi Arabia have introduced a number of initiatives to improve their STS. For instance, the Saudi Ministry of Transport and Huawei, a Chinese provider of information and communication technology infrastructure and smart devices, have signed a memorandum of understanding to enhance future transportation and technology adoption in the

transportation and logistics sector by exploring the prospects of utilizing advanced technologies such as 5G, artificial intelligence and Big Data. Additionally, the Royal Commission for AlUla launched an autonomous pod vehicle service early in 2022 to introduce local zero-emission mobility options (Anwar & Oakil 2024).

Governmental coordination among various stakeholders is often hampered by siloed approaches, mismanagement and self-serving motivations of urban developers, rather than a focus on the population's needs. Marginalized groups, such as migrants (Wiedmann & Salama 2019) or those in poor or informal urban areas, are frequently excluded from sustainable urban development initiatives (Satterthwaite 2018). While top-down urban planning does allow for rapid implementation, it can also stifle local initiatives, community involvement and urban development expertise, thus undermining inclusivity and competition. Some projects prioritize elitist marketing objectives and short-term gains to meet governmental key performance indicators (KPIs), but neglect long-term sustainability and exclude non-elite individuals from engagement.

Policymakers and opinion leaders often promote environmentalism and green urbanism for public relations and to attract foreign investment, rather than genuinely pursuing substantive change. The influence of US-style urbanism characterized by a lack of walkability and accessibility to parks and gardens has led to a diminished awareness of cultural heritage as well as a disconnect from traditional urban spaces and identities (Al-Azm 2023). Critics argue that some megacity projects prioritize over-ambitious, dystopian sci-fi architecture over practical needs and fail to incorporate local participation or independent creatives, resulting in inflexible and ineffective designs.

Growing Awareness for Sustainable Urban Development Across the Region

Despite such endemic challenges, stakeholders from various sectors in the WAAP states – including research, business, architecture, engineering, art, culture and local community initiatives – are embracing a multidisciplinary approach to tackle the complexity of sustainable urban development. The Tafahum wa Tabadul initiative is designed to address this issue by identifying common regional challenges and exemplary practices, with the objective of fostering enhanced regional dialogue and exploring avenues for closer cross-regional collaboration on sustainable urban development. As part of

this project, CARPO implemented two workshops addressing the concept of healthy urbanism in the region. Other concepts such as placemaking (Project for Public Spaces 2007) and the intricate connection between modern urban landscapes and traditional senses of belonging are increasingly featured in regional identity policies (Hoffmann 07.08.2024). Additionally, there is a notable trend at the local level to integrate urban livability and sustainability, promoting green urbanism as a crucial aspect of future urban planning.

Cultural entrepreneurs, artists and start-ups are actively engaged in community projects focused on cultural heritage, while educational programs are fostering environmental awareness and social sustainability. This highlights the growing importance of education for sustainable development (ESD) (UNESCO). Concurrently, the idea of 'healthy urbanism' is gaining traction, presenting cities as spaces for well-being and quality of life. Urban populations need easy access to neighborhood parks including available seating, plants, shading devices, lighting, water elements and maintenance (Almohandes & Mohamed 2022). Public gardens, sports facilities, entertainment options, public transportation and community-centered activities also enhance social resilience and establish sustainable economic models amidst ongoing economic diversification.

One promising approach to integrating these elements is to situate them within the context of the playground, where ESD can be embedded with the aim of creating a better understanding and motivation for an environmentally conscious conduct to serve the future of one's children (Fathaddin & Winkel). In this regard, the concept of healthy urbanism is based on a holistic perspective, including equity and inclusion, interconnecting spatial and temporal dimensions as well as the availability of healthcare systems, accessible and affordable housing or the reduction of pollution and other global environmental harms (e.g. biodiversity loss and resource depletion) (Floater et al. 2014; Costello 2009). Oftentimes, however, urban development features hedonic rather than eudaimonic elements, focusing more on short-term happiness rather than human development and well-being (Dodge et al. 2012: 223).

Ongoing Challenges for Regional Cooperation in Sustainable Urban Development

Despite the fact that local and national initiatives on sustainable urban development are becoming more prominent across the WAAP countries, comprehensive platforms for dialogue and exchange are lacking. Cities across the

WAAP face similar challenges, yet there is a lack of mutual understanding and collective effort in addressing issues like urban accessibility and climate action. Enhancing cross-border collaboration could yield synergistic and mutually beneficial outcomes. These initiatives could be particularly important for the restored diplomatic relations between Iran and Saudi Arabia. A long-term exchange could strengthen trust between the countries and promote interregional dialogue. Enhanced Saudi-Iranian cooperation in sustainable urban development could also reduce the possibility of an escalation of conflict at a time of multiple global crises. This can be achieved by exchanging knowledge and expertise on sustainable urban development; establishing academic exchange programs and training courses; organizing exhibitions for WAAP artists that focus on urban identities and green spaces; initiating institutional city partnerships; and creating online platforms for urban stakeholders to promote cooperation.

Despite traditional practices in WAAP societies for coping with harsh weather, community initiatives often lack awareness of such traditional techniques and fail to connect with potential partners in the region. By recognizing the importance of sustainability as a fundamental Islamic principle, historical concepts can be revived at social, cultural, technical and political levels to smartly adapt to current climate conditions. The prominence of Islamic environmentalism presents a unique opportunity, as the preservation of nature is a fundamental tenet repeatedly emphasized in the Qur'an. Islamic principles that promote serving the public interest and protecting life from harm advocate for human-centred development that meets basic needs and reduces the ecological footprint (El Omrani et al. 2021). Protecting national resources, conserving urban heritage and reconfiguring traditional water systems offer additional smart solutions to contemporary challenges. Additionally, integrating religious and commercial spaces can create flexible, hybrid urban spaces that foster social belonging and cohesion. Art and cultural initiatives should balance promoting tourism and preserving local identity, using urban spaces as platforms for national identity construction and cultural belonging, reinforcing the idea that cities are spaces for cultural diversity.

Implementing initiatives such as hackathons, workshops, artist residency programs and mentorship initiatives can help WAAP municipalities promote sustainable urban design, architecture and youth empowerment within the framework of healthy urbanism. Transcultural and transnational initiatives can enhance inter-WAAP cooperation in sustainable urban development by facilitating know-how transfer, raising public awareness and fostering collaboration in administrative, engineering, infrastructural and educational matters. Organizing summer schools, training courses and educational exchange programs for students from the region; introducing cross-border city partnerships; and

developing joint concepts to address climate change and UHI can create concrete opportunities for a comprehensive regional sustainable urban development. Urban forestry and the construction of sunlight-absorbing roofs are existing options to absorb CO_2, release oxygen and fresh air and provide a cooling effect (Aburuzaiza et al. 2022: 225).

However, WAAP urban municipalities currently operate mostly in isolation and with insufficient technical knowledge. New partnerships at both non-governmental and governmental levels among WAAP urban administrations, universities, non-profit organizations, health experts, start-ups and artists could overcome such silo thinking and increase awareness of shared challenges in sustainable urban development. By introducing concrete actions on a local and regional scale, the growing obsession for technological smart city solutions could be complemented with social and community-centred efforts that do serve the needs and requests of urban populations across the WAAP region. Urban planning and the design of giga projects are mainly driven by the respective WAAP governments and are thus initiated on a top-down level. On the one hand, in some WAAP countries, urbanism has been integrated into the general modernization and diversification agendas, as represented by the developmental visions in the GCC countries. Spearheaded by state leaders, those agendas are run by the respective governmental agencies and institutions and thus provide an instrument of state-controlled, socio-economic development. On the other hand, top-down approaches hamper chances for closer cross-border cooperation as they mainly address the national arena and technological solutions rather than regional collaboration. In particular, GCC countries compete with each other in developing smart city solutions, as seen with NEOM in Saudi Arabia or Masdar in the UAE. Coordination between different stakeholders is limited. Furthermore, the challenge of mismanagement prevails. Here, the top-down approach provides opportunities for quick implementation and project realization; but conversely, the lack of close connection to national decision-makers limits participation of local initiatives, communities or urban development experts and undermines inclusivity. As well, some urban planning projects are not prioritizing sustainable aspects but are mainly driven by elitist marketing aspirations to create “something new and shiny” in order to achieve certain governmental KPIs. Particular giga projects, such as The Line in Saudi Arabia, provide interesting insights into future urban development in terms of innovation and people-to-people connectivity, but concrete outcomes still remain uncertain.

Against this backdrop, closer regional cooperation in sustainable urban development could provide an opportunity to exchange knowledge and discuss long-term solutions in terms of technological innovation and social acceptance. Such a partnership model also provides a chance for de-escalation and

regional securitization as well as improved business and economic cooperation. Despite current existing differences, collaboration can be based upon the similar challenges urban spaces across the region face: a lack of public transportation; affordable housing; air pollution; rising sea levels; UHI; lack of green spaces; access to blue spaces; non-integration of local communities into urban planning; lack of accessibility to recreational and entertainment areas; movability and walkability; as well as a lack of childcare. Security and safety as well as livability and accessibility of urban spaces are thus needed to contribute to individual well-being and collective mental health and provide impetus for regional security and stability.

Recommendations

Two workshops were conducted with experts in the field of healthy urbanism as part of the Tafahum wa Tabadul project, as previously described. From these discussions, the following recommendations can be derived for policymakers from the GCC, Iran, Iraq and Yemen, as well as for NGOs, civil society actors, regional and international networks and educational and research institutions. These recommendations aim to foster enhanced regional dialogue and explore avenues for closer cross-regional collaboration on sustainable urban development:

To Regional Policymakers

- **Promote Regional Collaboration through Inclusive and Secure Urban Development:** Highlight best-case scenarios to demonstrate the benefits of regional collaboration, focusing on developing cities as platforms for human exchange, innovation hubs as well as centers of environmental resilience and shared economies. Cities should be accessible, affordable and welcoming to all, and also serve as drivers of regional security by preventing conflicts and violence. To achieve this, governmental strategies for advancing sustainable urbanization, climate change mitigation and adaptation, biodiversity protection and social cohesion must be integrated and coordinated. A secure and sustainable urban environment not only fosters regional stability but also attracts investment and promotes long-term economic growth.
- **Enhance Regional Initiatives and Networks with Cost Transparency:** Strengthen partnerships with regional organizations such as the Arab Urban Development Initiative (AUDI) or the Saudi Middle East Green Initiative

and leverage international networks like ICLEI to expand city partnerships across the region. These collaborations should not only promote sustainable urban practices and knowledge exchange but also prioritize the disclosure of direct and indirect costs associated with sustainable urban development, compared to common methods. Indirect costs, often overlooked, are crucial for evaluating the economic benefits of healthier urban environments. For instance, reductions in productivity due to high temperatures and their impact on supply chains can lead to significant economic losses. Transparent reporting on these factors can highlight the potential for cost reductions through increased productivity in healthier working environments, thereby strengthening the economic case for sustainable urban initiatives.

- **Integrate Historical Practices into Urban Planning:** Utilize historical, cultural and religious practices in urban planning to enhance sustainability and livability. Reviving traditional methods, such as Iran's water channels (*qanat*) or Arabian wind towers (*barajeel*), can offer smart, climate-adapted solutions to current urban challenges. In addition, religious and commercial spaces could be combined to create flexible and hybrid urban spaces for social belonging and togetherness (mixed-use concepts).

To Non-governmental Actors

- **Develop a Positive Narrative for Sustainable Urban Development:** Create compelling stories around green urbanism to encourage regional dialogue and cooperation. Ensure that these narratives are transparent and inclusive to avoid perceptions of greenwashing or elitist-driven initiatives. Reframe the narrative for sustainable urban development to align with the goals and motivations of the respective national policymakers.
- **Promote Sustainable Urban Development as a Driver for Economic Growth:** Advocate for sustainable urban planning as a key component in economic diversification and job creation. Highlight its role in attracting investments, fostering industries like cultural tourism and green technology and empowering woman and youth.
- **Facilitate Educational Programs and Exchanges:** Organize regional workshops, summer schools and scholarship programs to build trust and close knowledge gaps. These initiatives should target youth and emerging leaders to foster a new generation committed to sustainable urbanism.

To Regional and International Networks

- **Establish a Regional Steering Committee for Sustainable Urban Development:** Form a committee with representatives from across the region, possibly coordinated by the UN-Habitat Regional Office for Arab States (ROAS). This body can discuss common interests, share best practices and champion sustainable urban initiatives.
- **Identify and Empower Sustainability Champions:** Engage influential figures from politics, culture and business who are respected by local communities and political elites. These champions can raise awareness and advocate for sustainable urban development practices.
- **Incorporate Traditional Social Formats for Community Engagement:** Utilize *Diwaniyyas* and *Majalis*, which are respected and well-established social gatherings, to discuss everyday issues within the community. These gatherings provide a valuable platform to identify community needs and support the effective implementation of changes in urban development.

To Educational and Research Institutions

- **Strengthen Capacity Building and Knowledge Sharing:** Empower (young) talents with interdisciplinary skills through regional competitions, residential programs and workshops focused on developing innovative solutions for sustainable urban challenges. Focusing on ESD teaches greater environmental awareness, social and economic sustainability and sustainable development practices. This can help create green jobs, promote healthy urbanism and establish sustainable business models amid economic diversification. Encourage collaboration between regional experts to address local issues effectively and use social media as a tool for interdisciplinary communication to enhance knowledge transfer and engagement on sustainable urbanism.
- **Enhance Regional Educational Exchanges:** Promote interdisciplinary knowledge exchange among experts in sustainable urban development to build stronger networks and foster a culture of collaboration across the region. These exchanges can also reach non-digitized communities, ensuring inclusivity in education efforts.
- **Create a Shared Regional Database for Sustainable Urban Development:** Develop a comprehensive, virtual database that compiles significant information on regional initiatives, educational programs and local activities. This resource would support cross-border collaboration and provide a foundation for interdisciplinary research and practice.

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About CARPO

CARPO is a Germany-based think tank with a focus on the Orient that works at the nexus of research, consultancy and exchange. Our work is based on the principles of partnership, inclusivity and sustainability. We believe that a prosperous and peaceful future for the region can best be achieved by engaging the creative and resourceful potential of all relevant stakeholders. Therefore, CARPO opens enduring channels for trustful dialogue and interactive knowledge transfer.

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The CARPO Sustainability Series aims to contribute to the slowly growing but still quite marginal research on sustainability in the Middle East and North Africa. As this region's high vulnerability to the severe effects of climate change and global warming represents one of the greatest challenges of this century, it is imperative to tackle this field from a holistic perspective. Sustainability comprises aspects of social (e.g. justice, equality, participation, state-society relations); environmental (e.g. clean energy, pollution, waste, recycling, biodiversity); and economic sustainability (e.g. business engagement, training, education, diversification). Cross-cutting issues are highly diverse and interconnect a vast array of disciplines such as anthropology, politics, economics, sociology, environmental studies and history. Accordingly, this series will publish analyses in the form of CARPO Briefs, Reports or Studies by academics and practitioners from various fields to provide multidisciplinary analyses on key themes of sustainability.

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The Tafahum wa Tabadul project has been implemented since 2021 in partnership with the Gulf Research Center Foundation (GRCF). It pursues the goal of generating better understanding (tafahum) among regional stakeholders and initiate operational exchange (tabadul) on common interests in West Asia and the Arabian Peninsula, a region that subsumes the six GCC states plus Yemen, Iraq and Iran. Tafahum wa Tabadul builds on outcomes of an earlier initiative called Tafahum (2018–2021), which developed a thematic fundament for multi-track regional dialogue in West Asia and the Arabian Peninsula. The current phase of the Tafahum wa Tabadul project is funded by the Swiss Federal Department of Foreign Affairs.

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