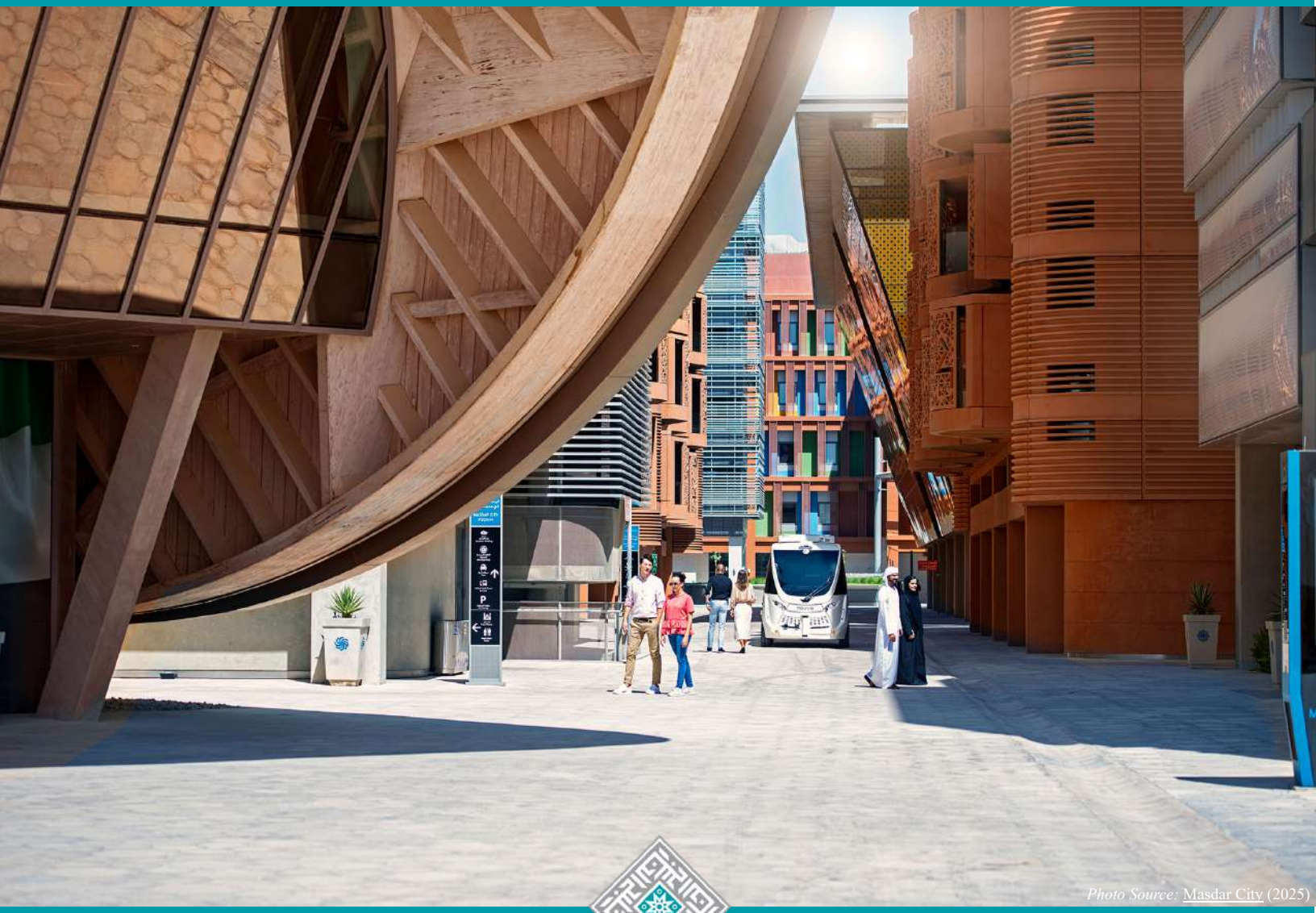


Photo Source: Masdar City (2025)

Gulf Research Center
Knowledge for All

Sustainable Cities in the Gulf: The Case of the GCC Countries

Mohamed Abdelraouf *
March 2025

Sustainable Cities in the Gulf: The Case of the GCC Countries

Experts predict that the world's urban population will double by 2050 as more and more people are flocking to the cities. The Arabian Gulf region is no exception, as tremendous changes have taken place over the past 30 years, especially in terms of economic transformation and urbanization. Gulf cities are growing rapidly, with many rural residents either migrating to or commuting to work in the cities. In addition, the region is well known for its many mega-projects and the subsequent, over-the-top carbon footprint they leave behind. To address this, there has been a growing interest in the promotion, planning, and building of sustainable cities in the Gulf region.

As the Gulf region becomes more urban, city development needs to adapt to handling the challenges that come along with it, including meeting citizens' needs and aspirations for a continued high quality of life, reduced pollutants, increased efficiency, better services, employment, and an affordable cost of living. As climate change becomes a growing universal concern, countries have conducted initiatives and formulated policies to protect the environment and promote a greener planet. Sustainable cities are a crucial way to achieve this goal without compromising urban development, as they address social, economic, and environmental impacts through urban planning and city management, as well as incorporate eco-friendly alternatives into urban infrastructure.

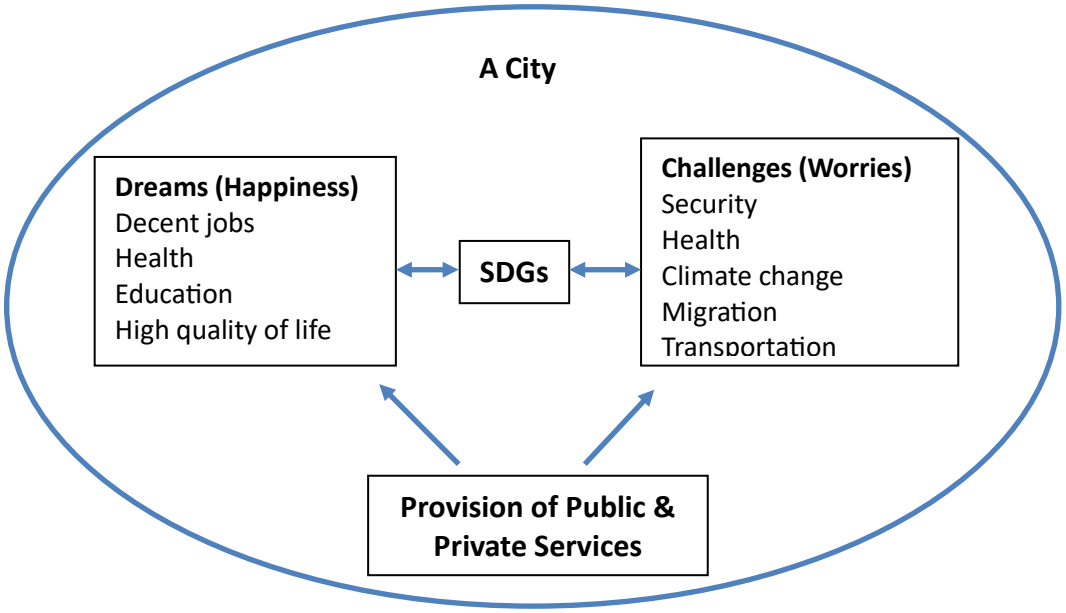
The importance of these so-called sustainable cities is further underlined by the fact that the universal agenda for the Sustainable Development Goals (SDGs), specifically SDG goal no. 11, call on making "cities and human settlements inclusive, safe, resilient, and sustainable" (UN, 2015). There can be little doubt that a sustainable city possesses numerous advantages for emerging countries to consider, for instance, reducing costs, providing a cleaner and more vibrant environment, embracing biodiversity, enhancing water management and food production, and contributing to overall public health.

The Concept of a "Sustainable City"

Recently, many terminologies around cities have emerged in literature to identify sustainable, smart, future city concepts. These include Green Cities, Zero Carbon Cities, Ecological/Clean Cities, and Intelligent/Knowledge Cities, all boiling down to the same idea: Smart and sustainable cities. The term "sustainable city" was included in the "Agenda 21" outcomes of the United Nations Conference on Environment and Development in 1992, which discussed how the environmental, social, and economic factors should be part of the sustainable city's framework.

Cities, like people, face their own goals and challenges. In other words, on an individual level, residents of a city have dreams of how they want to live. These are hindered by certain challenges that are faced in any city, at any time or place, just as one is faced with worries about obstacles that might stop them from meeting goals. This idea is conceptualized in the figure below, which shows how SDGs can reconcile the "dreams" of a city with its "worries."

Figure 1: SDGs and the Local Context of Any City



Source: Author

Sustainable Living and the GCC

Subject to the tremendous growth that has occurred in the Gulf region and given that sustainable cities are crucial for a developing society, GCC countries have begun to initiate several innovative plans to create a more sustainable environment in the region. Over the years, cities worldwide have become increasingly congested. It has been estimated that urbanization will increase by 600 million people by 2030, and more than 5.6 billion are expected to constitute the urban population by 2050. In the Gulf region, the urban population is expected to increase by 30% between 2020 and 2030 and to 90% by 2050. It has further been predicted that the Saudi urban population will increase from 83% to 90% between 2023 and 2030. Other parts of the region are following suit, as Dubai and Abu Dhabi have already emerged as megacities in the UAE, and the largest city in Qatar, Doha, makes up almost the whole population of the country, amounting to 2.38 million out of its 3.11 million people as of 2022.

On that note, it is vital for GCC countries to implement a sustainable criterion in order to alleviate damages that come as a result of this development. Creating a sustainable city would first require addressing existing issues in the region, such as climate change, insufficient public transportation, equitable and inclusive healthcare, and air and water pollution. With this in mind, emerging sustainable cities should be a priority within the region's development agenda.

The GCC countries are well aware of the importance of sustainable cities and have, fortunately, undertaken a number of initiatives to promote sustainable living and follow the sustainable city checkbook. Each GCC member country has integrated sustainable development and greener initiatives as part of their national visions and agendas and cooperates with international organizations to achieve this goal.

The drive for sustainable cities emerged in the transition from developing to smart civilizations, with technological innovations such as artificial intelligence, cloud computing, and big data. Throughout recent years, GCC countries, predominantly Saudi Arabia and the UAE, have integrated the concept of eco and smart cities and projects into sustainable development. These cities include Masdar City, Abu Dhabi (UAE), Neom (Saudi), Lusail City (Qatar), Saad Al-Abdullah City (Kuwait), and The Sustainable City Yiti (Oman). A brief look at three of these cities is provided below.

UAE: Masdar City

Located in Abu Dhabi, Masdar City is an innovative and sustainable community committed to evolving research and development and setting a standard for urban communities. The advanced city possesses a strong ambition to achieve a sustainable environment, which was passed down through the generations, making sustainability a long-lasting priority in the UAE.

Photo Source: Masdar City (2025)

Saudi Arabia: NEOM City

Saudi Arabia is developing futuristic, sustainable cities like NEOM, The Line, and Qiddiya, which integrate advanced technology and environmental sustainability principles. NEOM's plans are very ambitious, incorporating cutting-edge technology; however, the investment costs are very high for a city in a desert, and there have been several delays and cutbacks from original planning, such as a reduction to the length of The Line. Thus, it is worth identifying city priorities in terms of sustainability and high quality of life in order to attract residents and tourists.

Photo Source: NEOM The Line (2025)

Qatar: Lusail City

Qatar's second-largest city after Doha, Lusail City extends 38 square kilometers, housing four exclusive islands and 19 multi-purpose districts expanding from residential to entertainment and commercial spaces. While being the hub for prime entertainment, sports, and more, Lusail City aims to preserve greenery and reduce the carbon footprint by creating walkways, sports fields, bicycle lanes, etc. These also contribute to sustainable living and promote the health and well-being of the public.

Photo Source: Lusail (2025)

Blending the Old with the New

Across the region, cities and municipalities face a wide range of challenges as businesses and citizens demand better, more efficient, and more flexible services. Yet, in order for the region's sustainable cities to be successful, they have to take into consideration the needs of the local community as well as regional climatic conditions.

To address urbanization challenges in a sustainable manner, particularly in the GCC countries, the complete use of modern technology is not recommended. Understanding and respecting local conditions, cultures, and traditions is crucial to developing systems that will be accepted and effective in the long run. In fact, traditional knowledge and practices in old urban districts, buildings, and transportation and irrigation systems can often deliver faster, more reliable, more affordable, and more environmentally-friendly services for citizens and can even double as tourist attractions. However, in modern cities and most cities across the GCC, municipalities ought to adopt a mix of both traditional and modern technological innovations.

Finally, citizens' participation is integral to finding and implementing innovative and creative strategies or policies that support sustainability in their countries. Authorities of these smart cities should keep their citizens informed of the current projects and invite them to give feedback on those projects. Seoul, for instance, represents a perfect example of this, where policymakers and city developers have put together an online system that allows its citizens to share and discuss their ideas with the city's authorities regarding the suitable policies of a specific issue. This public engagement enhances awareness and ensures that policies and projects that are implemented will suit the needs of the community, thus contributing to their effectiveness and longevity.

**Dr. Mohamed Abdelraouf is the Director of the Environmental Security and Sustainability Research Program at the Gulf Research Center.*

Gulf Research Center
Knowledge for All

مركز الخليج للأبحاث
المعرفة للجميع

Gulf Research Center Jeddah (Main office)

19 Rayat Alitihad Street
P.O. Box 2134
Jeddah 21451
Saudi Arabia
Tel: +966 12 6511999
Fax: +966 12 6531375
Email: info@grc.net

Gulf Research Center Riyadh

Unit FN11A
King Faisal Foundation
North Tower
King Fahd Branch Rd
Al Olaya Riyadh 12212
Saudi Arabia
Tel: +966 112112567
Email: info@grc.net

Gulf Research Center Foundation Geneva

Avenue de France 23
1202 Geneva
Switzerland
Tel: +41227162730
Email: info@grc.net

Gulf Research Centre Cambridge

University of Cambridge
Sidgwick Avenue,
Cambridge CB3 9DA
United Kingdom
Tel:+44-1223-760758
Fax:+44-1223-335110

Gulf Research Center Foundation Brussels

Avenue de
Cortenbergh 89
4th floor, 1000
Brussels
Belgium

@Gulf_Research Gulfresearchcenter gulfresearchcenter gulfresearchcenter

www.grc.net

مركز الخليج للأبحاث
المعرفة للجميع