



هيئة تطوير منطقة المدينة المنورة
Al Madinah Region Development Authority

المركز الحضري
URBAN OBSERVATORY

AL MADINAH CITY VOLUNTARY LOCAL REVIEW 2023

LOCALIZING THE SUSTAINABLE
DEVELOPMENT GOALS



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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ



His Royal Highness Prince

Faisal bin Salman bin Abdulaziz

Governor of Al Madinah Al Munawara Region



His Royal Highness Prince

Saud bin Khalid Al-Faisal

Deputy Governor of Al Madinah Al Munawara Region

Opening Statement

In September 2015, the United Nations for Sustainable Development Summit adopted a new framework to guide global development efforts by 2030, entitled “Transforming our world: the 2030 Agenda for Sustainable Development”. In line with Saudi Arabia’s commitment to this Agenda and its 17 goals which coincide with Islamic values, Kingdom’s Values and constants, and the Kingdom’s VISION 2030 and its executive Programs, In continuation of the national efforts in the Voluntary National Review (VNR) on its First Edition in 2018 entitled “Towards the sustainable development of the Kingdom of Saudi Arabia” by the Ministry of Economy and Planning (MEP), Al Madinah Region Development Authority (MDA) presents the Voluntary Local Review (VLR) of Sustainable Development Goals (SDGs) in Al Madinah.

The VLR aims to evaluate Al Madinah’s current state of sustainable development and to assess them to the national and international trends, Enriching the localizing of the SDGs in collaboration with the government agencies, the private sector, the non-profit sector, and Al Madinah’s civil society.

This VLR covers 9 Goals of the SDGs: from Goal 1 to Goal 8, and Goal 11. The report comprises Al Madinah’s sustainable development state in many fields of such as health and education statuses, infrastructure, environment, housing, and transport, and others.

In collaboration with success partners across the region, we expect accomplishing the SDGs targets at the local level through ensure jobs, prosperity and development without burdening land and resources, and pollution reduction. In compatibility with national efforts and initiatives to achieve sustainable and inclusive development.

Eng. Fahad bin Mohammed Al-Buliheshi

CEO

Al Madinah Region Development Authority (MDA)



هيئة تطوير منطقة المدينة المنورة
Al Madinah Region Development Authority

Table of Content

CHAPTER 1

INTRODUCTION: VOLUNTARY LOCAL REVIEW OF THE SDGS, VISION 2030 AND OTHER AL	
MADINAH REGIONAL INITIATIVES	1
1.1 The Sustainable Development Goals	4
1.2 The SDGs And The Saudi Vision 2030, And Al Madinah Regional Initiatives	6
1.3 The Al Madinah City Voluntary Local Review (VLR) – Content And Methodology	10
1.3.1 Introduction	10
1.3.2 Content And Structure Of The Al Madinah City Voluntary Local Review	10
1.3.2.1 Lessons learned from the first saudi voluntary national review of 2018	10
1.3.2.2 Lessons learned from past voluntary local reviews by other cities and regions	13
1.3.2.3 Content of the Al Madinah VLR: organization of goals within chapters	14
1.3.3 Data And Analytical Methodology	18
1.4 References Chapter 1 Introduction.....	21

CHAPTER 2

2.1 Introduction: SDG11 Sustainable Cities And Communities	29
2.2 SDG 11.1: Affordable Housing For All	30
2.2.1 Type Of Housing Tenure.....	31
2.2.2 Housing Affordability.....	33
2.2.2.1 Housing ownership affordability: housing ownership price to annual income	34
2.2.2.2 Housing rental affordability: housing monthly rent to monthly income	36
2.2.2.3 Land price key for housing affordability.....	37
2.2.3 Safe And Decent Houses: Affordable Housing Goes Beyond Housing Price And Income	38
2.2.4 Housing Finances: Mortgage Key Driver Of Home Ownership.....	40
2.2.5 Partnership For The Provision Of Affordable Housing	41
2.2.6 Impact Of COVID-19 In The Housing Industry.....	42
2.2.7 Technology And Innovation	43
2.2.8 Saudization Of The Housing Sector For Affordable Housing Delivery.....	43
2.3 SDG11.2: Sustainable And Inclusive Public Transport System	44
2.3.1 Urban Transport In The Vision 2030 And The SDGs	44
2.3.2 Promoting The Public Transport: Al Madinah Integrated Transportation Infrastructure	45
2.3.3 Promoting Safe Pedestrians	47
2.3.4 Planning For A Connected Madinah City – Density, Compactness, Mixed Land Use And Complete Street Network.....	48
2.3.5 Promoting Smart Urban Mobility	51

2.3.5.1	Intelligent transport system (ITS).....	51
2.3.5.2	Smart mobility solution	51
2.4	SDG 11.3: Urbanization, Land Use An Urban Planning	52
2.4.1	Suburbanization Of Al Madinah Urban Growth: Extension, Inclusion & Leapfrog.....	52
2.4.2	Planning, Designing And Managing For Sustainable Al Madinah City	55
2.4.3	Densification Of Low Dense Areas: Saudi Policy Strategy	57
2.4.4	Al Madinah City Region – National Spatial Strategy (NSS).....	59
2.5	SDG11.6: Solid Waste Management And Air Quality	62
2.5.1	Solid Waste Management	62
2.5.2	Air Quality	63
2.5.2.1	Annual mean levels of fine particulate matter (e.g., PM2.5 and PM10) in cities (population weighted).	64
2.5.2.2	Disasters adaptation and mitigation	65
2.6	SDG 11.7: Sustainable, Green, And Safe Public Spaces	68
2.7	SDG 6: Ensure Availability And Sustainable Management Of Water And Sanitation.....	71
2.7.1	Access To Safe And Affordable Drinking Water	71
2.7.2	Water Resources And Management	73
2.7.3	Access To Adequate And Equitable Sanitation And Hygiene	74
2.8	SDG 7: Ensure Access To Affordable, Reliable, Sustainable And Modern Energy For All	76
2.8.1	Target 7.1 By 2030, Ensure Universal Access To Affordable, Reliable And Modern Energy Services.....	76
2.8.2	Target 7.2 By 2030, Increase Substantially The Share Of Renewable Energy In The Global Energy Mix....	77
2.9	References Chapter 2 Sustainable Cities And Communities: Goal 11, Goal 6 And Goal 7.....	78

CHAPTER 3

3.1	Goal 1 End Poverty In All Its Forms Everywhere.....	86
3.1.1	Introduction	86
3.1.2	Household Economic Living Conditions	86
3.1.3	Ending Poverty In All Its Forms Everywhere	88
3.1.4	Conclusion: Key Findings And Recommendations	92
3.2	Goal 8 Promote Sustained, Inclusive, And Sustainable Economic Growth, Full And Productive Employment And Decent Work For All.....	93
3.2.1	Introduction: Urban Economy In Al Madinah Within The Sustainable Development Goals And The Vision 2030 And Its Programs	93

Table of Content

3.2.2	Al Madinah Religious, And Socio-Economic Resource Advantages	95
3.2.2.1	Religious advantages	95
3.2.2.2	Socio-economic resources	95
3.2.2.3	City-region structures	97
3.2.3	Macro-Economic Indicators Of The Al Madinah Urban Economy	98
3.2.3.1	Gross domestic production and economic sector contribution	99
3.2.3.2	Economic diversification and sectoral contribution to the gross value added (gva)	100
3.2.3.3	Al Madinah regional contribution to the national GDP	102
3.2.4	Labor Force Participation And Employment	103
3.2.4.1	Labor force participation	104
3.2.4.2	Labor force participation across cities of Al Madinah region	105
3.2.4.3	Saudization of the labor market	106
3.2.4.4	Enabling private sector and attracting foreign investments	106
3.2.5	Unemployment	107
3.2.5.1	General unemployment	107
3.2.5.2	Youth Non-employment (Not in employment, education, or training)	109
3.2.5.3	Informal employment	110
3.2.6	Conclusion: Key Findings And Recommendations	111
3.3	References Chapter 3: Ending Poverty (Goal 1), And Promoting Economic Growth And Decent Employment (Goal 8).....	112

CHAPTER 4

4.1	Goal 2 End Hunger, Achieve Food Security And Improved Nutrition And Promote Sustainable Agriculture	118
4.1.1	Introduction: Social Development In The KSA Vision 2030 And The SDGs	118
4.1.2	Eradicate Hunger: Levels And Trends	119
4.1.3	The Kingdom Of Saudi Arabia'S Programs And Initiatives To Eradicate Hunger	119
4.2	Goal 3 Ensure Healthy Lives And Promote Well-Being For All At All Ages.....	121
4.2.1	Introduction	121
4.2.2	The Kingdom Of Saudi Arabia'S Programs And Initiatives For Good Health And Well-Being	122
4.2.3	Health Indicators: Levels And Trends.....	123
4.2.3.1	Infant and under-five mortality:.....	123
4.2.3.2	Maternal mortality	123

4.2.3.3 Life expectancy at birth	124
4.2.3.4 Immunization.....	124
4.2.3.5 Adequacy of health service components	124
4.2.3.6 Percentage of population (15 years and older) smoking	127
4.2.3.7 Impact of the COVID-19 pandemic	128
4.2.4 Conclusion And Recommendations.....	128
4.3 References Chapter 4: Ending Hunger (Goal 2) And Ensuring Healthy And Well-Being (Goal 3)	130

CHAPTER 5

5.1 Goal 4. Ensure Inclusive And Equitable Quality Education And Promote Lifelong Learning Opportunities For All	133
5.1.1 Introduction	133
5.1.2 Completion Of Middle School.....	134
5.1.3 Higher Education Certificate	135
5.1.4 University Degree.....	136
5.1.5 Literacy	138
5.2 Goal 5. Achieve Gender Equality And Empower All Women And Girls.....	140
5.2.1 Introduction	140
5.2.2 Women’S Empowerment In The National Transformation Program Of The Saudi Vision 2030.....	141
5.2.3 Progress Towards The Achievement Of Gender Equality Through Empowerment All Women And Girl.....	143
5.2.3.1 Women participation in the labor market	143
5.2.3.2 General unemployment among saudi women.....	144
5.2.3.3 Women education.....	145

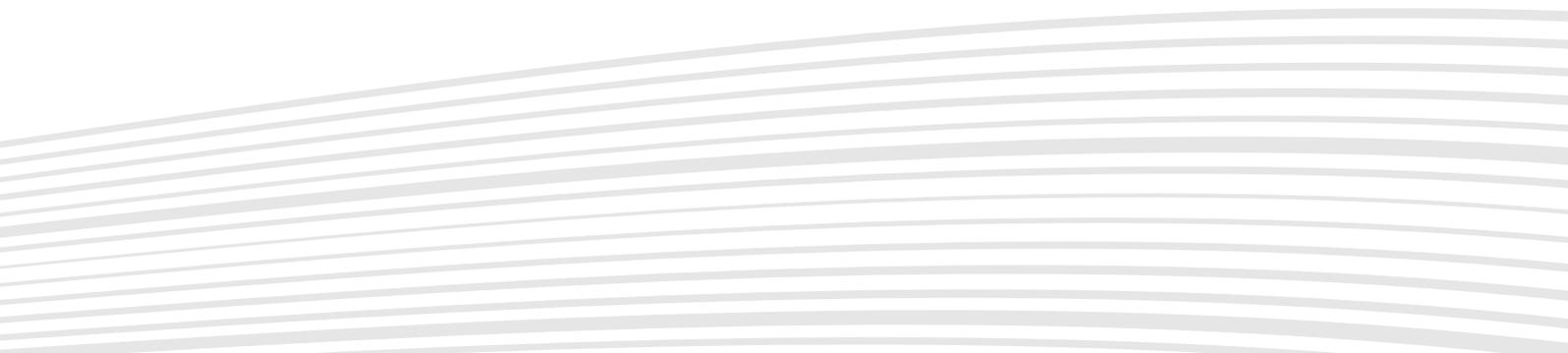


Table of Figures

CHAPTER 1

Figure 1.1: Sustainable Development Goals.	5
Figure 1.2 Vision 2030's themes and programs	6
Figure 1.3 Al Madinah proposed strategic objectives	8
Figure 1.4: Al Madinah Smart City Focus Sectors	9

CHAPTER 2

Figure 2.1 Goal 11 Make cities and human settlements inclusive, safe, resilient and sustainable	29
Figure 2.2 Housing Delivery Program	30
Figure 2.3 Type of housing tenure in Al Madinah region 2019	31
Figure 2.4 Demand and Supply Gap in major cities	32
Figure 2.5 Summary of Key factors affecting housing affordability: Demand and Supply	33
Figure 2.6 Housing ownership price to annual income	35
Figure 2.7 Housing rental affordability in Al Madinah region (monthly rent to monthly income)	36
Figure 2.8 synergies between the housing delivery and financing value chains	37
Figure 2.9 Al Madinah Proposed BRT system 2025	46
Figure 2.10 Multiple choices of access to services	51
Figure 2.11 Population growth and expansion, 1928–2015	53
Figure 2.12 Further land use plan (1462 AH)	56
Figure 2.13 Current distribution of population density	58
Figure 2.14 Al-Madinah Region map	60
Figure 2.15 Natural and topographic elements.....	66
Figure 2.16 the areas at risk of flooding in Madinah	67
Figure 2.17 Walking time to the public park inside the district	69

CHAPTER 3

Figure 3.1 Average monthly income among Saudi households, 2021	87
Figure 3.2 Mean Household incomes.....	88
Figure 3.3 Economic nodes and network.....	95
Figure 3.4 Natural resources.	96
Figure 3.5: Functional connectivity	97
Figure 3.6 : Economic sector contribution to GDP in Al Madinah region	100

Figure 3.7 Al Madinah Region GVA contribution by sector	101
Figure 3.8 Contribution of regions of the GDP (without crude oil and gas), 2017	102
Figure 3.9 GDP per capita, KSA, 2008–2020	102
Figure 3.10 Ratio of Population in the labor force, Al Madinah region, 2021	104
Figure 3.11 Labor Force Participation rate by region, (2021).....	104
Figure 3.12 Employment rates among Saudis by city of Al Madinah region, 2021	105
Figure 3.13 Proportion of employed people working full time	105
Figure 3.14 Unemployment rates , Al Madinah city , Saudis (Males and Females) during 2010-2021	108
Figure 3.15 Unemployment rates , by region	109
Figure 3.16: Youth non-employment rates	109
Figure 3.17 Informal employment of non-Saudis	110

CHAPTER 4

Figure 4.1 Efficiency of geographical distribution of health services	125
Figure 4.2 Health services performance efficiency	126
Figure 4.3 Percentage of population (15 years and older) smoking	127

CHAPTER 5

Figure 5.1: Percentage of Saudis 25-64 who completed middle school	134
Figure 5.2: Percentage of Saudis with higher education certificate	135
Figure 5.3: Percentage of the population 25-30 years old with university degree	136
Figure 5.4 Number of schooling years	137
Figure 5.5: Literacy rate (15-24 years) for Saudis	138
Figure 5.6: Literacy rate Male.....	138
Figure 5.7: Literacy rate Female	139
Figure 5.8 Female labor force participation, Al Madinah region (2016-2021)	143
Figure 5.9 Unemployment rates , Al Madinah city , Saudis (Males and Females) during 2010-2021	144
Figure 5.10 Literacy rate (15-24 years) for Saudis.....	145

CHAPTER 1

INTRODUCTION: VOLUNTARY LOCAL
REVIEW OF THE SDGS, VISION 2030
AND OTHER AL MADINAH REGIONAL
INITIATIVES





When adopting the 2030 Agenda, United Nations member States committed to working closely with local and regional governments on the implementation of the Sustainable Development Goals (SDGs). Since 2015, metropolises, small cities, regions and their associations have been actively localizing the 2030 Agenda, bringing the SDGs closer to the people and using the framework as a tool for planning and execution. [1]

As part of its follow-up and review mechanisms, the 2030 Agenda for Sustainable Development encourages member States to “conduct regular and inclusive reviews of progress at the national and sub-national levels, which are country-led and country-driven” (paragraph 79). Paragraph 89 of the 2030 Agenda calls on the civil society and other stakeholders, including local authorities, to report on their contribution to the implementation of the 2030 Agenda. [1]

In this spirit, local and regional governments are increasingly engaging in such sub-national reviews of SDGs implementation, also called Voluntary Local Reviews (VLRs). While the VLRs hold no official status, the process of undertaking these sub-national reviews is providing multiple benefits to the entities engaging in them and to SDGs implementation at large. These VLRs can also help to reinforce vertical coherence and complement and contribute to the national Voluntary National Reviews of SDGs implementation. [1]

The Al Madinah City Voluntary Local Review aims to report on the city’s localization and implementation process of the SDGs, how the city is working towards achieving the SDGs and its alignment to global and national programmes.

1.1 The Sustainable Development Goals

In September 2015, the United Nations Sustainable Development Summit adopted a new framework to guide development efforts between 2015 and 2030, entitled “**Transforming our world: the 2030 Agenda for sustainable development**”. [2] The 2030 Agenda “Sustainable development Goals - SDGs” seeks to combine two goals: meeting the needs of the present without compromising the ability of future generations to meet their needs. It is a transformative agenda that believes everyone deserve a dignified life and must live in

an environment that allows people to grow and flourish. The future we want includes cities that have opportunities for all, with access to basic services, energy, housing, transportation and more. With an increasingly urbanized world, this requires the attention of both local, regional and national governments and other stakeholders including the civil society and the private institutions to work towards achieving these goals. Overall, there are 17 goals that compose the SDGs. [2]

-  **Goal 1** End poverty in all its forms everywhere
-  **Goal 2** End hunger, achieve food security and improved nutrition and promote sustainable agriculture
-  **Goal 3** Ensure healthy lives and promote well-being for all at all ages
-  **Goal 4** Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all
-  **Goal 5** Achieve gender equality and empower all women and girls
-  **Goal 6** Ensure availability and sustainable management of water and sanitation
-  **Goal 7** Ensure access to affordable, reliable, sustainable and modern energy for all
-  **Goal 8** Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all
-  **Goal 9** Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation
-  **Goal 10** Reduce inequality within and among countries
-  **Goal 11** Make cities and human settlements inclusive, safe, resilient and sustainable
-  **Goal 12** Ensure sustainable consumption and production patterns
-  **Goal 13** Take urgent action to combat climate change and its impacts
-  **Goal 14** Conserve and sustainably use the oceans, seas and marine resources for sustainable development
-  **Goal 15** Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss
-  **Goal 16** Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels
-  **Goal 17** Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development



Figure 1.1: Sustainable Development Goals, Source: United Nations, 2015a. [2]

The 2030 Agenda recognizes that cities are hubs for ideas, commerce, culture, science, productivity, social development and much more. At their best, cities have enabled people to advance socially and economically through creation of jobs and providing opportunities. However, due to rapid urbanization many challenges exist when trying to maintain cities in a way that they continue to create jobs and prosperity without straining land and resources. The challenges cities face need to be overcome in ways that allow them to continue to thrive and

grow, while improving resource use and reducing pollution and levels of poverty. Recognizing the strong transformative effects of urbanization and the vitality of cities, the 2030 Agenda includes a dedicated stand-alone goal on sustainable cities and communities (SDG 11) to make cities inclusive, safe, resilient and sustainable. SDG 11 not only has strong linkages to all other SDGs, but also underpins them. Other goals of the SDGs are also relevant to cities and communities as expressed through their targets and indicators. [3]

1.2 The SDGs And The Saudi Vision 2030, And Al Madinah Regional Initiatives

Sustainability has been at the heart of Vision 2030 since its inception. [4] Vision 2030 is a vision for the future sustainability of the Kingdom of Saudi Arabia (KSA); with sustainability at the heart of its policy development, investment, planning and infrastructure development among others. [5] The Vision 2030 addresses the energy and climate challenges of today and inspires others in the building of a sustainable future. The KSA is now steering in a new era where it aims to reach Net Zero by 2060; among the wider Vision 2030 ambitions are to accelerate the energy transition, achieve sustainability goals, and drive a new wave of investment. [4,5]

Vision 2030 framework and other state programs and policies provide solid foundations for the implementation of the sustainable development agenda. An assessment of linkages between the Vision 2030 goals and the 17 SDGs conducted as part of the analytical work for this review found that a significant degree of alignment exists between the two frameworks. Adapting the SDGs to the realities of Saudi Arabia is work in progress and further alignment and integration is expected to be achieved as SDG targets and indicators become incorporated into the government’s detailed action plans and programs that are being developed and

refined under the Vision 2030 framework. [4,5]

The year 2021 marks the Vision’s fifth anniversary, and the Kingdom reaffirms its commitment towards achieving its goals by 2030 for: a Vibrant Society, a Thriving economy and an Ambitious nation. [6] As recognized in the Vision, a vibrant society is “vital to achieving a strong foundation for economic prosperity. The goal is to create a society in which every citizen enjoys a happy fulfilling lifestyle complemented by a standard of living which provides a safe and secure environment for families, and access to world class health care and education. At the same time, the vision encourages its citizens to cherish their national identity and their ancient cultural heritage and live by the Islamic principle of moderation”. A thriving economy provides opportunities for all by building an education system aligned with market needs to give the youth the skills for the jobs of the future, and creating economic opportunities for the entrepreneur, the small enterprise as well as the large corporation. An ambitious nation applies efficiency and responsibility at all levels in order to deliver the Vision, including building an effective, transparent, accountable, and enabling a high-performing government.” [7,8,9,10]



Figure 1.2 Vision 2030’s themes and programs

Source: <https://www.vision2030.gov.sa/v2030/overview/> [7]

To ensure that the development is sustainable and long lasting, the Kingdom of Saudi Arabia (KSA) together with other UN Member States adopted the 17 Sustainable Development Goals (SDGs) in 2015. The Vision 2030 has been built on the guidelines of the 2030 Agenda, adapted to the national reality of the Kingdom. The KSA's Vision 2030 includes a series of objectives and programs that overlap with the UN Agenda under all the five pillars and involve interlinkages between all SDGs. [7] The Vision 2030 is linked to several post-2015 development agendas such as the SDGs, the COP 21, the Sendai Framework for Disaster Risk Reduction 2015-2030, the Arab States Regional Framework for the New Urban Agenda and other national, regional and global agendas. [11,12,13,14]

The KSA has put in place initiatives and programs to achieve the Sustainable Development Goals in the Kingdom. Those initiatives focus on the different themes of the SDGs: no poverty, zero hunger, good health, good life, quality education, gender equality, clean water and sanitation, affordable and clean energy, decent work and economic growth, industry innovation and infrastructure. Other initiatives for the achievement of the SDGs include means of responsible consumption and production, climate action, life below water, life on land, strong institutions and partnerships. [11]

In addition to the Vision 2030, Al Madinah has been developing strategic objectives based on its competitive advantages.

The Proposed Al Madinah strategic objective:

The global beacon for Islamic and cultural enlightenment reinforced by a dynamic and sustainable economy for fulfilled residents and visitors. The proposed Al Madinah strategic objective has three core pillars lying on Place, People and Prosperity and two enablers along Governance and Infrastructure. [15]

Madinah Strategic Pillars

Core Pillars

Place: Beacon for Islamic and Cultural enlightenment through Enriching the visitor experience; Fostering Islamic identity; and Rich cultural and natural experiences to explore. [15]

People: Healthy, thriving and active citizens through High-quality and holistic healthcare services; World class education aligned to the labor market; Diverse entertainment and recreational options; and Responsible and socially active citizens. [15]

Prosperity: Diversified and sustainable economic development through Targeted enablers of priority sectors and attractive investments; Strong Islamic Economy; Thriving SME community Optimized and effective; and Optimized and effective use of natural resources. [15]

Enablers Pillars

Governance: Collaborative and efficient government services through Collaborative and integrated intraregional agency planning & execution; Efficient & enabling government service delivery; Transparent, inclusive & responsive government entities; and Active engagement with national & other regional government entities. [15]

Infrastructure: Responsible infrastructure development in a balanced environment through Efficient, equitable and coordinated master planning for urban development and infrastructure; Enhanced regional connectivity and urban movement; and Effective capacity management of strategic resources. [15]

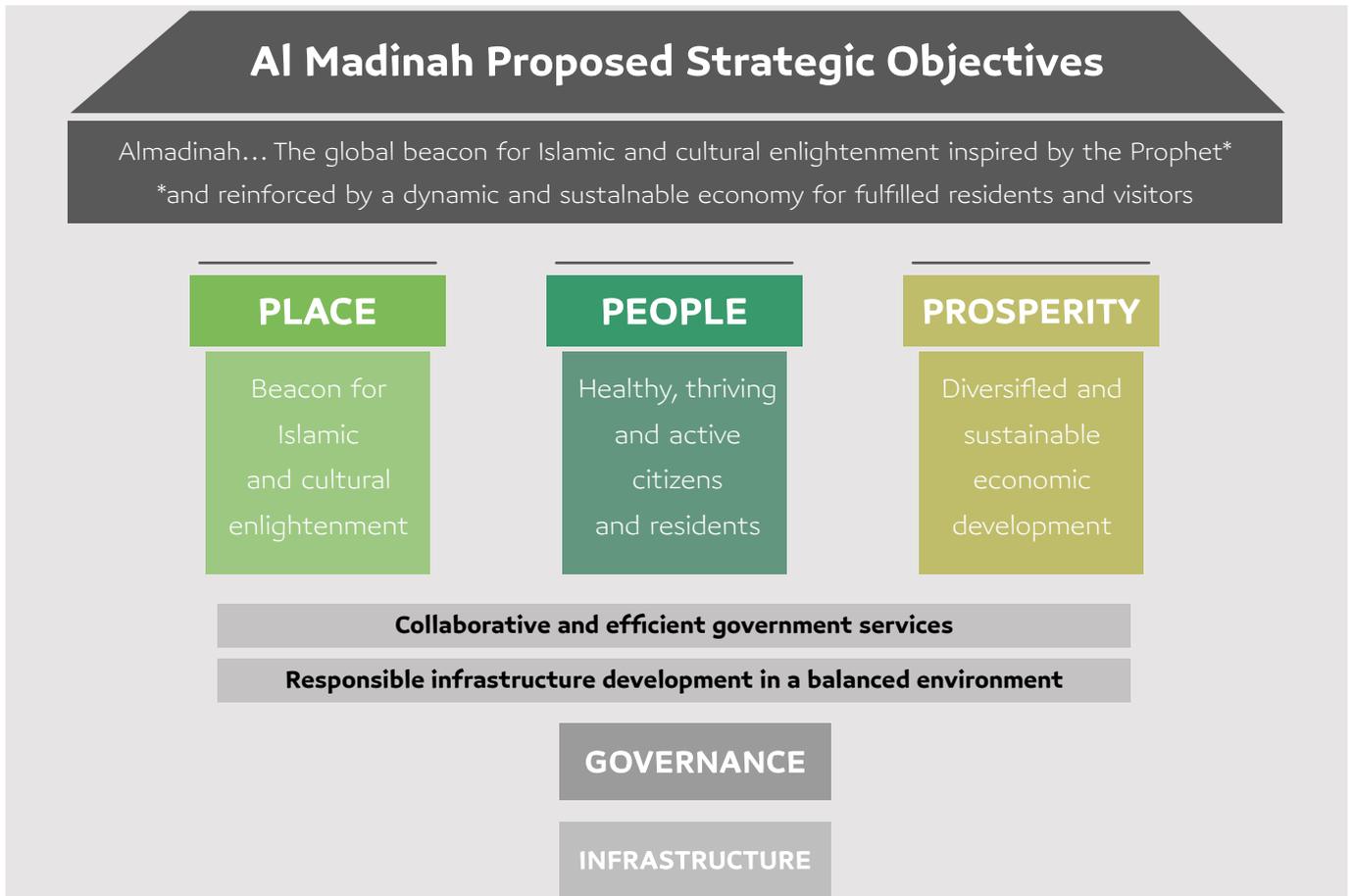


Figure 1.3 Al Madinah proposed strategic objectives; source: MDA, 2022 ^[15]

The proposed Al Madinah strategic objective aims to transform Al Madinah region by propelling its economy through increase in GDP, job creation, and business establishment; empowering its society through increase in life expectancy, entertainment, volunteers’ services; and preserving its environment through reduction of water consumption, adoption of renewable energy, increase in treated sewage influent reuse, and increase in green space per capita.

In addition to that, MDA has developed the Al Madinah Smart City to create the most tranquil, generous and dynamic smart city in the world, delivering enriched experiences to its residents and visitors, by putting technology, innovation and collaboration at the heart of Al Madinah Smart City.

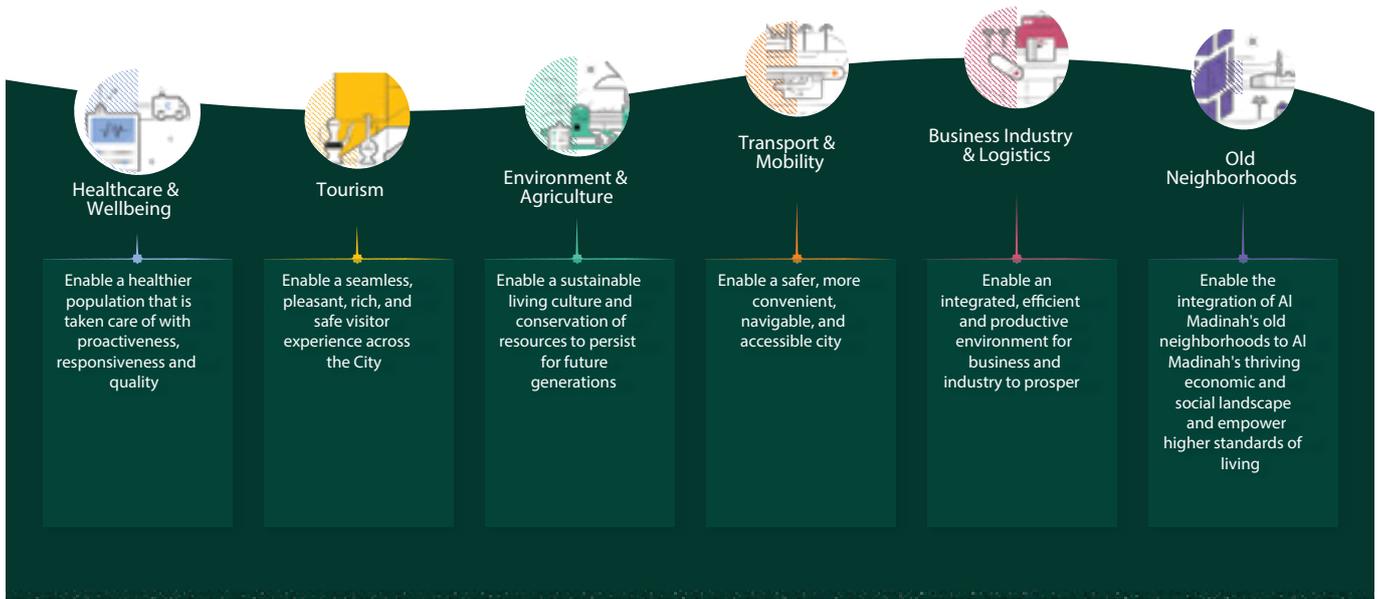


Figure 1.4: Al Madinah Smart City Focus Sectors; source: MDA, 2021^[16]

Al Madinah Ongoing, Upcoming Mega Projects

Rua Al-Madinah Project

Goals: connect and integrate the spiritual experience in Madinah with a sense of reassurance while providing a unique interactive experience; Increase luxury hospitality; Enrich shopping experience; Sightseeing and museums; Safe, comfort, interactive pedestrians; and Transportation services. Targets by 2030 are: 23M International visitors, 86K Hotel Rooms, 1.52M m2 Developed Land area, 83K m2 Green area, and 93K Jobs opportunities. ^[17]

BRT Project (Al-Madinah Buses Project)

Goals: Developed Public transportation system; Easy transportation for visitors; Decrease traffic jams; and Safe for old aged, children, and people with disabilities. Targets by 2030 are: 300 to 500 stations, 80- 100 Buses, 30 to 40M annual trips, 400 to 800 meters Service buffer, and 80 to 90% Area coverage. ^[17]

Green Initiatives

Goals: Society awareness of environment; Green spaces expanding; Desertification reduction; Reduce environment pollution rates; Reuse treated water in non-productive aggregations; Rehabilitation of green areas, road trees and parks. Targets are: Green Area (16.1M m2), Trees (1.3 M), and Trees and shrubs (2.1M). These targets will be achieved through several initiatives such as: central Parks, district Parks, plant nursery, roads Planting, and private Farms. In terms of target for green area: from 31 to 85 Hectares per 100,000 capita, and trees, from 41.3K to 68.4 trees per 100,000 capita. ^[17]



1.3 The Al Madinah City Voluntary Local Review (VLR) – Content And Methodology

1.3.1 Introduction

In 2018, the KSA prepared a national voluntary report to shed light on the efforts being made by the Kingdom towards the implementation of the Sustainable Development Goals (SDGs).^[18] It was presented at the United Nations High-Level Political Forum (HLPF) on Sustainable Development. The review represented the Kingdom's attempt to conduct a systematic and comprehensive review of the status of the SDGs and actions taken by relevant stakeholders to fulfill the 2030 Agenda for Sustainable Development. At local level, cities such as the Buraidah city also prepared a local voluntary report on the Goal 11 of the SDGs.^[19]

Similarly, Al Madinah city has taken the initiative to prepare a voluntary local review titled "Al Madinah City Voluntary Local Review (VLR) -

Localizing the Sustainable Development Goals". This VLR will go beyond the city goal – SDG11 "Make cities and human settlements inclusive, safe, resilient and sustainable". In addition to the SDG11, the Al Madinah City VLR covers 8 other goals of the SDGs (Goal 1 to Goal 8).

The Al Madinah City Voluntary Local Review report is built upon the Al Madinah City Development Status Report 2022 that covers several aspects of the SDGs, but in a more general way and corresponding with The SDGs. Building the report upon the Al Madinah City Development Status Report 2022 has several advantages: in terms of availability of information, including background documents such as priority issues, operational initiatives and policies.^[16]

1.3.2 Content And Structure Of The Al Madinah City Voluntary Local Review

1.3.2.1 Lessons learned from the first saudi voluntary national review of 2018

Since the inception of Voluntary Reviews of the SDGs, national, local and regional governments are increasingly engaging in national, local and regional reviews of the SDG implementation, also called Voluntary National Reviews (VNRs)^[20] or Voluntary Local Reviews (VLRs)^[1]. The KSA conducted its first Voluntary National Review in 2018.^[18] This first Saudi VNR was concluded with several lessons that have been drawn in the context of the first phase of alignment of The SDGs with Vision 2030. Key among these lessons

is the need to consider national realities and priorities. Considering the national context in The SDGs prioritization is an effective enabler for preparation and implementation, as well as for long-term sustainability of results.^[18] Another lesson from the KSA first VNR is the importance of a clear long-term vision and policy coherence, such that would ensure building on existing national frameworks, plans and initiatives that are geared up to implement The SDGs.^[18] Equally important is the requirement for early collaboration of new

the Minister of Economy and Planning (MEP) to follow up on the implementation and monitoring of the SDGs. The MEP was mandated to create alignment of the national context with the SDGs. The MEP provides support to government agencies with respect to strategic planning, implementation and monitoring along with the harmonization of sectoral and regional plans across relevant authorities. The MEP also promotes the role of the private sector and charitable societies and associations towards realization of the SDGs, through development of methodologies and proposals designed to improve their productivity and efficiency. Under the National Transformation Program (NTP 2.0), the MEP also assumes a leading role in promoting the private sector's role in sustainability. ^[18]

Incorporation of the SDGs in national frameworks:

The MEP conducted a review to assess the alignment of Vision 2030 with the SDGs for consistency. Sub-strategic objectives of Vision 2030 along with national strategies and programs that are aligned with the SDGs targets have been identified to reflect an accurate picture of actual alignment that can be implemented by executing agencies. The KSA used the UNDP-designed Rapid Integrated Assessment (RIA) Tool to conduct this process. It has also proceeded to the alignment of national plans with the SDGs to take advantage of monitoring processes at the national level. Performance indicators of relevant government agencies have been aligned with the SDGs level, with an aim to establish proxy indicators to measure progress made towards achievement of goals and targets at various levels, particularly Vision 2030 and related realization programs as well as indicators of various agencies ^[18]

The KSA also embarked on a process to align its national strategies in various sectors with the SDGs. The Ministry of Environment, Water and Agriculture (MEWA), such as the Water Strategy and the Environment Strategy, which are aligned

with the SDGs, with sufficient integration of social, economic and environmental dimensions. As the KSA accords due attention to education as a key driver of development, a Royal Order was issued to include the SDGs into education curricula under the leadership of the Ministry of Education, in partnership with public and private stakeholders. More strategies and plans have been designed to promote national frameworks' coverage of the SDGs. ^[18]

Promoting the SDGs at the Sub-National Level:

Promotion of the SDGs at the sub-national level implies adapting the SDGs, targets and indicators to local circumstances and integrating them into the planning and implementation of public policy at the sub-national level. The SDG framework has the potential to help local governments improve their planning and link their performance more firmly to evidence and results, through accelerating capacity building for local government structures. ^[18] This is where the Al Madinah Voluntary Local Review is called.

Coordination of Multiple Actors and Sectors:

Given the comprehensiveness of The SDGs, multiple stakeholders from the public, private and non-profit sectors play a vital role in turning the SDGs into practical tools for explaining sustainable development, managing implementation, ensuring accountability and reporting on progress. Therefore, it is important that all these actors are truly on board in a comprehensive approach and ensuring that sustainable development is not just a matter for specialized sustainable development designated focal points, but rather a whole-of government affair. This underscores the need for strong coordination among government and non-government institutions to ensure synergies rather than duplication of efforts. Achieving effective coordination between all these actors is not easy. Efforts and resources are therefore needed to strengthen existing mechanisms of coordination and adapting them to the requirements of the SDGs. ^[18]

1.3.2.2 Lessons learned from past voluntary local reviews by other cities and regions

Since the inception of Voluntary Local Reviews, local and regional governments are increasingly engaging in sub-national reviews of SDG implementation, also called Voluntary Local Reviews (VLRs). Among them, 92 VLRs have been reported and placed at an UNDESA platform as received. [1] The Al Madinah City Voluntary Local review have learned from each of these VLRs, their successes and failures. To avoid a bias assessment on good practices allocated to one or another, we have opted to proceed with an overall assessment of lessons learned benefited not from one city but the overall city as possible. Cities adopted methodological approaches of tracking progress on SDGs that can be classified into two main approaches:

a) Goals and Targets

b) Thematic Areas

Goals and Targets Approach

Using this approach, most of cities have opted to address their priority goals and targets among the 17 goals. For instance, there are cities that have tackled Goal 1, Goal 6, Goal 8, Goal 11 according to their priorities while others tackled Goal 2, Goal 3, Goal 4, Goal 5, Goal 11 also according to their policies' focus and information availability. Very few cities have addressed all the 17 goals, and wherever it is the case, most of them presents a dashboard instead of an in-depth analysis. The same approach is used with goals, not all their targets have been addressed, only those that fall within cities priorities and only where information are available are analysed. [1]

Thematic Areas Approach

Using this approach, most cities have opted to address their priority thematic areas. These thematic areas can be the sum up of one or more goals or targets which are not named explicitly but implicitly. The priority thematic areas vary across cities and embrace areas such as: Climate & Energy, Sustainable Mobility, Housing & Sustainable Communities, Employment and Sustainable Economy, Slums, Pollution, Waste Management, Disaster Management, etc. [1]

Though both approaches have their strengths and weaknesses, Al Madinah City has opted for a hybrid approach that group goals into thematic chapters. Within each thematic chapter, each section is directly linked to the goals and targets of the SDGs. The reason behind that being the first voluntary local review, it is preferable to be explicit than implicit on goals and targets. Second the information available from Al Madinah Urban Observatory allow for tracking the SDGs through goals and targets where it is possible. Overall, the Al Madinah City Voluntary Local review will focus on the Goal 1 to Goal 8 and Goal 11. The goals that are not tracked here are not lesser than the rest, it is mainly related to the availability of information rather than the priorities. For instance, Goal 9 and Goal 12 are relevant for the Al Madinah, but there will be addressed in next regional voluntary local review when the information is matured and allow for a robust tracking of progresses. The same can be said for other goals such as Goal 10, 13, 14, 15, 16 and 17 not included in the first round of the Al Madinah City voluntary local review.

1.3.2.3 Content of the Al Madinah VLR: organization of goals within chapters

The Al Madinah City Voluntary Local Review is composed of chapters starting with the city goal, Goal 11. Before the analytical chapter of goals, the first chapter is the introductory chapter which is developed here. The second chapter is composed of Goal 11 (Sustainable Cities and Communities), Goal 6 (Clean Water and Sanitation) and Goal 7

(Affordable and Clean Energy), the third chapter is composed of Goal 1 (No poverty) and Goal 8 (Decent Work and Economic Growth), the fourth chapter is composed of Goal 2 (Zero Hunger) and Goal 3 (Good Health and Well-being) and the fifth chapter is composed of Goal 4 (Quality Education) and Goal 5 (Gender Equality).

Chapter 1: Introduction: The Voluntary Local Review of the SDGs, Vision 2030 and other Al Madinah regional initiatives

- 1.1 The Sustainable Development Goals and the Voluntary Local Reviews
- 1.2 The Sustainable Development Goals, and the Saudi Vision 2030 and other regional initiatives
- 1.3 The Al Madinah City Voluntary Local Voluntary Review Content and Methodology

Chapter 2: Sustainable Cities and Communities: Goal 11, Goal 6 and Goal 7

- 2.1 Affordable housing for all (Goal 11)
- 2.2 Sustainable and inclusive public transport system (Goal 11)
- 2.3 Urbanization, land use and Urban Planning (Goal 11)
- 2.4 Solid Waste Management and Air Quality
- 2.5 Sustainable, green, and safe public spaces
- 2.6 Ensure availability and sustainable management of water and sanitation (Goal 6)
- 2.7: Ensure access to affordable, reliable, sustainable and modern energy for all (Goal 7)

Goal 11 Make cities and human settlements inclusive, safe, resilient and sustainable



Amid the challenges posed by rapid urbanization, the Al Madinah city as most cities around the world is facing major challenges in providing safe and affordable housing to its inhabitants. With the spread of COVID-19 the seriousness of the pre-existing housing crisis has been exacerbated. The pandemic COVID-19 has come with a wakeup call that affordable housing cannot be delayed. Housing is prominent in the Sustainable Development Goals (SDGs) goal 11 “Making cities and human settlements inclusive, safe, resilient and sustainable”. This section will address the following sections:

Affordable housing for all

Target 11.1 “By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums.”

Sustainable and inclusive public transport system

Target 11.2 “By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons.

Urbanization, land use an Urban Planning

Target 11.3 “By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries.

Solid Waste Management and Air Quality

Target 11.6 “By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management

Sustainable, green, and safe public spaces

Target 11.7 “By 2030, provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities

Goal 6 Ensure availability and sustainable management of water and sanitation



Access to safe and affordable drinking water

- By 2030, achieve universal and equitable access to safe and affordable drinking water for all (6.1)

Increase water-use efficiency

- By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity (6.4)

Access to adequate and equitable sanitation and hygiene

- By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations (6.2)

Goal 7 Ensure access to affordable, reliable, sustainable and modern energy for all

- By 2030, ensure universal access to affordable, reliable and modern energy services (7.1)
 - Population with access to electricity (7.1.1)
 - Population with primary reliance on clean fuels and technology (7.1.2)
- By 2030, increase substantially the share of renewable energy in the global energy mix (7.2)
 - Renewable energy share in the total final energy consumption (7.2.1)

Chapter 3: Ending Poverty (Goal 1), Promoting Economic Growth and Decent Employment (Goal 8)

3.1: Goal 1 End poverty in all its forms everywhere



- By 2030, eradicate extreme poverty for all people everywhere, currently measured as people living on less than \$1.90 a day (1.1)
- By 2030, reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions (1.2)
- Implement nationally appropriate social protection systems and measures for all, including floors, and by 2030 achieve substantial coverage of the poor and the vulnerable (1.3)
- By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance (1.4)

3.2 Goal 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all



- Sustain per capita economic growth in accordance with national circumstances and, in particular, at least 7 per cent gross domestic product growth per annum in the least developed countries (8.1)
- By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value (8.5)
 - Unemployment rate, by sex, age and persons with disabilities (8.5.2)
- By 2020, substantially reduce the proportion of youth not in employment, education or training (8.6)
 - Proportion of youth (aged 15–24 years) not in education, employment or training (8.6.1)

Chapter 4: Ending hunger (Goal 2) and Ensuring Healthy and Well-being (Goal 3)

4.1 Goal 2 End hunger, achieve food security and improved nutrition and promote sustainable agriculture



- By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round (2.1)
- By 2030, end all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women and older persons (2.2)

4.2 Goal 3 Ensure healthy lives and promote well-being for all at all ages



- By 2030, reduce the global maternal mortality ratio to less than 70 per 100,000 live births (3.1)
- By 2030, end preventable deaths of newborns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and under-5 mortality to at least as low as 25 per 1,000 live births (3.2)
- Strengthen the prevention and treatment of substance abuse, including narcotic drug abuse and harmful use of alcohol (3.5)
- By 2020, halve the number of global deaths and injuries from road traffic accidents (3.6)

Chapter 5: Ensuring Inclusive and Equitable quality education, and Achieving gender equality

5.1 Goal 4 Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all



5.2 Goal 5 Achieve gender equality and empower all women and girls (5.2)



1.3.3 Data And Analytical Methodology

Each goal will constitute a detailed chapter or section with a methodology tailored to the SDG and the Vision 2030. This report is based on data prepared by the Al Madinah Urban Observatory (MUO), particularly on Al Madinah Development Status report 2021^[15, 21] and 2015 socio-economic survey^[22] conducted by Al Madinah Urban Observatory of MDA, other MUO reports^[23,24] the platinum data of Al Madinah Urban Observatory, coupled with information from key publications from several stakeholders. Information from the General Authority for Statistics (GASTAT) was used when appropriated and for comparison purpose across regions^[25,26,27]. Information for specific subjects was supplemented by the relevant stakeholder such as the Ministry of Municipal, Rural Affairs and Housing (MOMRAH) for housing, urban planning, and land use^[28,29,30]. Information from the GIS section of the MDA was heavily used to illustrate key findings from Al Madinah 2021 socio-economic survey or two remote sensing data, particularly on urbanization, land use and urban planning.^[15,21]

Data Availability and Statistical Capacity in the KSA: As indicated in the KSA Local Review^[18], the adaptation and monitoring of the SDGs requires data and statistics that are accurate, timely, sufficiently disaggregated, relevant, accessible and easy to use. Although data availability and quality have steadily improved over the years, the analysis of the alignment of Vision 2030 with the SDGs revealed that in certain areas data are unavailable. Filling these gaps and ensuring that key measures are included in the official indicators will require improvements in methodologies and data collection systems; more emphasis should be put on data disaggregation. One of the key priorities identified in this review is the need to invest in strengthening data

collection systems and the capacity of statistical bodies and putting more emphases on data disaggregation. This will require empowering data producer through legislation and better coordination between data producers and users and innovative ways of producing and applying data and statistics.

Major challenges identified in the KSA National Local Review^[18] are the availability of data and identifying measures to enhance the capacity of statistical bodies to collect and disseminate SDG-related statistics; achieving more effective coordination among government and non-government institutions to ensure synergies rather than duplication of efforts; building on existing institutional frameworks rather than creating new structures and promoting the SDGs at the sub-national level.

Saudi Arabia is committed to pursuing the implementation of the global development agenda through close collaboration between all relevant stakeholders.

SDGs-related activities will proceed hand-in-hand with the implementation of Vision 2030, which has already gathered significant momentum. Key priority areas include improving the quality and coverage of SDG indicators and analysis of data, continuing the process of alignment of state programs and strategies with global development goals, targets and indicators and developing strategies for strengthening collaboration among different actors and key players.

Other key priorities include strengthening the role of The SDGs at the sub-national level, enhancing the Monitoring and Evaluation (M&E) infrastructure for tracking progress

towards the achievement of The SDGs at the national and sub-national levels and promoting international partnerships around the SDGs through development assistance, especially at the regional level.

Data Availability and Statistical Capacity of the Al Madinah Urban Observatory

The Harmonized Monitoring and Reporting Framework of the MUO has several features well organized in a systematic manner: conceptual framework, guiding principles, concepts, definitions, rationale, methods of calculation, source of data, data quality assurance, data disaggregation, and use of big data, coordination, etc. Accurate and correct data and metrics enable cities to make correct decisions on the best policies and means to track changes and systematically document performances

at the city level.^[31] This reinforces advocacy, stimulates political commitment and public private investments, informs decision-making at all levels and prompts well-placed investments targeted towards optimum sustainable cities. An innovative monitoring mechanism will assist in avoiding an excessive sectorial approach to urban development. For example, when designing sustainable urban mobility solutions, we need to ensure an integrated approach to urban planning and land use regulations.

The Al Madinah Development Authority, represented by the Urban Observatory, aspires to increase Madinah's efficiency in the field of sustainable development, and to enhance this, the city needs a range of targets and ambitions that we believe will help move the city to a distinct level in the field of sustainable development, including^[31]:

- Study the changes in values over time, by continuing to raise the values of sustainable development indicators on the International Council's platform.
- Raising the target of international awards to include other specialized organizations.
- Transfer knowledge to the city's sectors by holding workshops with them to raise awareness of the importance of benefiting from global comparison.
- Agreements with the city's development and services sectors to study global indicators and specialized platforms in each sector, and joint cooperation in sharing the values of these indicators.
- Improve the quality and methods of data collection from relevant entities, taking into account the standard audit factors of the statement.
- Cover as many indicators as possible depending on their importance, by collecting their data, and placing this in the Urban Observatory's periodic action plan.
- Conduct workshops with authorities and liaison officers whenever possible to explore the possibility of improving the quality and diversity of data.
- Use indicators of the diversity of their sectors in the issuance of periodic reports e.g a quarterly bulletin, in which the values and relationships of indicators, and composite indicators, are interpreted with the help of experts in the field of sustainable development.

These indicators can be used to track and monitor progress in the sustainable development. The entire city system, and planning for future needs must be taken into account when taking advantage of current use and resource efficiency for better planning. The indicators and associated testing methods have been developed to assist cities:

- 1 More effective governance and service delivery.
- 2 Approval of international standards and objectives.
- 3 Comparison and local planning
- 4 Support informed decision-making for policy makers and city managers.
- 5 Support policy development and prioritization.
- 6 Measuring and learning from corresponding experiences in other cities.
- 7 Enhance access to funding.
- 8 Global recognition in international entities.
- 9 A flexible framework for sustainability planning.
- 10 Attractions for investment through transparency and open data.
- 11 The value chain for a period of time helps identify strategic targets.

Al Madinah Development Authority, represented by the Urban Observatory of Madinah, has made an unprecedented effort, and succeeded in making Madinah a city capable of measuring sustainable development indicators and achieve ISO 37120 standards [31]. The Urban Observatory has spared no effort in collecting, verifying, matching and uploading data on the global data platform as required, and with the help of stakeholders and data sources, the Observatory has made Madinah an ISO 37120 city. The Urban Observatory concluded an agreement with the International Council for City Data in 2019, with the aim of raising the number of sustainable city indicators and complying with ISO 37120 standards. Al Madinah city was targeted for the platinum award due to the components and data available to enable the city to reach this level, and thank God the award was received. The values of 91 of the 104 indicators were raised on the board platform, where each indicator went through more than one review and audit stage to ensure the accuracy of the values and match them for the required methodology. Madinah is the only Arab city to have received the award according to the standards updated since 2018.

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Al Madinah City Voluntary Local Review Dashboard and Trends

SDG11 – Sustainable Cities and Communities	Value	Year	Rating	Trend
Proportion of urban population living in slums (%)	1.3	2021		
Affordable Housing (ratio Housing price to Income)	5.5	2021		
Ownership for regional level (Percentage of Saudi households that own house)	57.5	2019		
Mortgage (Percentage of Saudi households that purchase their house through mortgage)	25.3	2021		
Annual mean concentration of particulate matter of less than 2.5 microns in diameter (PM2.5) (µg/m³)	32.7	2019		
Annual mean concentration of particulate matter of less than 10 microns in diameter (PM2.5) (µg/m³)	90	2019		
Public transport (%)	<1%	2021		
Urban density	--	--	--	--

SDG6 – Clean Water and Sanitation	Value	Year	Rating	Trend
Population using at least basic drinking water services (%)	100.0	2021		
Population using at drinking water from public network (%)	93.3	2021		
Population using at least basic sanitation services (%)	99.5	2021		
Population connected to public sewerage network (%)	85.4	2021		

SDG7 – Affordable and Clean Energy	Value	Year	Rating	Trend
Population with access to electricity (%)	100.0	2021		
Population with access to clean fuels and technology for cooking (%)	100.0	2021		
CO2 emissions from fuel combustion per total electricity output (MtCO2/TWh)	--	--	--	--
Share of renewable energy in total primary energy supply (%)	0.0	2021		

SDG1 – No Poverty	Value	Year	Rating	Trend
Poverty headcount ratio at \$1.90/day (%)	0.7%	2021		
population with income threshold lower than 50% of average income (%)	16.2%	2021		

SDG8 – Decent Work and Economic Growth	Value	Year	Rating	Trend
Share on national GDP (without oil) (%)	7.1%	2018		
Unemployment rate (% of total labor force)	10.1	2021		
Youth non-employment rates (%)	14.8	2021		
Informal employment (non-Saudi) (%)	18.5	2021		

Goal 3 Good Health and Well-Being	Value	Year	Rating	Trend
Mortality rate, under-5 (per 1,000 live births)	10.0	2020		
Life expectancy at birth (years)	74.6	2020		

SDG4 – Quality Education	Value	Year	Rating	Trend
Percentage of Saudis 25-64 who completed middle school	7.0	2021		
Percentage of Saudis with higher education certificate	32.6	2021		
% of the population 25-30 years old with university degree	60.3	2021		
Literacy rate (% of population aged 15 to 24)	99.9	2021		

SDG5 – Gender Equality	Value	Year	Rating	Trend
Ratio of female-to-male mean years of education received (%)	--	--	--	--
Ratio of female-to-male labor force participation rate (%)	<u>50.2</u>	<u>2021</u>		

Legend			
SDG Achievement	Challenges remain	Significant challenges remain	Major challenges remain

On track	Moderately Increasing	Stagnating	Decreasing

Data not available

CHAPTER 2

GOAL 11



SUSTAINABLE CITIES
AND COMMUNITIES

GOAL 6



CLEAN WATER
AND SANITATION

GOAL 7



AFFORDABLE AND
CLEAN ENERGY

SDG11 – Sustainable Cities and Communities	Value	Year	Rating	Trend
Proportion of urban population living in slums (%)	1.3	2021		
Affordable Housing (ratio Housing price to Income)	5.5	2021		
Ownership for regional level (Percentage of Saudi households that own house)	57.5	2019		
Mortgage (Percentage of Saudi households that purchase their house through mortgage)	25.3	2021		
Annual mean concentration of particulate matter of less than 2.5 microns in diameter (PM2.5) ($\mu\text{g}/\text{m}^3$)	32.7	2019		
Annual mean concentration of particulate matter of less than 10 microns in diameter (PM2.5) ($\mu\text{g}/\text{m}^3$)	90	2019		
Public transport (%)	<1%	2021		
Urban density	--	--	--	--

SDG6 – Clean Water and Sanitation	Value	Year	Rating	Trend
Population using at least basic drinking water services (%)	100.0	2021		
Population using at drinking water from public network (%)	93.3	2021		
Population using at least basic sanitation services (%)	99.5	2021		
Population connected to public sewerage network %)	85.4	2021		

SDG7 – Affordable and Clean Energy	Value	Year	Rating	Trend
Population with access to electricity (%)	100.0	2021		
Population with access to clean fuels and technology for cooking (%)	100.0	2021		
CO2 emissions from fuel combustion per total electricity output (MtCO2/TWh)	--	--	--	--
Share of renewable energy in total primary energy supply (%)	0.0	2021		

Legend			
SDG Achievement	Challenges remain	Significant challenges remain	Major challenges remain

On track	Moderately Increasing	Stagnating	Decreasing

Data not available

Amid the challenges posed by rapid urbanization, the Al Madinah city as most cities around the world is facing major challenges in providing safe and affordable housing to its inhabitants. With the spread of COVID-19 the seriousness of the pre-existing housing crisis has been exacerbated. The pandemic has come with a wakeup call that affordable housing cannot be delayed. Housing is prominent in the Sustainable Development Goals (SDGs) goal 11 “Making cities and human settlements inclusive, safe, resilient and sustainable”. This section will address the following:

GOAL
11

**MAKE CITIES AND HUMAN SETTLEMENTS INCLUSIVE,
SAFE, RESILIENT AND SUSTAINABLE**



2.1 SDG 11.1: Affordable housing for all

Target 11.1 “By 2030, ensure access for all to adequate, safe and affordable housing and basic services and

2.2 SDG11.2: Sustainable and inclusive public transport system

Target 11.2 “By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons.

2.3 SDG 11.3: Urbanization, land use an Urban Planning

Target 11.3 “By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries.

2.4 SDG11.6: Solid Waste Management and Air Quality

Target 11.6 “By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management

2.5 SDG 11.7: Sustainable, green, and safe public spaces

Target 11.7 “By 2030, provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities

GOAL
6**ENSURE AVAILABILITY AND SUSTAINABLE
MANAGEMENT OF WATER AND SANITATION FOR ALL****2.6: SDG 6: Ensure availability and sustainable management of water and sanitation****2.6.1 Access to safe and affordable drinking water**

By 2030, achieve universal and equitable access to safe and affordable drinking water for all (6.1)

By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity (6.4)

2.6.2 Access to adequate and equitable sanitation and hygiene

By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations (6.2)

**CLEAN WATER
AND SANITATION**GOAL
7**ENSURE ACCESS TO AFFORDABLE, RELIABLE,
SUSTAINABLE AND MODERN ENERGY FOR ALL****2.7: SDG 7: Ensure access to affordable, reliable, sustainable and modern energy for all**

By 2030, ensure universal access to affordable, reliable and modern energy services (7.1)

7.1.1 Population with access to electricity**7.1.2 Population with primary reliance on clean fuels and technology**

By 2030, increase substantially the share of renewable energy in the global energy mix (7.2)

7.2.1 Renewable energy share in the total final energy consumption**AFFORDABLE AND
CLEAN ENERGY**

2.1 Introduction: SDG11 Sustainable Cities And Communities

In September 2015, the United Nations Sustainable Development Summit adopted a new framework to guide development efforts between 2015 and 2030, entitled “Transforming our world: the 2030 Agenda for sustainable development”. [1] The 2030 Agenda “Sustainable development Goals - SDGs” seeks to combine two goals: meeting the needs of the present without compromising the ability of future generations to meet their needs. It is a transformative agenda that believes everyone deserve a dignified life

and must live in an environment that allows people to grow and flourish. The future we want includes cities that have opportunities for all, with access to basic services, energy, housing, transportation and more. With an increasingly urbanized world, this requires the attention of both local, regional and national governments and other stakeholders including the civil society and the private institutions to work towards achieving these goals. Overall, there are 17 goals that compose the SDGs. [1]

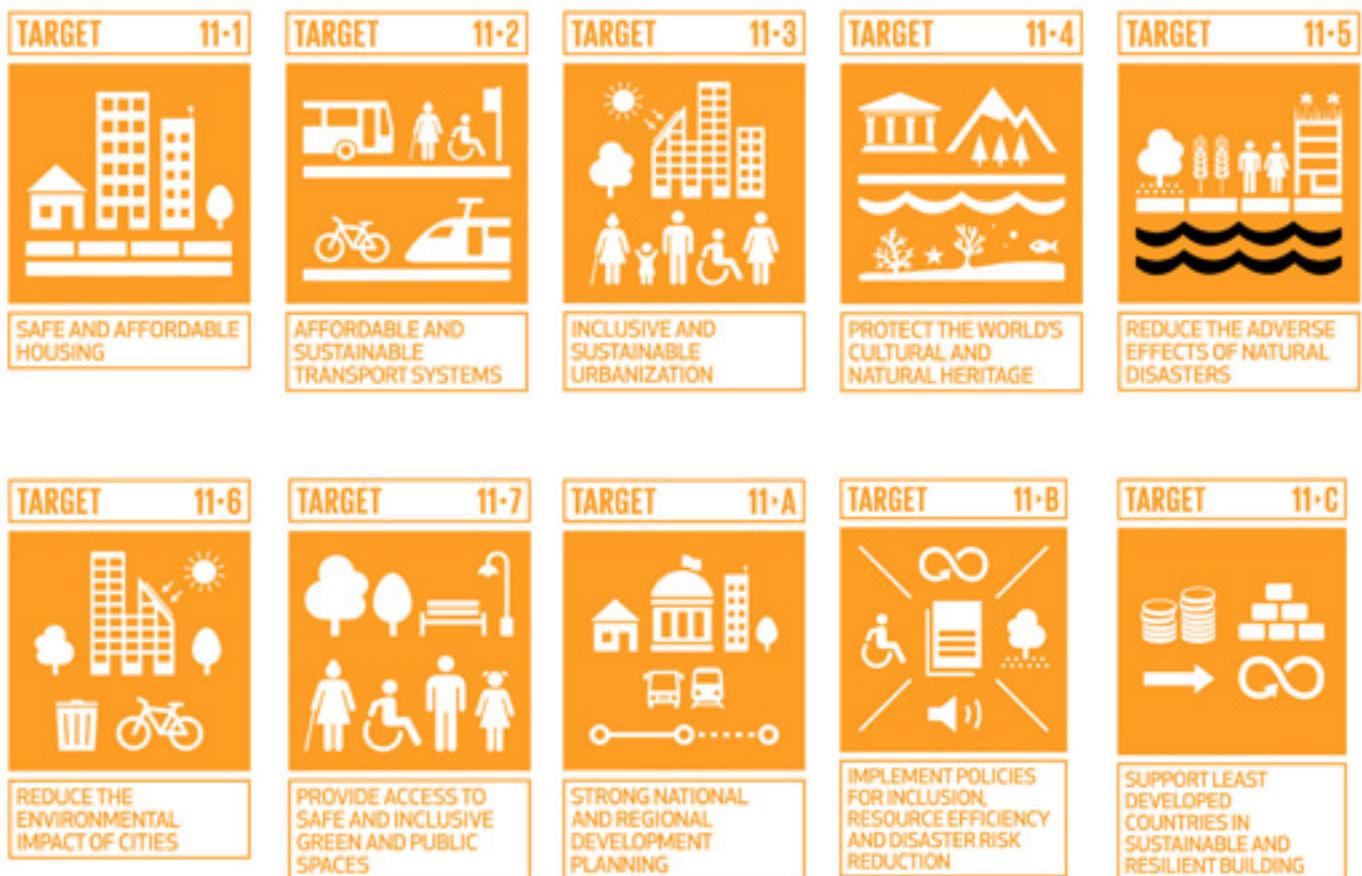


Figure 2.1 Goal 11 Make cities and human settlements inclusive, safe, resilient and sustainable
Source: UN-Habitat, 2016. Making Cities and Communities Sustainable [2,3]

2.2 SDG 11.1: Affordable Housing For All

Target 11.1 “By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums.”

Under the Vision 2030, the Saudi Housing Program Delivery Plan aims to offer solutions to enable households to own or benefit from housing according to their needs and finances. This aims to improve living conditions for current and future generations, increase the supply of affordable housing units in record time, and enhance access to subsidized and appropriate funding. Integral to the Housing Programs are specialized programs targeting the most deprived sectors of society, and further development of the legislative

and regulatory environment. These measures are designed to increase the housing sector’s attractiveness to the private sector, develop local innovation, create more business opportunities, and strengthen the economic foundation of the Kingdom. Overall, the Program aims to increase supply of suitable home pathways, create demand by enabling beneficiaries to acquire appropriate housing, and regulate the housing sector including the real estate development environment and the relationship between owners and residents of housing units under joint ownership scheme. The Program aims to improve the housing sector through five axes. [4,5]

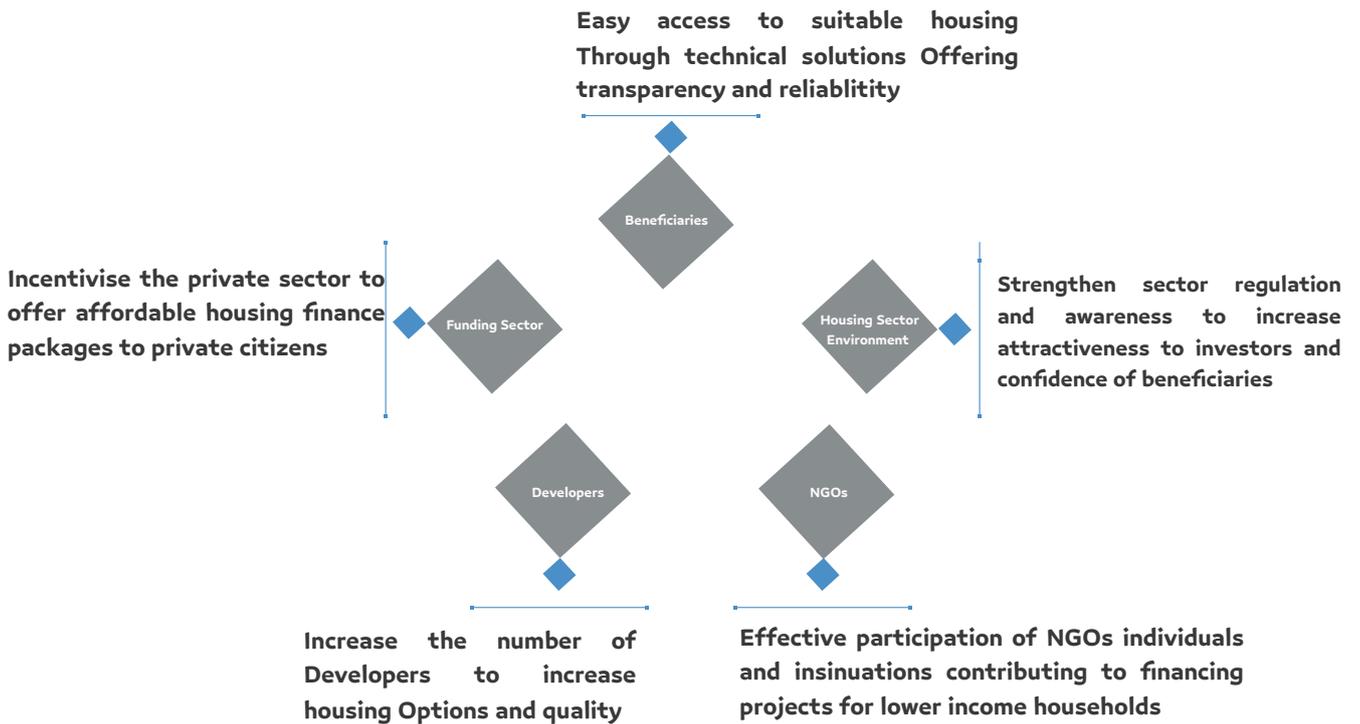


Figure 2.2 Housing Delivery Program

Source: Kingdom of Saudi Arabia, Housing Delivery Program 2020, Vision 2030 [4,5]

Along the above axis that are largely driven by the KSA central government, the Al Madinah city as most Saudi cities has been developing proactive policies and programs to engage the participation of all actors to the challenges of affordable housing. Those policies and programs will be presented in the following sections.

2.2.1 Type Of Housing Tenure

Both homeownership and rental housing come with different advantages and certain challenges. While homeownership provides more rights and privileges, owning a home is accompanied by restrictions in mobility and limited options for business and economic development. Rental housing may provide greater flexibility to move around as the need may arise for proximity to workplaces, education facilities, social or cultural institutions etc. Although rental housing comes with less privileges and rights, it also requires lower capital requirements and costs related to operations and maintenance. Besides the mobility, buyers in Al Madinah may remain constrained by strict conditions on mortgage.

Among the objectives of the Housing Program

Delivery Plan (2021-2025) is to “increase Saudi household home ownership rates to 60% nationwide by 2020, and to achieve 70% by 2030” [3,4] When we consider only the Saudi population in Al Madinah Region in Housing Bulletin survey provided by GASTats in 2019. Progress has been made on home Ownership among Saudis in Al Madinah Region (57.5% own their house in 2019). This ownership ratio is 4.5% below the national average in 2019 which is 62%. And 2.5% below the target of 60% of the Housing Program Delivery Plan in 2020 and 12.5% below the target of 70% in 2030. [64]

This calls to accelerate home ownership in Al Madinah City. The second phase of the Housing Program (2021-2025) requires

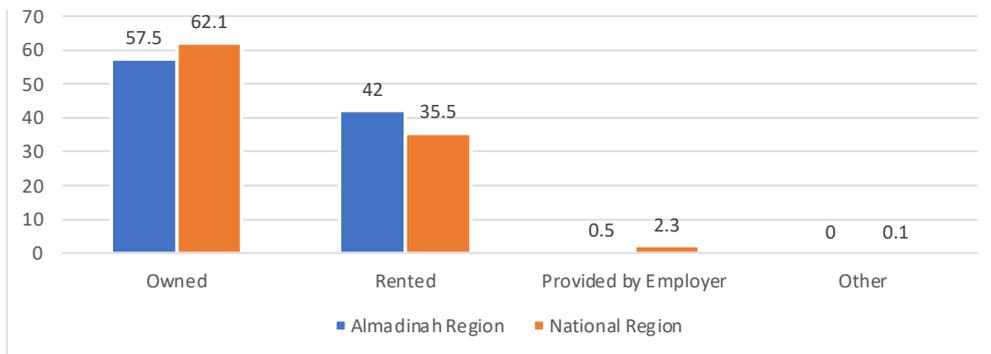


Figure 2.3 Type of housing tenure in Al Madinah region 2019
 Source: Housing Bulletin survey provided by GASTats in 2019

Facts: With a housing ownership of 57.5%, the Al Madinah region is lagging behind the target of the housing program delivery plan of the Vision 2030 which is 60% by 2020, and 70% by 2030 and will need to sustain the progress made in the last decade.

Facts: Existence of idle lands “white lands” that has contributed to a growing housing shortage and to the unaffordability of land in Al Madinah.

Policies: To discourage the practice of idle land “white land”, the Ministry of Municipal and Rural Affairs and Housing has introduced penalties and fees system. The government recently issued the White Lands Tax Law that imposes an annual land tax of 2.5% of its value on “white land,”

a series of paradigm shifts to ensure the progress achieved to date is sustained, residual challenges in the market are addressed and the housing ecosystem continues to mature. Support vulnerable segment, increase home ownership, improve housing market affordability, and enhance housing market maturity. Continue to target the neediest segments and determine support levels on basis of financial capability of beneficiaries. Optimize housing ecosystem spending, reduce mortgages' costs and launch guarantees company to serve citizens and RE developers.^[5] In Al Madinah city, in 2021, when we consider the total population, the prevalent tenure types are ownership and rental housing, respectively 28.6%, 59.2 %. Over 7.4% occupied housing units provided by their employers, and the rest (4.8%) by other means such as charitable houses which constitutes a kind of social integration and support for poor families.^[6]

The highly level of rental housing (59.2%) are due mainly to the increased urbanization of Al Madinah which host now over 1.45 million inhabitants

reinforced by high level of migration. Migrants are first rentals and may become tenants along their duration and capability to have a decent permanent job. During these past ten years, it is indeed noted an increase of the ratio of rental housing, particularly among the migrants. The above-mentioned distribution of housing types also reflects urban development stages in Al Madinah City ranging from the old traditional houses to residential blocks which meet the high demand for housing and central areas. Further, it reflects the shift to the villa type which in turn reflects an increase in income levels and high demand for private housing.

According to the Housing Delivery Program of Vision 2030, Al Madinah city is among the 10 Saudi cities with most pressing demand for housing, accounting together for 60% of the target for 2020, with a value a demand-supply gap of 106,000 units compared to 325,000 units in Riyadh, and 242,000 in Dammam as illustrated below:

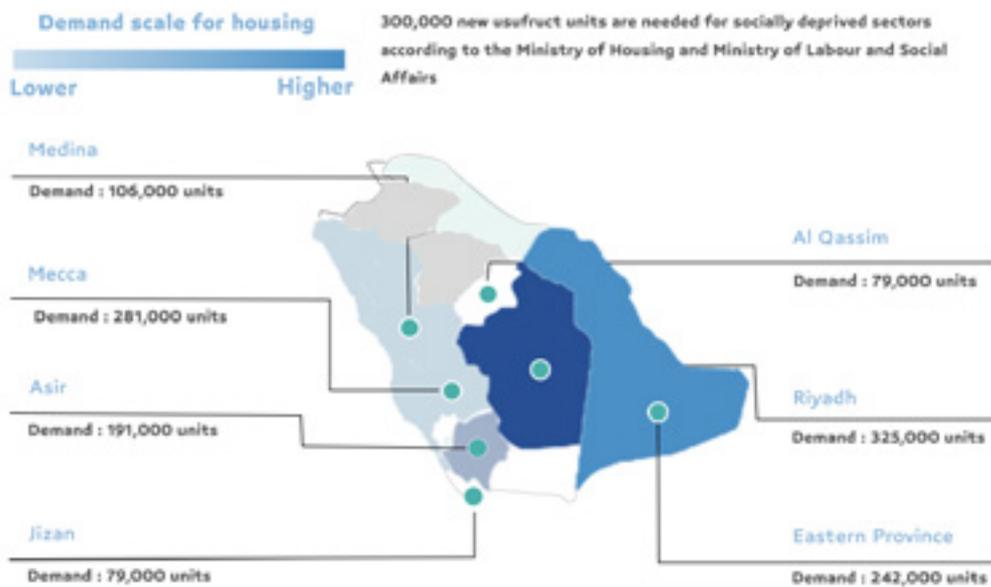


Figure 2.4 Demand and Supply Gap in major cities (source: Housing Program Delivery, Vision 2030 Source: Kingdom of Saudi Arabia, Housing Delivery Program 2020, Vision 2030 ^[4])

According to the Ministry of Housing, a new development housing program (Sakani) was introduced in 2017 to boost homeownership by Saudis in need (level of assistance based on household income and size), including those receiving assistance through the Income Guarantee Programme. This program is complemented by several other initiatives within the Vision 2030 to improve affordability.^[4,5] As of June 2020, 1,7 million people have benefited from

the programs, a rapid increase of approximately 315% from 2017 and most beneficiaries of residential support contracts have been for ready-made units, regardless of the region, which is evidence of the housing program efforts. Moreover, the percentage of people living in slums in the Kingdom has declined from 18% in 2015 to 16.2% in 2018, which partially shows the outcomes of these housing programs. ^[7]

2.2.2 Housing Affordability

Affordability matters in the decision of either buying or renting a house. Affordability involves the ability not only to buy or rent a home, but also to afford other basic needs. This definition of affordability goes beyond meeting expenses related to operations and maintenance, taking into consideration transport, infrastructure and services. Typically, housing is considered affordable if its purchase value does not surpass the threshold of 3.0 times the annual median household income. Regarding the affordability of house rental, the Housing Cost Burden approach states that paying no more than 25-30% of income in monthly rents or mortgage servicing marks affordable housing. Several

global, regional and national governments and groups use this standard to measure housing affordability and develop housing policies.

The cost of housing is determined by numerous factors associated to the cost to buy the house and the cost to maintain it. The first includes the house purchase price which is determined by a) the cost of land, infrastructure, building materials, labor and profit, and b) the ability to finance down payment. The Later includes the housing occupation cost which is determined by a) the land lease, home insurance, property tax, quit rent and building maintenance cost, and b) the ability financially service the loan.

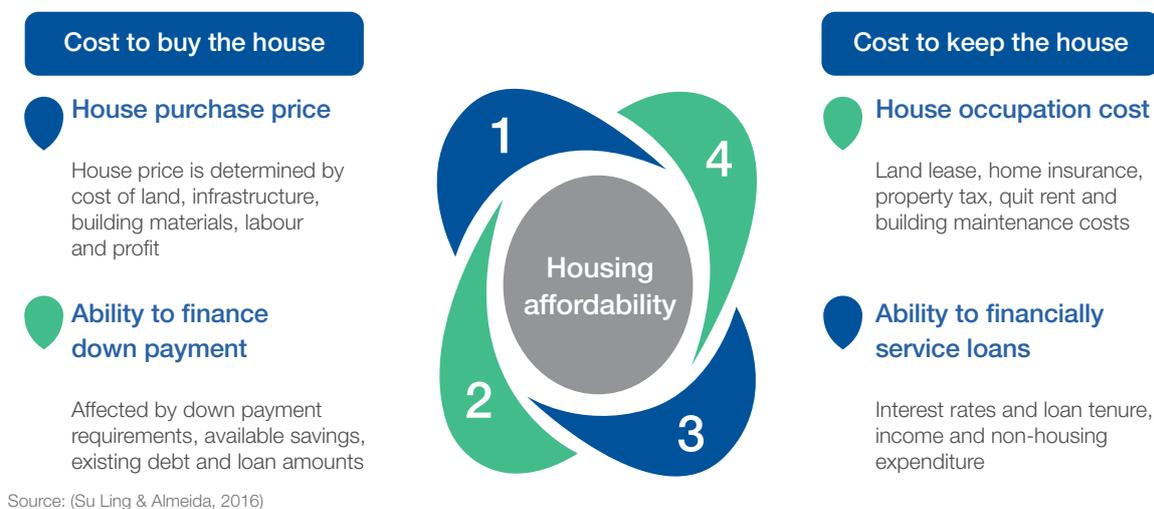


Figure 2.5 Summary of Key factors affecting housing affordability: Demand and Supply
Source: World Economic Forum, 2019. ^[9]

2.2.2.1 Housing ownership affordability: housing ownership price to annual income

In the housing program delivery plan (2016-2020) of the vision 2020, the target ratio of housing price to annual income is 5 by 2020. In the same framework of the relation of the finance abilities of households to housing cost, the socio-economic survey conducted by the MUO 2021 (1442 AH) shows that the ratio average price of housing based on the annual income is 5.5. This means the city of Al Madinah has almost reached the target of housing affordability by 2020 as indicated in the housing program delivery plan (2016-2020) of the vision 2030. This target has been reached

since 2015 where the ratio of housing to income was estimated at 4.6 which was half of the 2005 level of 9.4. Compared to its level of 9.4 in 1425, there is a decrease of 3.8 points indicating that owning a house in Al Madinah city is much affordable in 2021 than a decade ago. Despite that increase in housing affordability, this ratio is above the threshold of 3 globally used to determine whether housing is affordable or not in a specific city, whereas a level below 3 indicate an affordable housing situation, and level of 3 or above indicate the opposite. ^[10,11,12]

Facts: The ratio of housing price to annual income in Al Madinah city is 5.5, close to the target ratio of 5 by 2020 in the housing program delivery plan of the vision 2020, but higher the international ratio threshold of 3.0.

Policies: If efforts leading to the housing affordability ratio are sustained, Al Madinah city should be able to reach the international ratio of 3.0 by 2030 or within the next decade.

Policies : The road to housing affordability calls for the implementation of specialized programs targeting the most vulnerable groups of Al Madinah City.

Compared to other cities of Al Madinah region, owning a house in 2021 is affordable in Al Madinah city with a housing price to income ratio of 5.5 as Al Ulaaa (5.6%), Khaibar (5.4%), more than in Yanbu' with a housing price to income ratio of 8.3%, Al Hanakia (6.9%), but less affordable than the other cities such as Badr, Al Fari'a where the house price to income ratio is less than 3, [6]

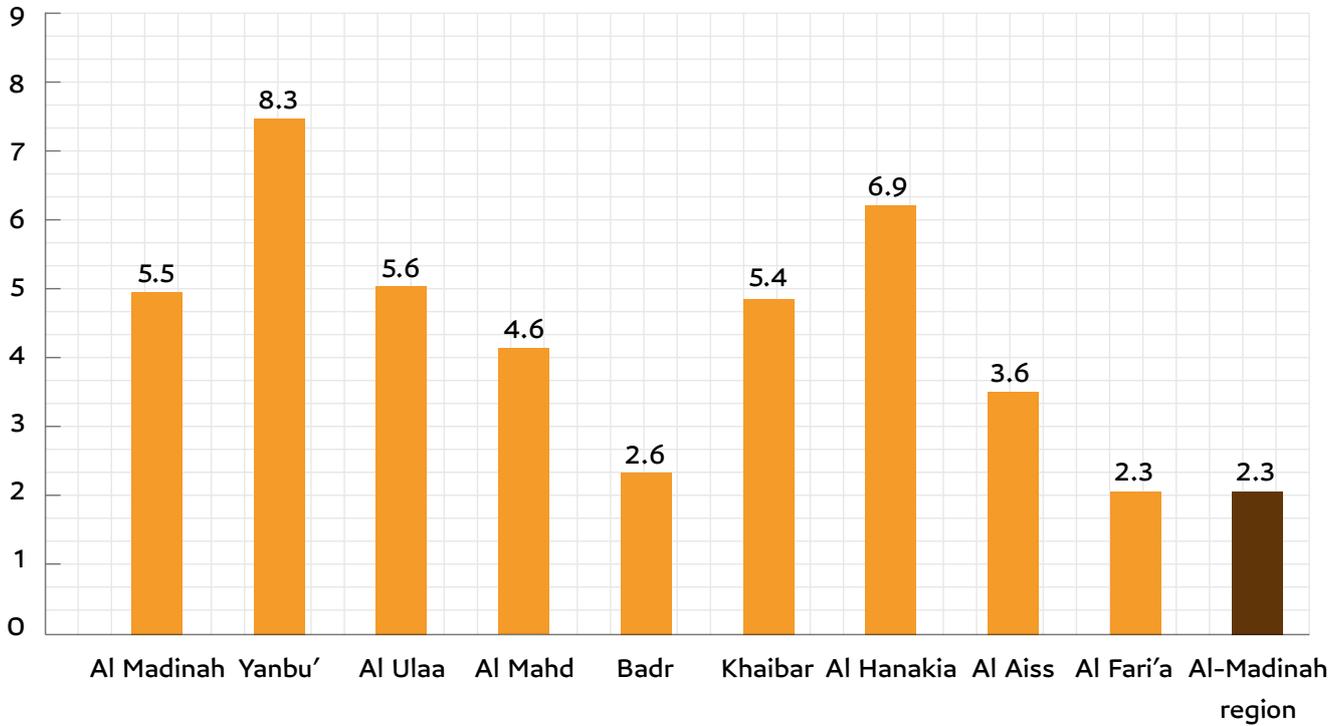


Figure 2.6 Housing ownership price to annual income [6]
Measured by the number of years that householdes need to buy house

2.2.2.2 Housing rental affordability: housing monthly rent to monthly income

In 2021 (1442 AH), the rental housing cost to monthly income has also significantly decreased compared to previous years. Overall, in 2021, it is estimated at 20.8 %, well below its level a decade ago (28.9% in 1431 AH - 2009), and 1437). [6,10] This follows the improvement of affordability of housing rental already observed in 2015 (1437 AH) with a ratio of 23.3. In this regard, the ratio of a house rate average to the monthly income reaches 20.8% i.e. the leasing household shall spend about a fifth of its income to finance the housing monthly rental cost, below the maximum acceptable world limits of said average which supposes that 25%-30% is an acceptable value for the monthly housing cost especially for low income households. If considers only the Saudi family, in 2021 this ratio was 17.3% against

26.0 for non-Saudis. [6,10] In both groups, the housing rentals appears affordable. For the housing market to be affordable, it requires a mix of tenures – rental, home ownership and a combination of the two. However, for the Al Madinah city with its high proportion of migrants, there is a case for nurturing strong rental markets. Renting makes it easier for migrants. Young people also are more willing for rental houses due to job mobility. This gives them the capability to move around inside the city as their needs change in terms of proximity to educational institutions, workplaces, public transit, and social and cultural amenities. High homeownership is correlated with restricted labor mobility, with impacts on business creation and economic development.

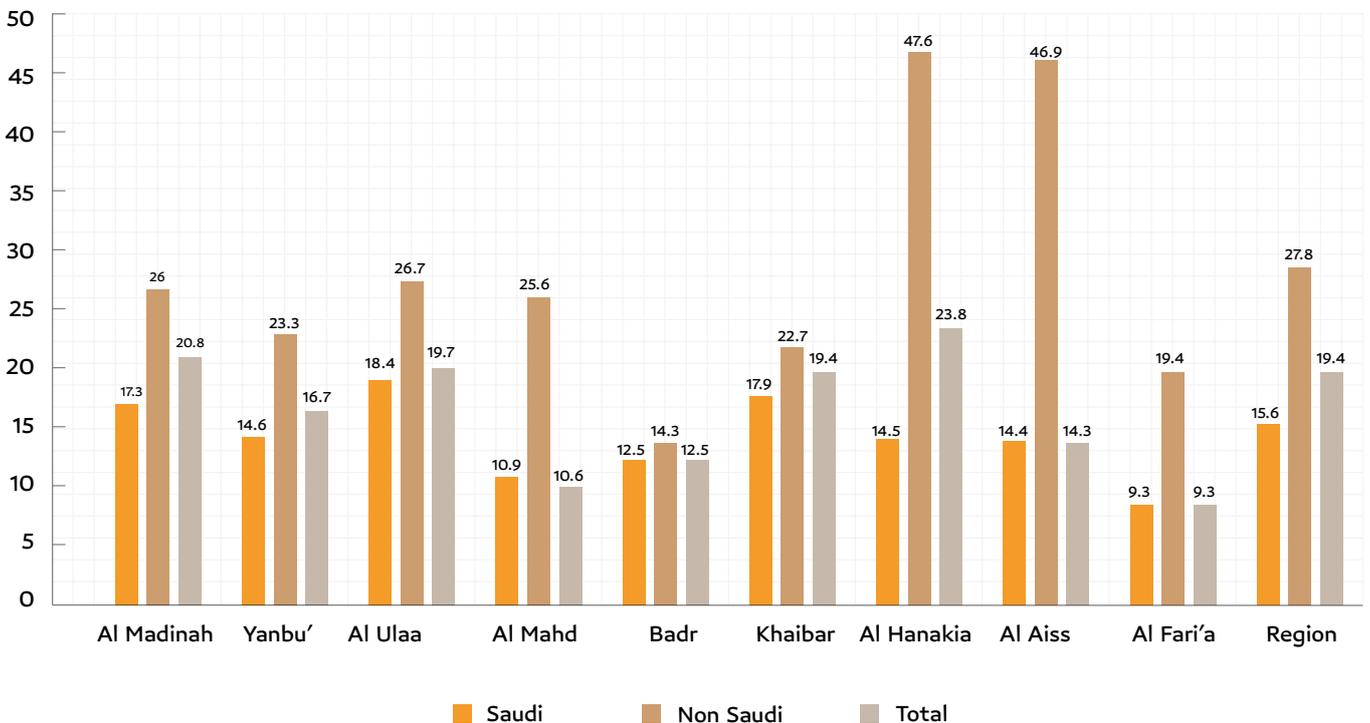


Figure 2.7 Housing rental affordability in Al Madinah region (monthly rent to monthly income)

Compared to other cities of the region, renting a house is more expensive in Al Madinah city (with a monthly house rent to monthly income ratio of 20.8%) than most cities of the region expect Al Hanakia (with a monthly house rent to monthly income ratio of 23.8%).

2.2.2.3 Land price key for housing affordability

As shown in the figure of value chain of housing, land acquisition is a key factor for housing affordability among other factors such as title/tenure, Infrastructure, house construction, Sales & transfers, Maintenance and ongoing improvements, social and economic infrastructure. At its level of the value chain, finance from different sources is required.

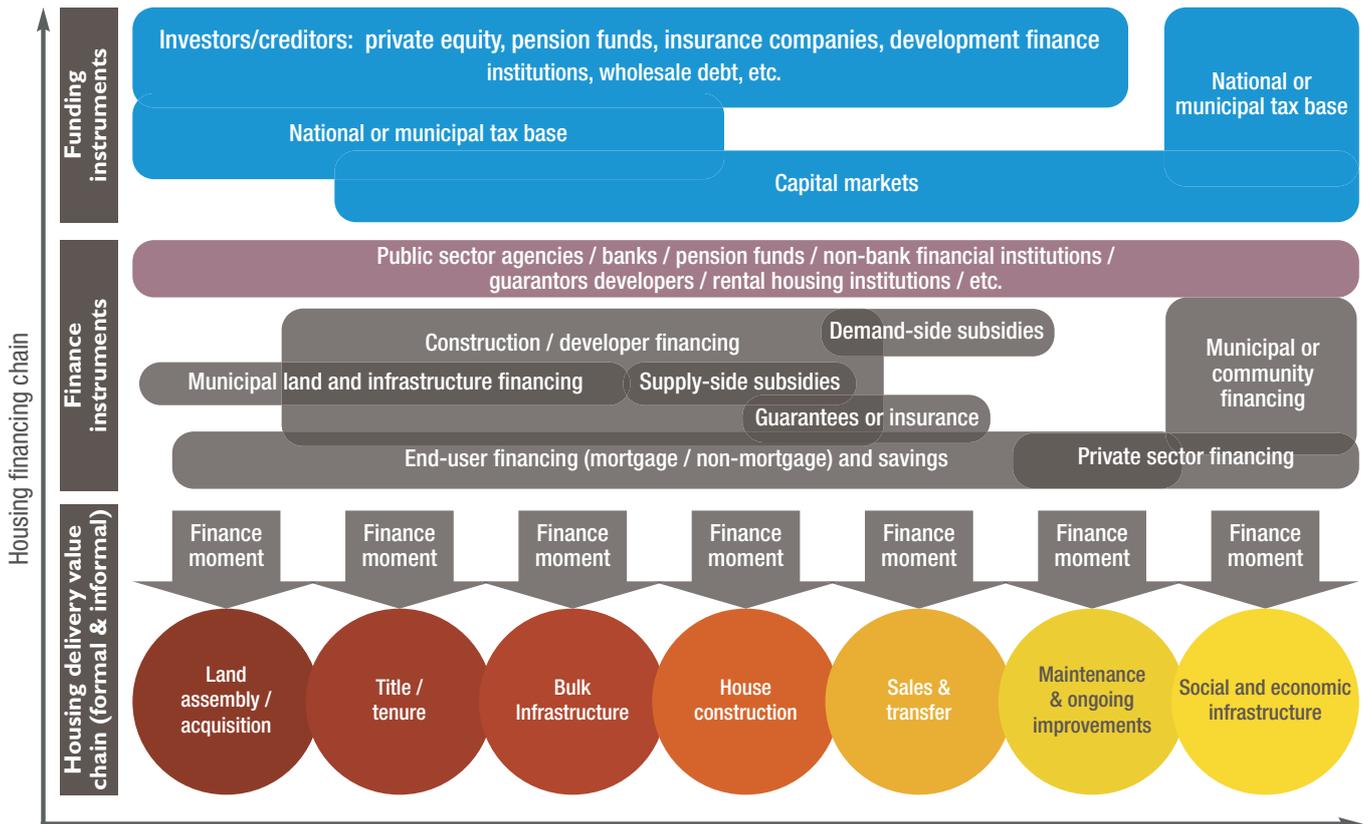


Figure 2.8 synergies between the housing delivery and financing value chains
 Source: Centre for Affordable Housing Finance in Africa, 2018 ^[12]

The socio-economic survey of 2021 shows that the ratio of average land price to income for Saudi families is 8.5 against 9.8 in 1437, which a decrease of 1.3 point. This means land also is becoming more affordable in Al Madinah than in previous years. This can be associated with several factors, and most directly to the reduction of the price of land itself because the household income has decreased in 2021. ^[6]

2.2.3 Safe And Decent Houses: Affordable Housing Goes Beyond Housing Price And Income



As it is broadly expressed in the definition of housing affordability, in addition to the cost, housing must be adequate in quality and location. This has been anchored in the establishment of the first target of Goal 11 “Ensuring universal access to adequate, safe, affordable basic housing and services and upgrading slums by 2030”. In addition to housing affordability, this target calls for safe and decent houses.

According to the UN-Habitat’s definition of slums, a decent house enjoys a) improved water, b) improved sanitation, c) durable structures, d) sufficient living area, and e) security of tenure.^[3]

Besides UN-Habitat’s definition of slums, decent houses require basic services such as electricity, and waste management, safe location with clean streets with lights. In the KSA, the Ministry of Energy, Industry and Mineral Resources is strengthening the electrical system by building generation plants to meet the growing demand^[14], while the Ministry of Environment, Water and Agriculture is expanding sewage services and increase coverage to eliminate

environmental harm and keep up with the urban growth; expanding water services and increase coverage to keep up with the growth in demand; and increasing reuse of treated water.^[15] Another factor of the value lies on infrastructure, building material and social services that, together determine the housing conditions.

According to the definition of the UN-Habitat, a household is considered overcrowded when an average of more than 3 persons share a room. According to the MUO 2021 socio-economic survey, in Al Madinah city, the number of persons per room is estimated at 2.0, which is below the threshold of 3.0 indicated by UN-Habitat’s definition. In other terms, most of the households in Al Madinah city enjoy sufficient living area as it is also indicated in the 2021 survey with **99.6% of households having a sufficient living area.**^[6]



Furthermore, the socio-economic survey estimated that the ratio of area per person in the household at 43.6 square meter per person in Al Madinah city. In addition to having

sufficient living area, most of the households of Al Madinah city have access to improved water (93.3%) and to improved sanitation (85.4%)

The 2021 socio-economic survey also indicates that households are mostly in residential building (68.6%) suitable for renting, villa (6.1%), old traditional house (3.2%), and modern traditional house (12.5%).^[6] Regarding security of tenure, the percentage of ownership with legal documents is also high (93.9%).

The socio-economic survey estimates that 92.8% of houses are decent. It also estimated that 95.4% of households were served with a regulation collection of solid wastes. Regarding the safety of the environment, **96.1% of people feel safe in their community.** All households are connected to electricity.



In conclusion, most households in Al Madinah live in decent houses with sufficient living area, improved water, improved sanitation, connection to electricity, regular collection of solid waste in a safe neighborhood.^[6] This picture is drastically different from the situation observed in 1428 AH where informal housing was estimated at 23% with smaller, overcrowded rental units in densely developed low-rise buildings (two to three stories in Al Madinah),

occupied by a mixture of low-income expatriate workers, from various countries. The same situation is observed in Makkah with a higher magnitude (more than 40%).

It is important to note that, though the socio-economic survey indicates that, in 2021, the percentage of families with legal documents (title deed) is high (93.9%), this information was collected only among families who already have a house; they are 40% of the Saudi families of Al Madinah city. Those who are not able to have title deed, are not legally authorized to build a house. **The unplanned settlements represents only 4% of the Al Madinah area.**



MOMRAH (BALADY) Portal has greatly boosted building permits issuance, Currently, it takes about 5 days.

The upgrading of the Developers Services Centre (Etmam) by the Ministry of Municipal and Rural Affairs (MOMRA) and Housing is to expedite the issue of all necessary housing approvals and permits.^[7] it aims to a) Reduce to 60 days the time needed for necessary licenses and permits for real estate development; b) Increased number of services provided via a comprehensive platform for real estate development procedures.

Facts: Most of the households in Al Madinah live in decent houses with sufficient living area, improved water, improved sanitation, connection to electricity, regular collection of solid waste in a safe neighborhood. They also enjoy security tenure. Affordable housing goes beyond housing price and income.

Policies: Al Madinah is moving towards the achievement of the first target of Goal 11 "Ensuring universal access to adequate, safe, affordable basic housing and services and upgrading slums by 2030".

2.2.4 Housing Finances: Mortgage Key Driver Of Home Ownership



In Al Madinah city, the information collected in 2021 shows a significant progress (25.3%) compared a decade ago where less than 10% of houses were under mortgage. However, it seems that the pandemic of COVID-19 has affected the housing sector in many angles including housing finance. In 2021, two-thirds of families use private funds to purchase their home. ^[6]

Regarding home acquisition, as noted in the Housing Program Delivery Plan of the Saudi Vision 2030, there is difficulty in accessing adequate housing finance in the KSA. This is evident by a low mortgage penetration in the kingdom (about 4–6 per cent of the GDP, and 23 per cent of retail loans), which has also been attributed to the shortage of affordable housing coupled with the high real estate prices. (McKinsey Global Institute, 2015). ^[16] This calls for diversification of funding sources for housing through the Public Housing Authority (PHA) in the newly combining Ministry (Housing, Municipal and Rural Affairs); the Public Pension Agency (PPA), and the Real Estate Development Fund.

The Green Paper for the National Spatial Planning Act outlines enabling suitable homeownership among Saudi families as one of the avenues of achieving the strategic objectives (offering a fulfilling and healthy life). Based on Vision 2030, the Ministry of Housing aims to increase the ownership rate by at least 70% by 2030, whereas the housing goal set forth as part of the NTP objectives is to increase homeownership to 52% by the end of 2020. Under the NTP, some of the housing will be delivered through public-private-partnerships and build-operate-transfer projects. The Government strives to reduce the cost of housing from an estimated 10 times gross salaries to five times by 2020, and to increase by tenfold the number of proper housing units provided to needy families benefiting from social security to 101,700 by the same year. In terms of the operations of the real estate sector, the Government plans to reduce the average time required to approve and license new residential real estate development projects from a baseline of 760 days to 60 days by 2020. ^[4,5]

2.2.5 Partnership For The Provision Of Affordable Housing

Al Madinah-based initiatives by the non-governmental organizations and the private sectors

The non-profit sector can implement alternative tenure models, assist in advocacy efforts in formulating just policies creating awareness through technical know-how of developing and maintaining home affordability. Selected initiatives include:

- King Abdullah Bin Abdul-Aziz Foundation for Housing Development: Granting low-income citizens in need with well fitted residential units.
- Prince Sultan Bin Abdul-Aziz Al Saud Foundation's Charity Housing Program in Al Madinah Al Munawarah region: Providing loans for housing in accordance with the accredited policies and standards; Providing residential units fitted with facilities
- Private sector: Real estate finance and development

Al Madinah Al Munawarah Urban Development Bank and Real estate loans

It is clear, within the same framework of housing availability support for different social classes, that about third of the building constructed during the year 1430 A.H (2009 A.D) in Al Madinah Al Munawarah Metropolis **(31.8%) were constructed based on real estate loans** according to the data issued by Al Madinah Al Munawarah Urban Development Bank which is a vital element in the housing support and finance system not only for low income classes but also for middle income classes. The low value of the previous indicator (residential



To increase rate of ownership, the ESKAN 2 will provide 500,000 SR building loans to develop Ministry lands in Jeddah, Al Madinah , Qatif and Dammam. Comprehensive mechanism for planning and executing Housing Program infrastructure: This aims to:



Increase the number of comprehensive real estate projects.



Reduce time taken to develop housing projects.



Reduce infrastructure costs by coordinating with multiple execution entities.

Besides the above measures that are largely driven by the central government, the city of Al Madinah as other Saudi cities must develop proactive policies to engage the participation of the private sector to cover their shortage of affordable housing. The city of Al Madinah as other primary cities has been the key drivers of the regional economies of Al Madinah. Future migrations will continue, predominantly, to the city of Al Madinah unless a major effort is made to improve the economic competitiveness of other cities or divert newly created employment to new growth poles. Example of the knowledge economic city. As is the case in other rapidly urbanizing societies, maintaining the attractiveness of secondary cities to young people entering the labor force will require a coherent policy involving the support of General Authorities. In addition to the creation of jobs matching the increasing levels of skilled young Saudis, the availability of affordable housing and other urban amenities in secondary cities will be critical to reversing their demographic downturn.

2.2.6 Impact Of COVID-19 In The Housing Industry

The economic impact of COVID-19 is creating income instability, particularly for low-income and informal workers as well as for contractors who are facing job loss and economic hardship which could result in mortgage and rental arrears and forced evictions. The COVID-19 housing conditions constitute indeed a wake-up call for city governments, local authorities, people, communities and other stakeholders to put decent houses for all in the center of global, national and local agendas. Governments across the world are putting in place mechanisms to protect those who are most vulnerable to the current emergency. Governors and mayors play a major role in urban areas stopping the pandemic spreading while keeping their cities functioning to support the most vulnerable in accessing adequate shelter and health care services. The emergency response should be decentralized to urban areas and tailored to the urban context by working closely with local governments. The success will depend

on the level of preparedness. The situation of Al Madinah is particularly affected with the Hajj and Umrah. ^[12]

The COVID-19 crisis has further drawn widespread attention to the existing inequalities of affordable housing, including disparate health impacts and the financial fragility of low-wage workers in cities. To address long-standing gaps in the safety net, addressing this will require more thoughtful interactions with public agencies and the private and nonprofit sectors. The pandemic crisis triggered a shift in the way housing is perceived both for its social function as well as for its connection to the full enjoyment of the right to the city. Ensuring the right to adequate housing for all is key for disaster preparedness and beyond. Therefore, housing must play a central role in post-COVID-19 reconstruction conversations - including the global agendas 2030 and sustainable urban development. ^[12]

2.2.7 Technology And Innovation

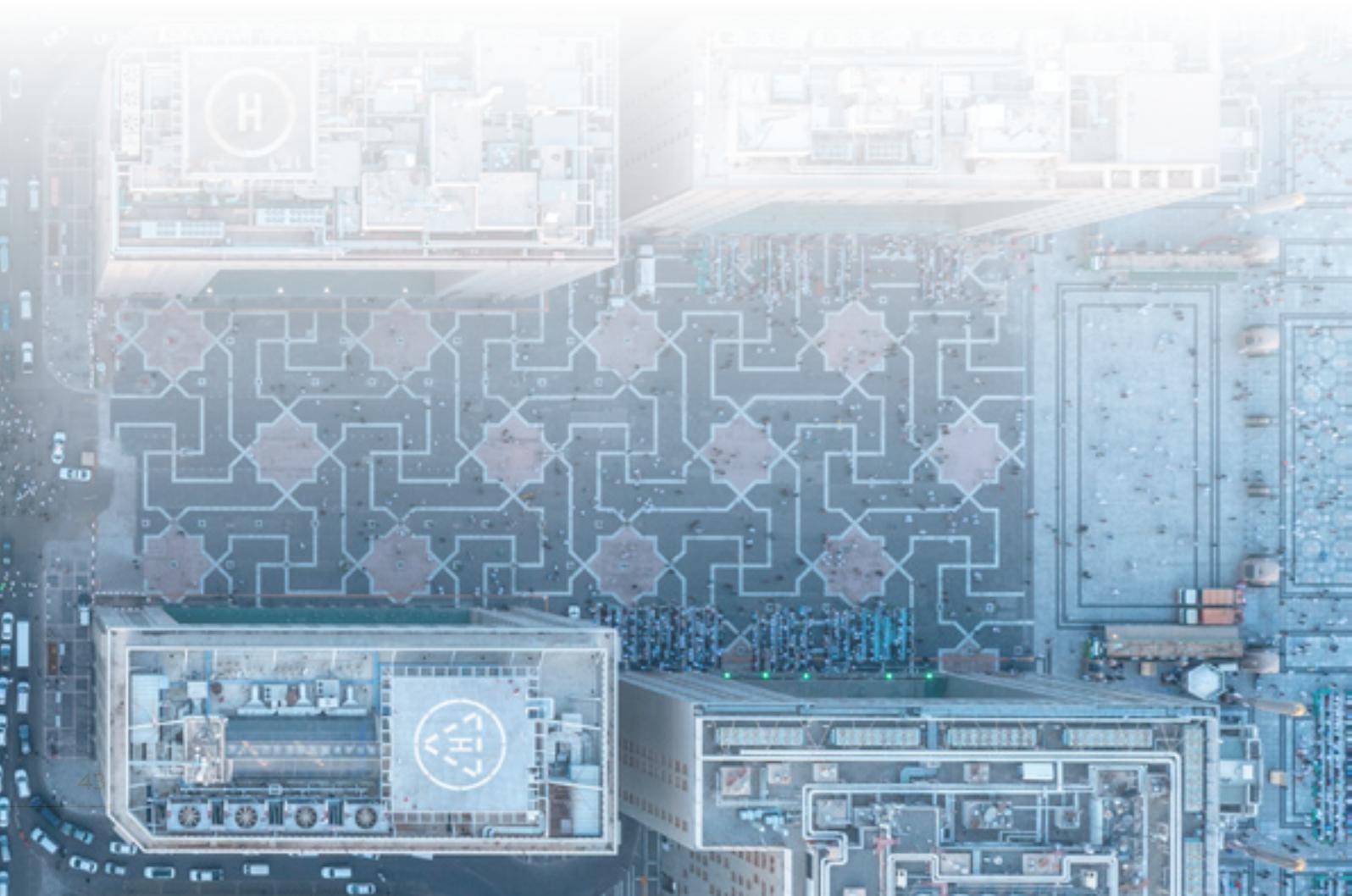
Standards, specifications and guidelines for modern building technologies: The Housing Delivery Programs for an implementation of local rules and standards to design and install 2D and 3D building products, for sustainability, guidelines for the Building Information Management (BIM) system and facilitate the approval of modern technologies. This aims to: a) Increased awareness and understanding of real estate developers, contractors, and engineers to drive adopt of modern building technologies; b) Facilitate adoption of modern

technologies to encourage the private sector to innovate. The private sector must embrace innovative mechanisms to finance development and help establish the creditworthiness of those unable to secure finance through conventional routes, invest in sustainable design concepts to create energy-efficient housing, mainstreaming innovative methods through, for instance, 3D Printing, prefabrication, etc. and using alternative building materials and advanced automated equipment among others. (Housing Delivery Program, Vision 2030). [4,5]

2.2.8 Saudization Of The Housing Sector For Affordable Housing Delivery

Increasing Saudization of the housing sector: It is crucial that the import of raw materials is reduced and the Saudization (nationalization) of the work force is accelerated – across all stages of the value chain, from developer to the manufacturer to suppliers of

materials. Construct housing units in record time by incentivizing the real estate development sector to employ advanced building and construction technologies and develop the sector's capabilities. (Housing Delivery Program, Vision 2030). [4,5]



2.3 SDG11.2: Sustainable And Inclusive Public Transport System

Target 11.2 “By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons.

2.3.1 Urban Transport In The Vision 2030 And The SDGs

Al Madinah city is experiencing rapid urbanization, with a population of approximately 1.45 million, which provides opportunities for economies of scale and agglomeration, but it will also call for large investments in infrastructure to respond to the increased demand for water, sanitation, solid management, energy and mobility. Besides the increase due to urbanization, the arrival of Muslims worldwide to perform the Hajj and Umrah in Makkah and Madinah multiplies Al Madinah’s population by threefold every year. By 2030, the city’s resident population is expected to reach 2.2 million; Hajj pilgrims will be 6.5 million and Umrah visitors 10.8 million. This has been underscored in the Saudi Vision 2030 as follow “Our cities have grown significantly in recent decades; a growth which has been accompanied by the steady development of their infrastructure. To ensure we can continue to enhance the quality of life for all and meet the needs and requirements of our citizens, we will continue to ensure high quality services such as water, electricity, public transport and roads are properly provided.” (MOMRA, 2019) [6]. Development of Al Madinah city, as all large cities, will particularly come with increased demand on mobility that must be satisfied with an efficient public transit accompanied with increased spaces for pedestrians to safeguard the environment while creating economic growth. Economies of scale and agglomeration are, indeed, greater in metropolitan areas where transportation infrastructures are able to

respond to mobility needs with higher access to markets and resources than those where people’s mobility is impeded by deficient transportation infrastructures. [17]

Part of the objectives of the National Transformation Program 2020 aims to improve the legislative environment of the urban transport sector; improve efficiency of transport infrastructure; increase use of public transport; and increase reliance of self-funding for the Ministry of Transport. [18,19] The Sustainable Development Goals also rightly recognized that sustainable transport is crucial for urban economic development. One of the targets of Goal 11 of the SDGs is, indeed, to provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons”. [1,3] In the SDGs and the COP 21, it is also recognized that transport is crucial for sustainable environment. It plays a key role in achieving commitments in the COP21 as a critical part of the climate change solution where it contributes to 23 percent of global CO2 emissions. It can contribute to both reducing greenhouse gas (GHG) emissions and building economy-wide resilience to the impacts of climate change. [1,20]

The goal of the country's urban mobility systems is to enhance access to destinations, activities, services and goods, and make a long-term strategy for economic growth and environmental protection. The following legislations were developed with the intent to guide the transformation of urban mobility in Saudi Arabia ^[4,5,21]:

- National Spatial Strategy. This specifies transport as a prerequisite for any development corridor, as it provides mobility and connects people, goods and services, which are necessary for the integration and development of Saudi's cities. ^[21,22]
- National Transformation Program 2020. This was developed with the intent to realize the medium-term goals of Saudi Arabia's Vision 2030. Part of its objectives include to

minimize the rate of road traffic fatalities; improve the legislative environment of the urban transport sector; improve efficiency of transport infrastructure; increase use of public transport; and increase reliance of self-funding for the Ministry of Transport. ^[4,5]

- National Transport Strategy. The strategy emphasizes several areas: (1) improving the efficiency and effectiveness of the transport sector; (2) enhancing transport for Hajj pilgrims; (3) improving national security during natural and man-made disasters; (4) environmental protection from motorization and increasing environmental awareness; (5) enhancing road safety to lessen traffic fatalities; and (6) promoting economic growth and social development by making transport services inclusive for all. ^[23]

2.3.2 Promoting The Public Transport: Al Madinah Integrated Transportation Infrastructure

The promotion of public transport can be bi-folded 1) long term with the introduction of BRT, Metro and light rail; and 2) short and medium terms with the formalization of the informal sector. ^[24] To meet the demand for urban mobility in large agglomerations it is proven that promotion of public transit system that can carry a large number of people is central ^[17, 24,25,26]. Public transport can get large numbers of people to their destinations efficiently. It is space efficient in terms of area per traveler, which can free significant amounts of land in prime locations that would otherwise be allocated for transport uses. It increases people's mobility with fewer vehicles, less energy and smaller space consumption. It contributes to environmental sustainability with lower emissions of airborne pollutants and greenhouse gases. Public transport has several social, economic and environmental effects on city smartness. ^[17, 24,25,26]

It is demonstrated that people with access to public transportation work more days annually than those without such access. Access to jobs, education, health services and other facilities through an affordable public transport is central to social inclusion for the urban poor, and particularly for the youth who have limited financial resources to cover most of their needs. With affordable public transport, youth can travel independently, and in some cases, delay their decision to drive private motorized vehicles. Community cohesion through interactions between people is also eased by public transportation. Public transport tends to increase physical activity as most trips include walking or cycling links. It is demonstrated that people using public transport walk three times more than those that rely on private cars, a duration that meets the required criteria of the moderate daily physical activity for health reasons. ^[17, 24,25, 26]

Al Madinah Integrated transportation infrastructure

To tackle its mobility problem, Al Madinah city has introduced a new integrated transportation infrastructure master plan to improve the quality, safety, and efficiency of its transport. The proposed transport network for Madinah. ^[27]



Figure 2.9 Al Madinah Proposed BRT system 2025
Source: BRT Project (Al Madinah Buses Project)

Facts: The urban mobility of Al Madinah is characterized by the predominance of the use of private car to access services and facilities and the lack of public transport.

Facts: Despite the lack of public transport, the drivability in Al Madinah city is efficient, as more than half of population resides at a 15-minute driving distance from the center, and nearly the whole city is under 30-minute drive.

Policies: It is to assure to implement the transport network mega project that aims to develop the public transportation system, ease transportation for visitors, decrease traffic congestion, and create safe mobility for elderly, children, and people with disabilities.

BRT Project (Al-Madinah Buses Project)

Goals: Developed Public transportation system; Easy transportation for visitors; Decrease traffic jams; and Safe for old aged, children, and people with disabilities. **Targets by 2030 are:** 300 to 500 stations, 80- 100 Buses, 30 to 40M annual trips, 400 to 800 meters Service buffer, and 80 to 90% Area coverage.

The Al-Madinah Buses project has numerous targets which are 300 to 500 stations, 80-100 Buses, and 30 to 40M annual trips (16 Annual trips per capita), 400 to 800 meters, service buffer, 80 to 90% Area coverage (80% Population coverage with Public transportation).

With its large population, Al Madinah city offers potential economies of scale and agglomeration. but it also calls for large investments in transport infrastructures to respond to the increased demand in mobility. In recognition of the mobility demand, the Al Madinah city authorities has initiated a mega project on transport. in the field of investment and strategic projects: the railway line of a total length of about 450 KM linking between Makkah al Mukarramah and Al Madinah al Munawarah through Jeddah and King Abdulah economic city, and a link has been established with Yanbu' city. the length of the railway line which passes within Al Madinah Al Munawarah is about 202 KM, and the proposed line ends at the east of the urban mass in Al Madinah al Munawarah which is located near the intersection of King Abdul Aziz road with King Khalid road (the third ring road). this project is considered a quantum leap in the development

2.3.3 Promoting Safe Pedestrians

Despite challenges, walking has enormous economic, social and environmental advantages. Madinah city with its rapid urbanization and increased Hajj and Umrah population must be planned as walkable with affordable means of public transport. Walking is an enabler of social cohesion and environmental sustainability with enormous social, Economic and Environmental benefits. It is now recognized and advocated that walk is the most efficient means of mobility

process of Al Madinah Al Munawarah. (reference, Madinah technical report 1434).

The urbanization dictated that Al Madinah would reach soon 2 million and above. In the future, the BRT project, alone, will be insufficient to move daily millions of people. To respond to this demand, Madinah city must put in place various combinations of high-capacity transport public modes, which are metro, light rail, BRT and buses. Riyadh is already pioneer in the development of metro in the Kingdom, but it may still face huge mobility challenges associated to the diversity of its urban form. There are many settlements in the outskirts of the city that are left out from the metro. Large cities require, indeed, a multi-modal transport system including, such a metro, that can accommodate a very number of passengers. In these high-capacity transport modes must also be integrated other means of movement such walking, cycling and other private means that will serve as "feeders". These "feeders" are crucial in large urban agglomerations with many settlements are far away from the center and lack street network that can accommodate high-capacity transport modes.

for environmental sustainability as expressed in global agendas such as Rio+20 (2014), SDGs (September 2015), COP21 (December 2015) and the New Urban Agenda in 2016, and the Saudi Vision 2030. In addition to its social and economic benefits, walking has a major advantage in reducing energy consumption, greenhouse gas emissions and pollution (air, water and noise) substantially, as it does not rely on fossil fuels unlike other modes of transport in cities.

Furthermore, as walking requires significantly less road space and parking, it enables the preservation of natural habitats and open spaces. Walking also provides the daily physical activity

required for a healthy lifestyle as seek in the Saudi Vision 2030. Sport features prominently in Al Madinah strategic planning.

2.3.4 Planning For A Connected Madinah City – Density, Compactness, Mixed Land Use And Complete Street Network

Linking transport planning and urban planning: Transport demand and efficiency are associated with urbanization and urban planning as well as to several other factors such as transport policies, planning and financing. Urban planning cannot fix all transport challenges, but it can provide solutions to land use related transport issues such as: promoting polycentric urban centers, mixed land use, controlling sprawl, decongesting the inner center, and planning and designing streets for multiple uses. In the process of the growth of Madinah city, it is important to consider the enforcement of urban planning and particularly for transport infrastructures. By combining spatial planning and transport policies, local governments would reduce people’s need to travel; improve travel conditions with affordable and efficient public transport options; and manage supply and demand traffic to curb congestion, which is a major barrier to productivity and a headache for residents. Transport also influences urban form. Large urban configurations have been located along major transport routes that use multi-modal networks that integrate land, sea and air transport systems. Competitiveness and employment are also through a better connectivity that allows goods and people to circulate quickly and easily for higher economic, social and territorial cohesion.

Transport demand and efficiency are associated with urbanization and urban planning as well as to several other factors such as transport policies and planning. Urban planning cannot fix all transport challenges, but it can provide solutions to land use related transport issues: promoting polycentric urban centers, mixed land use, controlling sprawl, decongesting the inner center, and planning and designing streets for multiple uses. Here we are going to examine how elements of urban planning can impact on transport in Madinah city through different elements of urban form such as: density, mixed land use and street network.

Urban densities shape transport modes: “No aspect of urban form and travel has been more closely studied than the influences of urban densities on public transport ridership. It is widely accepted that high densities are essential for sustaining cost effective public transport services.

Promoting mixed land use to reduce the need for mobility: When planning the growth of the city of Madinah, it is important to integrate the mixed land use approach that has proven efficient with high economic, social and environmental returns. Mixed land use settlements have various social and economic benefits by improving accessibility to services and urban amenities for

a broader segment of population, and increasing housing options for diverse household groups. By combining spatial planning and transport policies, local governments would reduce people's need to travel; improve travel conditions with affordable and efficient public transport options; and manage supply and demand traffic to curb congestion, which is a major barrier to productivity and a headache for residents.

The mixed land use areas only amount to 5.2% of the total land use within the 1450 UGB, where the area delimited by the 1st Ring Road significantly contributes to this percentage. The rest of the city is predominantly monofunctional, consisting mostly of residential new developments, which form an urban fabric that is very different

from the traditional vernacular pattern. The subsequent progressive restructuring of the urban form, pushed by this kind of development made of purely residential condominiums, is one of the reasons for the spatial monotonousness of the most recent expansions in Madinah.

Connected Streets are needed to transform urban mobility in Madinah city: One key element of urban planning is the street, which defines the form and structure of city. In recent years streets have been recognized as an integral factor in the achievement of sustainable urban mobility. A connected street network reduces travel time and encourages walking and social interactions.



Al Madinah's Street network

Madinah's structural organization is around a radial road network, starting from the central area, where the Prophet's Mosque is located, The Grand Haram, and defined by the 1st Ring Road, creates a central focus that attracts extremely high pedestrian flows. The radial organization, starting in the centre and followed by concentric Ring Roads defining different areas of the city, remains the main structural feature. In addition to the Ring Roads structure, there are several minor and major arterials, functioning as radial linkages across the city and the different Ring Roads, in an attempt to minimize traffic disruption due to the high tourism rate. The main roads defining the major street hierarchy and urban structure are:

- The 1st Ring Road, King Faisal Bin Abdulaziz Road, circling around the Haram area and the heart of the city, which is 5 kilometres long;
- Prince Abdulmajeed Road, which defines an area characterised by a traditional urban pattern and dense population;
- The 2nd Ring Road, King Abdullah Road, about 27 kilometres long, which defines a densely populated urban area, where density is overall higher than in any other areas of the city.
- The 3rd Ring Road, King Khalid Road, situated at a further distance from the city centre, of about 10-15 kilometres;
- Omar Ibn Al Khattab Road, a main radial road extending to the Southwest, serving largely the traffic flows to/from Makkah and Jeddah.

The total amount of roads within the 1450 UGB is 5834 kilometers, and the amount of road surface per capita is 4.2 meters, indicating a sufficient ratio of road infrastructure in reference to international standards. Overall, the citywide road network functions well and has a well-defined hierarchy of highways, major and minor arterial roads, and collector roads. Nevertheless, because of both the centralized road network structure and the massive numbers of religious visitors and their associated dynamics, Madinah faces a challenging transportation issue, manifesting in the continuous conflict between pedestrians and vehicular traffic within the central area, and particularly within the 1st Ring Road. Another essential aspect affecting Madinah's overall movement structure is the limited accessibility to the historical sites, currently openly accessible by private cars and syndicate busses. The most congested streets (figure 32), especially during the peak seasons, are the arterial roads leading to the main entrances of the city: Omar Ibn Alkhattab Road, also known as the old Jeddah-Madinah Road, the Airport Road, also leading to Riyadh and Al Qassim, and the King Abdulaziz Road. Since the Haram Plaza has recently increased its hosting capacity, these movement issues are predicted to become more substantial without the appropriate development of an efficient public transport system, and an increased pedestrian-only area with sufficient public space provision. Besides the radial road structure, it is worth mentioning that the Al Haramain High-speed Rail, which connects the cities of Makkah, Jeddah, and Madinah efficiently,⁴⁰ became a significant structural component of the overall city's mobility infrastructure.

Reference: Depending on Madinah City Profile, 2019. Future City Programme. MOMRAH

2.3.5 Promoting Smart Urban Mobility

2.3.5.1 Intelligent transport system (ITS)

An Intelligent Transport System (ITS) is particularly crucial for the upcoming Mega BRT project of Al Madinah. One of the goals of the upcoming mega projects is a developed public transportation system with easy transportation for visitors, to decrease traffic jams, and increase safety Safe for elderly people children, women and people with disabilities.

ITS vary from basic management systems such as car navigation; traffic signal control systems; container management systems; variable message signs; automatic number plate recognition or speed cameras to monitor applications, such as security CCTV systems; and to more advanced applications that integrate live data and feedback from several other sources, such as parking guidance and information systems; weather information, etc. Additionally, predictive techniques are being developed to allow advanced modeling and

comparison with historical baseline data. The technology embedded in smartphones, including global positioning system (GPS) sensors, Wi-Fi capabilities, and cameras, allows users to generate information in the field that is automatically appended with locational data. ITS also increase the operational efficiency of road infrastructure, reduce travel time through predictable travel information and improve drivers' convenience and safety.

Big data with its wealth of information from various sources as smart phones, GPS and sensors offer unique opportunities for complex transport modeling particularly for the Al Madinah upcoming Mega BRT project. In the journey towards sustainable and resilient transport system for safe and efficient movement of people, goods and services, ITS can play a critical role as it is observed in pioneer cities.

2.3.5.2 Smart mobility solution

Substitution Digital businesses support a sustainable transport in reducing the demand for both motorized and non-motorized means of mobility. Digital businesses include mobile money, price comparator websites and online commerce, and online media and entertainment. At the higher scale, we are moving to the era of digital goods traded exclusively online, as for e-books, online search, and streaming music and videos - making transport, storage, and distribution obsolete for these transactions. Nowadays, increasingly newly created businesses operate mostly entirely on the web while offering limited traditional services that require traditional means of transport, and existing businesses are operating part their activities through the web.

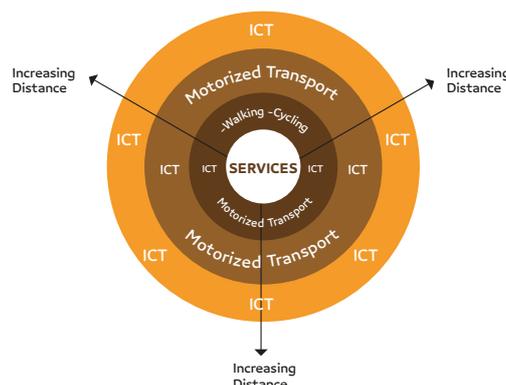


Figure 2.10 Multiple choices of access to services

Source: Mboup, G., 2019 [24]

2.4 SDG 11.3: Urbanization, Land Use An Urban Planning

Target 11.3 “By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries.

According to the United Nations Department of Economic and Social Affairs (UNDESA) report, World Urbanization Prospects: Review 2018, half of the world’s population now lives in urban areas. By 2050, two-thirds of the world’s population will be urban. Work to promote socially and environmentally sustainable development through good urban planning based on a partnership is needed to ensure the existence of cities suitable for all and commensurate with the local context of cities. [37]

A defining feature of many of the world’s cities is an outward expansion far beyond formal administrative boundaries, largely propelled by the use of automobiles, poor urban and regional planning and land speculation. [3] A large proportion of cities both from developed and developing countries have high consuming suburban expansion patterns, which often

extend to even further peripheries. To effectively monitor land consumption growth, it is not only necessary to have the information on existing land use cover but also the capability to monitor the dynamics of the resulting changes in land use. This should take into account the modifications resulting from the changing demands of increasing population and forces of nature acting to shape the landscape because all land cover today is altered principally by direct human use. [3]

The Saudi government has taken significant steps to achieve sustainable urban expansion in the Kingdom. A royal decree was issued, according to which the Ministry of Municipal and Rural Affairs, in cooperation with UN-Habitat, is implementing the “Future of Saudi Cities” program. [7] The program seeks to develop a new vision and framework for strategic planning for a sustainable urban future in Saudi Arabia that is productive, equitable, socially inclusive, and environmentally sustainable, with adequate infrastructure and an adequate and high quality of life. [7]

2.4.1 Suburbanization Of Al Madinah Urban Growth: Extension, Inclusion & Leapfrog

Al Madinah’s location and topography have fundamentally impacted the city’s identity and expansion trends. Al Madinah’s original features linked to it being a desert oasis, and the consistent presence of farms in some older parts of the city demonstrates this. Traditionally, Al Madinah developed as a radial structure, with the Haram area expanding from the central Prophet’s Mosque in the center to the surrounding cities. While the mountains have historically

constrained Al Madinah’s growth, the city has recently been expanding along the valleys to the North, South, and East. [27]

The total area of the urban boundary is 682.27 km². According to the last census in 2011, the population of Madinah was 1,385,192, with a growth rate of 2.9%, and the number of pilgrims and visitors in the same year was 9,006,000.

Between 1928 and 2015, the area of Madinah increased by about 42 times, while its population grew only 17 times during the same period. That means the increase in population is less than the increase in land consumption, which explains the emergence of new districts in the suburbs far from the central area. These extensions led to the phenomenon of urbanization and urban integration. Still, this expansion was at the expense of agricultural land. That led to a leap in urban development and integration with the emergence of scattered urban enclaves, separated from the main urban fabric. [27,38,39,40]

Population growth has put pressure on the boundaries of the urban scale, increasing the demand for land, which has led to rampant land subdivision. The process of zoning land is one of the basic procedures through which rural land is converted into urban land. The percentage of vacant lands (undeveloped vacant lands) with areas of 5 dunums (5,000 Sq. meters) or more in 2020 amounted to about 18% of the UGB 1450AH, while the area of white lands in 2017 was about 31% of the UGB of 1450AH.

On the other hand, the number of pilgrims coming to Madinah has increased over the years and will continue to increase in line with Vision 2030, which targets 30 million Hajj and Umrah pilgrims, This is an appropriate opportunity to make a sufficient use of the white lands inside the city. In order to achieve the 2030 vision and based on the future vision of the comprehensive plan for Madinah (1462 AH), the expansion projects of the Prophet’s Mosque are being implemented. [27,38,39,40]

To address the issue of urban sprawl and improve the efficiency of urban management, in 1406H (1986), the Kingdom of Saudi Arabia established Urban Growth Boundaries for all cities. Following the decree, Madinah has three existing Urban Growth Boundaries (UGB); 1) UGB established to contain the development up to the 1435 AH. 2) UGB established to contain the development up to the 1450 AH. 3) The Development Protection Boundary, which works to limit city expansions, and also defines the limit of the Amanah jurisdiction over the neighboring rural areas and satellite developments. [27,38,39,40]

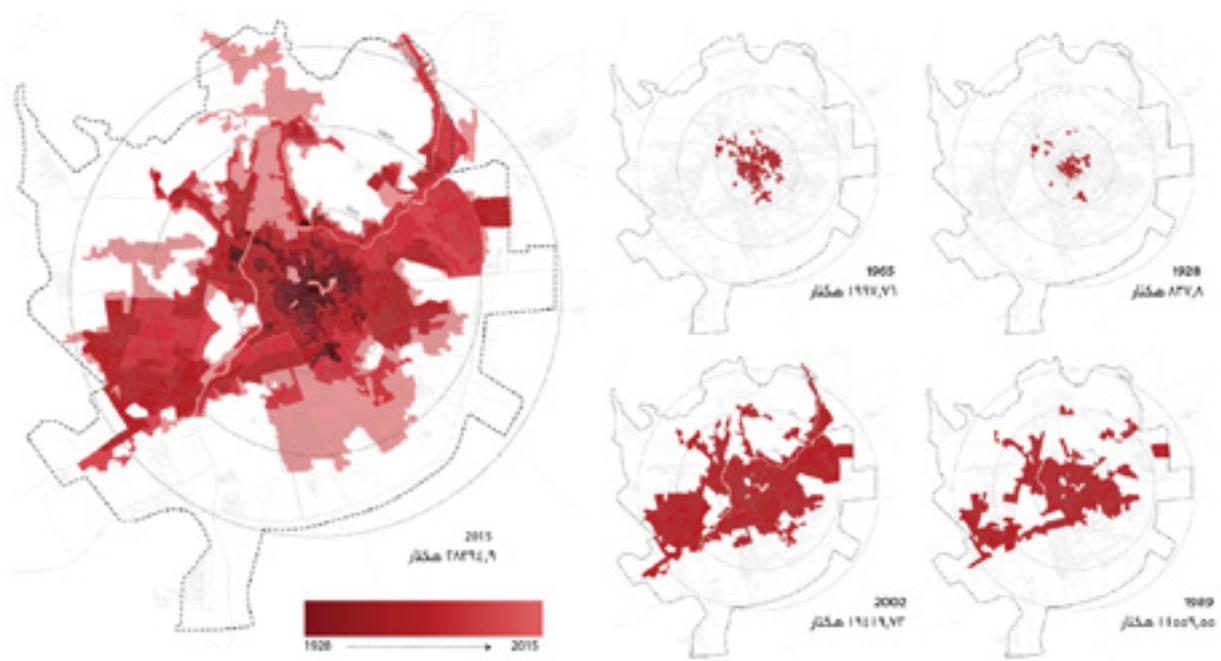


Figure 2.11 Population growth and expansion, 1928-2015
 Source: Al Madinah City Profile 2019 [27]

Along with consistent urban growth, the characteristics of more traditional development patterns and housing typologies changed substantially. Due to the city's increasing demand to accommodate resident and floating populations, the construction of a series of high-rise buildings within the 1st Ring Road began, shifting Madinah's skyline and changing its urban patterns. [27]

The Phenomenon of urban Sprawl, Unplanned Areas and Risk Areas:

The rapid urbanization of Madinah has led to many challenges which has resulted to the phenomenon of urban sprawl and unsustainable exploitation of urban land consumption. Despite the rapid population growth rate in Madinah, the urban land mass in the urban area is expanding faster, the urban boundary increase rate during the period 2002-2015 was 1.5%, compared to a population increase of 1.2%. [27]

Another type of unwanted land consumption is unplanned areas. Unplanned areas have been a significant concern for Madinah over the past decades, and these areas are located within the 1450 Urban Growth Boundary (UGB). The unplanned areas are concentrated within the Second Ring Road, around the Prophet's Mosque. Although it represents only 4% of the total urban footprint, it accommodates 17% of the total population. These areas are more densely populated than other parts of the city, displaying an average density of over 250 p/ha, which is higher than the UN-Habitat recommended density of 150 p/ha. These areas suffer from lack of services and transportation systems. [27]

As a result of the natural location of Al-Madinah Al-Munawwarah and the lack of suitable land consumption approaches in some areas, these areas are at risk of flooding. That means there is

a significant risk to the city's social and economic resilience as: 32% of existing road infrastructure, 10% of built area, 30% of proposed development areas, and 70% of the unplanned areas are affected by flood risks. [27]

To meet these challenges, the government adopted the preparation and implementation of development and renewal projects for the extension and unplanned areas and the protection of areas at risk of floods to implement the vision of a comprehensive plan for Madinah and to implement the Kingdom's vision 2030. Strategic Objective No. (2.3.2) The National Transformation Program stipulates "improving the urban landscape in Saudi cities" by developing and activating urban design controls, improving the urban environment in the centre of cities and slums, and achieving the city's vision. [18,19]

In the same context, Madinah is considered one of the best cities in the Kingdom in terms of community participation. Community participation in the urban renewal and development program allows the residents and the local administration to take advantage of the existing urban assets by developing white, abandoned, or underutilized lands within the city, thus improving the residents' standard of living. Therefore, the local government of Madinah adopts innovative and effective participation tools to enhance the constructive participation of all spectrums of society in development, achievement of social justice, and strengthen the attractiveness of cities for living, stability, and governance in the urban transformation process. [27]

Vacant Land and White Land Law: Vacant land is a main issue in the city, which represent the qualitative side of land consumption. Al Madinah is in the accelerating context of achieving the objectives of the MOMRAH in the exploitation

of white lands, according to the Geospatial Information Center (GIC, MDA) analysis at the end of 2020, the results showed that the area of white lands (bigger than 5,000 Sq. meters) is about 18 % of the UGB 1450AH. This is considered a clear improvement when compared to 31% (213 km²) white land area inside the UGB 1450AH in 2017, and 12% in 2017 of the urban area. [27]

With this high percentage in 2017, the City Profile report if Al Madinah in 2019 Suggested that, in order to overcome this problem, there should be a framework for developing and controlling the trend of urbanization and regulating the quality of land consumption. Under the Al Madinah Plan, the vacant land is already mostly planned for residential land use in monofunctional clusters of condominiums and low-density suburbs. [38,39,40] Urban sprawl makes the provision of adequate services and facilities, and access to job opportunities cumbersome. The opposite is mixed land use settlements, which fuels car

2.4.2 Planning, Designing And Managing For Sustainable Al Madinah City

Urban planning and proper land use management are the basic tools in organizing and controlling land consumption in an appropriate manner for the city's situation [41,42,43,44], therefore, it is one of the most important elements that the Kingdom of Saudi Arabia attaches to providing initiatives that support the national spatial strategy. [21, 22]

The Urban plan for Madinah aims to a) apply urban controls to urban land use and building regulations; b) to provide public services and infrastructure in a cost-effective and integrated manner; c) set basic requirements for proposed road networks; and d) help facilitate the development of public and private sector housing. [27,38,39,40]

Al Madinah plan proposed four strategies: 1) the compact City: Consolidating development and densifying centers in Madinah. 2) The Integrated

dependency to access most public services. [7]

It's supported by land capable of being developed within 1450 UGB, whose function should be to limit the city's expansion until 2030 (1450 AH), has an area of 213 square kilometres. That means by applying the same principles to the available vacant land of around 1450 UGB; this will be able to accommodate 862,900 people and cover the growing needs for the next 35 years at the current rate of growth. [27]

Moreover, The Ministry of Municipal and Rural Affairs (MOMRA) has issued a white land law to increase the supply of developed land to better address the housing shortage crisis, the Availability of residential lands at reasonable prices, and combating monopolistic practices. As the executive authority, MOMRA is expected to enforce the implementation of the White Land Law in more cities. [7]

City: Bridging Al Madinah and bringing residents and pilgrims together. 3) The Historic City: Preserving and enhancing Madinah's identity. 4) The Resilient City: Rebalancing Madinah's socio-ecological and economic systems. [27,38,39,40]

The spatial organization of Madinah is rooted in its history and role as one of the holy cities of Islam. The city's central areas are reserved for pilgrims, filled with hotels and business functions, and distanced from the needs of the resident population. That means Madinah faces an increased risk of its residents losing spatial contact with the city center. [27]

The city's current land use system showcases several monofunctional areas, segregated from each other. The mixed land use areas only represent 5.2% of the total land use within the 1450 urban growth

boundary. The area delimited by the 1st Ring Road significantly contributes to this percentage. The rest of the city is predominantly monofunctional, mainly consisting of residential new developments, which form an urban fabric that is very different from the traditional vernacular pattern. [27]

Fertile agricultural land constitutes 23% of the total land use of Madinah, which is equivalent to half of the total residential land use. [27] That indicates that the green agricultural axis along the valley expresses a strong structure for the city. However, the city lacks public spaces and recreational areas such as parks, gardens, playing areas, squares, etc. It is required to increase these elements as one of the priorities of the future vision of the Madinah plan. The vacant land represents 12% of the total developable land, and it is located within the built-up area, which gives many opportunities to create a network of public and green spaces.

The Future Land Use Plan indicates the development of new residential areas to the South, along the 1450 urban growth boundary, in a site free from topographic constraints, as well as a series of

developments beyond the 1450 UGB and within the development protection boundary, extending to the West, East, and South. The proposed new Eastern and Southern development along the wadi is currently under construction. Although provisions for these new development areas include secondary recreational and commercial services, they are distant from the urban core (30-40 kilometers away from the city center), encouraging urban sprawl and putting additional pressure on Al Madinah municipality to provide sufficient service infrastructure. [27]

In the planned future land uses of Madinah, we find that the percentage of residential land has increased to 55% from 51.8% (at present). Agricultural land has decreased to 11%, meaning there will be urban expansions at the expense of agricultural land, while the percentage of open spaces will increase to 7%. Commercial areas behind the C-Ring Road account for 4.4% of the area. The public facilities area decreased to 12.5%, and warehouses increased to 4%, reducing the proportion of mixed uses to 1% from 5.2% in the current situation, which will affect the ease of access to various services.

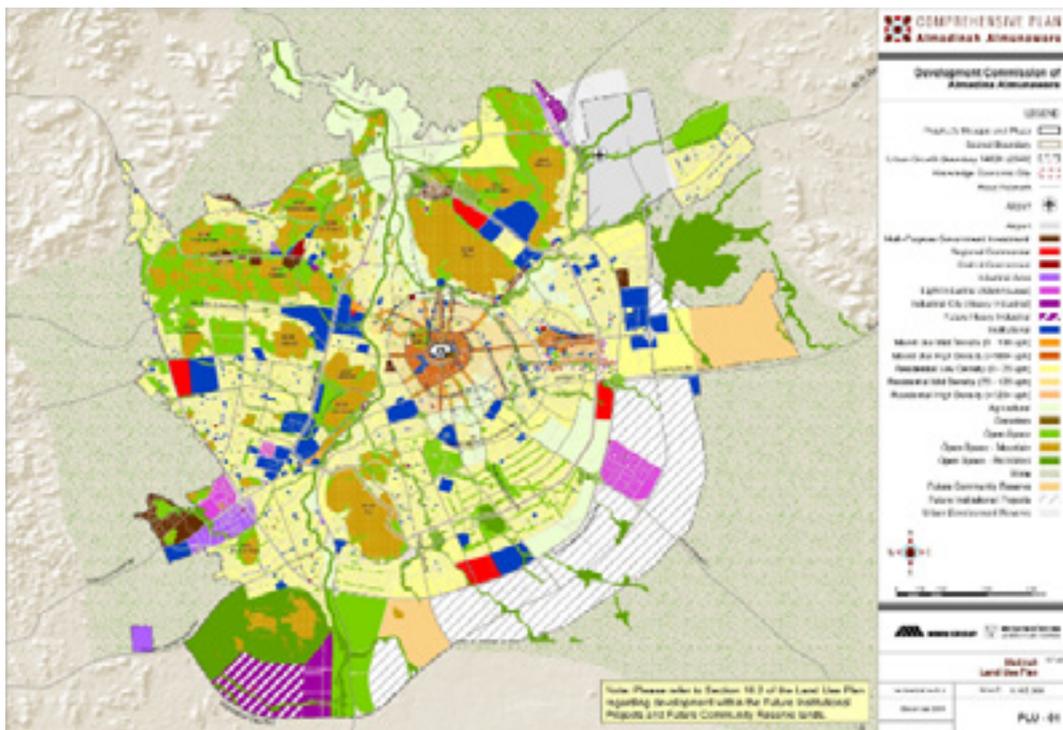


Figure 2.12 Further land use plan (1462 AH)
 Source: Comprehensive Plan of Al Madinah Al Munawwarh [27]

The population of Madinah is expected to reach 2.6 million in 1462 AH, and based on the 2030 vision, the number of visitors and pilgrims will reach 9 million.

Accordingly, we find that the number of visitors is an element that affects the population. They will need places to stay and visit throughout the year without stopping. Which requires more land to cover the unique needs of these visitors, which is reflected in the city's vision in providing these lands taking into account sustainability and preservation of the natural environment, whose elements are in land consumption.

Therefore, one of the essential pillars in the vision of Madinah is the development of master planning

for urban development and infrastructure. Strengthening regional connectivity and urban movement; Effective management of strategic resource capabilities, which includes land consumption and all factors affecting it, ranked first is the population growth rate.

Also, one primary aim of the Al Madinah Urban plan is to apply urban controls to urban land use and building regulations. [38,39,40] It is called for strengthening the management (governance) of urban development and urban legislation through the availability of a comprehensive, integrated and effective legislative framework to control urban development aimed at achieving quality, transparency, and accountability in urban planning. [45]

2.4.3 Densification Of Low Dense Areas: Saudi Policy Strategy

According to the last census in 2011, the population of Al Madinah was 1,385,192 inhabitants. With a growth rate of 2.9%, occupying a built-up area of 44,800 hectares, with a density of 30.9 p/hc. The floating population (pilgrims/visitors) in the same year was 9,006,000, significantly contributing to the total population. [27, 38,39,40]

The population is mainly concentrated on the 2nd ring road, about 5 km from the Prophet's Mosque. It is a traditional urban nucleus with an ancient character and a rich Islamic fabric. [27] As a result of the new development trends and the increasing demand to accommodate pilgrims led to radical changes in the traditional urban pattern, especially within the First Ring Road. Most of the vernacular urban-style buildings were demolished to increase the city's carrying capacity by constructing high-rise and mid-rise hotels and other accommodations. [27,38,39,40]

The central area inside Prince Abdul Majeed Road is the most densely populated, with an average density above 250 p/ha. The density of adjacent areas within the 2nd Ring Road ranges from 150 to 240 p/ha. The central areas with a density above 150 p/ha occupy only 5% of the total building area but accommodate 39% of the total population. [27,38,39,40]

The unbalanced distribution of services to visitors has resulted in a socially polarized spatial and unequal distribution of services and facilities between the heart of the city and the periphery, as the vast majority of visitors reside in the central area within the First Ring Road, which is the area best served. [27]

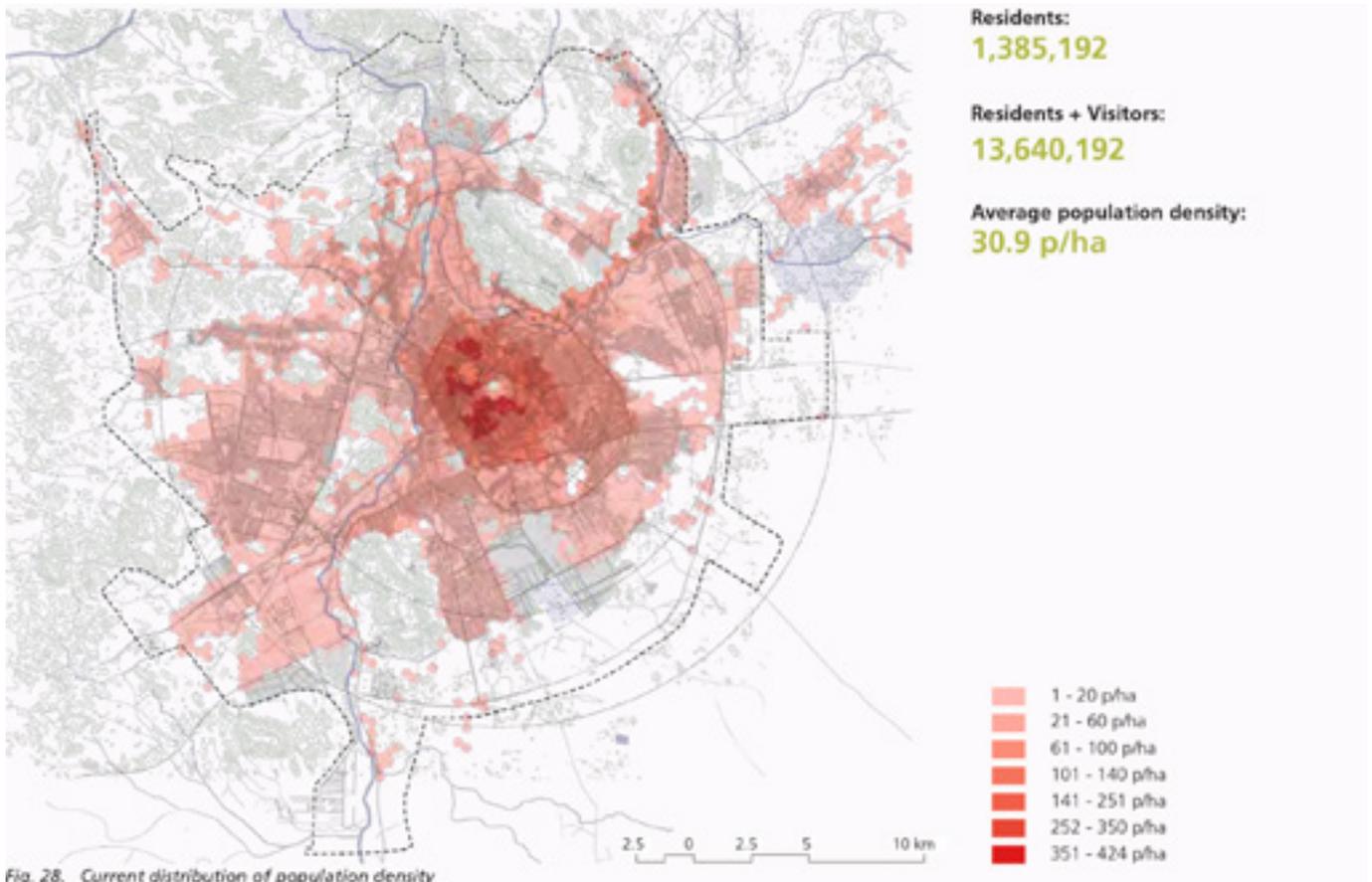


Figure 2.13 Current distribution of population density

Source: Madinah City Profile Report 2019 ^[27]

To address the issues of imbalance in urban density, the policies of the Saudi strategy for the distribution of densities were based on several scenarios based on the approved planning tools and the recommendations of UN-Habitat.

Scenario 1: Al Madinah Plan

According to the trends documented by the Comprehensive Plan and Al Madinah Plan provided by the Amanah [38,39,40], the planned built-up area is supposed to increase to 73,128 hectares, hosting a population of 2,064,000 by the year 2030. Even with the substantial increase in population, the over-dimensioned expansion area will substantially bring down the urban density, which, only considering the built-up area, will reach 28.2 p/ha, demonstrating how this plan promotes sprawled, low-density development. ^[38,39,40]

Scenario 2: UN-Habitat Recommendations

The UN-Habitat scenario supports sustainable district planning for the Holy City, starting by promoting an increased density in line with the average UN-Habitat recommended density of 150 p/ha. Considering the current growth rate and a consequently increased population of 2,064,000 by 2030, the additional built-up area needed to fulfill the city's future growth would only be 13,760 hectares, which is only one-fifth of the proposed built-up area considered in Scenario 1. ^[27]

2.4.4 Al Madinah City Region – National Spatial Strategy (NSS)

Target 11.a “Support positive economic, social and environmental links between urban, peri-urban and rural areas by strengthening national and regional development planning”

National Urban Policy (NUP) and Regional Development Plans (RDP) promotes coordinated and connected urban development. [3] A coordinated effort from government through a NUP or RDP provides the best opportunity for achieving sustainable urbanization and balanced territorial development by linking sectorial policies, connecting national, regional and local government policies, strengthening urban, peri-urban and rural links through balanced territorial development. This indicator provides a good barometer on global progress on sustainable national urban policies. It serves as gap analysis to support policy recommendations. It also enables the identification of good practices and policies among countries that can promote partnership and cooperation between all stakeholders. [3]

The Vision 2030 has been built on the guidelines of the 2030 Agenda, adapted to the national reality of the Kingdom. KSA’s Vision 2030 includes a series of objectives and programs that overlap with the UN Agenda under all five pillars and involve interlinkages between all SDGs.

Among the most important initiatives of the Kingdom of Saudi Arabia for sustainable cities and communities:

- Updating the National Urban Strategy 2030 in cooperation with the United Nations Development Program.
- Improving Madinah to be the first Islamic city in the world.

Saudi Vision 2030 aims to accommodate about 30 million Hajj and Umrah pilgrims by 2030 through the initiatives of the National Program to ensure that the Kingdom is a destination for Muslims by providing tourism, cultural and historical programs for visitors and Umrah pilgrims, by developing infrastructure, preparing Umrah companies, and strengthening partnership with the sector players to achieve it.

Al Madinah region has also initiated and implemented various strategies, policies, and programs along with Vision 2030, the National Transformation Program 2020, and other programs and agendas. These strategies and initiatives are firmly glued on the Al Madinah Main Competitive Advantages such as:

- Islamic hub and destination: Hallmark of Islamic culture, home of second Islam’s holiest city,
- Natural richness and cultural heritage: One of the region’s most attractive coastlines in the backdrop of beautiful land topography and cultural sites, and
- Diverse economy: High-potential sectors to spur economic development & diversification (mining, manufacturing & logistics, agriculture).

The National Spatial Strategy (NSS) designates the city of Al Madinah as a National Growth Centre, one of the three in the Al Madinah Region. The City of Al Madinah ranks fourth in terms of urban agglomeration in the Kingdom, after Riyadh, Jeddah and Makkah. Madinah is anticipated to grow significantly over the next 30 years, reaching a projected permanent residential population of 2.06 million, and approximately 12 million visitors annually by 1462H (2040). [7,27]



Figure 2.14 Al-Madinah Region map

Al-Madinah Al-Munawwarah is considered a development centre at the national level, along with the capital of Yanbu' Governorate. Al-Madinah has reached the stage of self-growth, being the fourth urban centre in the Kingdom, including the satellite projects proposed within the regional scheme. At the level of the Madinah region, Yanbu' and Badr have strong links with Madinah in terms of water provision, trade, and transportation, and in general, the region has a high agricultural potential within the city and in the settlements around Hanakiyah etc. As a top priority for comprehensive national development, Madinah is also one of the first eight urban centers that the NSS supports. This is due to the comparative advantage of Madinah in influencing the development of the Madinah region and the region in spreading regional development at the national level. This aspect positively affects the regional spatial balance

regarding the distribution of services and central government functions provided by Madinah, such as universities, research institutions, specialized medical services, and others. Balanced regional development is essential in ensuring the effective use of existing infrastructure and public services and directing support for the growth of small and medium-sized cities around them. The objectives of the NSS for the Madinah region are:

- Achieving a balanced urban development between regions in the long term;
- Expanding and enhancing economic growth.
- Strengthening the selected growth centres in the region's cities and maximizing the essential equipment found in the current major urban centred (mainly represented in Madinah).

The Al Madinah Strategy aims to transform Al Madinah Region by propelling its economy, empowering society, and preserving its environment. One of the core pillars of the Al Madinah regional strategy 2030 lies in Prosperity and "Diversified and sustainable economic development." This pillar aims for a) Targeted enablers of priority sectors and attractive investment destinations, b) a Strong Islamic economy, c) a Thriving SME community, and d) Optimized and effective natural resources. Target economic sectors were prioritized based on Al Madinah's competitive advantage, Vision

2030 priorities, and the sector's socioeconomic contribution. The Al Madinah Strategy aims to transform Al Madinah Region by propelling its economy, empowering society, and preserving its environment. On the economic side, it aims to increase the regional GDP growth (2.9 times), create 402,000 jobs, reduce unemployment by 70% among Saudi families, and create new business establishments (by 2.5 times).^[12]

To ensure a more balanced and integrated development at the regional and national level, NSS 2030 proposes a spatial structure of the country consisting of logistics corridors, gates, urban areas, regional capitals, and settlement groups. The logistics corridor system seeks to support intermediate cities, small towns, and villages as the building blocks of the regions. That means the development of Madinah can not only be realized within the city, and there is an interconnected relationship with other areas in the region.^[12]

Al Madinah Region Development Authority (MDA) is now taking essential steps to reformulate the regional plan for the Madinah region based on a solid and ambitious economic outlook, providing a responsive environment and adequate infrastructure. Moreover, keeping pace with Vision 2030 and achieving the sustainable development goals is supported and directed by the Emir of the Madinah, His Royal Highness Prince Faisal bin Salman bin Abdul-Aziz.^[12]

2.5 SDG11.6: Solid Waste Management And Air Quality

Target 11.6 “By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management

Managing solid waste is one of the most important challenges of urban areas of all sizes.^[3] Waste collection and management is intended to lessen adverse effects of waste on health, the environment or aesthetics, and the entire ecosystems that support the city or urban area. Urban households and businesses produce substantial amounts of solid waste, including industrial, construction and hazardous waste that needs to be collected regularly and properly disposed of in order to maintain healthy and sanitary living conditions.^[3,46] Uncollected and improperly managed solid waste can end up in drains and dumps leading to blocked drainage and cause unsanitary conditions providing breeding grounds for disease vectors.^[3,46] A prosperous city seeks to collect and manage appropriately all

of its solid waste and improve standards of living, cleanliness and hence decrease the chances of having disease outbreaks related to the improper management of waste. Sustainable solid waste management is essential for the sustainability of cities especially if it includes waste reduction, reuse, recycling and composting, incineration, and disposal in landfills.^[3]

Vision 2030 seeks to increase the efficiency of waste management by establishing comprehensive recycling projects and reducing pollution caused by waste, especially plastic products. The National Water Company aims to use solid waste to generate thermal energy, electricity and water.

2.5.1 Solid Waste Management

Goal 11.6.1 Proportion of municipal solid waste collected and managed in controlled facilities out of total municipal waste generated, by cities

The challenges of population growth, the rapid pace of urbanization, and climate change have multiplied the burdens related to waste management in Saudi Arabia and increased the energy demand. The Kingdom aims to convert waste into renewable energy, generating 3 gigawatts by 2025. The demand for non-recyclable waste disposal techniques within special incinerators is also increasing to reduce the creation of more landfills.

Rapid and rising standard of living have also led to an increase in the amounts of solid waste in cities. The waste production index in the year 1438 AH for Madinah was about 4.3 kg/person/day. It is a very high value compared to global rates; the high rate is attributed to the excessive loads resulting from Hajj and Umrah visits throughout the year.^[47]

The percentage of households served by a regular collection of ordinary solid waste in residential areas increased from 90.2% in 2015 (field survey indicators 2015)^[10] to 95.4% in 2021 (field survey indicators 2021)^[6]. That means during the period, many projects to improve the living environment

have been implemented related to the regular collection of ordinary solid waste in residential areas. This is in line with Saudi Arabia's 2030 vision regarding environmental protection.

The solid waste recycling rate index was recorded in 1438 AH at 7%, which is almost double the value recorded in 1431 AH (4.1%); although this constitutes an upward trend, the annual increase is considered limited, given the specificity of the case of Madinah. In the same context, the percentage of sanitary landfills/burials (according to technical specifications) for comprehensive coverage decreased from 100% in 1425 AH to about 92% in 1438 AH.^[47] Therefore, disposal of most solid waste by burying it in landfills is one of the most important problems of solid waste management in Madinah. Because it poses to the health of society and the environment and damages groundwater as a result of leachate that seeps into the soil and pollutes it, as well as the outbreak of spontaneous fires and greenhouse gas emissions.

In order to achieve Vision 2030, which emphasizes the need to protect the environment and combat desertification, the National Water Company aims to use solid waste to generate thermal energy, electricity, and water.^[48] The local government also adopts many important steps aimed at developing solid waste management in Madinah, the most important of which are:

- Stimulating waste recycling and reuse practices;
- Establishing policies that encourage not burying recyclable waste in landfills to relieve the increasing pressure on it;
- Increasing public awareness of the need to protect and preserve the environment by encouraging and motivating changes in household behavior towards managing household waste for recycling and reuse;
- Increasing private sector participation;
- Applying modern technologies in the field of waste management.

Policies: This calls for the increase of the efficiency of waste management by establishing comprehensive recycling projects and reducing pollution caused by waste, especially plastic products

2.5.2 Air Quality

11.6 By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management.

Urbanization has enormous environmental consequences, both global and local. Already city dwellers are indicated as responsible for up to 70% of the world's greenhouse gas emissions.^[1]

^{3]} Air pollution consists of many pollutants, among other particulate matter. These particles are able to penetrate deeply into the respiratory tract and therefore constitute a risk for health by increasing mortality from respiratory infections and

diseases, lung cancer, and selected cardiovascular diseases.^[3,46] Therefore, in order to tackle climate change, avoid lasting damage to vital ecosystems and improve the health and well-being of billions of people, solutions to these problems must be sought at the city level. Economic growth and urbanization are inevitable; and if matched with appropriate and effective policies and governance, the environmental consequences are manageable.^[3] Cities must build the financial and other institutions required to achieve environmental sustainability (without which economic growth will fall short of ensuring shared prosperity).^[3]

Environmental protection is a primary system within the Kingdom of Saudi Arabia dedicated to tackling environmental challenges, in alignment with the Kingdom's 2030 vision, making a quantum leap in environmental protection leading to the reduction in the percentage of environmental pollution. ^[18,19,49]

Saudi Vision 2030, environmental sustainability will be achieved through the preservation of the environment and natural resources through ^[18,19,49]:

- Increasing the efficiency of waste management, establishing comprehensive

recycling projects, reducing all types of pollution, and combating desertification.

- Work to promote the optimal use of water resources by reducing consumption and use of treated and renewable water.
- Private sector participation in these efforts.
- Rehabilitation and development of national parks and their sustainable investment and management.
- Preserving the environment and natural resources.

2.5.2.1 Annual mean levels of fine particulate matter (e.g., PM2.5 and PM10) in cities (population weighted).

In recent years, air pollution has become one of the main problems in the cities of the Kingdom due to the rapid pace of urbanization and the growth of industrialization activities in cities, and emissions from factories and vehicles. The adverse health effects of outdoor air pollution are mainly caused by emissions of sulfur dioxide, inhaled suspended air pollutants with a diameter of 10 µm and 2.5 µm (due to the prevailing sandstorms in the Kingdom), ozone, carbon monoxide, lead, and chlorofluorocarbons. Volatile organics, nitrogen oxides, where the average per capita greenhouse gas emissions were 20.45 tons / per capita in the Kingdom. ^[47]

Air Pollution in Urban Areas (Al-Madinah City):

In 2018, Al-Madinah city recorded an average concentration of particulate matter (PM10) of 90

µg/m³ and fine particulate matter (PM2.5) with a concentration rate of 32.68 µg/m³, and this leads to many health problems. This requires reducing the suspended pollutants in urban air from 70 to 20 µg/m³. This requires reducing the suspended pollutants in urban air from 70 to 20 µg/m³. ^[47]

In 2018, the average concentration of nitrogen dioxide (NO₂) 2018 was 26 mcg / m³ (below the permissible rate), which is lower than the value recorded in Yanbu', 45.80 mcg / m³, and Makkah, 32.38 mcg / m³. ^[47]

In 2018, Al-Madinah Al-Munawwarah city recorded an average concentration of sulfur dioxide (SO₂) of 13 µg/m³ (below the permissible limit). And less than Riyadh 40 micrograms / cubic meter and Yanbu' 34.4 micrograms / cubic meter, and Mecca 16.35 micrograms / cubic meter. ^[47]

Fact: Environmental pollution has increased along with the increased oil economic prosperity.

Policies: Unless appropriate measures are implemented to address the environmental deterioration associated with production and consumption patterns, Al Madinah will continue to face environmental challenges with negative effects on the prosperity and well-being of future generations

While the average concentration of ozone gas (O₃) was 46 µg / m³ in 2018, which is lower than that of Makkah Al Mukarramah (79.10 µg / m³) and Yanbu' (77 µg / m³).^[47]

As an essential step towards achieving the Kingdom's Vision 2030, the management of the air quality monitoring system is being expanded at the national level, with the installation and operation of several fixed and movable stations to monitor urban air quality.^[18,19]

One of the most prominent environmental challenges facing Madinah related to air pollution is the increase in sulfur dioxide, nitrogen oxide, and other emissions. To achieve the Kingdom's Vision 2030 and goal 11.6.2, the government adopts several steps, the most important of which are^[18,19]:

- Encouraging the use of clean electric cars instead of vehicles that run on fossil fuels to reduce harmful emissions and preserve the environment.

2.5.2.2 Disasters adaptation and mitigation

Climate change has emerged as a central issue in urban development agendas over the past three decades.^[50] The Kingdom has been exposed to 14 natural disasters, affecting nearly 30,000 people and resulting in economic losses estimated at about 450 million US dollars. Floods were the most common natural hazard, despite the Kingdom's dry climate.^[18,19]

- Expanding the management of the air quality monitoring system at the national level, with the installation and operation of several fixed and mobile air quality monitoring stations in urban areas as a major step toward achieving the Kingdom's Vision 2030.
- Adding air quality monitoring on websites or mobile applications to different urban areas so that citizens can track the air quality in the area they live in to ensure an improved quality of life.
- Cultivation of green areas and trees that purify the air from suspended pollutants to reduce air pollution.
- Expansion of new and renewable energy projects to reduce emissions from fossil energy.

Al-Madinah Al-Munawwarah has three main natural elements influencing its structure and urbanization: the mountainous terrain, the valley system, and the agricultural landscape. Madinah is an oasis surrounded by stone mountains whose height ranges between 800 and 1500 meters. The network of valleys contributes to the formation of the identity of Madinah, as five valleys pass through it (Wadi Al-Aqiq, Wadi Al-Aqol, Wadi Pathan, Wadi Manzoor, and Wadi Ranona).^[27]



Figure 2.15 Natural and topographic elements
 Source: MOMRA, Al Madinah city profile report, 2019 [27]

The valleys of Madinah vary in shape and depth. Still, they are all semi-arid throughout the year, except for the period of heavy rains, which often cause flash floods due to intermittent and intense rainfall and low rates of absorption. Overall, 32% of existing roads, 10% of the built-up area, 30% of proposed development areas, and 70% of the unplanned areas are at risk of flooding. This means a significant risk to the city's social and economic resilience. [27]

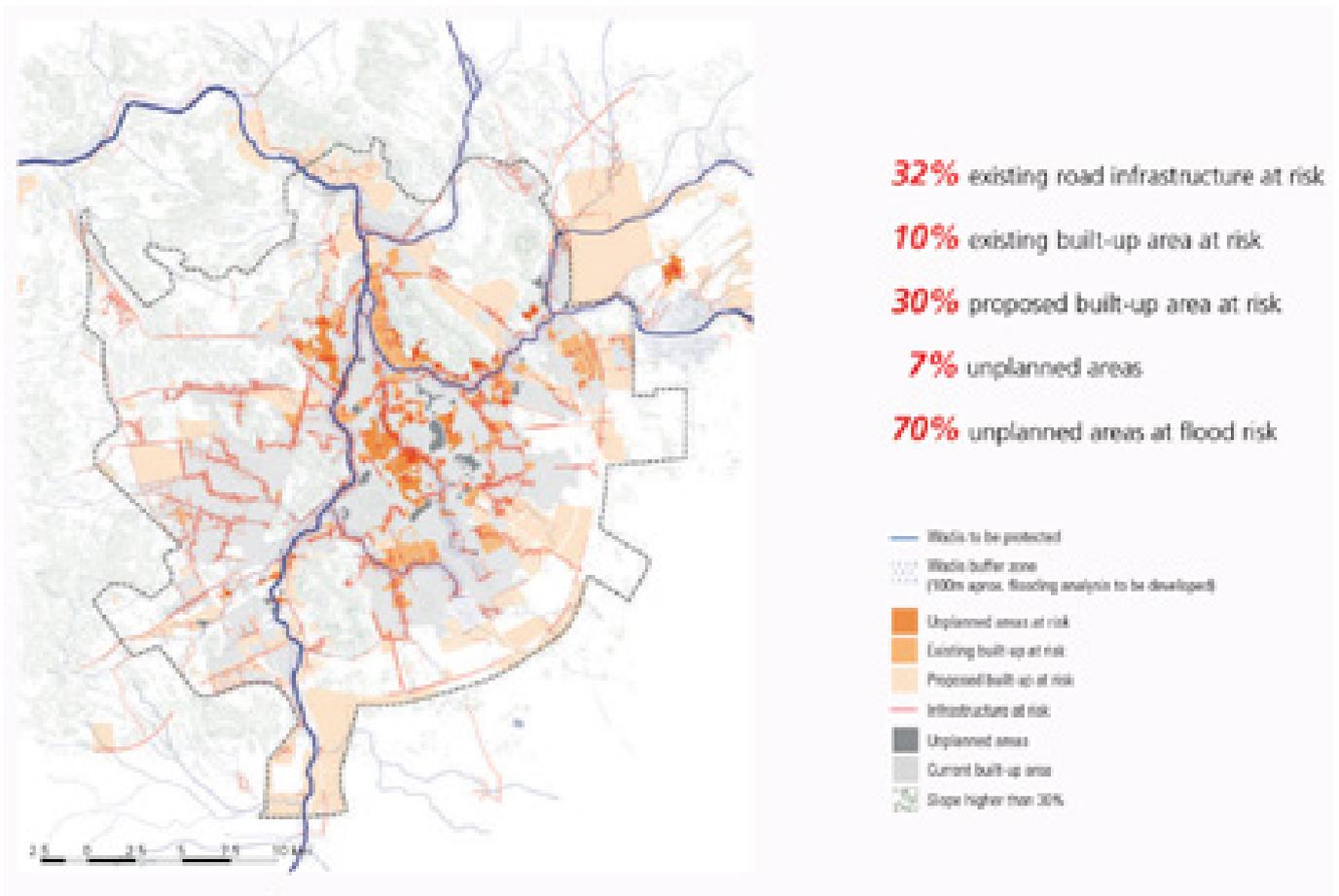


Figure 2.16 the areas at risk of flooding in Madinah

Source: Al Madinah City Profile 2019 ^[27]

Officials' efforts: To achieve the vision of the Kingdom of Saudi Arabia 2030 and in line with goal 11.6 for sustainable development regarding the preservation of the environment and nature. The government's efforts to adapt to climate change at the local level while preserving biodiversity continue through the steps taken by the government, including ^[18,19]:

- Monitoring the different and most dangerous dates for floods and building dams to take advantage of the flood waters and store it for use in various activities.
- Develop a specific vision for how to deal with different urban areas prone to flooding flexibly and effectively.
- Monitoring roads subject to flooding and finding alternative avenues so that they do not affect the lives of citizens.
- Dealing with flood risks by following advanced scientific and technological methods.

2.6 SDG 11.7: Sustainable, Green, And Safe Public Spaces

Target 11.7 “By 2030, provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities.” [1,3]

Many public areas have been gradually forgotten or are no longer safe spaces for many city residents. For cities to be vibrant and safe places, we need to think of them as systems of interdependent parts and complex connections, as interactive and social spaces. Reclaiming urban spaces for people is part of how we can humanize our cities and make our streets more communal. [3] Public spaces are often more than anonymous places that can be replaced with one another: the meetings and exchanges that occur there affect our relationships with each other, giving meaning to our communities and urban landscapes. Cities that improve and sustain the use of public space, including streets, enhance community cohesion, civic identity, and quality of life. Having access to open public spaces does not only improve the quality of life: it is also a first step toward civic empowerment and greater access to institutional and political spaces. Measuring how much public space a city has is only one part of measuring whether residents actually benefit from the space. [3,51,52]

For a decent life, people in healthy communities must enjoy all the services they need. The National Transformation Program emphasized that one of its most important roles is to raise the level of living services provided to beneficiaries by improving the system of social services, health care and safety levels in order to achieve the Saudi Vision 2030. [18,19] The second dimension of the National Transformation Program focused on improving living standards and safety by upgrading

the cities of the Kingdom to become smart cities with high quality services and infrastructure that contain public open spaces, green spaces and pedestrian paths, in order to achieve a healthy and safe environment by enhancing traffic safety and reducing pollution. [18,19]

One of the most important objectives of the comprehensive plan for Madinah (1462 AH) is to provide an attractive recreational environment for the city’s residents, preserve and protect the current agricultural area, improve open spaces, create an interconnected network of safe lanes for pedestrians, and preserve its position and sanctity.

The total area of urban growth limits for Madinah (the administrative boundaries of the city and its urban areas, undeveloped areas, and other areas such as farms, parks, waterways, and mountains) is 682.27 km² in which about 1.4 million people lives. Based on the current land use plan, the percentage of green areas is 1%, and the future land use plan recommends increasing the percentage of green areas to 7%. [27]

The per capita share of green areas per square meter within the urban area of the city includes green lands allocated for recreational purposes, and the area of farms does not include (4.9 m² / person in 1437 AH). This rate achieved a boom, as it rose during the last 12 years from 1.9 m² / person in 1425 AH to 4.9 m² / person per capita in 1437 AH, although it was considered low compared to the values recorded for some other cities such as Buraidah 1438 AH (13.3 m² / person), and Riyadh 1438 H (11.4 m² / person). [27]

The report on sustainable development indicators for Madinah, based on the indicators

and standards of ISO-37120 of the World Council for Cities Data (WCCD) in 2019, showed that the average area of green areas to the population amounted to 31.08 hectares/100,000 people, and the per capita area of outdoor public recreational places was 2.09 m² / person.

Indicators of the field survey of the districts of Al-Madinah Al-Munawwarah in 2021^[6] indicated that the time to reach the public park inside the districts on foot ranges from 0.5 to 15 minutes. The number of districts that recorded a rate ranging from 0.5 to less than 5 minutes reached

27 districts. The districts that registered an average of 5 minutes to less than 10 minutes reached 35 districts. The number of districts that recorded an average of 10 to 15 minutes was seven districts.

Abu Kabir district is one of the lowest districts in the service time index in minutes, where it recorded an average of 0.5 minutes, followed by the Al Jabera district at a rate of 1.5 minutes, while the district of Dhul-Hulaifa came among the most district in the index of access time with an average of 15 minutes.^[6]

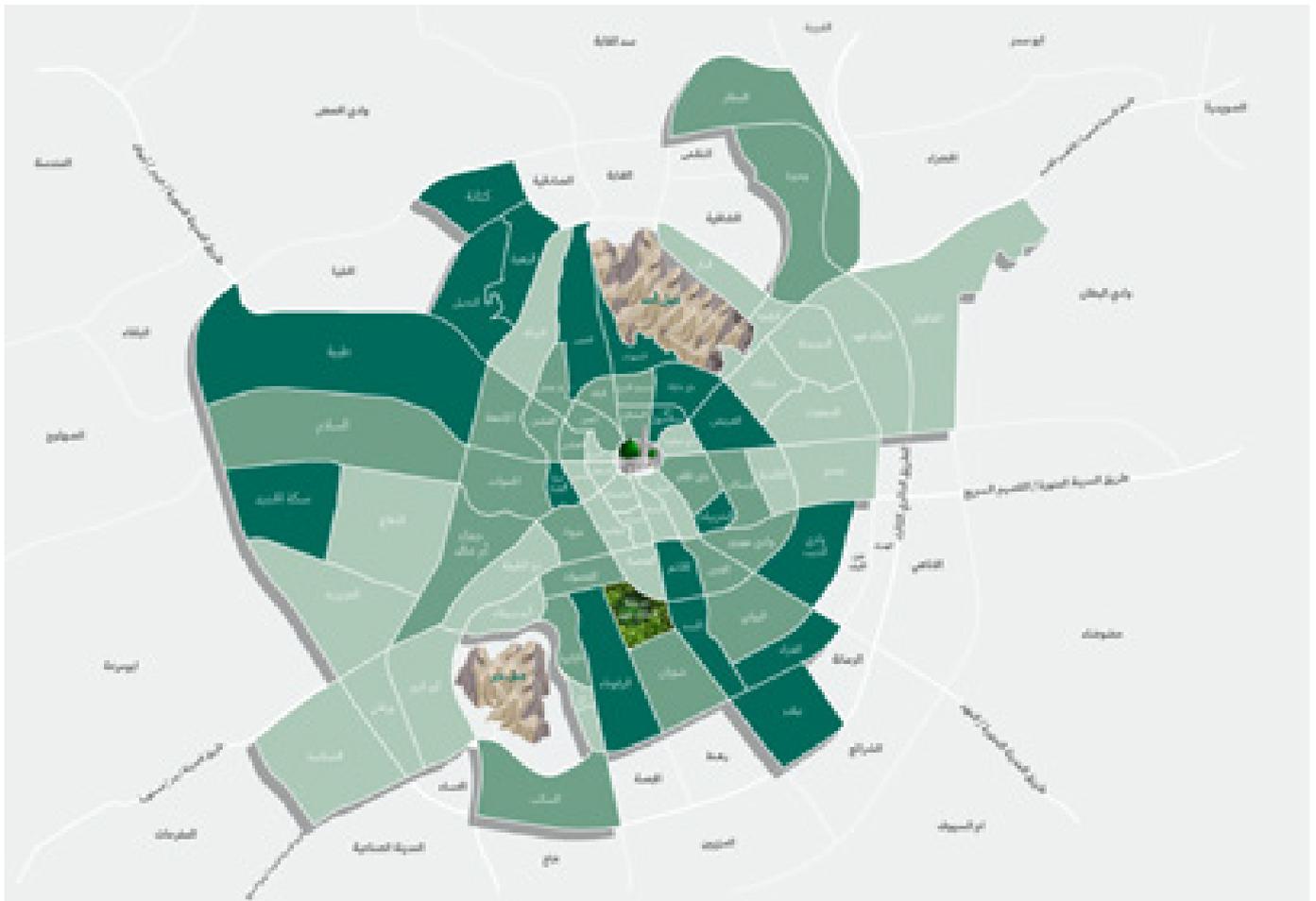


Figure 2.17 Walking time to the public park inside the district

Source: Al Madinah Region Development Authority – field Survey for Al-Madinah District 2021

Challenges: One of the most important challenges facing Madinah to meet the needs of its residents and visitors for Hajj and Umrah is the need to improve the urban landscape and increase open spaces, public spaces, and recreational areas such as parks, public gardens, play areas, squares, and safe pedestrian paths.

Therefore, the Madinah vision statement confirmed that there would be protection from direct sunlight in public pedestrian areas as much as possible. The public areas will be clean, paved, and adorned with attractive plants and street furniture.

Officials' efforts: Given the status of Madinah, the Kingdom's leadership was keen to harness the efforts and capabilities to implement the projects of the comprehensive plan vision for

Madinah (1462 AH) to provide an attractive recreational environment for the city's residents sufficient to fill a large part of the city's shortage of open areas and to highlight the aesthetics of natural landmarks and the historical components of the valley. By improving the open spaces and creating an interconnected network of safe lanes for pedestrians, such as the development of Uhud and Darb al-Sunna path to the south of the central area. Darb al-Sunna will serve as the main pedestrian path between Al-Masjid Al-Nabawi, Quba Mosque, and the path of Al-Qiblatain. The Darb al-Sunna path will serve as the main pedestrian path between Al-Masjid Al-Nabawi and Cuba Mosque and Al-Qiblatain path. This path will connect to the site of Al-Qiblatain Mosque and the site of Jabal Al Sala` (Al Khandaq) through safe and wide pedestrian paths.



2.7 SDG 6: Ensure Availability And Sustainable Management Of Water And Sanitation

GOAL
6

**ENSURE AVAILABILITY AND SUSTAINABLE
MANAGEMENT OF WATER AND SANITATION FOR ALL**



Goal 6 aims to achieve, by 2030, universal and equitable access to safe and affordable drinking water for all; improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally; and ensure access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations. ^[1,3]

The Kingdom of Saudi Arabia has made significant investments in water desalination and sanitation, and is witnessing remarkable progress in its ongoing government support. Water and wastewater projects are working rapidly to achieve sustainable environmental development

in line with National Transition 2020 and Vision 2030. The Kingdom is also the world leader in desalinated water production with 16.5% of world production. ^[18,19]

Initiatives of the Kingdom of Saudi Arabia to produce clean water and ensure general sanitation:

- The Ministry of Environment, Agriculture and Water will implement 508 water dams with a total storage capacity of 2.2 billion cubic meters). ^[15]
- The initiative to promote the sources of surface water by establishing 1,000 dams. ^[15]
- The National Program for Aquaculture aimed at developing the fisheries sector in the Kingdom. ^[15]

2.7.1 Access To Safe And Affordable Drinking Water

- By 2030, achieve universal and equitable access to safe and affordable drinking water for all (6.1)
- By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity. (6.4)

Water is one of the most important axes of economic and social development. As it is essential to meet human needs, manage the environment, and ensure the sustainability of economic development, and despite the importance of water, the Kingdom faces great challenges due to the unsustainable use of water resources, as well as the limited non-renewable groundwater reserves, which are witnessing an accelerating depletion, and under arid climatic conditions.

The vision of the National Water Strategy 2030 is linked with the Saudi Vision 2030 and the National Transformation Program to ensure that “a sustainable water sector develops and preserves water resources, preserves the environment, provides safe supply, high quality services, and efficiency that contributes to economic and social development.” The vision is represented in Five strategic objectives, the following [18,19,48]:

- Ensuring continuous access to sufficient quantities of secured water in normal cases and in emergency situations.
- Improved water demand management in all uses.
- Providing high-quality and cost-effective water and sanitation services to ensure acceptable prices.
- Preserving water resources and improving their use, while preserving the local environment for the benefit of Saudi society now and in the future.
- Ensuring the competitiveness of the water sector and its positive contribution to the national economy; By promoting effective governance, private sector participation, localization of capabilities and innovation.

The performance of the water sector was measured against five main dimensions: 1) Cornucopia, 2) Affordability, 3) the quality, 4) environmental sustainability, 5) economic sustainability.

The State of water sector in Al-Madinah:

Indicators approved by the ISO-37120 standards in the WCCD program [47] indicated that the per

capita residential and commercial consumption of improved water recorded 271.65 liters/day/per capita in 2019, and the average per capita consumption of improved water for all activities is 358.95 liters/day/capita, which is higher than the cities of Yanbu’ 1217.28 liters/day/per person, Riyadh 350.6 liters/day/person, and Makkah Al-Mukarramah 270.89. liters/ day/per person. [47] The indicators of Al Madinah Sustainable Development Status Report (issued in 2019) also showed that the average water consumption index per capita was recorded 368 liters/person/day in 1438 AH, which is higher than the rates of cities such as Riyadh 170 liters/person/day and Buraidah 277.8 liters/person/day and less than Dammam city rates 426 liters/person/day in the same year. This increase is due to the consumption of the number of visitors, Hajj and Umrah pilgrims, in addition to the consumption of the permanent resident population. Where this rate decreases after the Hajj months to 358.95 in the same year (1438 AH), and this was confirmed by the indicators of the field Survey 2021 [6]

Indicators of the field survey in 2015 [10] indicated that the percentage of families that obtain improved water for domestic use through the public network was 100%. While the indicators of the field Survey 2021 showed that 93.3% of households obtain improved water for domestic use through the public network, and that 6.6% of households obtain water from tanks. This decrease is due to the increase in residential buildings that did not access the improved water through the public network. Indicators of the field survey 2021 showed that the degree of general satisfaction of the population with the availability of improved water through the public network was 87.4%.

2.7.2 Water Resources And Management

Al-Madinah Al-Munawwarah region occupies a wide geographical area of about 153.8 thousand square kilometers, which is equivalent to 6.72% of the total area of the Kingdom. It is one of the most important agricultural areas in the Kingdom, and rain falls at an annual rate ranging between 40-110 mm.^[48]

The main water sources in Madinah are: 1) Groundwater, which is mainly used for agricultural purposes. 2) Surface waters and valleys. 3) Treated sewage. 4) Desalinated water, as Madinah relies on desalinated water provided by the desalination plant in the city of Yanbu'.^[48]

To manage water supply and demand, the municipality of Madinah has recently increased the number of water service centers, which is expected to enhance the efficiency of water provision, supply services and water distribution.^[48]

The main challenges of the water sector: Despite the peculiarity of Madinah's position as a global Islamic capital, the most important challenges facing the water sector are the high rate of water consumption^[6], water scarcity and the low stock of non-renewable groundwater that is witnessing rapid depletion and under dry climatic conditions, the high rate of losses in public water networks as a result of obsolescence.^[53,54,55,56]

Officials' efforts: Therefore, officials are intensifying their efforts in implementing many important steps to achieve the Kingdom's Vision 2030 and its initiatives, which are interconnected with the National Water Strategy^[54] for the Executive Objective (6-1) of the Sustainable Development Goals, for comprehensive coverage. Among the most important of these efforts are the following:

- Improving the management of water resources in a more sustainable and effective manner, in addition to increasing the supply of water from renewable sources.

- Rationalizing the use of available fresh water and recycling wastewater, reducing network losses, and improving policies related to water consumption to prevent its unsustainable use.
- Implementation of awareness campaigns to change the behavior and wrong practices of citizens to rationalize water consumption.

The ten national water strategy programs outlined the initiatives that are being taken, the most important of which are the following^[54]:

- Updating and issuing the water system and policies.
- Developing regulations, licenses, and quality standards related to water resources management.
- Restructuring and developing the capabilities of the integrated water resources management.
- Develop and implement a water rights system, and establish water resources records and monitoring and control mechanisms.
- Integrated water planning.
- Reducing feed production and improving crop productivity through comparative advantage.
- Water efficiency in buildings and household appliances.
- Implementation of awareness and education campaigns, changing incorrect behavior and practices
- Developing renewable groundwater and surface water resources.
- Rehabilitation and development of wastewater treatment plants, and promoting the reuse of treated water.
- Developing sustainable desalination capabilities.
- Developing non-renewable groundwater resources.

- Expanding production capacity to meet the demand of hajj and umrah (guests of Rahman).
- Enhancing the contribution of the third sector in the water sector.
- Compliance with environmental regulations and requirements.
- Expansion and rehabilitation of the water distribution network.
- Expansion and rehabilitation of the sewage network.
- Reducing wastage and addressing irregular supply.
- Develop the use of smart meters, billing, and collection.
- Improve customer service.
- Pollution control and water quality improvement.

- Implementation of private sector involvement in sewage treatment plants.

Initiatives for Clean water and ensure general sanitation

Initiatives of the Kingdom of Saudi Arabia to produce clean water and ensure general sanitation:

- The Ministry of Environment, Agriculture and Water will implement 508 water dams with a total storage capacity of 2.2 billion cubic meters).
- The initiative to promote the sources of surface water by establishing 1,000 dams.
- The National Program for Aquaculture aimed at developing the fisheries sector in the Kingdom.

2.7.3 Access To Adequate And Equitable Sanitation And Hygiene

By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations (6.2)

The Kingdom emphasized that in order to implement the vision of the Kingdom of Saudi Arabia 2030 and the National Transformation Program ^[18,19] in the field of sanitation, there is a need to expand and rehabilitate the sewage network with the aim of increasing sewage coverage to reach 100% by 2030 and promoting safe drainage and reuse practices, in addition to rehabilitating Developing wastewater treatment plants and promoting the reuse of treated water with the aim of improving treated wastewater and establishing the necessary infrastructure to enhance the rate of sewage revenues, and reuse of treated wastewater.

The most important initiatives to implement Saudi Vision 2030 are ^[18,19]:

- Providing sanitation services with the aim of expanding sanitation services and increasing coverage to reduce environmental damage and keep pace with urban growth
- Reuse of sewage water in order to expand the reuse of treated water to conserve water resources by implementing projects to rehabilitate stations, and establishing networks of lines and connections
- Increasing digital content to improve customer services in order to raise the level of services provided to customers in the water and sanitation sectors through improving and developing the digital infrastructure that includes electronic networks and applications related to customer service
- Participation of the private sector in wastewater treatment plant projects with the aim of maximizing the benefit of the private sector's participation

The state of sanitation and wastewater sector in Al Madinah:

Despite the specificity of the case of Madinah, the results of the indicators of both the sustainable development reports issued in 2019 and the field survey in 2015 ^[10] showed that the indicator of sewage connections to dwellings in 1437 AH recorded a very low percentage of 57.5% compared to the cases of cities: Riyadh (84%) Dammam 97.89%) and Buraydah (88%) for the year 1438 AH. Indicators of the field survey in 2021 ^[6] confirmed an increase in the percentage of houses serviced by the sewage network from 57.8% (2015) to 85.4% (2021); this means that during that period sewage projects were implemented to improve the living environment; and that the relative distribution index of sewage resources (for domestic use) in 2021 recorded 85.4% distributed across public networks, 14.1% through septic tanks, and 0.5% not shown. Indicators of the field survey 2021 also recorded that the degree of general satisfaction of the population with the quality of the sewage network reached 82.6%.

The indicator of the treated wastewater incoming to the treatment plant has achieved a distinct quantitative leap; It rose in a period of 12 years from 53% in 1425 AH to a distinct percentage of 96.1% in 1438 AH. This indicator is consistent with what was stated in the report of ISO 37120 indicators approved by WCCD (96.1%). Thus, Al -Madinah is very close to achieving comprehensive coverage, taking into account the qualitative boom in tertiary treatment that allows reuse in irrigation of gardens and non-fruitful trees. Which represents a remarkable achievement

in this field, especially since Madinah and Makkah Al-Mukarramah recorded the highest value for this indicator compared to other cities in the Kingdom.

Challenges: One of the main challenges of wastewater treatment is that there are a range of social, religious, cultural and economic factors that influence the social acceptance of the reuse of treated wastewater. In addition, quantities of untreated wastewater are discharged into sand dunes and valley basins, which may threaten human life as a result of direct or indirect exposure to pollutants. ^[57]

Officials' efforts: To meet the challenges of wastewater treatment, officials are intensifying their efforts in implementing several important steps to achieve the Kingdom's Vision 2030 and its initiatives that are interconnected with the National Water Strategy ^[54] and the Executive Objective (6- 2) of the Sustainable Development Goals. Among the most important of these efforts are the following:

- Raising the rate of reuse of treated water in various uses (according to the level and quality of treatment) to 5% annually.
- Conducting more field tests that include assessment of a wide range of technical and health challenges through pilot projects.
- Taking the necessary measures for the authority to adopt strict quality standards in wastewater treatment and monitoring to ensure compliance with irrigation water specifications.
- Increasing the proportion of treated wastewater collected from the public sewage networks to 100%.

Fact: The coverage of clean water is quasi universal in Al Madinah City. But there is still 7% of households that are left behind from the access of the public network.

Fact: Though the coverage of sanitation is quasi universal, 15 % households have left behind from the public sewerage network.

Policies: It is called for the development of wastewater treatment plants and promoting the reuse of treated water with the aim of improving treated wastewater and establishing the necessary infrastructure to enhance the rate of sewage revenues, and reuse of treated wastewater.

2.8 SDG 7: Ensure Access To Affordable, Reliable, Sustainable And Modern Energy For All

GOAL
7

ENSURE ACCESS TO AFFORDABLE, RELIABLE,
SUSTAINABLE AND MODERN ENERGY FOR ALL



2.8.1 Target 7.1 By 2030, Ensure Universal Access To Affordable, Reliable And Modern Energy Services

One of the most important elements of preserving the natural environment is achieving balance in the process of exploiting its resources to meet the life requirements of future generations and achieve economic development.^[3,18,19] The Kingdom is not excluded from others in its vision and direction to find alternative energy sources. Because renewable energy is energy derived from sources that nature can continuously regenerate, renewable energy is distinguished from fossil energy (oil, natural gas, coal) as it is natural and is continuously regenerated. It is a clean and environmentally friendly source of energy as its production does not cause environmental pollution. The Kingdom of Saudi Arabia is characterized by an abundance of renewable energy sources, especially solar and wind energy.^[58,59]

The KSA's initiatives to promote clean and affordable energy:

- Crown Prince Mohammed bin Salman signed a Memorandum of Understanding (MoU) with Vision Softbank to implement the 2030 Solar Plan, the world's largest solar energy project.
- Initiative to increase energy efficiency in the iron, cement and petrochemical industries.
- Apply fuel economy card to light vehicles and adopt fuel economy standard.
- Encouraging new factories to achieve energy efficiency standards according to international standards.
- Develop new Saudi specifications for energy efficiency.
- Project of energy density certificate for existing and new buildings.

- The initiative to rehabilitate government buildings and stimulate the private sector to invest in the energy efficiency sector.

Population with access to electricity

The demand for electricity in Saudi Arabia is increasing due to the rapid pace of urbanization and increasing industrialization. It is estimated that the Kingdom's energy needs are increasing at an average of 8% annually and are expected to reach 120 gigawatts annually. At present, energy is mainly generated from crude oil.

The results of the ISO 37120 indicators report at the city level showed that the final annual energy consumption of public buildings was 1.48 GJ/capita/year in 2017. The proportion of the population legally served by electricity services was 100% in 2019, while Yanbu' recorded 100%, Riyadh 99.9%, and Makkah 92.63%. The indicators of the 2021 field survey and the 2015 indicators issued by Al Madinah Development Authority also confirmed that the percentage of families or dwellings connected to electricity is 100%.

Madinah is characterized by full coverage of the electricity network and high energy density - being an oil-producing country - with its housing and services sectors, which leads to air pollution and affects the quality of life. Despite this, indicators of the degree of citizens' satisfaction with the quality and regularity of electricity services showed that 86.3% are satisfied with the services provided.

2.8.2 Target 7.2 By 2030, Increase Substantially The Share Of Renewable Energy In The Global Energy Mix

Renewable energy share in the total final energy consumption

Vision 2030 drives collective commitment to creatively and responsibly meet current and future energy and climate challenges. G20 leaders endorsed the Circular Carbon Economy (CCE) framework during the Saudi G20 Presidency. A closed-loop system, CCE is based on reducing, reusing, recycling, and removing carbon that addresses climate change while advancing sustainable development and promoting economic diversification. By reducing emissions and expanding the use of carbon capture, utilization and storage, the international community will be able to pursue sustainable growth and reconcile the sustainability needs of both energy and climate.

Due to the distinction of the Kingdom of Saudi Arabia in the abundance of solar energy sources [61,62,63] and vast lands, it has taken the initiative to develop modern sources and cost-effective technologies to meet the high need by establishing 46 monitoring and measurement stations for solar energy resources throughout the Kingdom. A station was established to monitor and measure solar energy sources at Taibah University in Madinah. The Renewable Energy Indicators Report (2018) [60] issued by the General Authority for Statistics showed the following indicators:

Al Madinah was included in the projects of the National Renewable Energy Program in the second phase of 2021, where the capacity of the plant will be 50 megawatts (MW), with an electrical capacity expected to be generated from the project 109,938 megawatts.Hour (MW. Hr), and it is expected that the number of homes

that will be supplied with energy will reach 5,235.

- The percentage of the household that use solar energy at the level of Al Madinah region is 1.36%, but 0 in Al Madinah city.
- The percentage of families at the level of Al Madinah region who wish to use renewable energy in the dwelling reached 67%, the percentage of families who do not want to use solar energy is 17.14%, and the percentage of unsure/undecided families is 15.86%

Madinah does not depend on renewable energy resources, despite the availability of mainly solar energy and wind energy. Al Madinah also lacks any models and projects in the field of using renewable energy, which requires revitalizing pioneering initiatives and models that are consistent with the role of Al Madinah as a global Islamic capital and a model for sustainable cities, which is related to achieving the executive goal (7-2) of the sustainable development goals (a significant increase in in the share of new and renewable energy by 2030) as well as rationalizing electricity consumption.

With Saudi Arabia's impressive natural potential for solar and wind power and through strategic investments in sustainable technologies, signature projects have been launched to diversify energy resources and optimize the Kingdom's energy mix. By 2030, the contribution of renewable energy to the overall energy mix will reach up to 50%. Renewable energy projects are one of the key drivers towards achieving sustainability that will contribute to avoiding emissions and the displacement of high-value fuel in electricity generation. [18,19]

Fact: Access to electricity is universal in Al Madinah City. But the use of renewable energy is not common in the city.

Policies: To meet the energy requirements without using crude oil, it is necessary to take advantage of the huge potential of Al Madinah in the field of renewable energy, especially solar energy.

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CHAPTER 3

GOAL 1 

NO POVERTY

GOAL 8



DECENT WORK AND
ECONOMIC GROWTH

SDG1 – No Poverty	Value	Year	Rating	Trend
Poverty headcount ratio at \$1.90/day (%)	0.7%	2021		
Population with income threshold lower than 50% of average income(%)	16.2%	2021		

SDG8 – Decent Work and Economic Growth	Value	Year	Rating	Trend
Share on national GDP (without oil) (%)	7.1%	2018		
Unemployment rate (% of total labor force)	10.1	2021		
Youth non-employment rates (%)	14.8	2021		
Informal employment (non-Saudi) (%)	18.5	2021		

Legend			
			
SDG Achievement	Challenges remain	Significant challenges remain	Major challenges remain

			
On track	Moderately Increasing	Stagnating	Decreasing

 Data not available

GOAL

1

GOAL 1 END POVERTY IN ALL ITS FORMS EVERYWHERE



3.1: Goal 1 End poverty in all its forms everywhere

By 2030, eradicate extreme poverty for all people everywhere, currently measured as people living on less than \$1.90 a day (1.1)

By 2030, reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions (1.2)

Implement nationally appropriate social protection systems and measures for all, including floors, and by 2030 achieve substantial coverage of the poor and the vulnerable (1.3)

By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance (1.4)

NO
POVERTY



GOAL

8

PROMOTE SUSTAINED, INCLUSIVE, AND SUSTAINABLE ECONOMIC GROWTH, FULL AND PRODUCTIVE EMPLOYMENT AND DECENT WORK FOR ALL



3.2 Goal 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

Sustain per capita economic growth in accordance with national circumstances and, in particular, at least 7 per cent gross domestic product growth per annum in the least developed countries (8.1)

By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value (8.5) 8.5.2 Unemployment rate, by sex, age and persons with disabilities (8.5.2)

By 2020, substantially reduce the proportion of youth not in employment, education or training (8.6) Proportion of youth (aged 15–24 years) not in education, employment or training (8.6.1)

DECENT WORK AND
ECONOMIC GROWTH



3.1 Goal 1 End Poverty In All Its Forms Everywhere

GOAL
1

GOAL 1 END POVERTY IN ALL ITS FORMS EVERYWHERE



3.1.1 Introduction

The first goal of the Sustainable Development Goals (SDGs) is to “End poverty in all its forms everywhere”^[1,2], at economic levels as well as other levels of sustainable development.

To combat poverty, the Kingdom has taken several initiatives including: a) Aid and relief projects provided by the King Salman Humanitarian Aid and Relief Centre; b) Ministry of Housing initiatives aimed at helping citizens find suitable homes; c) The Citizen Account Initiative designed to protect Saudi families from the direct and indirect impact expected from various economic

reforms, which may cause additional burdens on certain segments of society; d) The Social Security System to support unassisted families, orphans, those unable to work, and other beneficiaries of the social security system; e) Charity organizations, under the supervision of the Ministry of Human Resource and Social Development; People with special needs (In the Saudi Vision 2030, there is a strategic goal to enable people with special needs to obtain suitable job opportunities and education that guarantees their independence and integration as active agents in society.^[3,4]

3.1.2 Household Economic Living Conditions

The United Nations has released a special edition, recognizing the negative impact of the COVID-19 pandemic on the performance of SDGs “Sustainable Development Goals 2021: View from the pandemic”, There is a special chapter “stark realities, critical choices”. In this special report, it is underscored that “COVID-19 has led to the first rise in extreme poverty in a generation” [6]. An additional 119–124 million people globally were pushed back into extreme poverty in 2020. Global poverty rate is projected to be 7% in 2030. More countries are missing the target of eradicating poverty. [6] Governments worldwide have put in

place short term social protection measures in response to COVID-19. But 4 billion people are still not covered by social protection.^[6]

Trends in monthly income from 2012 to 2015 and 2018

For The analysis of household economic living conditions is based on the Household Income and Expenditure Survey 2018 (1439 AH) for regional level. And comparing it with the socio-economic survey conducted in 2015 (1437 AH) when the SDGs was officially endorsed by the United Nations members states respectively,

and the socio-economic survey conducted in 2012 (1433 AH) after 12 years of the endorsement of the Millennium Development Goals (MDG) by the United Nations member states, the same happened in 2015 when the SDGs was officially endorsed by the same United Nations member states as well as in 2021, six years after the endorsement of the SDGs.

For the years 2012, 2015 and 2018, we have calculated the average monthly for comparison to track progress on the SDGs MDGs. In 2018 the average monthly income estimated at (9,646) riyals/month, Higher than the average total household income of 2015 (8,765 riyals/month), higher than the value in 2012 (7,899 riyals/month) [7,8,9]

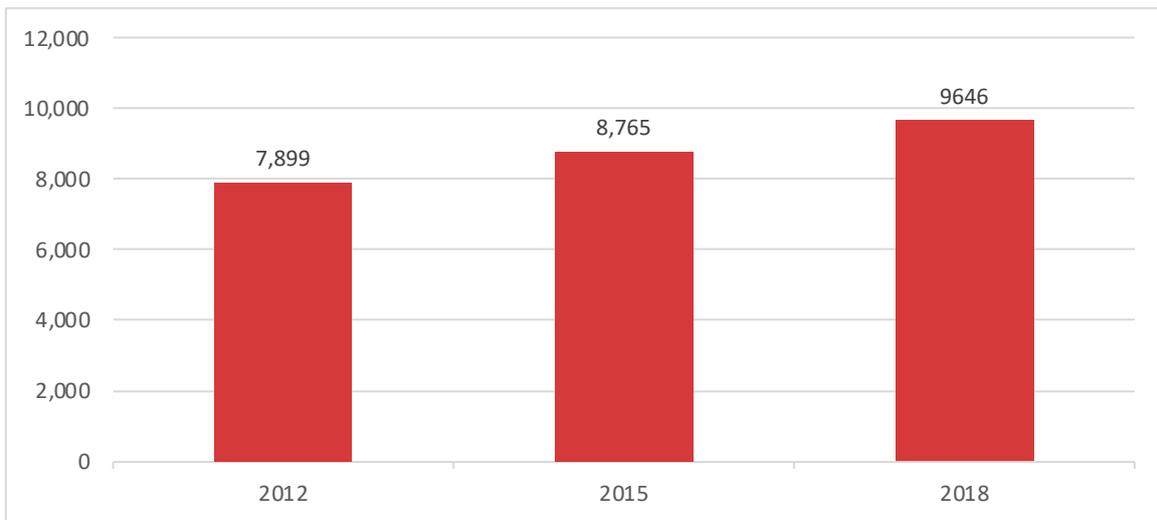


Figure 3.1 Average monthly income among Saudi households, 2021
Source: Al Madinah Urban Observatory, Socio-economic survey 2021.

Comparison of Al Madinah with cities from other regions

The 2019 City Profile series of the Saudi Future Cities Program (SFCP) also produced the Mean Household Income at the city level. It has been used here to compare the city of Al Madinah with other Saudi cities in terms of income. In this publication, the annual mean household income in USD value, is estimated at USD 20,482.66 (almost SR 77,000) for the city of Al Madinah compared to USD 29,824.00 (almost SR 112,000) for the city of Makkah, USD 29,823.01 (SR 112,000) for the city of Jeddah, 34,532 (almost SR 130,000) for the city of Riyadh, USD 26,109.55 (almost SR 98,000) for the city of Buraydah, USD 49,168.00 (almost SR 185,000) for the city of Dammam. [12,13]

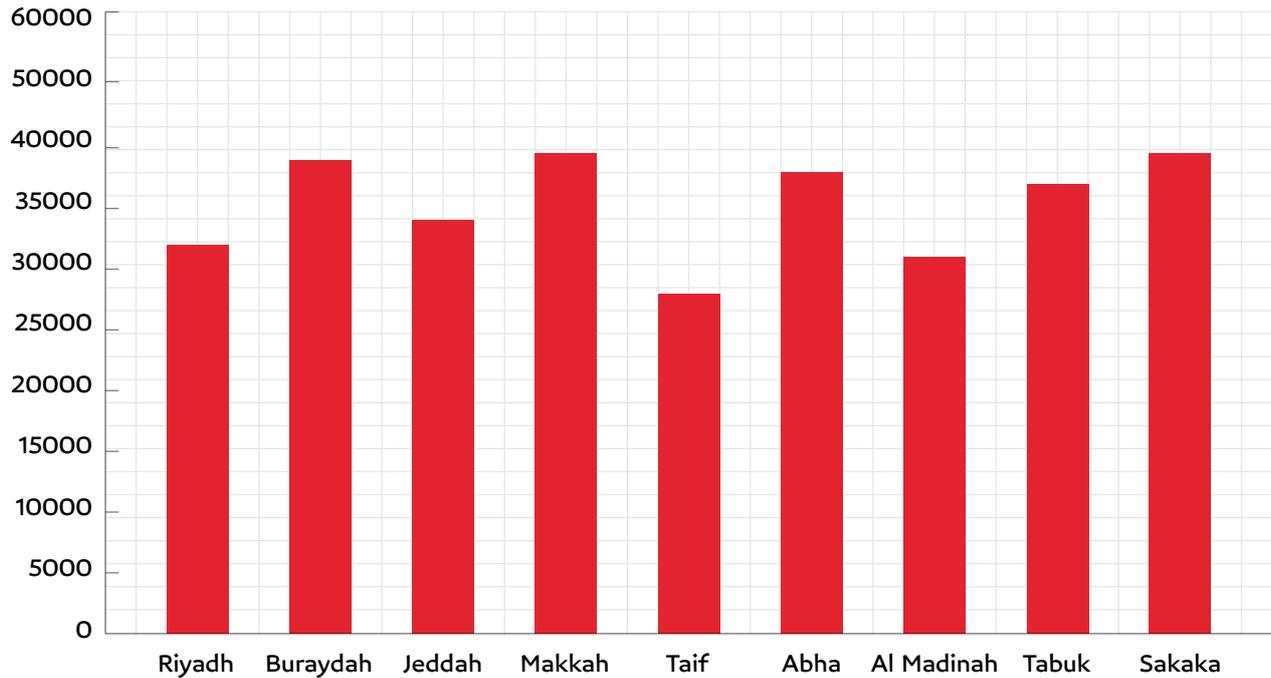


Figure 3.2 Mean Household incomes

Source: General Authority for Statistics, 2018. Results from the household income and expenditure [14]

3.1.3 Ending Poverty In All Its Forms Everywhere

One of the goals of the SDGs is Goal 1 “End poverty in all its forms everywhere”. This goal aims, by 2030, to: a) eradicate extreme poverty for all people everywhere, currently measured as people living on less than \$1.9 a day; b) reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions; c) implement nationally appropriate social protection systems and measures for all; d) ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance achieve substantial coverage of the poor and the

vulnerable; and e) build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters. ^[1,2]

a. Eradicate extreme poverty for all people everywhere, currently measured as people living on less than \$1.9 a day

Based on the data on household income for the 2021 socio-economic survey, the daily income was calculated and compared to the international poverty line. In 2021, less than 1% of Al Madinah residents (0.7%) lives below the international poverty line of US\$ 1.9/day (0.4% for Saudis and 1.5% for non-Saudis). ^[9] This can be translated that according to the international norms and definition, residents of Al Madinah are in general

out of poverty. In fact, the first target of Goal 1 “No Poverty” is “by 2030, eradicate extreme poverty for all people everywhere, currently measured as people living on less than \$1.9 a day”. This target has been almost achieved for the city of Al Madinah, 10 years before the target year (2030). This shows that the initiatives and the efforts mobilized by the Saudi authorities at the national as well as local levels have paid off.

b. reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions

Furthermore, the Goal to “end poverty in all its forms everywhere” has a target based on international definition where Al Madinah perform quite well, but it has another target which is specific to each country and based on national thresholds “By 2030, reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions”.^[1,2] In the Saudi context, the National Urban Observatory has adopted the threshold of half the average monthly income. A household is considered living in low income if their income is below half of the average monthly income, which is 4,275 riyals per month. In 2021, it is estimated that 16.2% of households lived below this threshold.

c. Goal 1: Implement nationally appropriate social protection systems and measures for all

To combat poverty, the KSA has taken several initiatives^[16,17,18] including:

- Aid and relief projects foreign provided by the King Salman Humanitarian Aid and Relief Centre.
- Ministry of Housing initiatives aimed at

helping citizens find suitable homes.

- The Citizen Account Initiative designed to protect Saudi families from the direct and indirect impact expected from various economic reforms, which may cause additional burdens on certain segments of society.
- The Social Security System to support unassisted families, orphans, those unable to work, and other beneficiaries of the social security system.
- Charity organizations, under the supervision of the Ministry of Human Resource and Social Development.

The Saudi authorities has implemented various initiatives to eradicate poverty in all its forms at the national as well as local levels. Among those we can enumerate: Ministry of Housing initiatives that aimed at helping citizens find suitable homes; The Citizen Account Initiative designed to protect Saudi families from the direct and indirect impact expected from various economic reforms, which may cause additional burdens on certain segments of society; The Social Security System to support unassisted families, orphans, those unable to work, and other beneficiaries of the social security system; Charity organizations, under the supervision of the Ministry of Human Resource and Social Development.^[16,17,18,19]

Other KSA’s initiatives to eradicate poverty indirectly include: a) Clean and affordable energy, b) Clean water and ensure general sanitation, c) Gender equality and women empowerment, d) achievement of quality education, e) decent life and good health for all, f) eradicating hunger.

Under its National Strategy for Social Development, the KSA accords special attention to persons with special needs.^[16,17,18,19] Vision 2030 sets a strategic objective that calls for enabling people with disabilities to gain access

to suitable job opportunities as well as education to ensure their independence and integration as effective members of society. The government provides cash assistance to the families of disabled persons to help them cope with the costs associated with providing care to the disabled family member. ^[16,17,18,19] In 2017, the government issued a decision which exempted persons with special needs from visa fees related to recruitment of nurses, drivers and laborers, in order to help them manage their day-to-day activities. A total of 136,500 persons received this exemption, including 73,500 males and 63,000 females. A recently issued Royal Order provides for development of a national strategy for the rights of persons with disabilities, with an aim to improve their quality of life. Furthermore, the Council of Ministers approved a move to set up an umbrella commission for persons with disabilities. The commission will function as a reference body for disabled persons and will monitor programs and services provided to them. It will also audit the regulations and policies and will submit related advice. The commission will further supervise activities of relevant agencies in the government and private sectors as well as charitable institutions. ^[19]

There are also governmental programs including the Social Insurance Program and the Social Safety Nets. The Social Insurance Program includes cooperative health insurance, retirement pension system and unemployment insurance (Musaned Scheme). The Social Safety Nets include government subsidy (food, fuel, electricity and water subsidies), citizen account programs, housing support programs, educational programs, shelter care programs and welfare programs for persons with special needs. ^[19]

In parallel to the government initiatives to support persons with special needs, there are non-government organizations committed to alleviate poverty in the Kingdom such as the King Khalid Foundation (KKF), the Abdul Latif Jameel Poverty Action Lab (Community Jameel), the Social Charity Fund (SCF), the Citizen Account Program. ^[19]

The King Khalid Foundation (KKF) has been the first non-profit organization that took the lead in undertaking related research and studies (a study on subsistence level, as well as a study on female poverty). In this regard, KKF conducted a survey of 10,000 households covering all provinces of the Kingdom, with an aim to develop a methodology to measure poverty line in the Kingdom. Research efforts by KKF had a significant impact on leading the discussions on this issue and on forwarding of proposals for solutions and how best to tackle the issue. KKF is a member of the national social protection strategy team through which policies and programs are developed to address poverty and to enable vulnerable segments of society. ^[19]

Abdul Latif Jameel Poverty Action Lab (Community Jameel) takes part in the global fight against poverty and in providing aid to poor people. Abdul Latif Jameel Poverty Action Lab aims to serve 100 million persons around the world over the coming years, through international partnerships with countries, international institutions and world development organizations. Abdul Latif Jameel Poverty Action Lab also provides support to studies and research work to combat poverty and offers training programs to specialists in this field. ^[19]

The Social Charity Fund (SCF), as a charitable

institution, operates as an independent corporate entity. SCF has a mission to improve living conditions of needy citizens in Saudi Arabia. SCF plays a leading role in promoting the non-profit sector and in addressing challenges facing development work, through enablement, innovation and impact assessment. SCF contributes to improving living standards of targeted segments through quality solutions and innovations. The fund's activities are provided to targeted beneficiaries in all provinces of the Kingdom through a network of several partnerships to achieve the required objectives.^[19]

The Citizen Account Program is a program that seeks to alleviate the burden of Saudi citizens and to provide financial support to low and middle income Saudi households, to ensure a better life for citizens. The program was initiated to compensate citizens who may be at risk as a result of the economic policies being implemented by the government. The rationale for the Citizen Account is that subsidy in its earlier form was provided to all consumers, including non-

Saudis and high-income Saudi citizens. Allowing universal access to subsidies meant that the needs of both low and high income people were treated alike, leading in turn to overconsumption of subsidized products. Rechanneling of subsidies to eligible beneficiaries is bound to promote rational consumption. The program aims to re-channel subsidies to eligible segments, in such a way as to promote rational consumption and to ensure that subsidies are offered in an equitable manner to eligible groups. Under the Citizen Account program, subsidies will be offered in cash payments to be deposited directly into eligible recipients' accounts. It is worth mentioning that cash transfer is an effective and internationally recognized instrument to encourage people to save. The program seeks to achieve several objectives that are bound to raise the efficiency of government subsidies to citizens, encourage rational consumption of basic services by households and reduce the negative impacts of economic reforms.^[19]

3.1.4 Conclusion: Key Findings And Recommendations

In general, most of Al Madinah residents are out of poverty according to international definition of poverty: According to the international norms and definition, residents of Al Madinah are in general out of poverty in 2021: less than 1% of Al Madinah residents (0.7%) lives below the international poverty line of US\$ 1.9/day.

But considering the local definition threshold of Al Madinah Urban Observatory, 16.2% of families in Al Madinah city are below threshold of “less than 50% of the average income” in 2021, in addition to the progress in income, the Saudi authorities have implemented various initiatives to eradicate Poverty and low incomes in all its forms at the national as well as local levels. Ministry of Housing initiatives that aimed at helping citizens find suitable homes; The Citizen Account Initiative designed to protect Saudi families from the direct and

indirect impact expected from various economic reforms, which may cause additional burdens on certain segments of society; The Social Security System to support unassisted families, orphans, those unable to work, and other beneficiaries of the social security system; Charity organizations, under the supervision of the Ministry of Human Resource and Social Development.

Steady income increase by the time: It is important to note the increase of income at regional level: the average monthly income in 2012 (7,889 riyals/month), Then increasing in 2015 (8,765 riyals/month), This is in line with the increase in national GDP during the same period. Then, another good increase on 2018 (9,646 riyals/month), that should happen due to the VISION 2030 programs taking effect on the Socio-Economic fields.

Fact: In general, most of Madinah residents are out of poverty according to international definition of poverty: less than 1% of Madinah residents (0.7%) lives below the international poverty line of US\$ 1.9/day.

Fact: “About 16% of households in Al Madinah city are below 50% of the average monthly income in 2021.”.

Policies: the initiatives and the efforts mobilized by the Saudi authorities at the national as well as local levels have paid off. Among those we can enumerate: Ministry of Housing initiatives aimed at helping citizens find suitable homes; The Citizen Account Initiative designed to protect Saudi families from the direct and indirect impact expected from various economic reforms, which may cause additional burdens on certain segments of society; The Social Security System to support unassisted families, orphans, those unable to work, and other beneficiaries of the social security system; Charity organizations, under the supervision of the Ministry of Human Resource and Social Development.

3.2 Goal 8 Promote Sustained, Inclusive, And Sustainable Economic Growth, Full And Productive Employment And Decent Work For All

GOAL
8

PROMOTE SUSTAINED, INCLUSIVE, AND SUSTAINABLE
ECONOMIC GROWTH, FULL AND PRODUCTIVE
EMPLOYMENT AND DECENT WORK FOR ALL



3.2.1 Introduction: Urban Economy In Al Madinah Within The Sustainable Development Goals And The Vision 2030 And Its Programs

The eighth goal of the Sustainable Development Goals (SDGs) (Goal 8) seeks to “Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all”.^[1,2] This includes to Sustain per capita economic growth in accordance with national circumstances; Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labor-intensive sectors. The SDGs also aims at its goal 9 to “Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation”, and at its goal 12 to “Ensure sustainable consumption and production patterns”. All these goals are in conjunction with several other goals at the social, environmental, and partnership levels to end poverty in all its forms everywhere.

The KSA, with its Vision 2030, has taken several initiatives for the achievement of sustainable development at the national, regional, and local levels. The Saudi Vision 2030 was launched in April 2016 including several strategic objectives, specified targets, and sets of Key Performance Indicators (KPIs) which would be achieved through a collaboration among the public, private, and

non-profit sectors within the Kingdom. An effective governance model was established by the Council of Economic and Development Affairs to enable mapping the Vision into Vision Realization Programs (VRPs)^[16] responsible to achieve the strategic objectives of Saudi Vision 2030. An Effective and integrated governance model has been adopted to translate the Vision into various implementation programs that will accomplish its goals and directions. Among those programs is the National Transformation Program 2020 (NTP 2020) which is in its second phase 2021-2025.^[17,18]

The National Transformation Program (NTP) was launched in 2016 as the first Vision Realization Program with the greatest number of assigned strategic objectives aimed at achieving government operational excellence, establishing the necessary infrastructure to improve economic enablers, and raising the standards of living. The program has developed strategies, launched initiatives, and managed projects by working collaboratively with various entities from all sectors to achieve its targets.^[17] As noted in NTP (2021-2025), in its first phase, the NTP 2020 reached key milestones toward achieving Saudi Vision 2030: Enabling Private Sector and

Attracting Foreign Investments, Developing Tourism Sector and Preserving National Heritage, Women Empowerment, Promoting Community Development and Developing Non-Profit Sector, and Raising Labor Market Attractiveness. ^[18]

Sustainable development calls for multiple dimensional approaches built on numerous development strategies and initiatives at the regional as well as city levels. Al Madinah region has also initiated and implemented various strategies, policies and programs along with the Vision 2030, the National Transformation Program 2020 and other programs and agendas. These strategies and initiatives are firmly glued on the Al Madinah Main Competitive Advantages such as: a) Islamic hub and destination: Hallmark of Islamic culture, home of second Islam's holiest city, b) Natural richness and cultural heritage: One of the region's most attractive coastlines in the backdrop of beautiful land topography and cultural sites, and c) Diverse economy: High-potential sectors to spur economic development & diversification (mining, manufacturing & logistics, agriculture). ^[20,21,22]

The Al Madinah Strategy aims to transform Al Madinah Region by propelling its economy, empowering its society and preserving its environment. One of the core pillars of the Al Madinah regional strategy 2030 lies on Prosperity "Diversified and sustainable economic development". This pillar aims for a) Targeted enablers of priority sectors and attractive investment destinations, b) Strong Islamic economy, c) Thriving SME community, and d) Optimized and effective natural resources. Target economic sectors were prioritized based on Al Madinah's competitive advantage, Vision 2030 priorities, and sector's socio-economic contribution. In the economic side, it aims to increase the regional GDP growth (2.9 times), create 402,000 jobs, reduce the unemployment by 70% among Saudi families, and increase the creation of new business establishment (by 2.5 times). ^[20]

Comparative advantages: Al Madinah presents advantages of city-region structures and dynamics. National Spatial Strategy (NSS) designates the city of Madinah as a National Growth Centre. NSS goals in Al Madinah region: a) Achieving balanced regional urban development in the long term; b) Expansion and enhancement of economic growth; c) Strengthening of selected growth centers in the cities of the region; and d) making the most of basic equipment existing in the current major urban centers as two-thirds of the region population live in Al Madinah city.

Ongoing policies: The diversification strategy is based on generating stronger non-oil growth and includes the privatization of selected public enterprises; encouraging a greater participation of the private sector, including public-private partnerships; streamlining permit processes; and encouraging foreign investment.

Ongoing policies: Al Madinah smart city strategy adopt sustainable development principles toward a green economy

3.2.2 Al Madinah Religious, And Socio-Economic Resource Advantages

3.2.2.1 Religious advantages

The city of Al Madinah holds major historical, religious, and economic importance for its unique location and presence of the Holy Prophet’s Mosque. The Prophet’s Mosque and his sacred tomb attract millions of pilgrims to the city every year, making Al Madinah city a key place for the tourism industry in the Kingdom. The city has been expanding rapidly since the 1970s, and due to the rapid growth, the government has invested

heavily in the physical infrastructure which has attracted labor from all over the Kingdom and other countries resulting into further growth of the city. Al Madinah’s urban population growth has been driven by a national development strategy intended to lessen the kingdom’s dependency on oil exports by diversifying its economy and developing urban-based activities in manufacturing, trade and services. [12,20]

3.2.2.2 Socio-economic resources

Industry

The industry is de facto the largest and most important economic sector in the Al Madinah Region, where there are two industrial cities: the first is the Industrial City of Yanbu’, the second largest industrial city in the Kingdom; and the second is the Industrial City of Al Madinah, which is built on an area of ten million square meters. In the city of Yanbu’, there is also the Yanbu’ Refinery, which in 2012, produced 25.5% of the total petroleum-refinery products in the

Kingdom. In the same year, the total industrial investments in the region were 88.9 billion riyals, representing 10.2% of the total finance of productive plants in the Kingdom, which was 873.2 billion riyals in total. Additionally, by the end of 2013, the number of recorded factory workers in Al Madinah was 32,500, representing 3.9% of the total industrial manpower in the Kingdom, which totaled 828,000 workers. [12,20]



Figure 3.3 Economic nodes and network

Source: MOMRA 2019, Al Madinah City Profile 2019. Saudi Future Cities Program

Agriculture

The agricultural sector is still one of the most important economic sectors in the region, where in 2011 the total crop area was 27.5 thousand hectares, representing about 3.5% of the total crop area in the Kingdom, which totaled 788,000 hectares in the same year. Khaibar and Al Ulaaa, producing mostly dates and wheat, are the main agricultural centers, and are directly linked to the Agricultural Corridor of the Kingdom formed by Al-Qassim, Hail, Tabuk, and Al Madinah. The region also had a considerable honey production in 2011, which amounted to 119 tons. (Al Madinah City Profile, Annual Agricultural Statistical Yearbook 2012, Ministry of Agriculture). Due to the unique topography of the area, Al Madinah has a significant number of agricultural land, equal to about 23.3 % of its total area. Though, the agricultural lands are the elements of historical significance, during the last few decades Al Madinah has been increasingly subjected to rapid loss of agricultural land, especially within the consolidated city. This underlines the need for immediate actions for the preservation of these elements and their better integration with the urban structure and functions. ^[12,20]

Mining and Quarrying

The mining and quarrying sector in Al Madinah is one of the key activities which can contribute to the

utilization of the natural resources in the region, also covering the needs for raw materials by the construction and industrial sectors. The mining and quarrying sectors significantly contribute to the exploitation of natural resources in the region and serve the needs of the construction and industrial sectors with raw materials. Some companies and establishments are operating on site to extract raw materials, such as limestone and gypsum. These are used in manufacturing gypsum products, cement (sand), ceramic (clay and kaolin), glass (silica sand), and together with other natural mineral resources such as copper, zinc, and lead constitute a substantial regional resource. The main mining areas in the region are located in Al Hanakia and Yanbu', providing mainly gold, copper, tantalum ores and manganese. Overall, more than 136 mining locations have been discovered in the region, based on geological studies. Also in Al Madinah, there is a major mine that extracts the most precious metal of the Kingdom, the ore. The Mahad Al-Dahab mine, owned by the Saudi Arabian mining company Maaden, is where the ore is extracted from and then treated for the ultimate production of gold. The annual production of the Mahad Al-Dahab mine is estimated to be of over 1,500 kg of gold and 3,300 kg of silver, 900 tons of copper and 600 tons of zinc per year. (Al Madinah City Profile, Technical, Financial Statistical Report on Mining Activities for 2012, Ministry of Petroleum and Mineral Resources. ^[12,20]



Figure 3.4 Natural resources.

Source: MOMRA 2019, Al Madinah City Profile 2019. Saudi Future Cities Program

3.2.2.3 City-region structures

Al Madinah city presents advantages of city-region structures and dynamics [10,20] as it is directly linked to the city of Yanbu', Al Ulaa, Mahd, Badr, Khaibar, Hanakiyah, Ais, and Wadi Al-Fari to form the Al Madinah City-region. As observed elsewhere, a city-region has numerous economic and competitive advantages: heritage, religious, industrial, and agricultural as illustrated in the corridor map. These emerging trends linking Al Madinah city to the other eight cities into spatial units are territorially and functionally bound by economic, political, socio-cultural, and ecological systems.

For instance, at the city-region level, Yanbu' and Badr have strong links with Al Madinah city regarding water provision, trade, and transport, and overall, the area has a high agricultural potential both within the city and in the surrounding settlements of Al Henakiyah, Al Mindassah, Shajwa, and Abu Rubayq. Apart from the central core of Madinah as the religious, industrial, and commercial centre, other major economic sectors like trade, industries, and maritime activities are located in Yanbu', on the Western part of the city-region, while agriculture is concentrated in Al-Hernakiyah, and services in Badr. The city of Madinah and its

consequent city-region take advantage of the water desalination plant in Yanbu', and equally important is the port connection to Ar Rayis in Badr, making the functional connections across the city-region stronger.

Though their economic output may be enormous, their management requires considerable investment on infrastructure, particularly to ease mobility and communication to constitute a large economic output, combining large markets, skilled labor and innovation. The Al Madinah Region has, indeed, a good network of roads and bridges connecting its major cities and other regions.

Finally, the Regional Plan for Madinah 1420H (1999) anticipated the creation of three new suburban areas as well as three satellite cities within a 60-kilometre radius from the Haram Area, which are intended to be linked to Al Madinah City through a hierarchical road network and, in some cases, a regional rail network. As presented in the chapter 2.3 Urban Transport, this plan, if fully implement, will help to better manage the increase in traffic at the city level as well as between cities. [10,20]

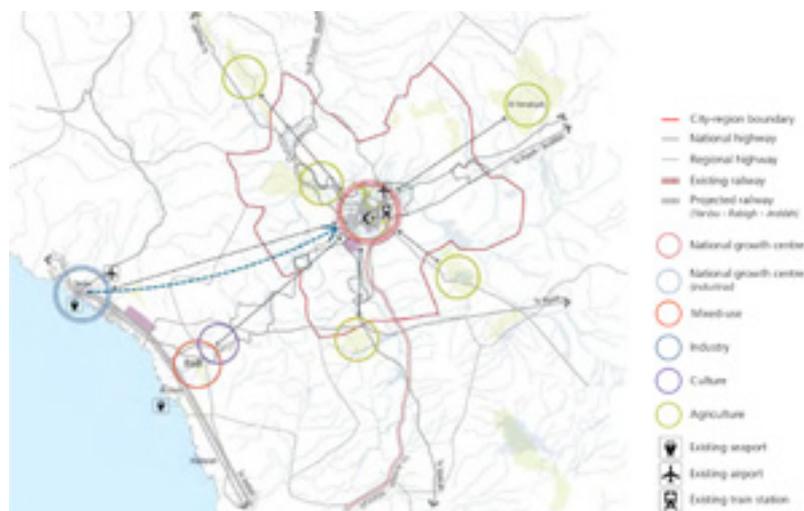


Figure 3.5: Functional connectivity, Source: MOMRA, 2019. Al Madinah city profile [10]

3.2.3 Macro-Economic Indicators Of The Al Madinah Urban Economy

One of the goals of the SDG is Goal 8 “Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all”. [1,2] This includes to Sustain per capita economic growth in accordance with national circumstances; Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labor-intensive sectors. This section includes indicators/variables for the urban economy in terms of gross output, growth in the number of economic enterprises, the characteristics of the labor force and its relative size and growth rate on different sectors. [1,2]

The Kingdom has mobilized large infrastructure investments to implement its economic development strategy. [12] Al Madinah and Makkah, as holy cities, and destination for Hajj and Umrah pilgrimage have benefited from these investments as large and competitive cities such as: Riyadh, the national capital and a major economic drive; Jeddah, the Red Sea port city; and Dammam, the heart of oil production led by Saudi Aramco. The Kingdom also launched a large project of the creation of economic cities, as one component of the national economic diversification strategies, to strengthen its global competitiveness, achieve balanced development, accelerate job creation and improve Saudi skill levels. [12] Economic cities are greenfield development projects being implemented as part of the Vision 2030. [12,17,18] These economic cities, developed through public-private partnership, present great opportunities for growing investments in new sectors such as emerging technologies, leisure and tourism activities that would further enhance the country’s competitiveness. [12,17,18] Planned on “smart city”

and sustainable development principles, they provide a gateway toward a green economy. One of those cities is the “Knowledge Economic City”, located in Al Madinah; it focuses on knowledge-based industries and services. [12,22] It is expected to host 200,000 inhabitants in an area of 4.8 square kilometers with an investment of US\$7 billion. Other economic cities are: King Abdullah Economic City, Prince Abdulaziz Bin Musaid Economic City, Jazan Economic City, King Abdullah Financial District, Al Faisaliyah City, Neom City, Qiddiya Project. [12,17,18]

Besides these large investments, the National Spatial Strategy (NSS) designates the city of Al Madinah as a National Growth Centre, one of the three in the Al Madinah Region. [12,23,24] The Kingdom’s development has largely been guided by a National Spatial Strategy that aims to achieve balanced development among the regions. It also seeks to achieve a spatially balanced pattern of population distribution within the country. The rationale for this is to minimize the negative consequences of rapid population growth in major cities. Al Madinah also presents advantages of city-region structures and dynamics as it is directly linked to the city of Yanbu’, Al Ulaa, Mahd, Badr, Khaibar, Hanakiyah, Ais, and Wadi Al-Fari to form the Al Madinah City-region. [20]

With a resident population of over 1.45 million and a floating population of about nine million every year, Al Madinah offers economies of agglomeration and scale as well as play an important role at the national level. Al Madinah is, indeed, considered a center of national development with important resources such as agriculture, industry, and other important income-generating activities, such as religious tourism. It is the economic engine and the driver of the

Al Madinah region constituting approximately two-thirds of the region population. [20] NSS goals for the Al Madinah region is, indeed: a) Achieving balanced regional urban development in the long term; b) Expansion and enhancement

of economic growth; c) Strengthening of selected growth centers in the cities of the region; and d) making the most of basic equipment existing in the current major urban centers (mainly represented by the city of Al Madinah). [20]

3.2.3.1 Gross domestic production and economic sector contribution

Available information on the Gross Domestic Product (GDP) is from the General Authority for Statistics (GaStat) [5,14,26] and the Al Madinah Chamber of Trade and Industry [25]. The city of Al Madinah, representing nearly two-third of the region, has a net influence on levels and trends of economic performance of the region measured by the GDP. In 2012, The GDP of the Al Madinah Region was about 101 billion riyals, representing 3.7% of the GDP of the Kingdom, and 7.1% of the GDP (without crude oil and gas) of the Kingdom. Other publications show a steady increase of the GDP during a period of 11 years along an annual inflation which ranges from 3.5% to 3.9%. During the period 2009 to 2012, the average growth rate of the region's GDP was 23.7%. [25,26]

In the absence of the availability of GDP information at the city level, we have used the equivalent at city level called city product as presented in the City Prosperity Index of Al Madinah published in 2019 by MOMRA and UN-Habitat. That report estimates the City Product per capita of Al Madinah at 26,570.67 USD (PPP) per capita. [27] The mean household income is also estimated at 20,482.66 USD (PPP) from the household income and expenditure conducted by GaStat in 2018. [14] As we indicated in previous chapters, large urban population provide multiple advantages including economies of scale and agglomeration. As an indicator of Economies of agglomeration, the Economic Density of the Al Madinah city is estimated, in the City Prosperity Index (CPI) report of Al Madinah at 144,990,717 USD (PPP)/KM2. [27]

As we indicated in the previous section, the region of Al Madinah has enormous economic resources including agriculture, industry and mine. While the Industry sector is the major direct contributor to the GDP (33 % of the total), the agriculture and the mine direct contribution is lagging with (2% and 4%) respectively. However, their contribution may be indirectly through other sectors by the transformation of their primary resources. Other contributor sectors are the Government services (19%), the trade sector with 12% followed by the construction and building sector with 10 %, the financial and real estate services sector with also 10%, transport and communications sector with 7 %, social services sector with 4 % (Al Madinah chamber of trade and industry / Competitiveness report 1439 HA (2017) [25]. These figures are similar to those provided by Saudi Arabia Monetary Authority (SAMA) 2018 Annual Report. [28,29] The high contribution of the industrial sector lies on the industrial activities of the region with its medium- and small- sized industries, in addition to the large industrial center (Yanbu' Industrial City) located in Yanbu' Governorate across the Red Sea coast, which is considered one of the most important industrial centers at the national level. Mining activity is also one of the most important economic activities of the region, with the most important gold mines in the Kingdom at Al Mahd Governorate.

Economic sector contribution to GDP in Al Madinah region (2017)

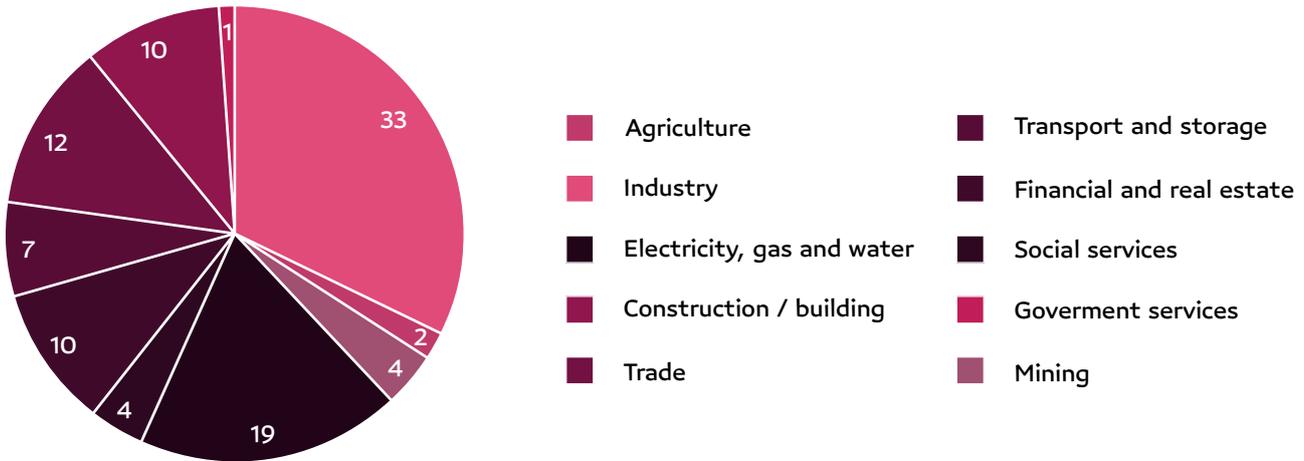


Figure 3.6 : Economic sector contribution to GDP in Al Madinah region

Source: Al Madinah chamber of trade and industry / Competitiveness report 1439 HA (2017)

3.2.3.2 Economic diversification and sectoral contribution to the gross value added (gva)

The Al Madinah Strategy 2030 indicates that, in 2018, the Manufacturing sector contributes to the Gross Value Added (GVA) of the Al Madinah region at 19.9%, followed by the trade sector (15.8%). At diverse degrees, Al Madinah city and Yanbu’ are the main contributors to the manufacturing sector. [20,28,29] After Manufacturing sector, trade is the second sector contributing to the GVA of the Al Madinah region (15.8%). The trade sector including wholesale and retail, accommodation and food is present in Al Madinah city, Yanbu’ and Al Ulaaa. Al Madinah city represents one of the most important main trade centers of the region with Al Masjid Al Nabawi, which is frequented by millions of visitors especially in Haj and Omrah seasons, resulting in a significant commercial boom in the region in particular and on the national level in general. It is expected that it will continue to grow the construction of new commercial centers such as those along

the 3rd Ring Road (King Abdullah Road). The sector of collective services, including health and education services contribute to the region GVA at 13.6%; it is present in all cities of the region and is followed by the financial services (10.8%) and the public administration (10.4%). The transport & communication, and the building and construction sectors contribute to the GVA at the same level, 7.4% and 7.3% respectively. [20,28,29] The agriculture sector is present in all governorates except in Al Aiss city, but its direct contribution to the GVA is lagging with a share of 4.8%, while the share of the mining and quarry sector is 4.3%. [20] The contribution of the agriculture, and mining & quarry sectors is less than what would be expected considering their potential in the region. However, their contribution to the GVA may be expressed indirectly through other sectors by the transformation of their primary resources. [20]

Almadinah Region Overview

Key Economic Activities & Landmarks

(SAR bn in 2010 prices, 2018)

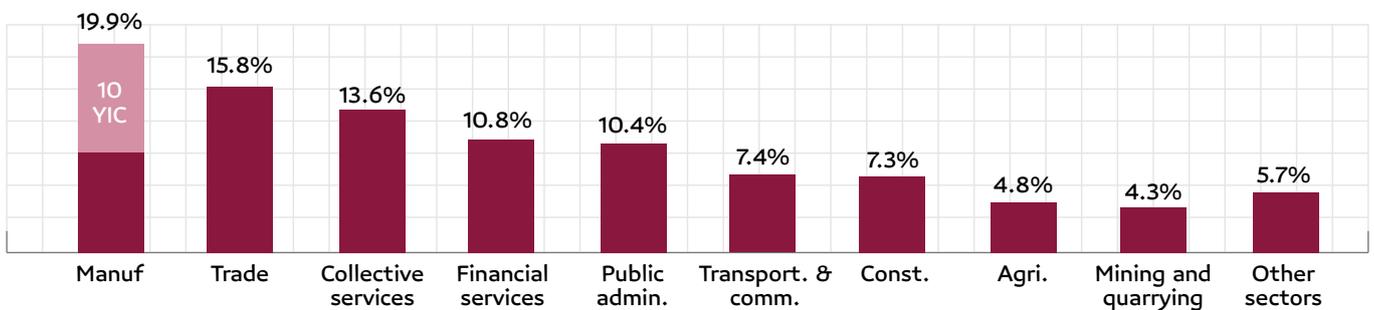


Almadinah region key sectors

- Manufacturing
- Agriculture
- Tourism
- Mining & quarry
- Retail/wholesale



Almadinah region GVA contribution by sector (% , 2018)



1. Includes wholesale and retail, accommodation and food; 2. Includes health and education services 3. Yanbu' Industrial City Source: GASTAT, MEP, SAMA< Oxford Economics, A.T. Kearney

Figure 3.7 Al Madinah region GVA contribution by sector

Source: Al Madinah Development Authority, 2019 Al Madinah Region Strategy 2030, Executive Summary, December 2019, GASTAT, MEP, SAMA, Oxford Economics [28,29]

Economic diversification

The diversification strategy is based on generating stronger non-oil economic growth and includes the privatization of selected public enterprises; encouraging a greater participation of the private sector, including public-private partnerships; streamlining permit processes; and encouraging foreign investment. This has ensured

a considerable rise in the number of private establishments. Between 2012 and 2016, for instance, the number of private establishments rose by 36 per cent (from 334,494 to 453,389 establishments) [17,18]

3.2.3.3 Al Madinah regional contribution to the national GDP

According to the Al Madinah chamber of trade and industry / Competitiveness report 1439 HA (2017) ^[25], the Al Madinah region contributes 7% to the national GDP (without crude oil and gass).

Riyadh region is the major contributor to the GDP (29%) followed by the Eastern region (24%) and Makkah region (21%). All other regions contribute to the GDP less than Al Madinah region,

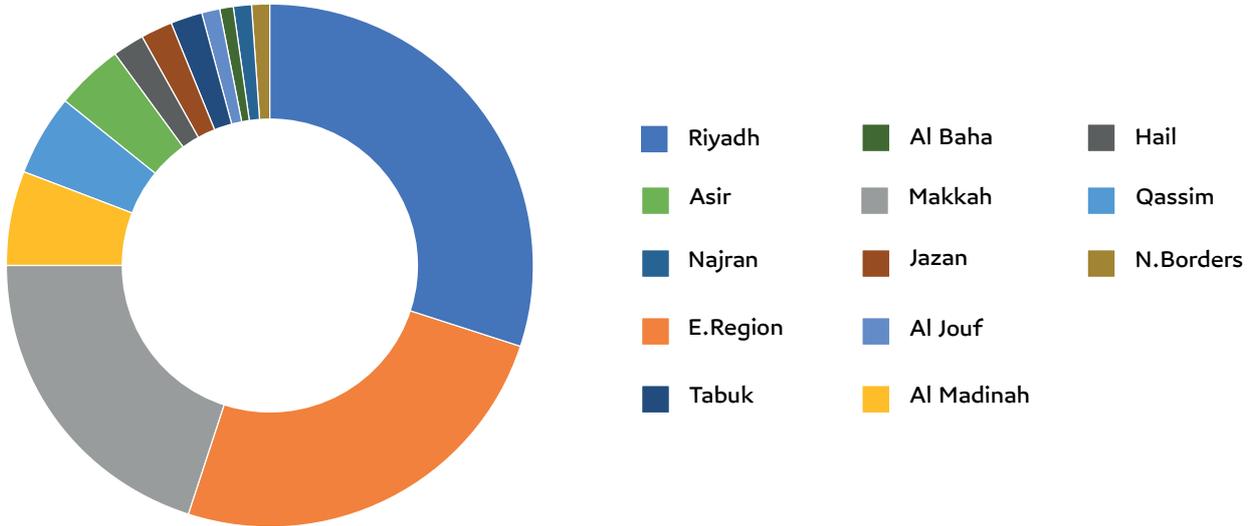


Figure 3.8 Contribution of regions of the GDP (without crude oil and gas), 2017

Source: Al Madinah chamber of trade and industry / Competitiveness report 1439 HA (2017) ^[25]

The figure 3.9 prepared from the statistics of GaStat 2021 ^[26] shows the fluctuation of the GDP per capita at the national level. In 2021, the Saudi GDP per capita was estimated at USD 23,726.42 (88,974.075 riyals). After the global financial crisis of 2008, there was an increase in

GDP from 2009 to 2012, it flattened between 2012 and 2014, followed by a three-years decline from 2014 that can be associated with the drop in oil revenue. There was another decline in the GDP from 2019, probably associated with the COVID-19 pandemic.

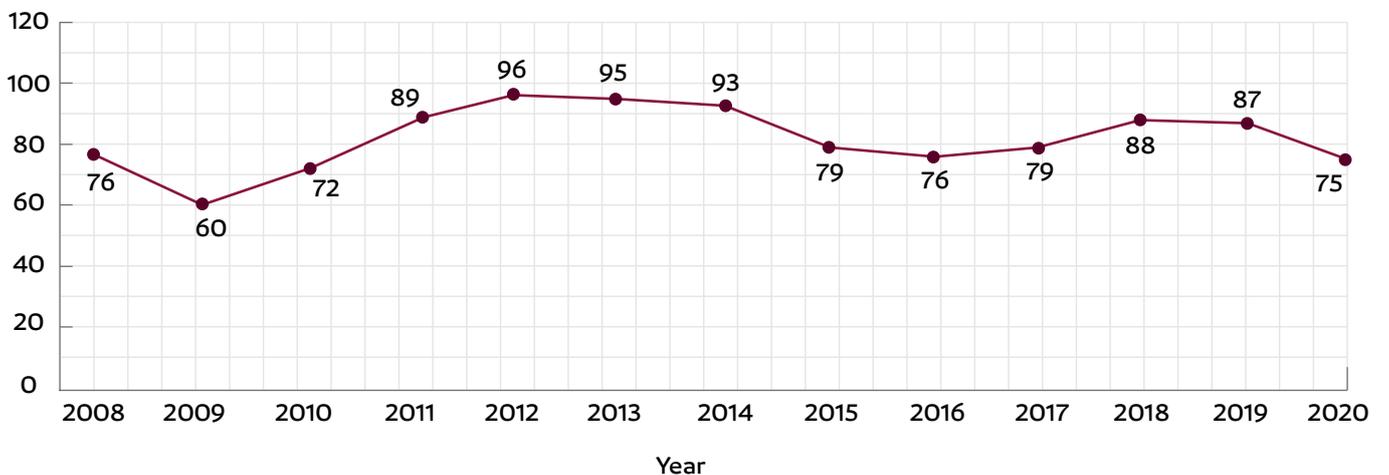


Figure 3.9 GDP per capita, KSA, 2008-2020
Source: General Authority for Statistics, 2021^[21]

City Product per Capita

The GDP is published at the national level, and when possible, at the regional level. UN-Habitat has introduced the City Prosperity Index based on the GDP per capita presented at city level as the City Product per Capita. [27] The notion of City Product per Capita has been presented in the City Profile report 2019 produced by the Saudi Future Cities Program (FSCP),

conducted by MOMRA in collaboration with UN-Habitat. In this publication of 2019, the City Product per Capita for Al Madinah city is estimated at USD 26,570.67 per capita, higher than Buraydah, Jeddah and Makkah (USD 25,969.07 per capita, USD 22,434.67 per capita and USD 19,552.00 per capita respectively) but much lower than the city of Riyadh (USD 41,762 per capita). [27]

3.2.4 Labor Force Participation And Employment

To realize the kingdom's vision of creating a thriving, business-friendly economy, a higher labor participation is essential. [17,18] Higher labor participation not only reduces fiscal pressures associated with welfare support, but it also mitigates against the health and wellbeing consequences of long-term unemployment

and improves social inclusion and equity. The government also initiated the Labor Market Support Programs that include wage protection programs, employment support programs and job seekers' employment support programs. [17,18]

Fact: There is progress in women's empowerment through participation to the labor force with a increase from 21.9% in 2016 to 30.4% in 2021, above the target of 25% by 2020 in the NTP.

Fact: Steady decline of the general unemployment for the last decade, from 26.9% in 2010 to 18.9% in 2015 then 10.1% in 2021.

Fact: There is Progressive employability of people with higher education level, but additional vocational education and training are needed as well as to create decent work conditions for young people and empower them with solid foundational skills to tackle continuous youth unemployment rates.

Policies: The Saudization of the labor market is taking its course but it is crucial to ensure an adequate match between the required skills and the qualification of new entrants into the labor force in order to realize economic growth sustained by low general unemployment and low youth non-employment

Policies: Enabling Private Sector and Attracting Foreign Investments - One key theme of the NTP is to enable the private sector to participate at the dynamization and competitiveness of the Kingdom economy with the development of non-oil sector. The role of the private sector has significantly increased in the Al Madinah city economic space.

3.2.4.1 Labor force participation

The labor force is composed of individuals (15 years and above) who participate or even ready to participate in the production of commodities and services during the reference period of the survey. The labor force is finally a combination of employed and unemployed people. [20] In Al Madinah city, according to the 2021 socio-economic survey, the labor force is estimated at 33.2% of the total population. Overall, in Al Madinah city 31.5% of Saudis were employed at at the 2021 socio-economic survey, this figure

is comprised of 48.5% of Saudi men against 12.1% of the Saudi women. When we consider the whole population (Saudis and non-Saudis), these figures are respectively 37.8%, 58.0% and 12.0%. [20]

Across cities of the Al Madinah region, the labor force participation rate among Saudis is as follows: Al Madinah city (33.2%) and Yanbu' (35.4), while Khaibar, and Al Ayes, have 42.7% and 41.1% respectively and Al Mahd and Wadi Alfar have 40.0% each).

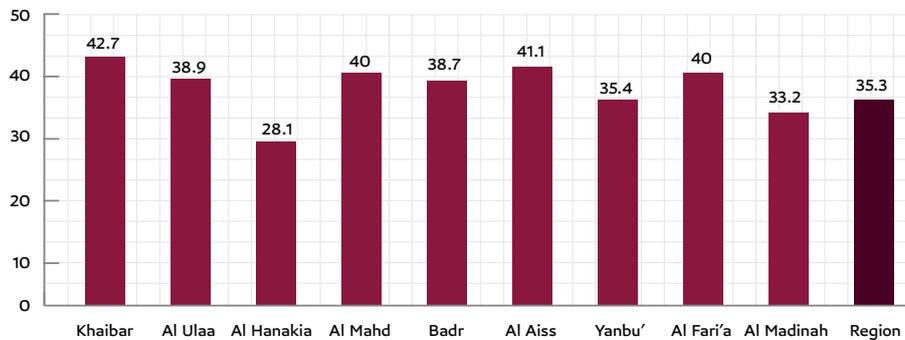


Figure 3.10 Labor force participation by city of Al Madinah region, 2021)
 Source: MDA, Al Madinah Urban Observatory. Socio economic survey 2021. [20]

Labor force data is available at the regional level according to the statistics produced by the General Authority for Statistics. At the regional level, the labor force participation in the third quarter of 2021 varies from 41.8% for the Al-Baha region to 56.2% for the Riyadh region, For the Al Madinah, the labor force participation is estimated at 45.3% in the same quarter of the year 2021. [30]

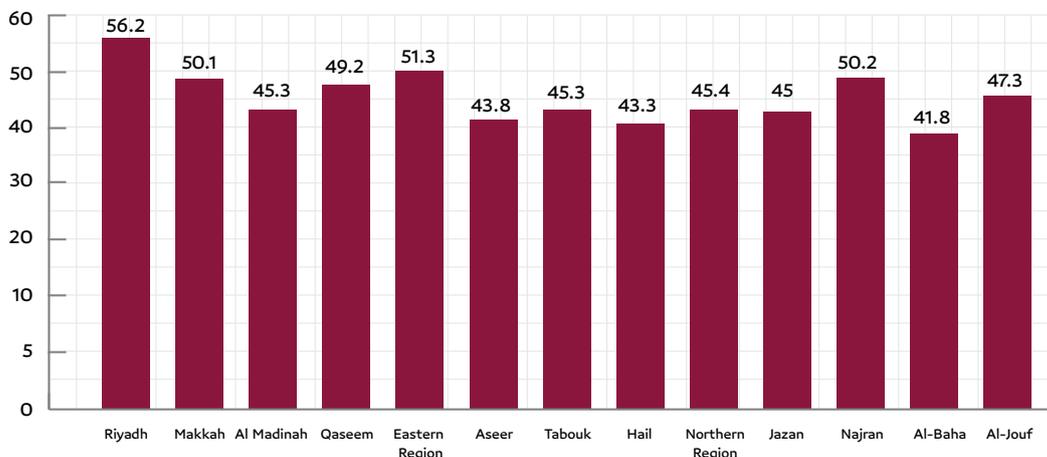


Figure 3.11 Labor Force Participation rate by region, (2021)
 Source: General Authority for Statistics [30]

3.2.4.2 Labor force participation across cities of Al Madinah region

Across cities of the Al Madinah region, the employment rate among Saudis in Al Madinah city is 31.5%, and 31.1% each for Yanbu’ and Al Fari’a. The lowest employment rate is observed in Khaibar with 17.9%, followed by Al Ulaaa and Al Hanakia with 21.3% and 21.8% respectively. In Al Madinah, the proportion of the workers that were working full time is estimated at 91.8%.

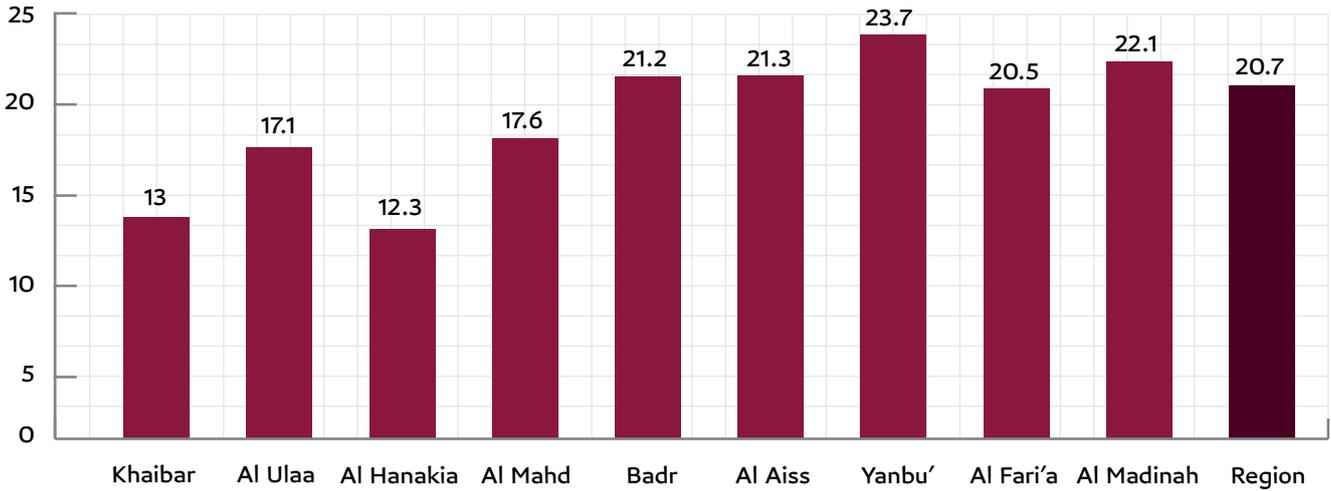


Figure 3.12 Employment rates among Saudis by city of Al Madinah region, 2021
 Source: MDA, Al Madinah Urban Observatory. Socio economic survey 2021.

It is important to note that most of the employed people work full time with proportions varying from 81.7% in Al Khaibar to 98.8% in Al Fari’a.

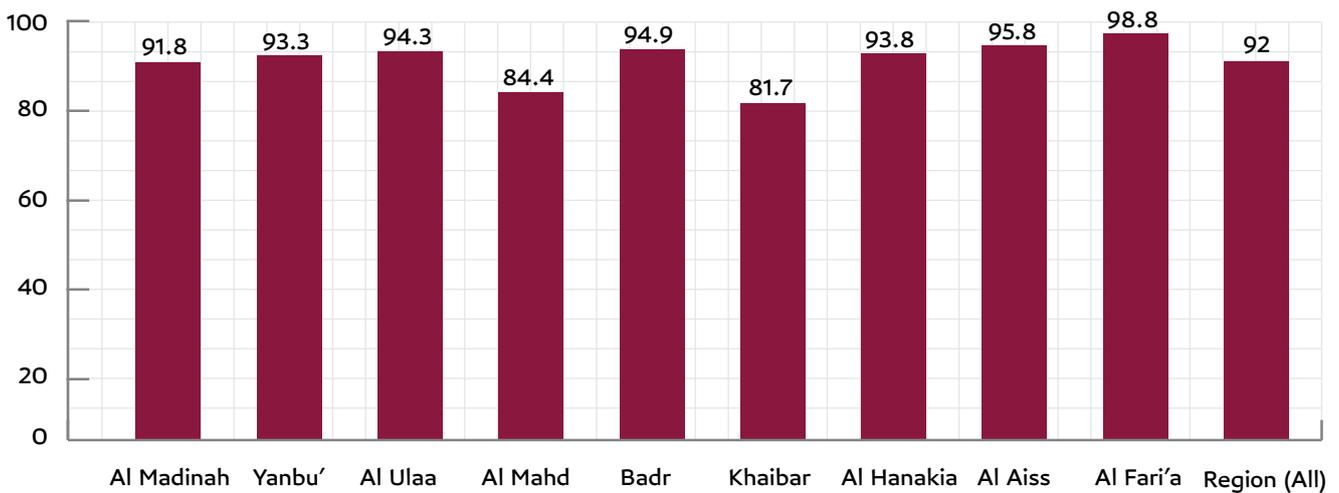


Figure 3.13 Proportion of employed people working full time
 Source: Source: MDA, Al Madinah Urban Observatory. Socio economic survey 2021.

3.2.4.3 Saudization of the labor market

Saudis account for two-thirds of the total population but are less than half of the labor force. (Saudi Cities Report, 2019). [31] However, compared to 2016, when the NTP 2020 [17] was launched, there is a slight increase of the Saudis labor force participation in the Al Madinah region from 41.2 % in 2016 to 45.3% in 2021. [30] Further, the NTP recognizes that to accelerate the “Saudization” of the labor market, it is crucial to ensure an adequate match between the required skill set and the qualification of new entrants into the labor force. [17,18] Free access to higher education has been a major component of the Saudi economic development strategy, but there is a severe mismatch between the

skills of a large cohort of young Saudis entering the labor force and the needs of the private sector, resulting in a higher unemployment rate for educated young Saudis. [17,18] This calls for reorientation of education and training programs coupled with incentives for Saudi youth. One of the measures for incentives stipulated in the NTP in the first (2016-2020) as well as in the second phase (2021-2025) is to provide unemployment assistance coverage (hafiz) to all 20 to 60-year-olds actively looking for jobs. [17,18] There may be an urgent need to also evaluate and reorient the attitudes of young Saudis towards certain jobs in certain sectors especially within the private sector.

3.2.4.4 Enabling private sector and attracting foreign investments

Among the themes of the NTP 20 extended to NTP (2021-2025) is to enable the private sector to participate at the dynamization and competitiveness of the Kingdom economy with the development of non-oil sector. [17,18] The Kingdom is now ranked 8th in world competitiveness among G20 countries. KSA also advanced by 3 points to rank 36th in Global Competitiveness. The number of SMEs has also increased. [18,32,33] The Al Madinah socio-economic survey shows that the role of the private sector has significantly increase in the economic space with a higher number of workers employed in the private sector (40 %) with less than a third working in the public sector (31.1%). It is also important to note that the family business has its share with 7% of workers along with the

security sector (8.3%). Furthermore, in terms of detailed activity sectors, the administration has a share of 28.2% of workers while the services, the industry and the commerce have shares of 21.9%, 19.7% and 16.3% respectively; these three sectors compose mainly the private sector. The construction sector has a share of 5.6% while only 5.4% of workers are in the oil sector. The agricultural sector contributes less than 1% (0.5%). The vast majority of workers (91.1%) are specialists and practitioners (30.2%), technicians or similar professions (22.7%), or sale workers or craftsmen (38.2%); senior professionals and mangers represent 8.9%. Information collected on the formality of the employment shows that 18.4% of non-Saudi workers are in the informal sector. [20]

3.2.5 Unemployment

One of the goals of the SDGs is Goal 8 “Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.” [1,2] This goal aims to: a) Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro, small- and medium-sized enterprises, including through access to financial services; b) By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value; and substantially reduce the proportion of youth not in employment, education or training. [1,2]

Along the SDGs, The KSA has taken several initiatives include the creation of adequate jobs and the achievement of economic growth [17,18] including:

- Localization of technologies and knowledge through the Public Investment Fund through which the Kingdom seeks to increase GDP at a steady pace, diversify sources of income, preserve major Saudi companies, create new investment opportunities, raise the level of innovation and technology, create job opportunities for young people, and

raise the level of productivity, Entering and developing major government projects, promoting and developing tourism, and supporting small and medium enterprises.

- Increasing the contribution of small and medium businesses to the economy.
- Increase women’s participation in the workplace.
- Reduce the duration of obtaining a Commercial Register to 180 seconds.
- Expanding vocational training to continue to meet workplace needs.
- Establishing a national platform for volunteering and enhancing awareness of the importance of volunteer work. The Ministry aims to increase the number of volunteers in the Kingdom to reach 300 thousand volunteers by the year 2020.
- Increase qualitative foreign investments to SAR 20 billion Saudi.
- Launching the National Program for the Development of Crafts and Handicrafts (Bare’a).
- Digital transformation and economic growth initiatives:

3.2.5.1 General unemployment

The Al Madinah city socio-economic survey conducted in 2021, has collected information on employment dis-aggregated by gender, Saudis versus non-Saudis, and other sub-groups. The information collected is compared with 2015 and other previous years wherever it is available. While in 2021 for the Al Madinah city, the unemployment

for Saudis is estimated at 10.1 % (6.8% for men versus 21.0% for women), this level is much lower than the 2015 level (18.9%), and the 2010 level (26.9%). During the same period, the male unemployment rate fell from 21.6% to 14.5%, then to 6.8% and the female unemployment rate from 45% to 33.5%, then to 21.0%. [20]

The decline of woman unemployment can be attributed to effective policies in the Kingdom to increase the participation of women in the labor force. It is clear that in this last decade, significant progress has been in the employment sector with lower unemployment rates.

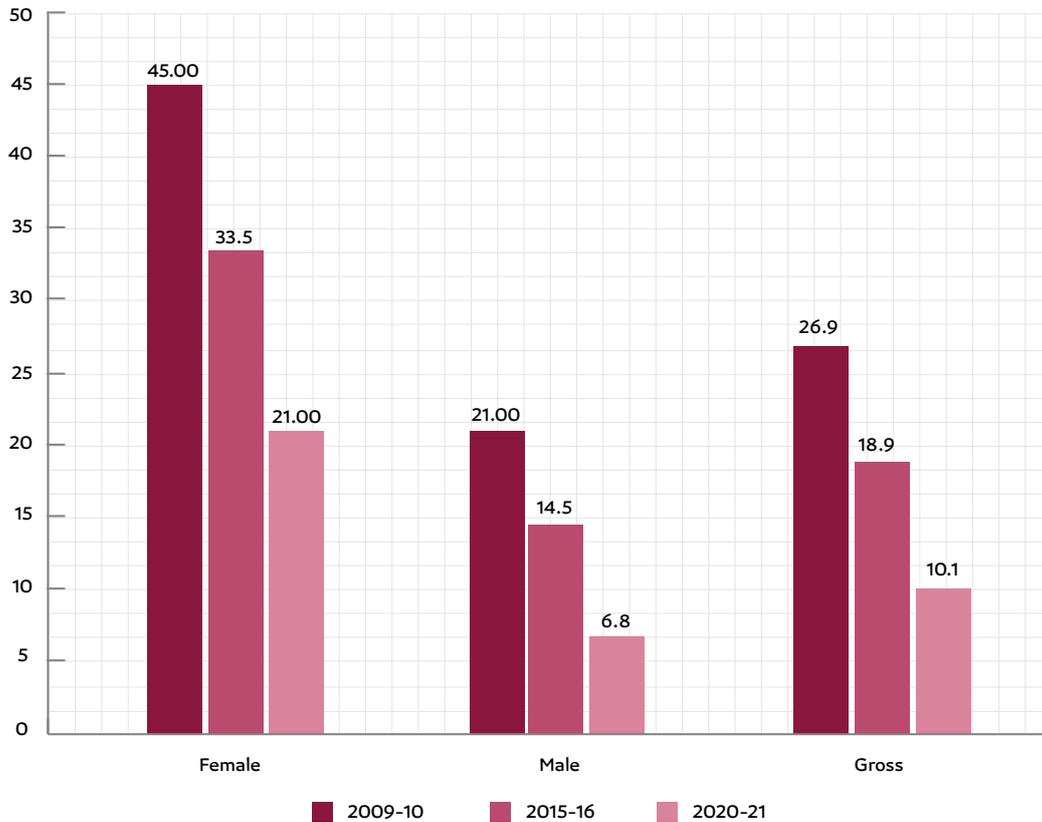


Figure 3.14 Unemployment rates for Saudis, Al Madinah city 2010- 2015 -2021
 Source: Al Madinah socio-economic survey 2021 and other sources ^[20]

Inter-regional variation of unemployment

The General Authority for Statistics provide unemployment data at the regional level. Considering that the Al Madinah represents more than 60 % of the Al Madinah region population, it will weigh significantly on the Al Madinah regional average. According to the data from the General Statistical Authority contain in the chart below, in the first quarter of the year 2021, Al Madinah region had the fourth highest unemployment rate of 13.2% behind Tabouk, Al Jouf and Jazan with (17.2%, 15.5% and 13.4%) respectively. Al Madina region was also higher than the average for all the regions which was at 11.7%. In the same quarter the unemployment rate in Riyadh was 10.4%, while Makkah and Al Qassim were both at 12.8%. The unemployment rate in Al Madinah increased from 13.2% in Q1 to 14.8% in Q2 and to the highest of all the regions with 16.2% in Q3. ^[32]

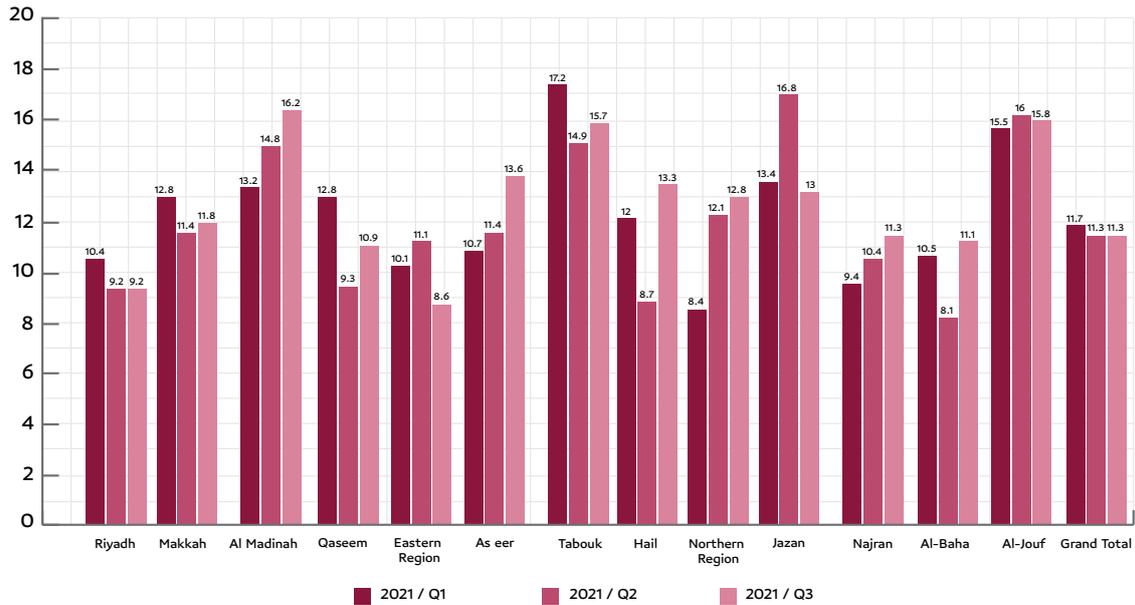


Figure 3.15 Unemployment rates , by region
Sources: General Authority for Statistics, 2022 [32]

3.2.5.2 Youth Non-employment (Not in employment, education, or training)

By 2020, substantially reduce the proportion of youth not in employment, education or training (8.6)

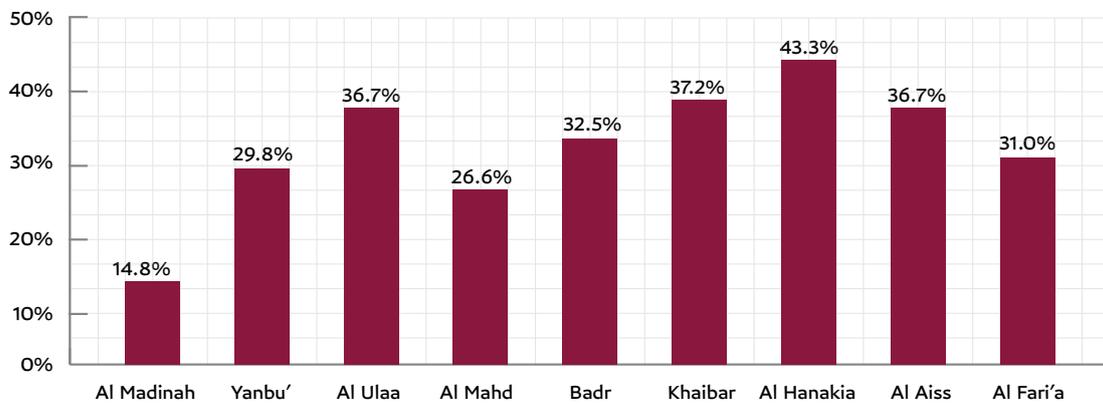


Figure 3.16: Youth non-employment rates: Proportion of youth (aged 15–24 years) not in education, employment or training; source Socio-economic survey 2021^[20]

The youth non-employment is composed of young people (aged 15–24 years) not in employment, education or training. ^[1,2] According to information from the Socio-economic survey 2021, the youth non-employment rate in Al Madinah city was at 14.8% and the lowest among the cities within Al Madinah region. The

highest youth unemployment rate is found in Al Hanakia with 43.3%. Most of the cities within Al Madinah region (Al Ulaa, Badr, Khaibar, Al Hanakia, Al Aiss, and Al Fari'a) have more than 30% of their youth out of employment. [20] Generally, the youth non employment within the region is lagging behind.

3.2.5.3 Informal employment

Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and

encourage the formalization and growth of micro, small- and medium-sized enterprises, including through access to financial services (8.3)

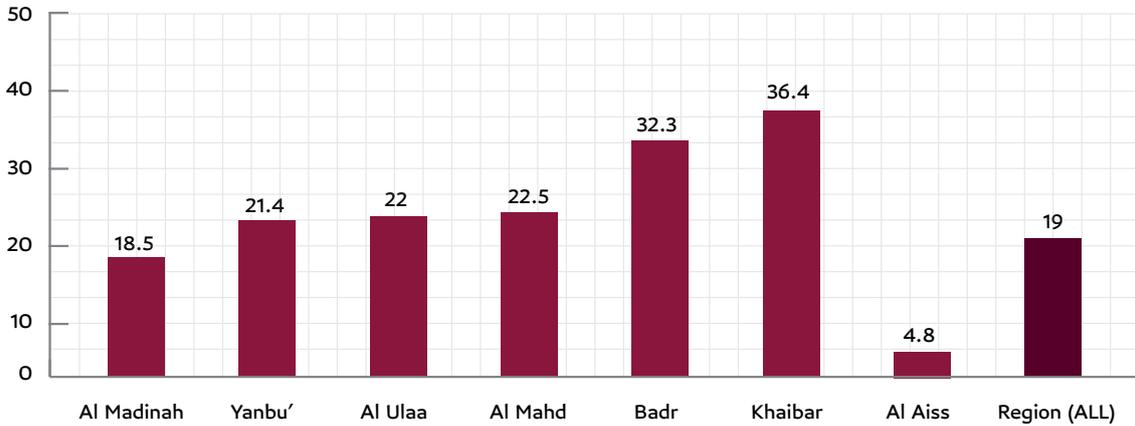


Figure 3.17 Informal employment of non-Saudis
 Source: source Socio-economic survey 2021^[20]

Information in the figure 3.15 on the formality of the employment shows that 18.5% of non-Saudi workers in Al Madinah city are in the informal sector. Al Madinah city is the second lowest in the region after Al Aiss with 4.8% against the region's average of 19%.

Progressive employability of people with higher education level

In Al Madinah, as presented in the section on education, young people are becoming well educated and are waiting for their integration in the job market. However, additional vocational education and training may be needed to align education and training with the required skills in the job market.^[17,18] It is important to note that ICT literacy and numeracy is progressively a requirement in all sectors of the economy, and young people must be equipped with knowledge in the use and development of ICT infrastructure.

[17,18] These figures show that with the right empowerment, Al Madinah's young population can lead the vision for the city of tomorrow and work for it. When young people are educated, their ability to adopt emerging technologies and transfer experiences from other parts of the world become key drivers of the Al Madinah's sustainable development in the long term. Various studies show that the KSA's young people will be the driving force behind economic prosperity in future decades, but only if policies and programs are in place to enhance their opportunities. These policies and programs include factors such as functioning institutions and laws, efficient bureaucracies, government stability, lack of corruption, and a stable business environment that encourages domestic and foreign investors as prescribed in the Vision 2030 and translated in the National Transformation Program.^[17,18]

3.2.6 Conclusion: Key Findings And Recommendations

Economic growth

The economic growth in the KSA is through economic diversification based on generating stronger non-oil growth and the privatization of selected public enterprises with a greater participation of the private sector, including public-private partnership and foreign investment. In the national GDP (without oil), the Al Madinah Region has a share of 7.1%. There is a high contribution of the Industrial sector in the Al Madinah regional GDP (33%) followed by Government services (19%), Trade (12%), Financial and real estate (10%). The City Product per capita of Al Madinah city is estimated at 26,570.67 USD (PPP) per capita.

Labor force participation: To realize the kingdom's vision of creating a thriving, business-friendly economy, a higher labor participation is essential. Labor force in Al Madinah city is estimated at 33.2%. Compared to 2016, when the NTP 2020 was launched, there is slight increase of the labor force participation in the Al Madinah region from 41.2 % in 2016 to 45.3% in 2021. Furthermore, 31.5% of Saudis are employed (48.5% among the Saudi men against 12.1% among the Saudi women).

Acceleration of the Saudization of the labor market: the NTP recognizes that to accelerate the "Saudization" of the labor market, it is crucial to ensure an adequate match between the required skills and the qualification of new entrants into the labor force. Mismatches between the skills of a large cohort of young Saudis entering the labor force and the needs of the private sector result to a higher unemployment rate for young Saudis with a tertiary education. Free access to higher education has been a major component of the Saudi economic development strategy. This calls for education and training programs coupled with incentives for Saudi youth which is to provide

unemployment assistance coverage (hafiz) to all 20 to 60-year-olds actively looking for jobs.

Enabling Private Sector and Attracting Foreign Investments: One key theme of the NTP is to enable the private sector to participate at the dynamization and competitiveness of the Kingdom economy with the development of non-oil sector. The Al Madinah socio-economic survey shows that the role of the private sector has significantly increased in the economic space with the majority of workers being employed in the private sector (53.6%) compared to less than the third working in the public sector (31.1%).

Steady decline of the general unemployment for the last decade, from 26.9% in 2010 to 18.9% in 2015 then 10.1% in 2021. In the same period, the woman unemployment declined from 45% to 33.5%, then to 21.0%, the men unemployment from 21.6% to 14.5%, then to 6.8%. The decline of woman unemployment can be attributed to effective policies in the Kingdom to increase the participation of women in the labor force.

Progressive employability of people with higher education level but additional vocational education and training are needed: In Al Madinah, Young people are becoming sufficiently educated, but additional vocational education and training may be needed to align education and the required skills in the private sector. With the right empowerment, Al Madinah's young population can lead the vision for the city of tomorrow, they become key drivers of the Al Madinah's sustainable development in the long term. the KSA's young people will be the driving force behind economic prosperity in future decades, but only if policies and programs are in place to enhance their opportunities.

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CHAPTER 4

GOAL 2



ZERO HUNGER

GOAL 3



GOOD HEALTH
AND WELL-BEING

Goal 3 Good Health and Well-Being	Value	Year	Rating	Trend
Mortality rate, under-5 (per 1,000 live births)	10.0	2020		
Life expectancy at birth (years)	74.6	2020		

Legend			
			
SDG Achievement	Challenges remain	Significant challenges remain	Major challenges remain

			
On track	Moderately Increasing	Stagnating	Decreasing

 Data not available

GOAL
2

END HUNGER, ACHIEVE FOOD SECURITY AND IMPROVED NUTRITION AND PROMOTE SUSTAINABLE AGRICULTURE



4.1 Goal 2 End hunger, achieve food security and improved nutrition and promote sustainable agriculture

By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round (2.1) [1]

By 2030, end all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women and older persons (2.2) [1]

ZERO
HUNGER



GOAL
3

ENSURE HEALTHY LIVES AND PROMOTE WELL-BEING FOR ALL AT ALL AGES



4.2 Goal 3 Ensure healthy lives and promote well-being for all at all ages

By 2030, reduce the global maternal mortality ratio to less than 70 per 100,000 live births (3.1)

By 2030, end preventable deaths of newborns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and under-5 mortality to at least as low as 25 per 1,000 live births (3.2)

Strengthen the prevention and treatment of substance abuse, including narcotic drug abuse and harmful use of alcohol (3.5)

By 2020, halve the number of global deaths and injuries from road traffic accidents (3.6)

GOOD HEALTH
AND WELL-BEING



4.1 Goal 2 End Hunger, Achieve Food Security And Improved Nutrition And Promote Sustainable Agriculture

GOAL
2

END HUNGER, ACHIEVE FOOD SECURITY AND IMPROVED NUTRITION AND PROMOTE SUSTAINABLE AGRICULTURE



- By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round (2.1) ^[1,2]
- By 2030, end all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women and older persons (2.2) ^[1,2]

4.1.1 Introduction: Social Development In The KSA Vision 2030 And The SDGs

Sustainability has been at the heart of Vision 2030 since its inception. ^[3] Vision 2030 is a vision for the future sustainability of the Kingdom of Saudi Arabia (KSA); with sustainability at the heart of its policy development, investment, planning and infrastructure development among others. The Vision 2030 addresses the energy and climate challenges of today and inspires others in the building of a sustainable future. The KSA is now steering in a new era where it aims to reach Net Zero by 2060; among the wider Vision 2030 ambitions are to accelerate the energy transition, achieve sustainability goals, and drive a new wave of investment. ^[3,4,5]

Vision 2030 framework and other state programs and policies provide solid foundations for the implementation of the sustainable development agenda. An assessment of linkages between the Vision 2030 goals and the 17 SDGs conducted as part of the analytical work for this review found that a significant degree of alignment exists between the two frameworks. Adapting the SDGs to the realities of Saudi Arabia is work in progress and further alignment and integration is expected to be achieved as SDG targets and indicators become incorporated into the

government's detailed action plans and programs that are being developed and refined under the Vision 2030 framework. ^[3,4,5]

Vision 2030 aims towards achieving its goals by 2030 for: a Vibrant Society, a Thriving economy and an Ambitious A vibrant society is "vital to achieving a strong foundation for economic prosperity. The goal is to create a society in which every citizen enjoys a happy fulfilling lifestyle complemented by a standard of living which provides a safe and secure environment for families, and access to world class health care and education. At the same time, the vision encourages its citizens to cherish their national identity and their ancient cultural heritage and live by the Islamic principle of moderation". A thriving economy provides opportunities for all by building an education system aligned with market needs to give the youth the skills for the jobs of the future, and creating economic opportunities for the entrepreneur, the small enterprise as well as the large corporation. An ambitious nation applies efficiency and responsibility at all levels in order to deliver the Vision, including building an effective, transparent, accountable, and enabling a high-performing government." ^[3,4,5]

4.1.2 Eradicate Hunger: Levels And Trends

One of the goals of the SDGs is to end hunger, achieve food security and improved nutrition and promote sustainable agriculture (Goal 2). This goal aims to ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round. Ending all forms of malnutrition, including stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women and older persons. [1,2]

The results of GASTAT's sports statistics shows that the percentage of the population practicing physical activity for at least 30 minutes per week in 2021, Al Madinah Region reached 46.8% (males are 52.9% when females are 38.2%), When it reached 51.8% for the National level. [6] It is known that lack of physical activity can cause obesity, heart diseases, high blood pressure, and high cholesterol among illnesses. Bad nutritional practices can also lead to obesity. Nutritional health awareness about the food ration size and the nutritional components of food product is important to empower consumers. In addition, increased duties on food products that are harmful

to people's health can be part of the solution. [7,8]

Causes of malnutrition could include poverty related issues as well as inappropriate dietary choices, a low income, difficulty obtaining food, and various physical and mental health conditions. Undernutrition is one type of malnutrition. [7,8] Multiple factors including poverty, limited access to basic food staples and essential services, and factors of population growth, may contribute to emergency levels of malnutrition in the region. Other malnutrition situations are mutually associated with health factors. Agricultural productivity is fundamental in the realization of this goal, including increasing incomes of small-scale food producers, through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment.

4.1.3 The Kingdom Of Saudi Arabia'S Programs And Initiatives To Eradicate Hunger

The Saudi government also introduced the national program to reduce food loss and waste and to prevent inadequate use of natural resources. [4,5,9] Seeking to develop food security sources and to ensure availability of food at affordable prices, several programs and initiatives have been launched. Among these is the national program to reduce food loss and waste and to prevent inadequate use of natural resources, which draws on international experience and best practices worldwide. The program is designed to maximize

benefit and raise efficiency of food consumption, in such a way as to achieve savings of food reserves and conservation of natural resources. The program considers both the economic viability of consumption and the use of natural resources. Furthermore, domestic initiatives were launched and farming practices were developed to improve crop yield of vegetables, fruits, dates and field crops. [4,5,9]

In the context of the Kingdom's endeavors to improve the environment in agricultural areas and to carry out preventive epidemics control, a program for prevention and control of Red Palm Weevil insect was launched to control the disease and to reduce its incidence from 10% to 1%, in view of the importance of date palm and its suitability to the Kingdom's environment. On the other hand, agricultural terraces have been rehabilitated, along with application of rain water harvest techniques in Taif, Baha, Asir and Jazan. Agricultural and water objectives of these activities will ultimately lead to abundance of output, as well as creation of a conducive environment for growth of agricultural activity and provision of food. ^[4,5,9]

In addition, the Kingdom pays special attention to the marketing and distribution of agricultural products of local farmers. In this regard, a study was conducted to set up marketing services' centers for small farmers and producers, with the aim to create an efficient system for the marketing of vegetables and fruits, through sustainable supply chains and forwarding systems. These centers will take into account the value-added aspect and will support the food processing industry. Besides conventional support channels, assistance is also provided to the electronic trade of dates, leading to an increase of the Kingdom's export of dates to about SAR 820 million (USD 218.67 million). A mechanism for the coordination of efforts was put in place between Ministry of Environment, Water and Agriculture, Saudi Agricultural and Livestock Investment Company, Grain Silos and the Flour Mills Organization and other stakeholders. The aim of this mechanism is to make optimal use of available resources for out-of-Kingdom agricultural investment, besides management of the strategic stockpile to secure food supply and ensure the achievement of overall food security for the Kingdom. ^[4,5,9]

The Kingdom of Saudi Arabia's initiatives for eradicating hunger ^[10]:

- Executing over 300 food security projects, resulting in millions fed through the efforts of the King Salman Humanitarian Aid and Relief Centre.
- The historic contribution of USD 500 million to the World Food Program in 2008.
- The Ministry of Environment, Water, and Agriculture's initiative to eradicate the red palm weevil (*Rhynchophorus ferrugineus*) and combat its spread the world over.
- The Ministry of Environment, Water, and Agriculture's initiatives to provide comprehensive and sustainable food security by:
 - Terracing and rehabilitation of agricultural lands, instating water harvesting technology in Al Taif, Al Bahah, Asir, and Jazan provinces.
 - Reducing per capita retail and consumer food waste by half, and reducing food losses in the production and supply phases, including post-harvest losses.
 - To develop and improve the efficiency of the agricultural market and to adopt measures to ensure the safe and timely delivery of commodities and their derivatives and to strengthen food reserves to reduce their volatility.
- Gaudi Grains Organisation (SAGO)'s initiative to reduce food loss and waste in the Kingdom and to prevent improper use of natural resources.
- Saudi Food Bank (Eta'am), which has provided more than 12 million meals since its inception.

4.2 Goal 3 Ensure Healthy Lives And Promote Well-Being For All At All Ages

GOAL 3

ENSURE HEALTHY LIVES AND PROMOTE WELL-BEING FOR ALL AT ALL AGES



4.2.1 Introduction

One of the goals of the SDGs is to ensure healthy lives and promote well-being for all at all ages (Goal 3). Healthy lives calls for the reduction in the maternal mortality ratio, the end of preventable deaths of newborns and children under 5 years of age, the reduction of premature mortality from non-communicable diseases through prevention and treatment and the promotion of mental health and well-being. ^[1,2]

- By 2030, reduce the global maternal mortality ratio to less than 70 per 100,000 live births ^[1,2]
- By 2030, end preventable deaths of newborns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and under-5 mortality to at least as low as 25 per 1,000 live births ^[1,2]
- Strengthen the prevention and treatment of substance abuse, including narcotic drug abuse and harmful use of alcohol ^[1,2]
- By 2020, halve the number of global deaths and injuries from road traffic accidents ^[1,2]
- Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all (3.8) ^[1,2]
- Strengthen the implementation of the World Health Organization Framework Convention on Tobacco Control in all countries, as appropriate (3.a) ^[1,2]
- Substantially increase health financing and the recruitment, development, training and retention of the health workforce in developing countries, especially in least developed countries and small island developing States (3.c) ^[1,2]

Facts: Al Madinah regions, the poportion of population who practice physical activities by at least 30 minutes a week are 46.8%, in the other hand 53.2% doesn't.

Facts: Smoking, bad nutrition habits and lack of physical activities can be harmful to health

4.2.2 The Kingdom Of Saudi Arabia'S Programs And Initiatives For Good Health And Well-Being

As noted in the KSA Voluntary National Review, there is relevance of SDG 3 with the Vision's strategic objectives and related initiatives as follows:

- Ease access to healthcare services
- Improve value of healthcare services
- Strengthen prevention against health threats
- Promote sports activities in society
- Improve quality of services provided in Saudi cities
- Substantially reduce air, noise, water and soil pollution
- Enhance the nation's immunity towards drug abuse
- Promote traffic safety
- Safeguard the environment from natural threats
- Enhance family involvement in preparing for their children's future
- Empower citizens through the welfare system

Health is, indeed, prominent in the Vision 2030 National Transformation Program with several (fifteen) health related strategic objectives ^[4,5] including (1) Increase private sector share of spending through alternative financing methods and service provision; (2) Increase the efficient utilization of available resources; (3) Improve the efficiency and effectiveness of the healthcare sector through the use of information technology

and digital transformation; (4) Increase training and development both locally and internationally; (5) Increase the attractiveness of nursing and medical support staff as a preferred career path. Overall, these five strategic objectives aim to a) Improve the quality of healthcare services (preventive or therapeutic), b) Expand privatization of governmental services, c) Create an attractive environment for both local and international investors and enhance their confidence in our economy, d) Achieve the highest levels of transparency and good governance in all sectors, e) Achieve budgetary balance, f) Improve performance, productivity and flexibility of public authorities, and g) Provide citizens with knowledge and skills to meet the future needs of the labor market. ^[4,5] For each strategic objective, key performance indicators were defined and measured with a baseline and a specific target.

Besides the Kingdom commitment to the achievement of the SDGs, one of the core pillars of Al Madinah regional strategy 2030 lies on people "healthy, thriving and active citizens and residents". This pillar aims for a) High-quality and holistic healthcare services, b) World class education aligned to the labor market, c) Diverse entertainment and recreational options, and d) Responsible and socially active citizens. The other core pillars are Place "Beacon for Islamic and cultural enlightenment" and Prosperity "Diversified and sustainable economic development". ^[11]

4.2.3 Health Indicators: Levels And Trends

4.2.3.1 Infant and under-five mortality:

Goal 3. Ensure healthy lives and promote well-being for all at all ages

By 2030, end preventable deaths of newborns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and under-5 mortality to at least as low as 25 per 1,000 live births (3.2) ^[1,2]

For the under-five mortality indicator, the city recorded good rates of 17.7 children per 1000 live births ^[12]. The 2019 Al Madinah database WCCD ISO-37120 [17] indicated that the under-five mortality is at 10 per 1000 live births, a significant decline from the previous level. This level is less than half of the SDG 3.2 target of 25 per 1,000 live births. This indicates the efficiency of medical services for children up to the age of five, and health policies can therefore be maintained. These Mortality rates are going to continue decreasing as stated in the Madinah CPI Profile report (2019) ^[12], especially with the significant progress made in the Kingdom by employing qualified technical and human

resources that help to provide more advanced health services, reflecting the efficiency and effectiveness of health care systems. The health care is in pace with the Sustainable Development Goals, the Kingdom's vision 2030 and the national transformation program, and especially the third pillar, to improve the level of living conditions provided by improving health system of social services, health care, safety levels, and the first dimension of the National Transformation Programme for the Advancement of Health Care.

Initiatives related to social, environmental and health services affected positively the health of the people in Al Madinah city. However, more efforts must be mobilized to further minimize if not to eradicate infant and child mortality. Regarding the adult population, high adult mortality can be associated to lifestyle factors such as smoking, bad nutrition habits, lack of physical exercises, etc. In the Al Madinah city, among people 15 years and older the percentage of people that smoke daily is estimated at 17.5% in 2021.

4.2.3.2 Maternal mortality

Goal 3. Ensure healthy lives and promote well-being for all at all ages

By 2030, reduce the global maternal mortality ratio to less than 70 per 100,000 live births (3.1) ^[1,2]

The Al Madinah City Prosperity Index estimated the Maternal Mortality Rate in Al Madinah City at 12.05 per 100,000 births, level close to the national average which is 12 deaths per 100,000

births ^[12]. Maternal mortality rate in Al Madinah as in the Kingdom is far below the global target of the sustainable development goals which is fewer than 70 deaths per 100,000 births by the year 2030. This demonstrates that it is imperative to maintain the existing health care policies in the Kingdom in general and Madinah in particular. ^[9,13]

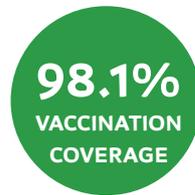
4.2.3.3 Life expectancy at birth

The Al Madinah City Prosperity Index estimated the life expectancy at birth in Al Madinah City at 74.30 years.^[12] This is 9.1 years below the target of the Kingdom's vision 2030, which is 80 years, or the global average of 83.4 years.^[9,13] This indicates that efforts must be mobilized to increase the life expectancy at birth in Al Madinah City.



4.2.3.4 Immunization

The Al Madinah City Prosperity Index estimated the vaccination coverage at 98.10%^[12]. This good performance on immunization could be associated with the implementation of programs to achieve this goal, the most important of which is the imposition of compulsory health insurance on residents and visitors, the national drug prevention project "Nebras".



4.2.3.5 Adequacy of health service components

One of the most important operational programs of the Vision 2030 is the National Transformation Program with eight dimensions, including the first dimensions "upgrading health care" and the second "improving living standards and safety", perhaps confirming the Kingdom's interest in raising the level of health care, and providing appropriate health services to citizens, residents, and visitors on its territory.^[4,5]

One of the most important objectives of the Vision 2030's National Transformation Program is to facilitate access to health care services for citizens and residents at the right time and place by expanding health capacity including hospital beds and medical staff.^[4,5] In addition, balanced or appropriate geographical distribution of health services across the kingdom and particularly in Madinah is key. The current state of health services will include a) availability of beds in health facilities, b) number of medical staff, c) Efficiency of geographical distribution of health services, d) efficient performance of health services:

a. Availability of beds in health facilities

At the health facilities level in Madinah, the availability of beds in government and private

hospitals is good according to the Al Madinah City Development Status report 2019.^[16] However, the number of beds has not reached the target of the vision 2030's health care strategy which 25 beds per 1,000 people. These results are also not in line or consistent with the ongoing efforts in health care sector in the Kingdom. The poor rating of number of beds in government hospitals is indicative of the weak participation of the non-governmental sector in health investments in the city.

b. Number of medical staff:

In regard to the medical staff providing health-care services, the number of doctors in the government and private sectors is very good according to the report of State of sustainable development and proposed operational initiatives and policies (2019).^[16] This is in line with national targets for the kingdom's health care strategy (one of the kingdom's vision 2030 strategies), and also in line with the ongoing efforts and renaissance in health care in the Kingdom.



**DOCTORS
IN-LINE
WITH
NATIONAL
TARGETS**

d. Perception of the Al Madinah City residences of the efficiency of performance of health services

The efficiency of performance refers to two important elements in the health services: a) the quality of the services provided and b) the efficiency of the human element and the equipment used to provide the health service to the population. According to Al Madinah Urban Observatory socio-economic survey 2021, the proportion of households who indicated that there is poor efficiency of health services is high in the following districts: Doikhla (40.0%), Jama um Khaled (24.6%), and the League District (24.0%) while it is lowest percentage is observed in the following districts are al-Raya district (0.8%), al-Fath and Al-Friday (1.4%). [6]

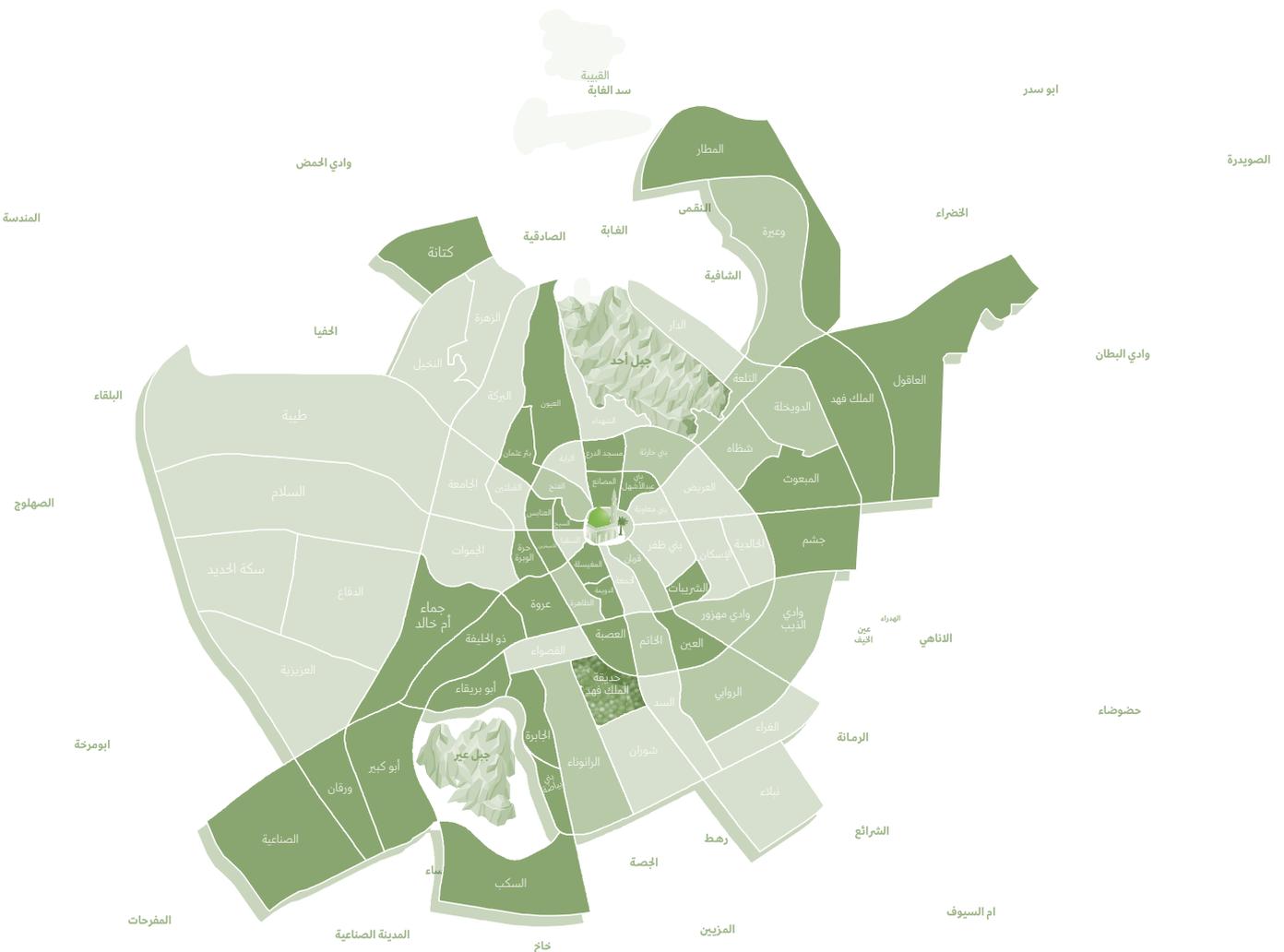


Figure 4.2 Health services performance efficiency

4.2.3.7 Impact of the COVID-19 pandemic

The COVID-19 is a global pandemic that have affected the health of people and kill many people. Al Madinah city is not an exception but less affected than other parts of the world. COVID-19 has particularly disrupted Hajj and Umrah. In the context of addressing this pandemic, protecting society from the effects of the virus, and reducing infections, the Supreme Governmental Committee took a series of measures that included suspending Umrah and Hajj, closing schools, universities, commercial

centers, public places and entertainment places. During the Al Madinah socio-economic survey 2021, people who considered that they are severely affected by the pandemic are 31.1 %, while 69% considered they are not affected (937%), or are lightly affected (32%). [6] This has been confirmed with the decline in average monthly income and the increase in local poverty as presented in chapter 3.1 of this report “Goal 1 End poverty in all its forms everywhere”.

4.2.4 Conclusion And Recommendations

The Al Madinah socio-economic survey 2021 shows that the under-five mortality is relatively low (10 per 1000) and the life expectancy is 74.6 years. Initiatives related to Social, environmental and health services affected positively the health of the people in Al Madinah city. However, more efforts must be mobilized to further minimize if not to eradicate infant and child mortality. Regarding the adult population, high adult mortality can be associated to life style factors such as smoking, bad nutrition habits, lack of physical exercises, etc. In the Al Madinah city, among people 15 years and older the percentage of people that smoke daily is estimated at 17.5% in 2021, The results of GASTAT’s sports statistics 2021 shows that the percentage of the population practicing physical activity for at least 30 minutes per week in Madinah Region reached 46.8% (males are 52.9% when females are 38.2%), 53.2% Don’t Practice.. These are the three main factors that contribute to high adult mortality rate. [18,19] In addition, there are deaths and injuries from road traffic accident as addressed in a section of Chapter 2 “Urban Transport”, and a possible substantial number of deaths and illnesses from hazardous chemicals

and air, water and soil pollution and contamination as addressed in chapter 2.5 “Infrastructure, environment and quality of life”.

The relatively good performance on health in Al Madinah city can be associated to the expansion to Al Madinah of the Kingdom’s Programs and Initiatives to ensure a decent life and good health such as [4,5]:

- Establishing primary health care centers
- Increase the number of hospitals
- Imposing compulsory health insurance on residents and visitors.
- Providing free healthcare services to pilgrims.
- Healthcare services for pregnant women (the safe birth pathway)
- Reducing hereditary diseases: by performing Premarital Screening, in addition to the provision of health care for pregnant women and the care of newborns, and the Kingdom monitors children under the age of five by conducting periodic checkups and vaccinations, to reduce the number of deaths

- Examining and monitoring infectious diseases, to follow up on infectious and non-communicable diseases and epidemics and ways to combat them and limit their spread. Establishment of specialized rehabilitation centers for some infectious diseases.
- Support initiatives related to awareness, prevention and care of heart disease, vascular disease, diabetes, respiratory diseases, obesity
- Nutritional health awareness on amount of the size of the nutrients food product to enable consumers to know their components and nutritional value, in addition to increased duties on food products that are harmful to health.
- The National Drug Prevention Committee (Nebras)

In addition to the above initiatives, to improve the quality of healthcare services (preventive or therapeutic), Al Madinah would need to pursue the following strategic objectives ss set in the National Transformation Program of Vision 2030 ^[4]:

- Increase private sector share of spending through alternative financing methods and service provision
- Increase the efficient utilization of available resources
- Improve the efficiency and effectiveness of the healthcare sector through the use of information technology and digital transformation.
- Increase training and development both locally and internationally.
- Increase the attractiveness of nursing and medical support staff as a preferred career path.
- Improve healthcare provision before hospitalization and in the main hospitals (ER & ICU).
- Improve integration and continuity in service provision by developing the primary care.
- Improve the infrastructure, facility management, and safety standards in healthcare facilities.
- Attain acceptable waiting times across all stages of service delivery
- Improve governance in the health system in order to enhance accountability with regards to quality issues and patient safety
- Adopt a national plan for emergency response to public health threats per international standards
- Identify additional sources of revenues
- Improve public health services with focus on obesity and smoking
- Improve the quality of life and healthcare service provided to patients outside hospitals
- Improve quality and safety principles as well as skills of service providers

4.3 References Chapter 4: Ending Hunger (Goal 2) And Ensuring Healthy And Well-Being (Goal 3)

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CHAPTER 5

GOAL 4 

QUALITY EDUCATION

GOAL 5 

GENDER EQUALITY

SDG4 – Quality Education	Value	Year	Rating	Trend
Percentage of Saudis 25-64 who completed middle school	7.0	2021		
Percentage of Saudis with higher education certificate	32.6	2021		
% of the population 25-30 years old with university degree	60.3	2021		
Literacy rate (% of population aged 15 to 24)	99.9	2021		

SDG5 – Gender Equality	Value	Year	Rating	Trend
Ratio of female-to-male mean years of education received (%)	--	--	--	--
Ratio of female-to-male labor force participation rate (%)	<u>50.2</u>	<u>2021</u>		

Legend			
SDG Achievement	Challenges remain	Significant challenges remain	Major challenges remain

On track	Moderately Increasing	Stagnating	Decreasing

Data not available

5.1 Goal 4. Ensure Inclusive And Equitable Quality Education And Promote Lifelong Learning Opportunities For All

GOAL 4

ENSURE INCLUSIVE AND EQUITABLE QUALITY EDUCATION AND PROMOTE LIFELONG LEARNING OPPORTUNITIES FOR ALL



- By 2030, ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes (4.1)
- By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship (4.4)
- By 2030, ensure that all youth and a substantial proportion of adults, both men and women, achieve literacy and numeracy (4.6)

5.1.1 Introduction

One of the goals of the SDGs is to Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all (Goal 4), including to ensure that by 2030, all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes; all girls and boys have access to quality early childhood development, care and pre-primary education so that they are ready for primary education; ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education. This goal aims also to substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship, and to eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable,

including persons with disabilities, indigenous peoples and children in vulnerable situations; and to ensure that all youth and a substantial proportion of adults, both men and women, achieve literacy and numeracy, and ensure that all learners acquire the knowledge and skills needed to promote sustainable development. [1,2]

Education is a key driver for the achievement of the Saudi Vision 2030 as presented in several of its programs including the National Transformation Program (2016-2020 and 2021-2025) [3,4,5]. There are a set of indicators and policies for inclusive and equitable quality education and promote lifelong learning opportunities for all. SDG 4 features prominently in the Ministry of Education strategy and in related initiatives and projects. The following is an overview of key efforts by the Ministry of Education to implement SDG 4 [4,5]:

- A National Committee has been set up to track the implementation of SDG 4. The committee leads efforts, develops plans and implements initiatives. It also supports competent agencies in implementing other education-related sustainable development goals.
- Building a Modern System of Governance and Policy including standardized regulations for General Education and Universities.
- Building a Strategy for Education and Training in the Kingdom: Strategy Vision is “a learner that achieves his highest potential and participates in national and community development through a high quality and globally competitive education system”.
- Launching of a Number of Initiatives under Vision 2030 to achieve the SDG 4.

5.1.2 Completion Of Middle School

- By 2030, ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes ^[4.1]

The completion of the middle school is particularly important for further vocational education which is necessary to reinforce the skills of citizens. This vocational education is important for the employability of the people and to boost the process of Saudization as expressed

in the National Transformation Program (NTP) ^[4,5]. Al Madinah socio-economic survey 2021 shows that the value of completion of middle school among the Saudi aged 25-64 years old is estimated at 7.0% in Al Madinah city. This percentage is particularly low in Al Madinah City as well as in other cities of Al Madinah region varying from the lowest level of 2.9% in Al Fari’a to the highest of 9.8% in Al Hanakia followed by Al Mahdi (9.1%). ^[7]

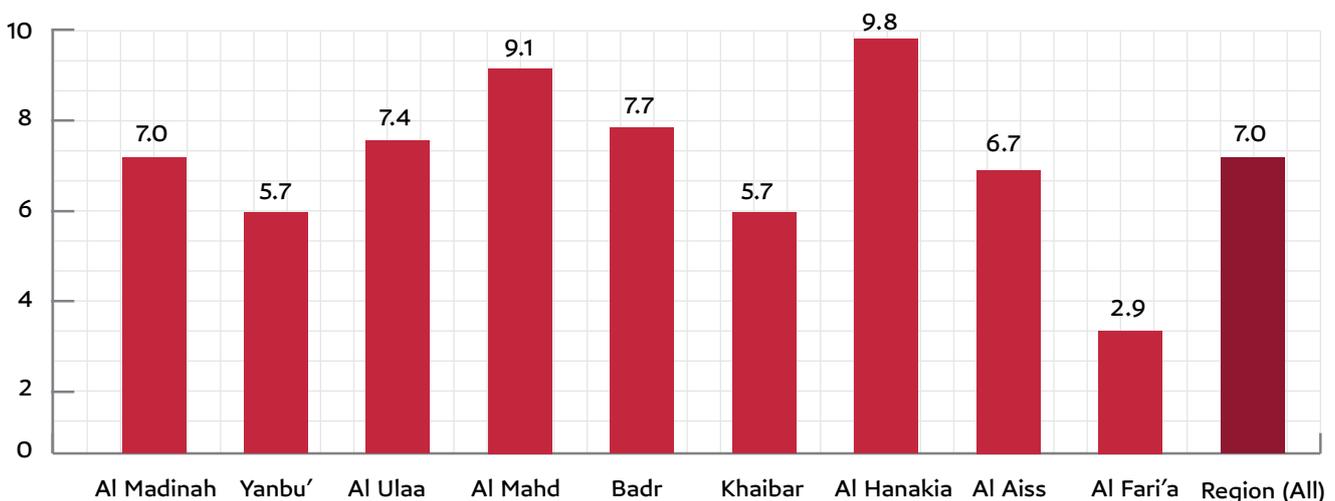


Figure 5.1: Percentage of Saudis 25-64 who completed middle school

Source 5.1: Madinah socio-economic survey 2021^[6]

5.1.3 Higher Education Certificate

Higher education certificate is also important for employability and the Saudization of the employment and the labor force. According to Al Madinah socio-economic survey 2021, among the young generation 25-30 years, nearly one third (32.6%) has a higher education certificate. In other cities of Al Madinah region, the percentages, the highest percentages

are observed in Badr (34.9%), and the lowest percentages are observed in Al Mahd (13.0%), Al Khaibar (13.6%) and Al Hanakia (14.3%). Between the two groups (high and low), we have the cities of Al Aiss (19.9%) and Al Fari'a (19.1%), and the cities Yanbu' and Al Ulaaa that have similar levels (28.4% and 28.2%) respectively.

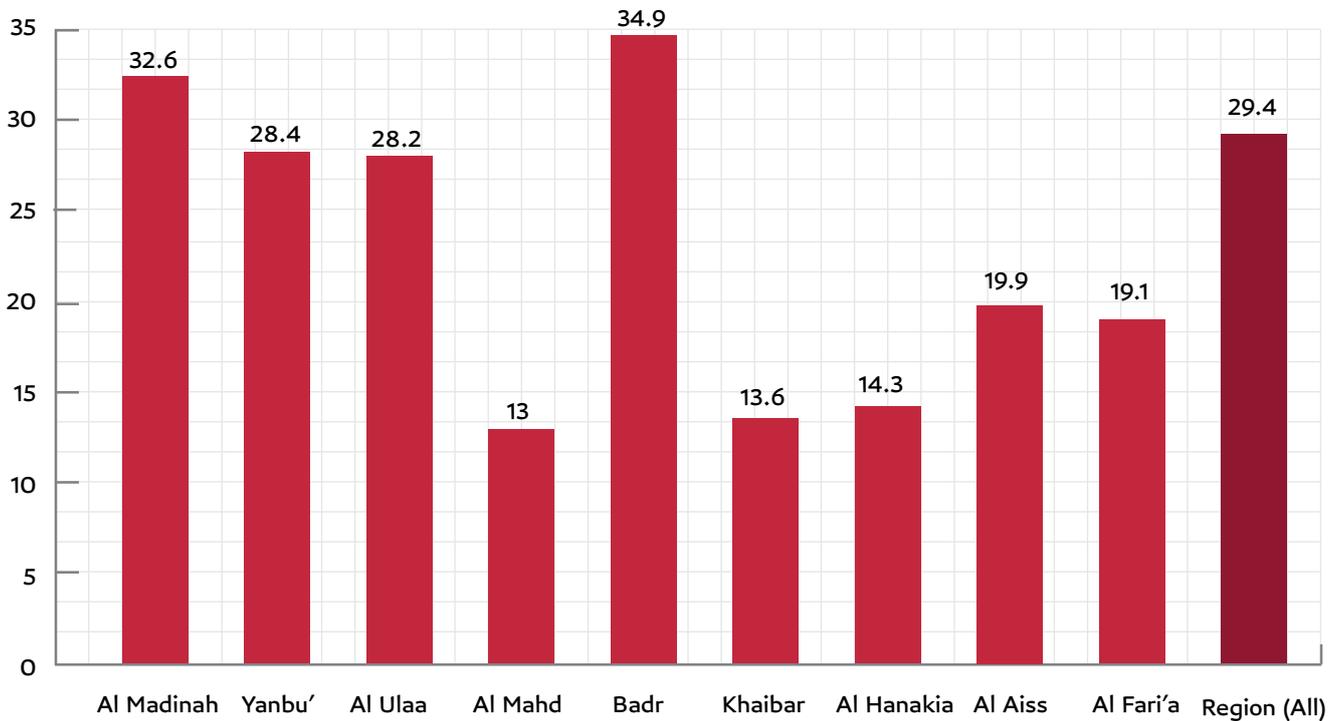


Figure 5.2: Percentage of Saudis with higher education certificate

Source: Madinah socio-economic survey 2021^[6]

5.1.4 University Degree

Beyond Higher education, the university degree is fundamental to access to professional and managerial positions. According to Al Madinah socio-economic survey 2021, among the young people aged 25-30 years old in Al Madinah city, 60.3% has a university degree. In other cities of the Al Madinah region, the highest percentage

is observed in Badr (53,6%), Al Ulaaa (52.3%) and Yanbu' (47.6%) while the lowest percentage is observed in Al Fari'a (20.0%), followed by Al Mahdi (28.1%), and Al Khaibar (31.2%). Between the two groups, we have the cities of Al Hanakia (38.9%) and Al Ais (41.5%).^[6]



Figure 5.3: Percentage of the population 25-30 years old with university degree

Source: Madinah socio-economic survey 2021^[6]

Number of schooling years

The number of schooling years also called the mean years of schooling is the average number of completed years of education of a country's population aged 25 years and older excluding years spent repeating individual grades. It is widely used as a measure of a country's stock of human capital (skills and competencies). The average for Madina city is 13.8 years which is the highest in the regions, and also slightly higher

than the regions average of 13.5 years and much higher than the global average of 8.7 years. Al Madina city is followed by Badr with 13.7 years, then Al Ulaa and Al Fari'a with 12.9 each. The city with the lowest mean years of schooling is Al Hanakia with 12.0 years. This high average is an indication of the success due to the initiatives and programs aimed at improving the education sector in the KSA. [6]

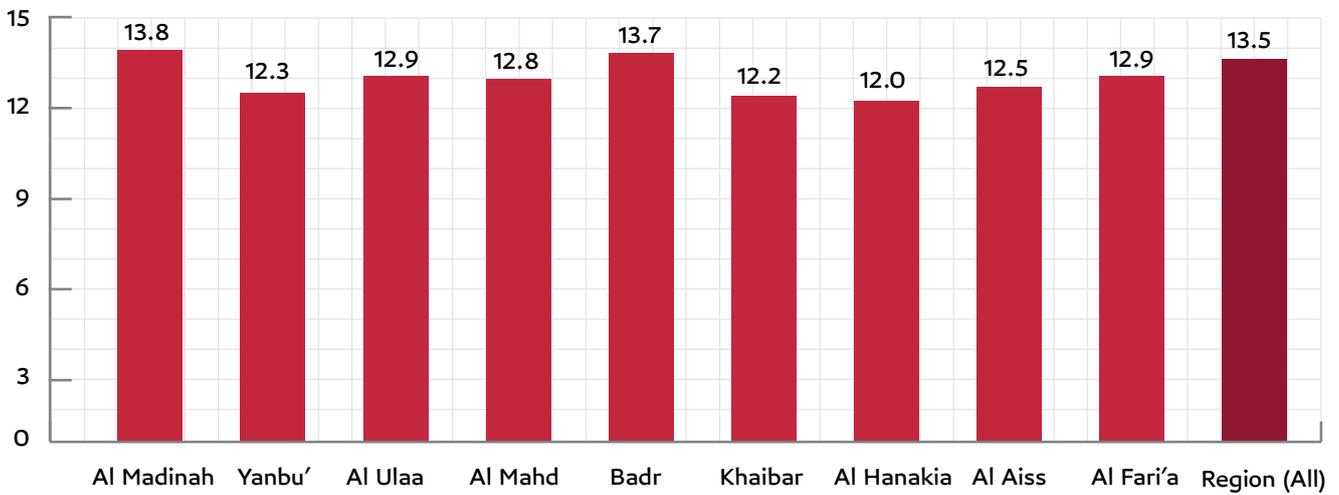


Figure 5.4 Number of schooling years
Source: Madinah socio-economic survey 2021[6]

5.1.5 Literacy

The literacy rate among Saudis in Madinah city aged 15 to 24 years is more than 99%. Generally, the literacy rate is high across the cities of Al Madinah region and in both males and females

within this age group.^[6] This is indicative of the success of the literacy programs pursued by the Kingdom in general and the local authorities in Al Madinah in particular.

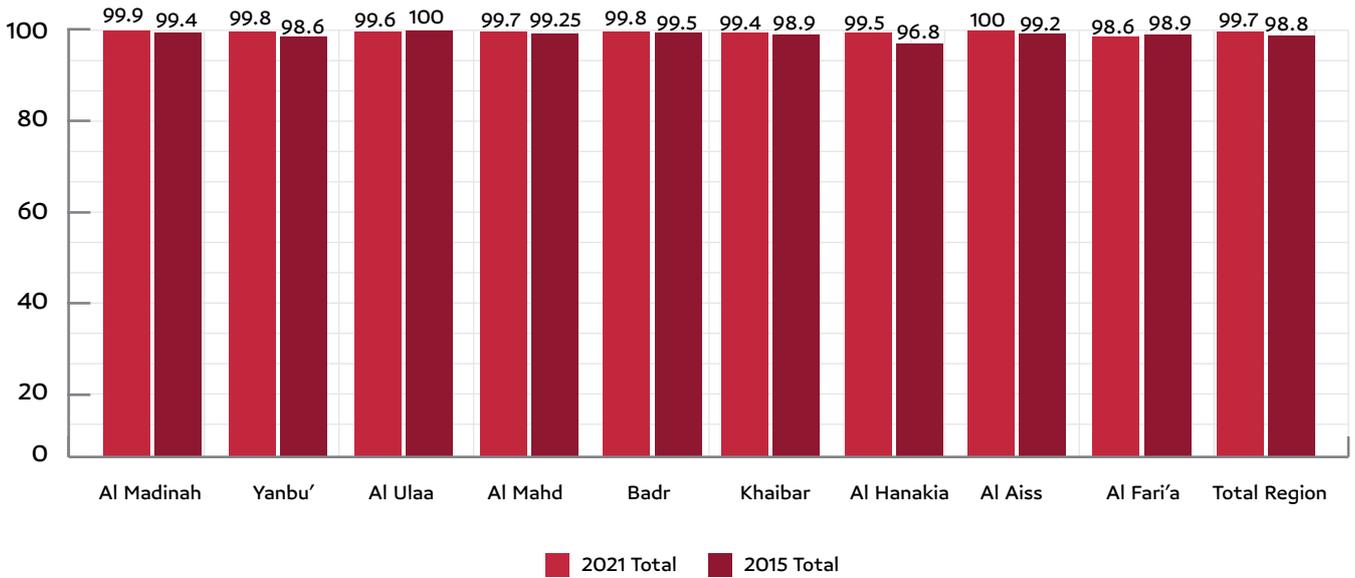


Figure 5.5: Literacy rate (15-24 years) for Saudis
Source: Al Madinah 2021 socio-economic survey^[6]

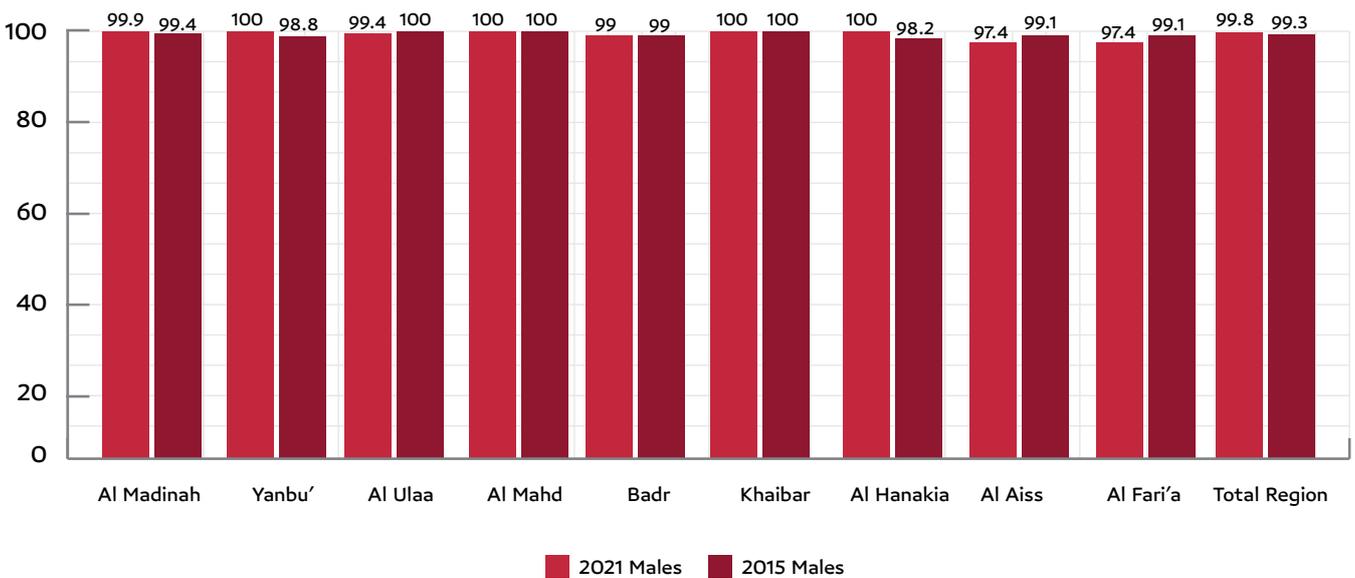


Figure 5.6: Literacy rate Male
Source: Al Madinah 2021 socio-economic survey^[6]

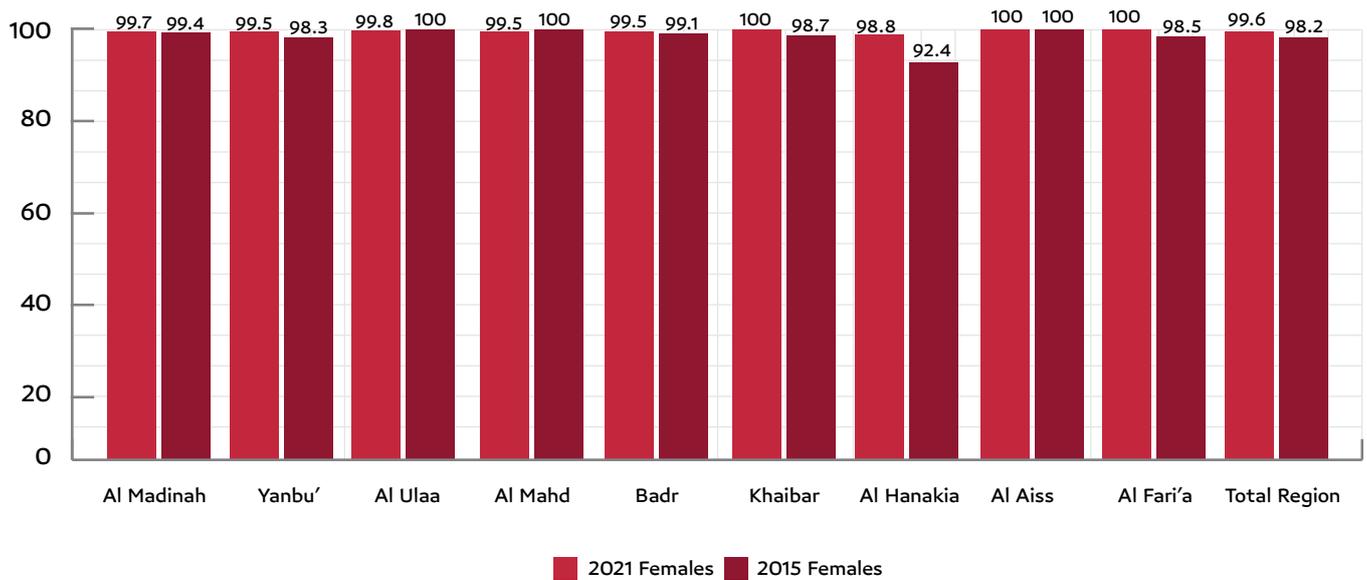


Figure 5.7: Literacy rate Female
 Source: Al Madinah 2021 socio-economic survey [6]

The good performance in the education sector shows clearly that education has been a priority in Al Madinah city as it is the Kingdom and the region. Several initiatives have been taken to enhance education including: care and communication center, independent school initiative, program of measuring the educational performance of primary education students, initiatives of the Ministry of Education to raise the quality of education, etc.

The Kingdom of Saudi Arabia’s initiatives to achieve quality education include [4,5]:

- Implementing over 60 projects in the education sector through the King Salman Humanitarian Aid and Relief Centre.
- Regional Center for Quality and Excellence in Education for the provision of educational aid and supporting research programs.
- Initiatives of the Ministry of Education to raise the quality of education:
 - The Safeer Program.
 - The Summer Literacy Program for remote areas of the Kingdom.
- Prince Sultan Center for Special Education Support Services.
- Independent Schools Initiative, through the transformation of 25 public schools to be operated by the private sector.
- Lifetime Learning Initiative.

Facts: In Al Madinah City, literacy is quasi-universal (99.9%), but only 32.6% of Saudis 20-64 years old have higher education certificate and 60.3% among Saudis 25-30 years old have university degree.

Policies: Pursue the goal os ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.

5.2 Goal 5. Achieve Gender Equality And Empower All Women And Girls

GOAL
5

**ACHIEVE GENDER EQUALITY AND EMPOWER ALL
WOMEN AND GIRLS**



- End all forms of discrimination against all women and girls everywhere (5.1)
- Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life (5.5)
- Enhance the use of enabling technology, in particular information and communications technology, to promote the empowerment of women (5.b)
- Adopt and strengthen sound policies and enforceable legislation for the promotion of gender equality and the empowerment of all women and girls at all levels (5.c)

5.2.1 Introduction

Equality among people, regardless of gender, nationality, ethnicity, color or religion is truly the root of freedom and basis of rights. It has become one of the general principles in law and a human conscience staple as it is included in international conventions, such as the Universal Declaration of Human Rights that was endorsed by the UN General Assembly. Islamic Sharia laws acknowledge the right of equality among all people regardless of their different races, ethnicities and human values. People are differentiated only

by their righteousness, and Sharia laws secured the rights of each human without discrimination to ensure solidarity among individuals. Article (8) stipulates that (reign in Saudi Arabia is based on the principles of justice, consultation and equality in accordance with Islamic sharia laws). Article 26 stipulates that (the State shall protect the human rights according to Islamic Sharia laws), including the prevention of discrimination against women. (Source: Ministry of Justice).^[8]

5.2.2 Women'S Empowerment In The National Transformation Program Of The Saudi Vision 2030

The National Transformation Program of the Saudi Vision 2030 launched in 2016 with one of the Vision 2030 programs to ease the accessibility and the attractiveness of the labor market, particularly for women by providing them with the required support and creating, an appropriate environment which encourages them to join the workforce. [4,5] This corroborates efforts mobilized by the government to empower women through NTP and other regional initiatives and to mitigate barriers that prevent different segments of the Kingdom, particularly women, from entering the labor market. Vision 2030 aims, indeed, to strengthen women's stature as an effective player at all levels. A separate strategic objective to increase women's participation in the labor market was set. Several women were appointed to top-level positions in the private sector. Saudi Arabia is also inching closer to achieving its goal of gender parity of wages. Other notable achievements and targets include Allowing women to pursue business on their own; Ensuring that women account for 20 per cent of private sector's investments in 2017, etc. [4,5]

One of the strategic objectives of the NTP is the strategic objective 4.2.2 Increase women participation in the labor market through making the labor market accessible and Attractive. One of the initiatives is to "Enhance Notary Protections for Women and Families". This Initiative aims to improve notary services provided to individuals. This will ensure accessibility and timeliness of notary services and maintain the rights of women and children. It will also increase awareness regarding women and children rights by operational procedures based on the approved notarization law. [4,5]

This is in line with the fourth theme of the NTP "Labor Market Accessibility and Attractiveness". This theme seeks to overcome obstacles preventing the different segments of society from entering the labor market. It aims to increase women participation in the labor market by providing them with the required support and creating, an appropriate environment which encourages them to join the workforce. In addition, individuals with disabilities will be provided with rehabilitation and employment programs, allowing them to join the workforce. To improve their work environment, regulations will be updated to provide individuals with disabilities the necessary special infrastructure and integrate them into the labor market. This theme contributes to raising and improving the labor market's attractiveness via several initiatives including improvement of contractual relationships, faster and more effective settlement of labor disputes, and the enforcement of occupational health and safety laws. In addition, the theme will attract and maintain global talents suitable for the Saudi labor market. [4,5]

Key Performance Indicators have been set to track progress of the women participation in the labor market. The KPIs are as follow [4,5]:

- Women Ratio in Managerial Positions (Middle & Senior) with the Baseline *: 28.6% (2017) and 2025 Target: 31%
- Economic participation rate of Saudi females (over the age of 15) with the Baseline: 17% (2017)and 2025 Target: 31.4%
- Woman's share in the labor market (from the overall Saudi labor force) with the Baseline: 21.2% (2017)and 2025 Target 30%

Other initiatives in the NTP are ^[4,5]:

- **Parallel Training to Meet Labor Market Requirements.** This initiative is aimed at developing training programs targeting unemployed women. The program consists of on-the-job training (by the employer) in parallel with a training program (technical and personal skills) by specialized training authorities. Upon training completion, the female trainee obtains an approved certificate from the training program owner. Furthermore, participating companies will be supported in various ways.
- **Training and Leadership Orientation for Women Cadres.** This initiative aims at developing training and orientation programs to improve working women's skills, preparing them for leadership positions, and increasing women employment rate in leadership positions (senior & middle management levels).
- **Empower Women in Civil Service and Promote their Participation in Leadership Roles.** This initiative aims to increase women participation ratio in the labor market at all the levels of government positions. This will be done by promoting women to senior leadership positions in government authorities within the civil service, investing in women's capabilities, expanding work options for women, and increase women's participation in order to achieve gender balance.
- **Provide Childcare Services for Working Women.** This initiative aims to empower Saudi working women to join the labor market while being reassured regarding the care provided to their children during their work period. Saudi working women will be able to enroll their children in any childcare service centers licensed by "Qurrah" e-system.
- **Support and Facilitate Women Transportation.** This initiative aims to support Saudi women working in the private sector by providing transportation solutions to and from their workplace. The initiative will develop a program to provide the transportation service and publish reports highlighting the number of beneficiaries of the program.

5.2.3 Progress Towards The Achievement Of Gender Equality Through Empowerment All Women And Girl

5.2.3.1 Women participation in the labor market

Statistics from the General Authority for Statistics (GaStat) show an increase in the participation of Saudis in the labor market in Al Madinah region, particularly for Saudi women. According to the GaStat 2022 publication, in Al Madinah region there is a significant increase in the participation of women in the labor force for a rate of 21.9% in 2016 to 30.4% in 2021, above the target of 25% by 2020 of the National Transformation Program (NTP) [9]. Labor force participation for women has traditionally been low in Al Madinah as it is in other parts of the kingdom. But these statistics show that women participation in the workforce has been rising

gradually since the NTP was launched in 2016. Similar trends were observed in other regions of the Kingdom. These statistics show that women participation in the workforce has been rising gradually since the NTP was launched in 2016. This increase can be associated with the National Transformation Program launched in 2016 with one of the themes being to ease the accessibility and the attractiveness of the labor market, particularly for women by providing them with the required support and creating, an appropriate environment which encourages them to join the workforce. [4,5]

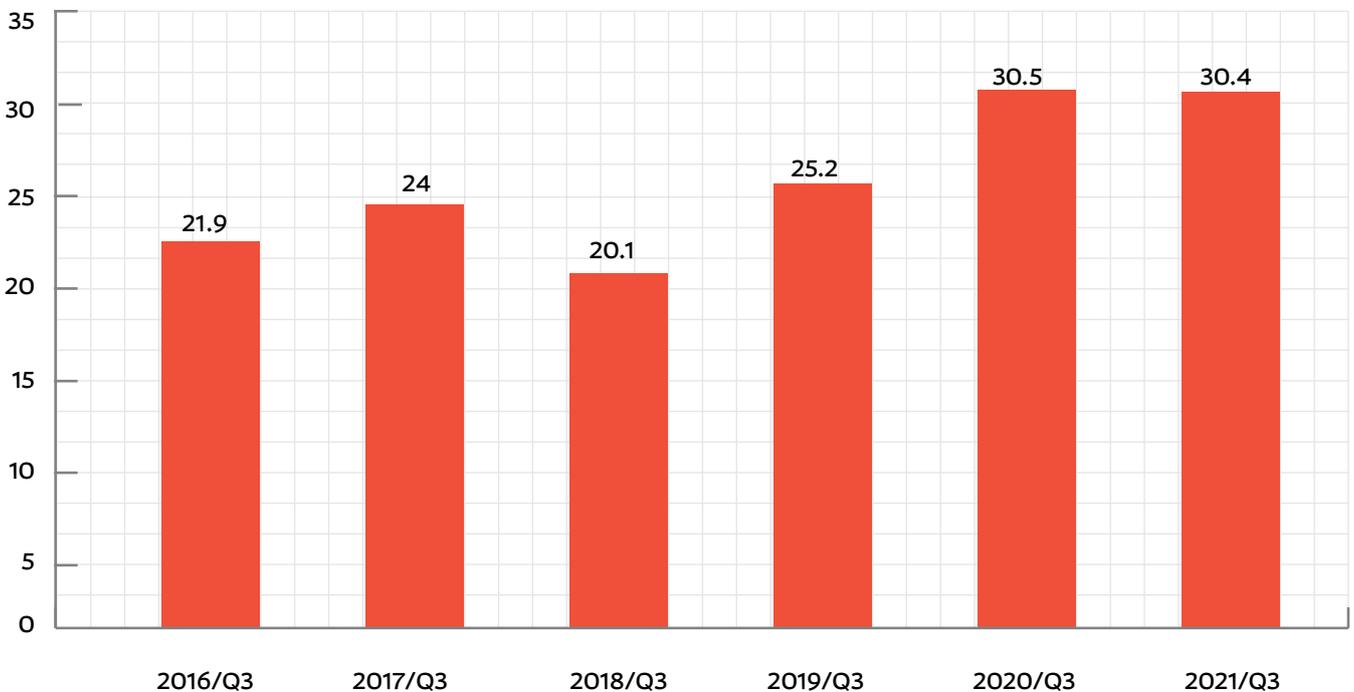


Figure 5.8 Female labor force participation, Al Madinah region (2016-2021)
Source: General Authority for Statistics, 2021 [9]

5.2.3.2 General unemployment among saudi women

The Al Madinah city socio-economic survey conducted in 2021, has collected information on employment dis-aggregated by gender, Saudis versus non-Saudis, and other sub-groups. While in 2021 for the Al Madinah city, the unemployment for Saudis is estimated at 10.1 % (6.8% for men versus 21.0% for women), this level is much lower than the 2015 level (18.9%), and the 2010

level (26.9%). During the same period, the male unemployment rate fell from 21.6% to 14.5%, then to 6.8% and the female unemployment rate from 45% to 33.5%, then to 21.0%.^[6,7] The decline of woman unemployment can be attributed to effective policies in the Kingdom to increase the participation of women in the labor force.

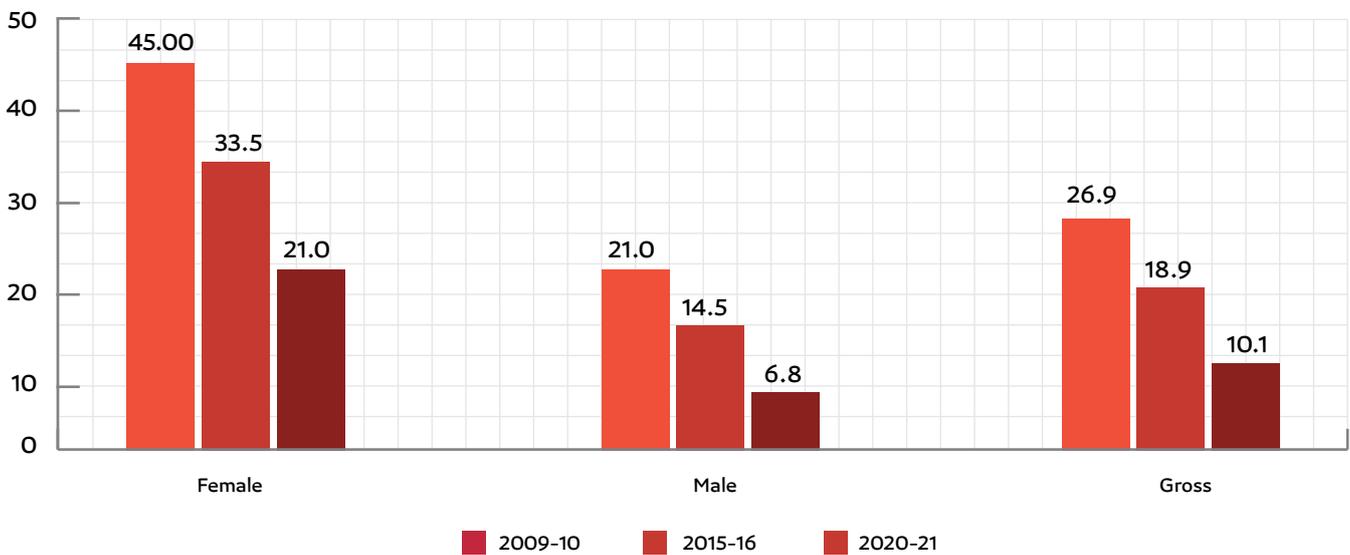


Figure 5.9 Unemployment rates , Al Madinah city , Saudis (Males and Females) during 2010-2021

Source: Al Madinah socio-economic survey 2021 and other sources ^[6]

5.2.3.3 Women education

Though Goal 4 is not specifically the gender goal, it is gender-sensitive. While ensuring inclusive and equitable quality education and promote lifelong learning opportunities for all, it aims to ensure particularly that by 2030, all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes; all girls and boys have access to quality early childhood development, care and pre-primary education so that they are ready for primary education; ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education. This goal aims also to

substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship, and to eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples and children in vulnerable situations; and to ensure that all youth and a substantial proportion of adults, both men and women, achieve literacy and numeracy, and ensure that all learners acquire the knowledge and skills needed to promote sustainable development.

Universal literacy among women in Al Madinah city since the onset of the SDGs in 2015

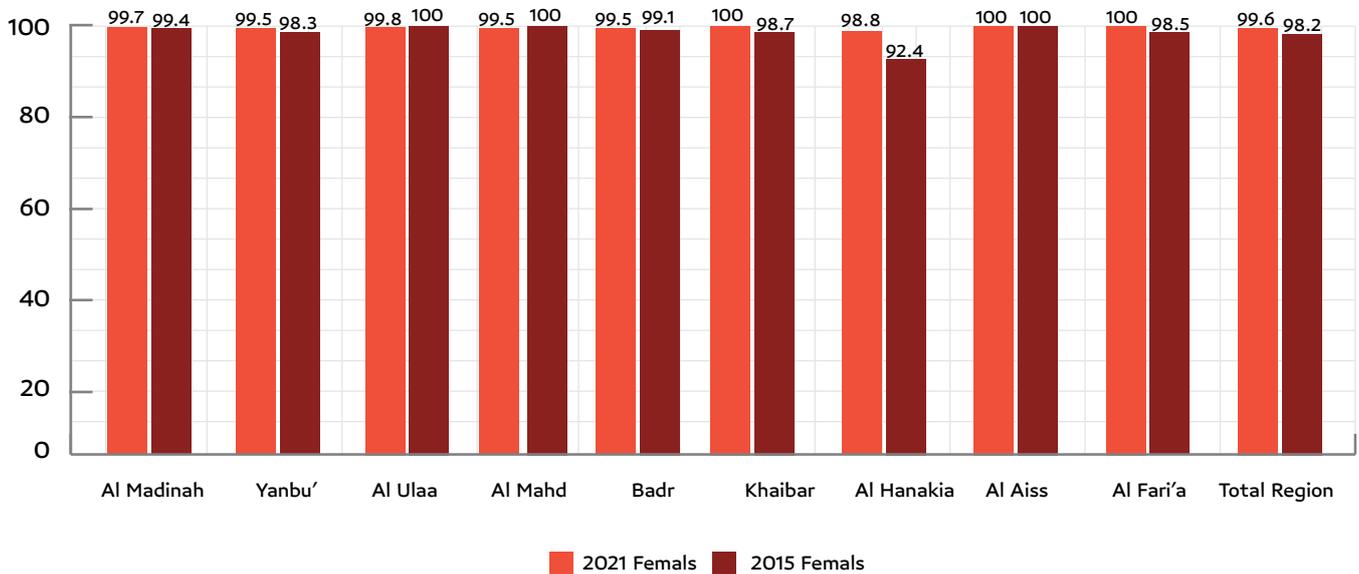


Figure 5.10 Literacy rate (15-24 years) for Saudis
 Source: Al Madinah 2021 and 2015 socio-economic survey [6,7]

Since 2015, more than 99% of Al Madinah city women are literate. This universality in literacy was also observed in 2021 according to the socio-economic survey. However, efforts must be deployed for more women to reach the higher education and university levels.

The KSA has promoted women's standing in development through capacity development and harnessing of women's capabilities to leverage their local and international roles. Vision 2030 dedicates the necessary efforts for enablement of women in community and economic development, as well as in raising women's stature as an effective player at all levels. Vision 2030 sets a separate strategic objective to increase women's participation in the labor market. The Vision further ensures women's rights in the fields of health, education, protection, employment with a decent living standard.

Several measures that aim to enable women to hold leading positions in the government are also put in place. Earlier on, women became members of the Shura Council (Consultative Council) with a Royal Order issued in 2013 to reserve 20% of the Council's seats for female members. Women were also elected to municipal board councils and several women were appointed to top-level positions in the government and private sectors. Saudi Arabia is inching closer to achieve its goal of gender parity of wages.

The launch of the National Observatory of Women's Participation in Development is another manifestation of the Kingdom's efforts to foster conditions that are conducive to women's participation in forging ahead with the development process. ^[4,5,8] The observatory is a think tank that seeks to monitor Saudi women's participation in development at local and international levels, along several themes encompassing economic, educational, regulatory,

health and social fields. As such, the observatory serves as a reference resource for decision-makers and charitable societies and associations and institutions, through compiling of benchmark, indicators relevant to women's role in development. In addition, several initiatives were launched with both direct and indirect intent to enable women in all fields such as the launching of an electronic portal that allows job seeking women to register and obtain information on eligibility criteria in all provinces; the development of production schemes for social security recipients that are fit for work, with the aim of raising the volume of sales from USD 96 million (SAR 360 million) to USD 666 million (SAR 2.5 billion); the launching of a program to support the transport of working women (Wusool). Launching of a program to support the hosting of children of working women (Qurrah); the development of mechanisms that enable female members of vulnerable groups to make use of qualification programs that provide employment from home at the end of training; the launching a training program aimed at providing professional support to needy women and orphans by equipping them with the necessary skills to enter the labor market; and the provision of affordable childcare services to working women. ^[4,5,8]

In parallel with the government efforts in empowering women, charitable societies and associations and non-profit organizations also offer considerable moral and material support to Saudi women in all areas. These institutions and organizations seek to promote women's participation in the labor market and conduct events and activities that create opportunities for partnerships, information sharing and increased public awareness. Most notable among these institutions and organizations are: Prince Sultan bin Abdulaziz Fund for Women's Development that provides support

for women to promote their role in community building and advancement; National family security program that seeks to promote family security, safety and unity, through protection and support programs, awareness promotion and forging of professional partnerships with specialists, government and private institutions and international organizations, to create a safe family environment in Saudi Arabia. The program focuses on family as a basis for unity of society; Deem Al-Manahil Fund (Princess Madawi' fund for women development) that serves as a business incubator to encourage Saudi women through offering of

technical, management and financial support in entrepreneurial activities; Wafa institution for women's rights which was founded to promote awareness of society as to women's rights, through conducting of specialized studies and research work and through the creation of a legal advice center; AlNahda Women Charitable Society that Provides financial support to women to protect them from poverty and also offers training opportunities to develop skills required for employment and runs campaigns to raise awareness as to the importance of women participation in municipal elections. AlNahda provides portals for women to share experience in various fields; Social Development Bank (SDB) that provides financial support to women for project management and business plans. Over 25 successful projects in women entrepreneurs have been carried out by SDB in various business fields; the Mawada society that aims to reduce divorce rates and the impacts associated with divorce, through offering of courses on planning for marriage, as well as providing legal services to divorced women. [4,5,8]

The Kingdom launched several other initiatives that are directly relevant to SDG 5. Among these

are achieving gender equality in civil service; enablement of female leaders; and improved women representation in decision-making positions. A trend of gender parity is emerging in general education enrolment. This corresponds with percentage distribution of the population by gender. In general and based on gender equality principle, the Kingdom's Basic Law of Governance prohibits discrimination against women and bans all forms of discrimination. The Kingdom of Saudi Arabia has acceded to a number of international agreements and conventions, including the Convention on Elimination of All Forms of Discrimination Against Women. As part of the Kingdom's efforts in this regard, a decree was issued to put into operation the law on protection from all forms of abuse. The Royal Decree provides for furnishing of immediate assistance and to make every possible effort to provide shelter as well as social, psychological and health care to victims of abuse. It also prescribes that culprits should be brought to justice and that convicted persons must be punished. The decree further calls for promotion of awareness as to the concept and legal consequences of abuse and addresses negative forms of conduct that could trigger incidence of abuse. In addition, the Royal Decree calls for development of scientific and enforcement mechanisms to deal with cases of abuse. [4,5,8]

The Royal approval of the organizational set-up of the Family Council testifies to the great importance that the Kingdom attaches to serve women and families in particular and the SDGs in general. Chaired by the Minister of Labor and Social Affairs, the Family Council is made up of 16 members, half of them are women. Members of the Council hold a minimum of grade 15 civil service position, or the equivalent thereof. Members

are appointed under a decision of the Council of Ministers, based on nomination of candidates by the Council chair. The Council is vested with an autonomous financial and administrative status and has a wide spectrum mandate, such that will allow the Council both financial independence and quick decision-making. The Council aims to promote and advance family stature and role of family in society advancement, along with maintaining a strong and cohesive family that

attends to the welfare of its children, with due adherence to religious and moral values as well as high ideals. The Council has a set of family relevant strategic objectives that seek to promote the family's role in society and ensure that family rights are observed. The Council branches out into three committees all of which are relevant to the SDGs. These are: children's committee, women's committee and seniors' committee. [4,5,8]

Facts: Labor force participation for women has traditionally been low in Al Madinah as it is in other parts of the Kingdom. But, since the NTP was launched in 2016, women participation in the workforce has been rising gradually in Al Madinah.

Policies: Ease the accessibility and the attractiveness of the labor market, particularly for women by providing them with the required support and creating, an appropriate environment which encourages them to join the workforce.

Policies: achievement of gender equality in civil service, empowerment of female leaders; and improvement of women representation in decision-making positions.



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Al Madinah Region Development Authority

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