



وزارة الشؤون
البلدية و القروية
Ministry of Municipal & Rural Affairs

QATIF

City Profile



مستقبل المدن السعودية
FUTURE SAUDI CITIES



UN HABITAT
FOR A BETTER URBAN FUTURE

Future Saudi Cities Programme
City Profiles Series: **Qatif**

© 2019. Ministry of Municipal and Rural Affairs
King Fahd National Library Cataloging-in-publication Data

Ministry of Municipal and Rural Affairs
Qatif City Profile./ Ministry of Municipal and Rural Affairs
Riyadh, 2019
..p ; ..cm

ISBN: 978-603-8279-02-1

1-Al-Qatif (Saudi Arabia) - Description and travel
2- Eastern region (Saudi Arabia)- History
I-Title
915.3135 dc 1440/8075

L.D. no. 1440/8075
ISBN: 978-603-8279-02-1

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www.unhabitat.org



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ACKNOWLEDGEMENTS

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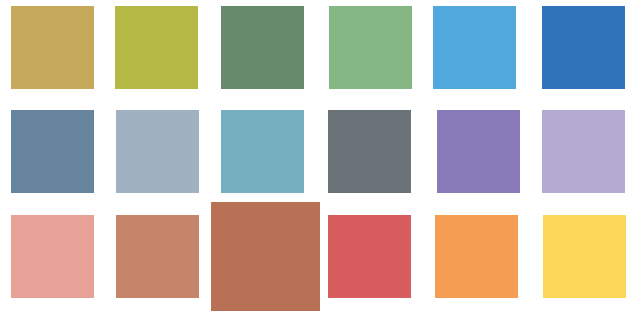
The Future Saudi Cities Programme is a jointly implemented project managed by the Deputyship of Town Planning of the Ministry of Municipality and Rural Affairs of the Government of the Kingdom of Saudi Arabia and the United Nations Human Settlements Programme (UN-Habitat).

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QATIF

القَطِيف



FUTURE SAUDI CITIES PROGRAMME

CITY PROFILE



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INTRODUCTION



1.1 About the Future Saudi Cities Programme

The Future Saudi Cities Programme is a joint programme developed by the Saudi Ministry of Municipal and Rural Affairs (MoMRA) and UN-Habitat, implemented in close cooperation with the municipalities of 17 major Saudi cities. The cities have been selected based on their different population sizes, geographic distribution, and a range of criteria based on capacities and economic potential to create a more balanced regional development among the cities of Saudi Arabia. The chosen cities include Riyadh, Makkah, Jeddah, Taif, Madinah, Tabuk, Dammam, Qatif, Al-Ahsa, Abha, Najran, Jazan, Hael, Arar, Al Baha, Buraidah, and Skaka.

After undertaking city-level reviews in the 17 cities, five cities were chosen as a representative cross-section, for in-depth analysis. The city-level reviews considered the linkages between urban and territorial planning by examining the city within the relational context of its sub-region and exploring specific issues at the neighbourhood level. These reviews, when referenced with City Prosperity Index reports and validation processes in the Rapid Planning Studio workshops, were used to extrapolate strong, evidence-based conclusions that relate to the planning system as a whole.

Applied research, with a strong focus on action-oriented conclusions, was used to collect evidence to diagnose the strengths and weaknesses of the planning system and local planning practices in each city. The methodology utilised design tests and demonstration projects as avenues to apply and analyse potential solutions, before concluding on policy recommendations.

UN-Habitat's three-pronged approach considers spatial planning in relation to legal and institutional frameworks, in addition to financial mechanisms. In this way, success criteria for the sustainable implementation of a spatial plan should include flexible but enforceable rules and regulations, in addition to a financing strategy and projections.

As a pragmatic explication of this approach, three local demonstration projects, representing essential elements of a strengthened and improved planning system, have been developed. These were elaborated to include schematic designs and feasibility studies, that can later be transformed into implementation plans. Such implementation plans are projected to be undertaken by MoMRA, in collaboration with other partners in the Kingdom.

In order to facilitate this process, a joint "FSCP Urban Lab" was created as a vehicle to strengthen endogenous capacities and to develop tailored tools, and instruments. The Lab, composed of international expertise from the planning, legal and economy branches of UN-Habitat Nairobi office, has been working with Saudi-based staff in the UN-Habitat Riyadh office (selected by MoMRA), to enhance knowledge exchange

and to apply a learning-by-doing method to the programme.

As such, all 17 cities have been simultaneously engaged in a capacity-building strategy that included foundational learning, and 'on the job' training, culminating in Saudi-specific advanced training. This training was based on the planning-system conclusions and recommendations, that the FSCP produced. Thus, the Urban Lab functions as a tool to generate evidence whilst additionally strengthening capacities through a process of learning-by-doing.

1.2 Saudi Initiatives for Sustainable Urban Development

The Saudi Government, along with the respective Ministries, and in line with a larger country-wide transformation process, has made several efforts aimed at the sustainable development of its growing cities. These contributions vary from plans at the national level, like the National Spatial Strategy (NSS), to strategies and plans at the regional level, cutting across various sectors towards realising Vision 2030. The FSCP recognises these efforts as positive, supporting Vision 2030 goals to realise a sustainable urban environment for the Kingdom of Saudi Arabia. The FSCP acknowledges and builds upon the current tools, plans, and strategies as part of a comprehensive assessment and suggests variations and improvements where appropriate.

1.3 Objectives of the City Profile Report

1.3.1 Scope of the city profile

The city-profile combines MoMRA's new strategy, with a review of existing studies, plans, and strategic documents, such as the review of the Kingdom of Saudi Arabia (KSA) National Spatial Strategy (NSS) to identify and address the root causes of problematic conditions outlined in the preliminary findings. The report acknowledged low uptake of the NSS by regions, utilities and ministries, as a key weakness. The issue of horizontal (sectors) and vertical (scales) integration is thus a key challenge that the FSCP aims to address going forward.

Policy recommendations for improving urban planning frameworks and practice shall be structured through a multi-scalar lens, considering the city as a continuum in the urban fabric, that should grow from the neighbourhood to the wider city-region, whilst influenced by dynamics and regulations at the national and supranational levels. This ensures that policy recommendations for these cities do not operate in isolation from the city's envisioned role in the administrative region and the national system of cities.

1.3.2 Objectives of the city profile

The City Profile Report brings together diagnostic urban



Waterfront at Southern Qatif

analysis and aligns that analysis with the UN-Habitat sustainable development framework and the Saudi Vision 2030. It performs as a thinking tool that constitutes together an assessment tool and guidance for the current and future planning of the city, whilst defining a clear strategy for sustainable development.

The definition of an ad-hoc strategy is rooted in an evidence-based approach to the issues, building upon both primary and secondary data collection and analysis. The profile, as well as the Program as a whole, uses the data collected by the City Prosperity Initiative (CPI), to identify significant trends and challenges at the city level. This evidence is then combined with reviews of existing planning documents, and cross-referenced with multi-scalar GIS spatial analysis, to define the above-mentioned ad-hoc strategy.

1.4 City Profile Methodology

1.4.1 Evidence based input approach

The evidence-based planning approach creates a deeper understanding of the spatial dynamics of the urban area, by combining and comparing urban datasets such as demographics, density, land use, natural features, and accessibility analysis.

The evidence (data) is reflected in the form of indicators that

can be compared with best practice standards and benchmarks for sustainable urban development. Not only does this provide a clear perspective on the main developmental issues, but it also quantifies the projected effect of future development proposals on the indicators applied in the analysis.

The programme recognises that the methodology, on which policy recommendations guiding improvements and adjustments in the planning system are based, needs to be evidence-based. For this purpose, different methods were integrated to first provide the necessary body of evidence on which to build an understanding, and full assessment of issues before making recommendations for the respective cities.

The elements constituting the evidence-based approach are primarily constituted of the following:

- Reviews of existing policy documents and plans;
- CPI index;
- GIS spatial analysis.

All of these elements are utilised in a cross-scalar diagnostic methodology that incorporates quantitative and qualitative evidence. The method used to generate evidence-based policy recommendations, which develops capacities and engages stakeholders in all 17 cities, provides conclusions derived from both top-down and bottom-up approaches, cross-cutting all scales of planning.



UN-Habitat workshop in Qatif with stakeholders and ministries

By analysing how the structures of spatial, socio-environmental and economic issues interact at different scales of influence, the diagnostic methodology moves from the national to the neighbourhood scale, tracking the interdependencies within the city's physical development patterns, and seeking to decrypt the reasons behind them.

1.4.2 The reviews

Several reviews of existing policy documents and plans were undertaken with the purpose of a) extracting information useful to the understanding of the context, and the city itself, and b) assessing their contents based on three criteria: content relevance, process integration, and effectiveness. The reviews focused on assessing the:

- National Spatial Strategy;
- Strategic Regional Plan for Eastern Region;
- Structural Plan of Dammam Metropolitan;
- Dammam Local Plan.

1.4.3 The City Prosperity Index assessment report

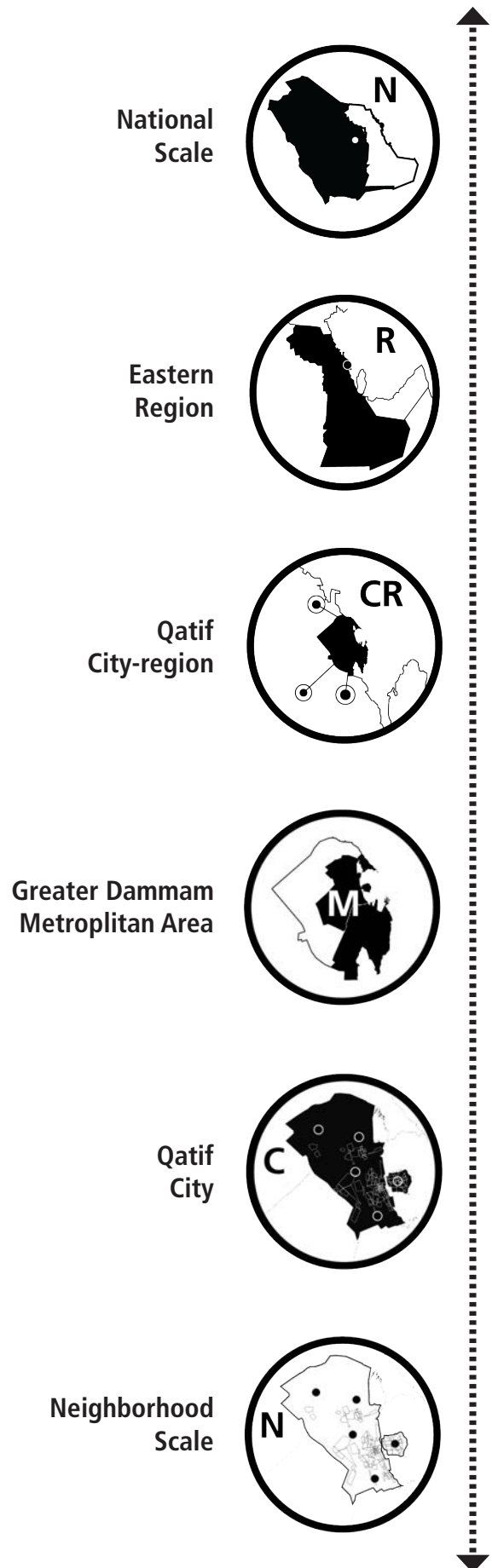
The City Prosperity Index is made up of six dimensions that serve to define targets and goals that can support the formulation of evidence-based policies. These include the definition of city-visions and long-term plans that are both ambitious and measurable. The six dimensions are:

- Productivity;
- Infrastructure;
- Quality of life;
- Equity and inclusion;
- Environmental sustainability;
- Governance and legislation.

These dimensions have been assumed as guiding principles in the spatial assessment of Qatif. There are ten detailed spatial indicators at the FSCP city profile level that link into the 72 flexible indicators of the CPI assessment.

1.4.4 The GIS spatial analysis

The spatial reflection of the above indicators highlights detailed patterns of development and the interactions and dynamics associated with movement, densities, and land-use within the urban system. This process enables a dynamic understanding of the physical expressions of weaknesses and strengths in the urban system and the main issues to be addressed. The effect of proposals for future development can also be assessed by use of the same indicators.



CROSS SCALAR DIAGNOSTIC METHODOLOGY

NATIONAL AND REGIONAL SPATIAL CONTEXT

2





1.1 The Region's Role in the KSA

1.1.1 Historical background

Qatif is located on the Western shore of the Arabian Gulf in the Eastern Region of the Saudi Arabian Kingdom and as a coastal city and oasis, holds a wealth of history. The history of Qatif, particularly in the late Bronze Age, dates to 3500 BC, and the deep roots of Qatif are demonstrated by the existence of castles, citadels, ancient ruins, and cemeteries. Qatif, an ancient oasis, traditionally relied on agriculture and fishing, making it rich in agriculture within the region. Ancient coins and pottery have been discovered in the oasis, and this proves the existence of ancient settlements. Towards the North and Northwest of the region, there is evidence of extensive ancient cultivation and habitations of 2500 years ago.

1.1.2 Geography and location

Qatif, (also known also as El-Katif / Al-Qatif) lies on a latitude of 26.52 and longitude of 50.02. Qatif is well connected to other urban centres in the KSA via highways and is close to the causeway leading to Bahrain. Qatif is accessed by the King Fahd International Airport in Dammam. Qatif, which is also referred to as Al-Qatif Oasis, covers a large geographic area. This area consists of Qatif City and other cities and villages, such as Saihat, Anak, Safwa, Awamiya, Awjam, Qudaih, Khuwailidiya, Jaroodiya, Umm Al-Hamam, Sanabis, Darin, and Tarout Island.

1.1.3 Demographic background

The Eastern Region represents 15.1% of the population in the Kingdom, translating to 4,105,780 people distributed amongst the different governorates. The Eastern Region is the third most populous province in Saudi Arabia, after Makkah and Riyadh. Dammam has a population of 903,000 making it the leading populous city in the Eastern Region and the sixth in the country. According to the 2010 census, the population of Qatif city was 474,000 people, scattered over distinct villages inhabited by farmers. In 2016, Qatif's downtown and coastal areas were inhabited by fishermen, and the estimated population was 612,000. Within the Kingdom in 2010, Qatif accommodated one of the lowest number of non-Saudi residents with an estimate of approximately 60,000. This grew in 2013 to 75,000, representing approximately 13.6% of the entire population of the city. Based on the estimated population in 2010, the density of Qatif City was 37 p/ha, and the mean household size was 6.3 p/household.

1.1.4 Socio-economic background

Traditionally, economic activity in Qatif consisted of agriculture and fishing, and more recently, the city is in the spotlight due to the oil industry. Before the discovery of oil, residents worked as merchants, farmers, and fishermen. However, after the recent establishment of Jubail Industrial City, most of the

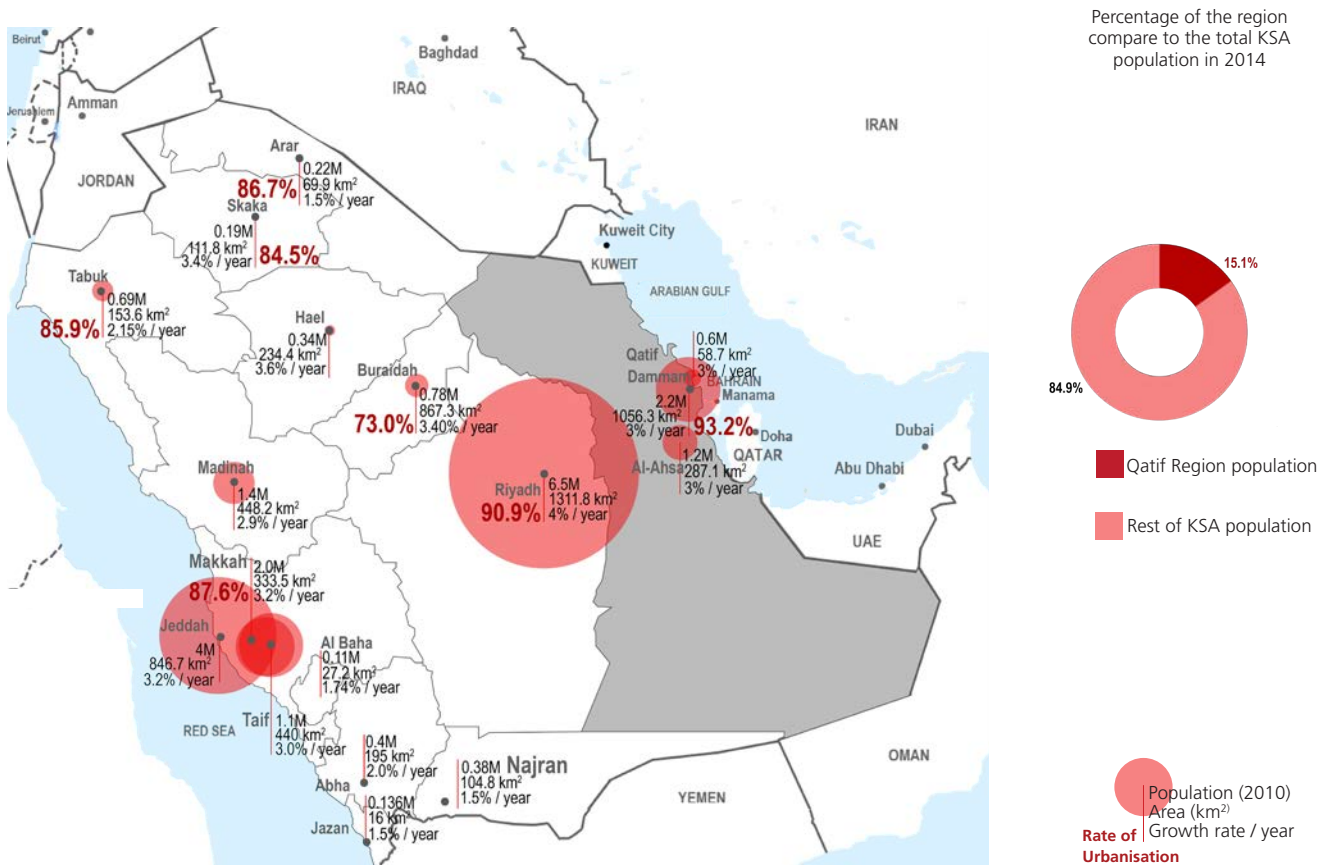


Fig. 1. Population distribution, growth rate and urban areas within the Kingdom of Saudi Arabia



© FSCP

Taroot Castle



workforce in Qatif works in the oil industry, public services, education, or the health-care sector. The fish industry still holds importance and the fish market is the largest in the Kingdom and the Gulf as a major trade centre with other Gulf markets. Qatif's economy is made up of a mixture of the fish industry, agriculture, and petroleum-related activities. Modernisation of the agriculture area occurred in the 1960s and the area cultivated dates, alfalfa, rice, fruits, and vegetables, which are typical products from Qatif.

Gross Domestic Product

In 2012, the total GDP of the Eastern Region amounted to 1,646 billion Riyals, accounting for 60% of the Kingdom's total GDP. The GDP of the region, discounting crude oil and natural gas, was 344 billion Riyals, representing 24% of the Kingdom's total GDP. The average annual GDP growth rate of the region, discounting crude oil and gas was 24.8% from 2009 to 2012. The industrial sector ranks first in its contribution to the Eastern Region GDP, (without crude oil) with 43.4%, followed by the trade sector with 11.1%, and real estate and financial services with 10.8%. Finally, the construction and communication sector contribute 5.7% to the overall GDP.

1.1.5 National connectivity

Air transport

There are three airports in the Eastern Region, an international airport in Dammam and two regional airports in Al-Ahsa and Al-Qaysouma. The number of passengers using these airports in 2011 was estimated to be 2.74 million, and this grew to 3.15 million in 2012, recording an increase of 15% and representing 8.17% of the total passenger air traffic in the entire Kingdom.

Sea transport

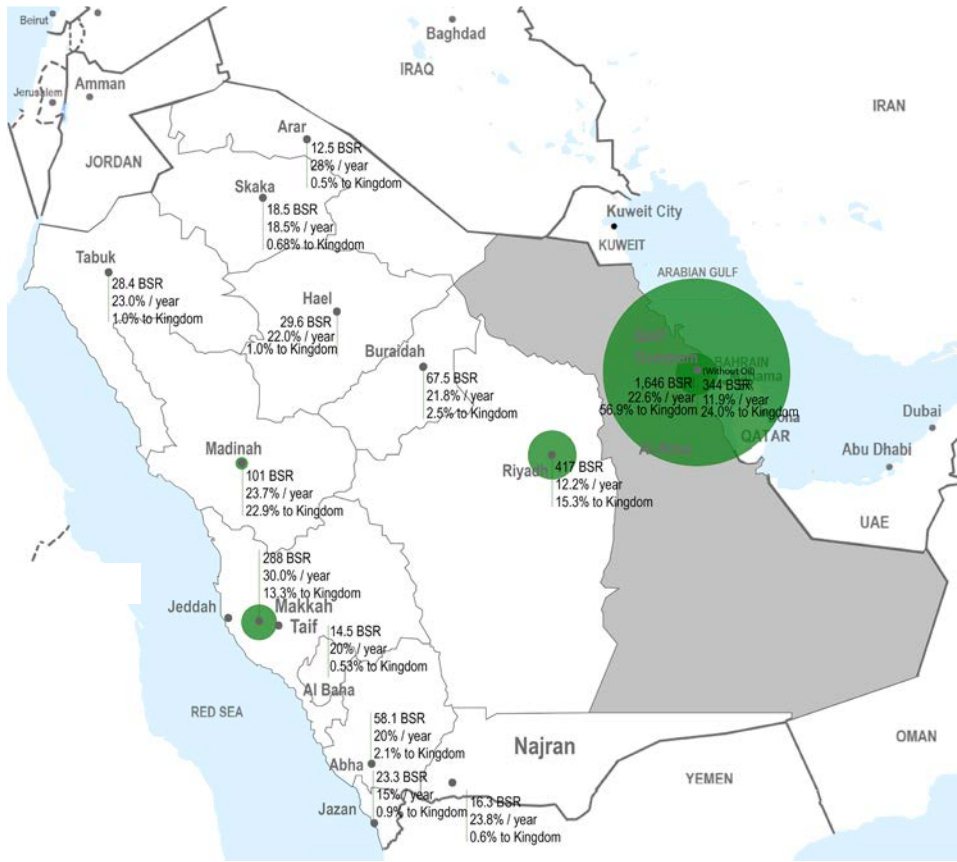
The Eastern Region has five ports on the Arabian Gulf. King Abdulaziz Port in Dammam is the second largest port in the Kingdom of Saudi Arabia. Others include King Fahd Industrial Port in Jubail, Jubail Commercial Port, Ras Alkhair and Ras Tannura. Ras Tannura is the main export port for oil, from which an estimated 97% of crude oil and petroleum products leave the Kingdom.

Railways Transport

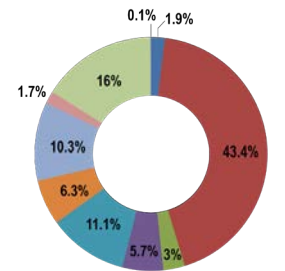
Saudi Railways Organisations, operates a network of railways with a total length of approximately 1,380 kilometres, extending from King Abdul Aziz Port in Dammam and the city of Dammam to Riyadh, passing Abqaiq, Hofuf, Haradh, Al- Tawdhihiyah, and Al-Kharj. In addition, some auxiliary lines branch from SRO's main lines to connect some of the industrial and agricultural areas, and military sites with export ports and residential areas.



Local fish market in Tarout Island



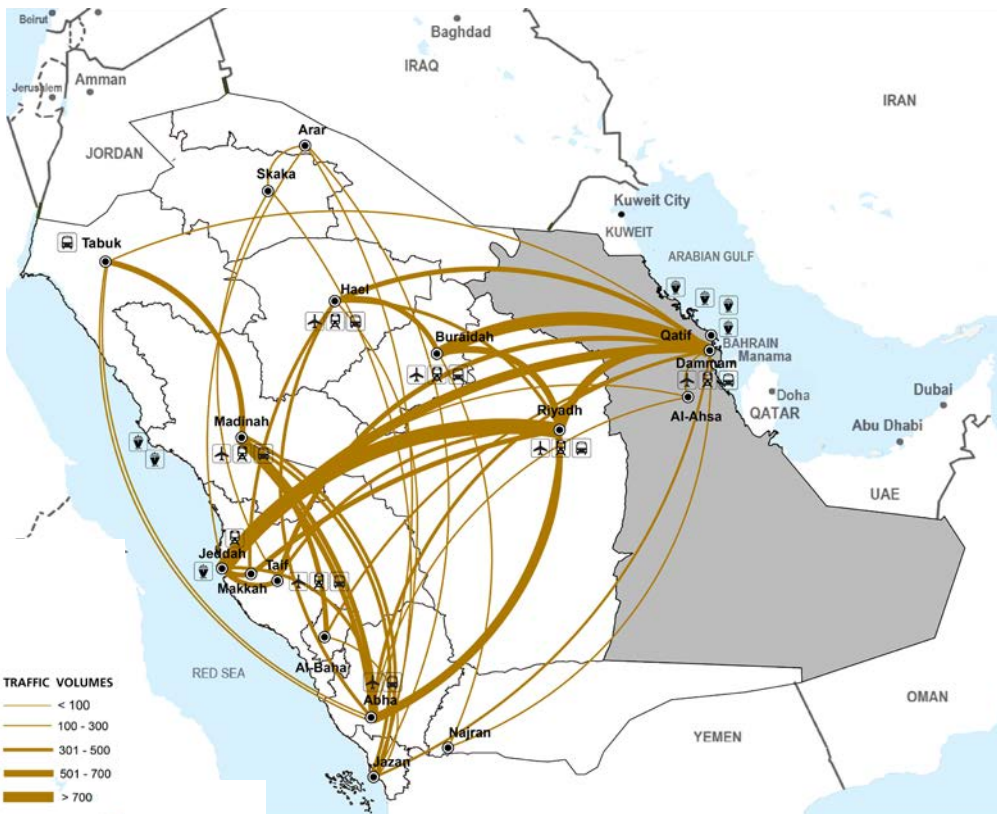
Economic sector contribution to GDP in Qatif Region (2014)



- Industry
- Energy (electricity)
- Construction
- Trade
- Transport
- Finance, real estate
- Social services
- Government services
- Mining
- Agriculture

● Region's GDP (2012)
● GDP growth rate / year
● Region GDP to kingdom

Fig. 2. Regional Gross Domestic Product and economic sector contribution



- Dammam:** King Fahd International Airport (Passengers 9,567,000);
- Jeddah:** King Abdulaziz International Airport (Passengers 30,000,000);
- Riyadh:** King Khalid International Airport (Passengers 22,300,000);
- Madinah:** Prince Mohammad Bin Abdulaziz International Airport (Passengers 6,500,000);
- Buraidah:** Prince Nayef Bin Abdulaziz International Airport (Capacity 550,000).
- Dammam-Abqaiq-Riyadh**
Al Qassim-Majma'a-Riyadh
Makkah-Jeddah-Madinah
- Gulf Ports:**
King Abdulaziz Port, Dammam
King Fahd Industrial Port, Jubail
Jubail Commercial Port
Ras Al Khair Port
Ras Tanura Port
- Red Sea Ports:**
Jeddah Islamic Port
King Fahd Industrial Port
Yanbu Commercial Port

Fig. 3. Transport connectivity between Saudi cities



1.2 Regional Development Patterns and Dynamics

1.2.1 Regional organisation

Administrative Boundaries

Qatif lies in the Eastern Region and is one of 13 regions in the KSA. The Eastern Region is subdivided into 11 governorates, which are further subdivided into sub-governorates. The governorates of the Eastern Region are Khobar, Abqaiq, Nariyah, Qaryat al-Ulya, Hafar Al-Batin, Dhahran, Jubail, Ras Tanura, Qatif, Khafji, and Al-Ahsa.

Qatif is governed by a “municipality” (Arabic: Amanah) which is an affiliate of the Eastern Region Amanah. Qatif is part of the Greater Dammam Metropolitan Area (GDMA). Dammam, the capital of the Eastern Region, is strategically located along the coast giving its port access to commercial and industrial activities. The port allows for cultural exchange between the Kingdom and the other states of the Gulf Cooperation Council (GCC), and Southeast Asian Countries. The Eastern Region, as the East Gate of the Kingdom, is considered to be the core economic base of the Kingdom due to its importance in petroleum production in the Kingdom, and the port linkages to the GCC.

The 2005 Regional Plan for the Eastern Region divides the region into five major sectors as follows:

- Coastline (Dammam sector): This sector hosts an estimated 24% of the region’s total number of urban clusters. The most prominent economic activity of this sector is concentrated in

- Al-Ahsa: Agricultural, tourism, and manufacturing activities are considered to be the focus of this sector, in addition to local commercial activity.
- Hafr Al Batin: The economic activity in this sector is limited to small and medium-scale pastoral and agricultural activities on the sector’s arable lands.
- Adeer: This sector’s most prominent economic activity is in security created by its position as the Southeastern entrance to the region, and the Kingdom. The plan aims to activate an exchange between the region and the Gulf countries, specifically in trade, tourism, and service activities. An economic city is proposed in Abu Gamees that is intended to ground the aforementioned exchange in a commercial and industrial activity centre.
- Empty Quarter: This sector holds the largest petroleum and gas reserve, which is the focus of ongoing research and excavation. However, it lacks a developed urban centre to extend support services to the sector.

Development Corridors

The Regional Plan for the Eastern Region for the year 1460H proposes a hierarchy of growth centres and development corridors, which are intended to organise development in the region. The map displayed in figure 6, shows proposed development corridors



Oil wells located in the Eastern Region

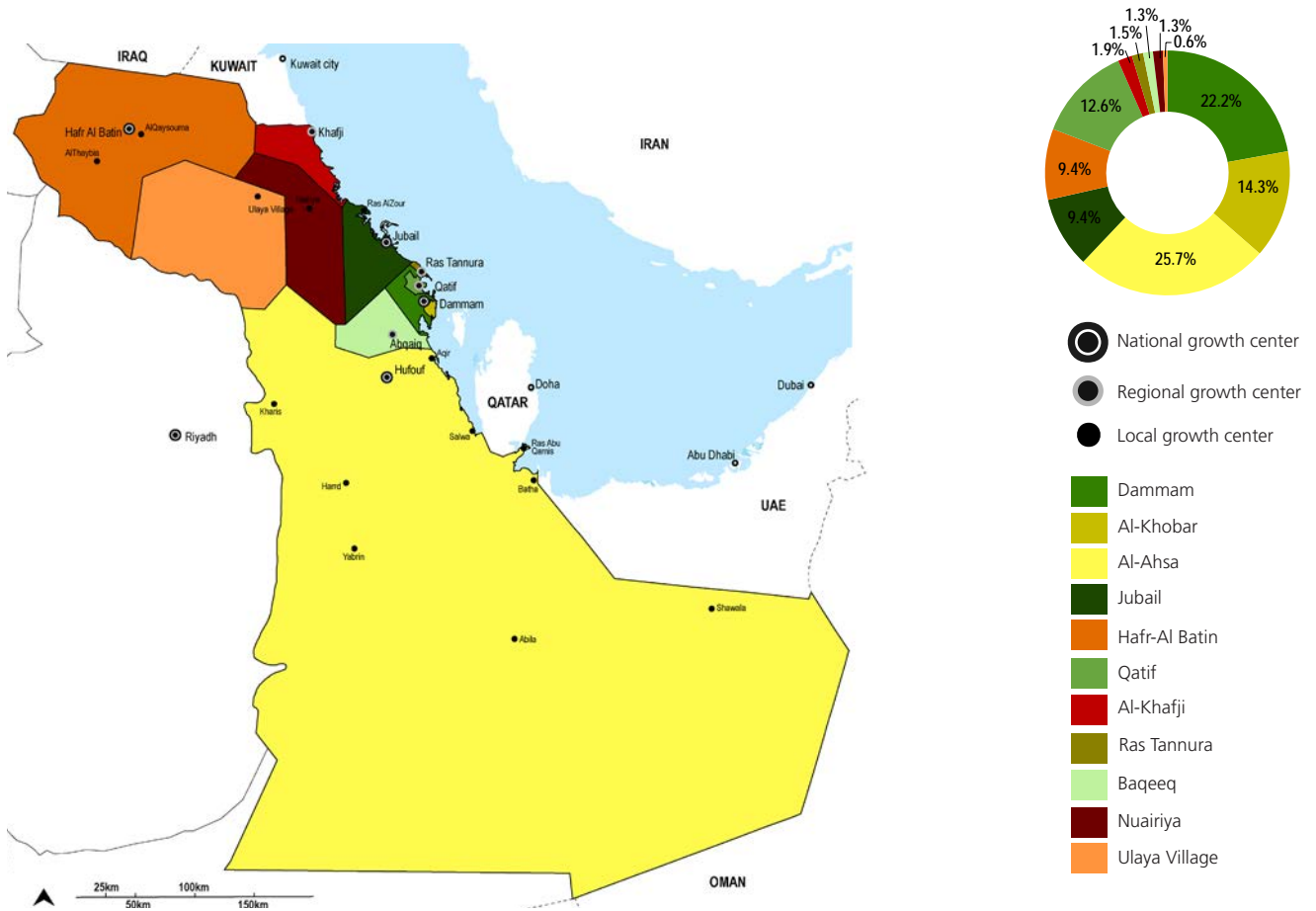


Fig. 4. Administrative boundaries and population in the governorates

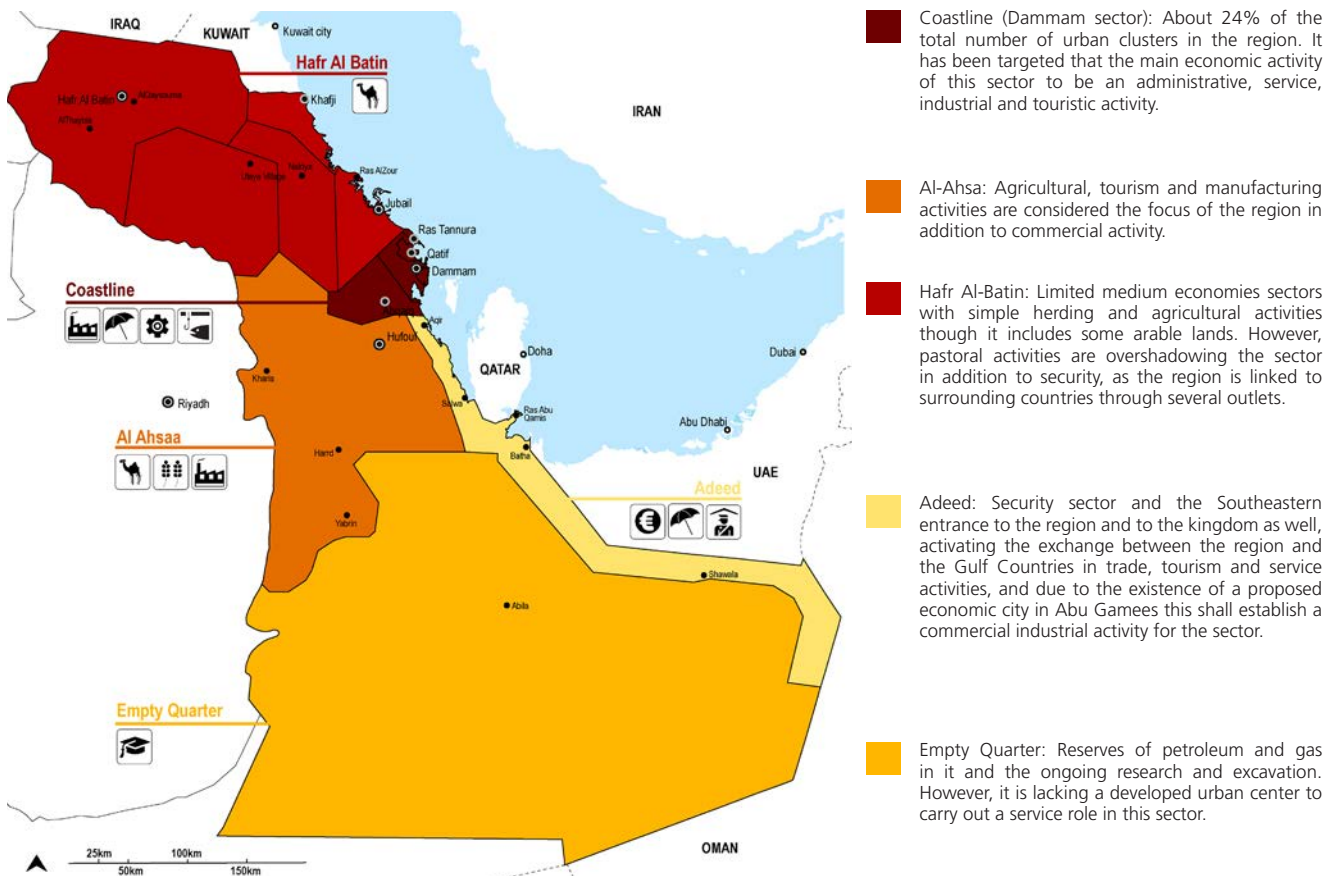


Fig. 5. Development sectors according to the Regional Plan for the Eastern Region by the Amanah



Qatif has a strong system of functional and economic relations with other significant urban centres surrounding it. Dammam is the capital of the Eastern Region, and the major urban centre. The Coastline Sector hosts 85% of the total regional population. Within these regional urban centres, three main axes emerge, two of which lie on main highways that cut through the region:

- An institutional corridor is located along Highway 40. Highway 40 is the most important highway in Saudi Arabia. It crosses the entire country linking the largest cities and the Arabian Peninsula. The 1,359 kilometres long highway connects Jeddah and Makkah on the West Coast to Dammam on the East Coast, crossing the capital of Riyadh.
- The second corridor runs along Highway 95, also known as Abu Haidriyah Highway. The highway begins from the King Fahd Causeway and links Bahrain to Saudi Arabia, extending to the Kuwait border via major cities, such as Dammam and Jubail. The highway is over 300 kilometres long and constitutes a major trucking route for transportation of goods in the area. The route runs parallel to the Dhahran-Jubail Highway, and the two roads serve as interchangeable substitutes if either undergoes maintenance or reconstruction. The highway also represents an Eastern border for King Fahd International Airport in Dammam.
- The third axis is situated along Highway 75, which connects Dammam to Al Hofuf in Al-Ahsa. Along this highway runs the railway, connecting Dammam Port, Dammam City centre, and Al Hofuf to Riyadh. This railway branches into

farms and agricultural land in Al-Ahsa Oasis, the largest producer of dates in the region. Highway 75 terminates in a remote area in the South, in Rub' al Khali and the road ends in the middle of the desert, rather than near a town or village, as would be expected. It is possible that the intention was to extend the road to Oman; however, this would require an extension through 600 kilometres of barren land consisting only of shifting sand dunes, which renders the project unfeasible.

1.2.2 Regional structure and resources

Movement Infrastructure

Highways, such as the Gulf Road, connect the major cities of the Eastern Region, such as Abqaiq, Dammam, Dhahran, Al Hofuf, Jubail, Khafji, Al Khobar, Ras Tanura, Sihat, and Qatif quite well. Dammam is connected to the Saudi capital, Riyadh, and Jeddah on the West Coast by Highway 40. The Eastern Region is also linked to Bahrain by the 28 kilometres long King Fahd Causeway, and to other Middle-Eastern countries, such as Kuwait (via the Abu Haidriyah Highway), Oman, Qatar, and the United Arab Emirates.

Environmental and Topographic Elements

The KSA represents 80% of the Arabian Peninsula. It comprises a range of topographical features, hosting 2,410 kilometres of the sea coast, 2.7 million hectares of forest land, over 171 thousand hectares of rangelands, 35 square kilometres of



King Abdulaziz Port

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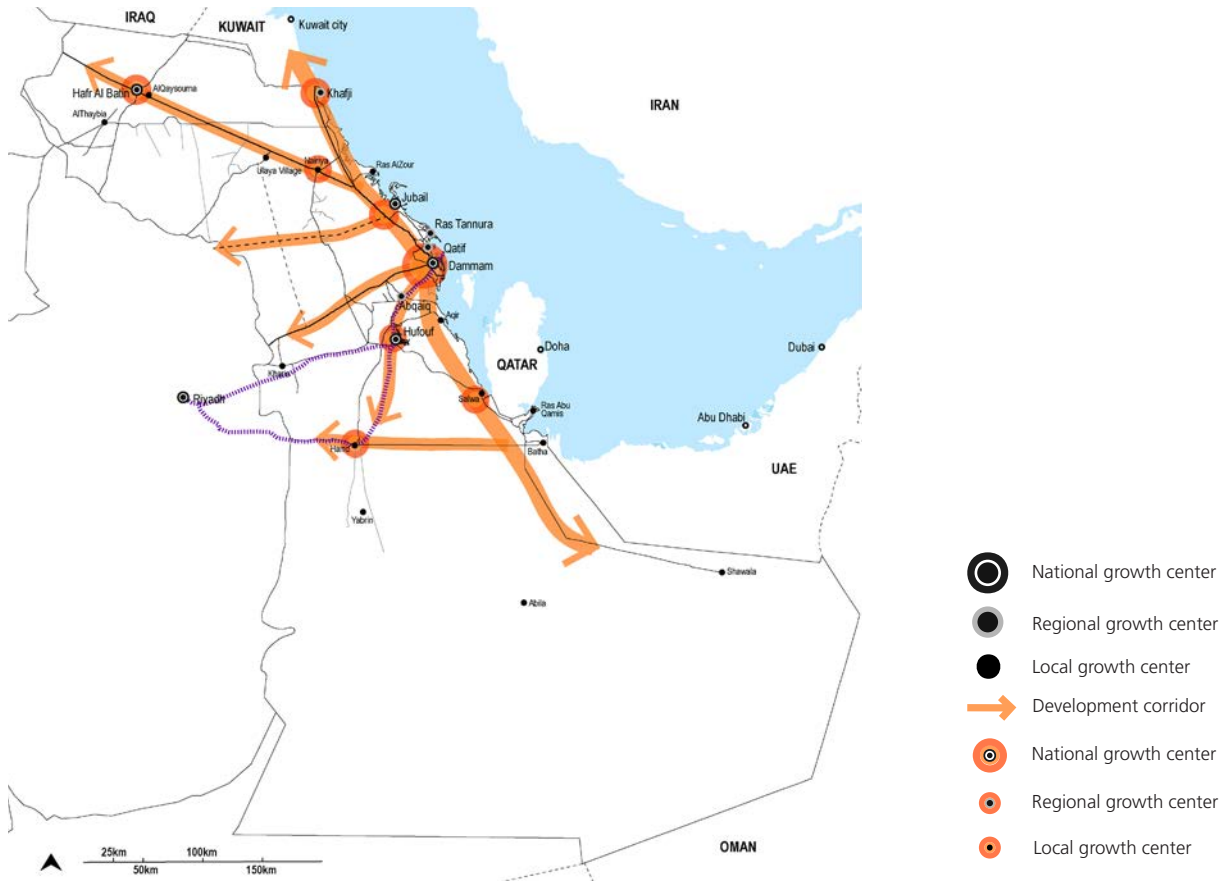


Fig. 6. Development corridors according to the Regional Plan for the Eastern Region by the Amanah

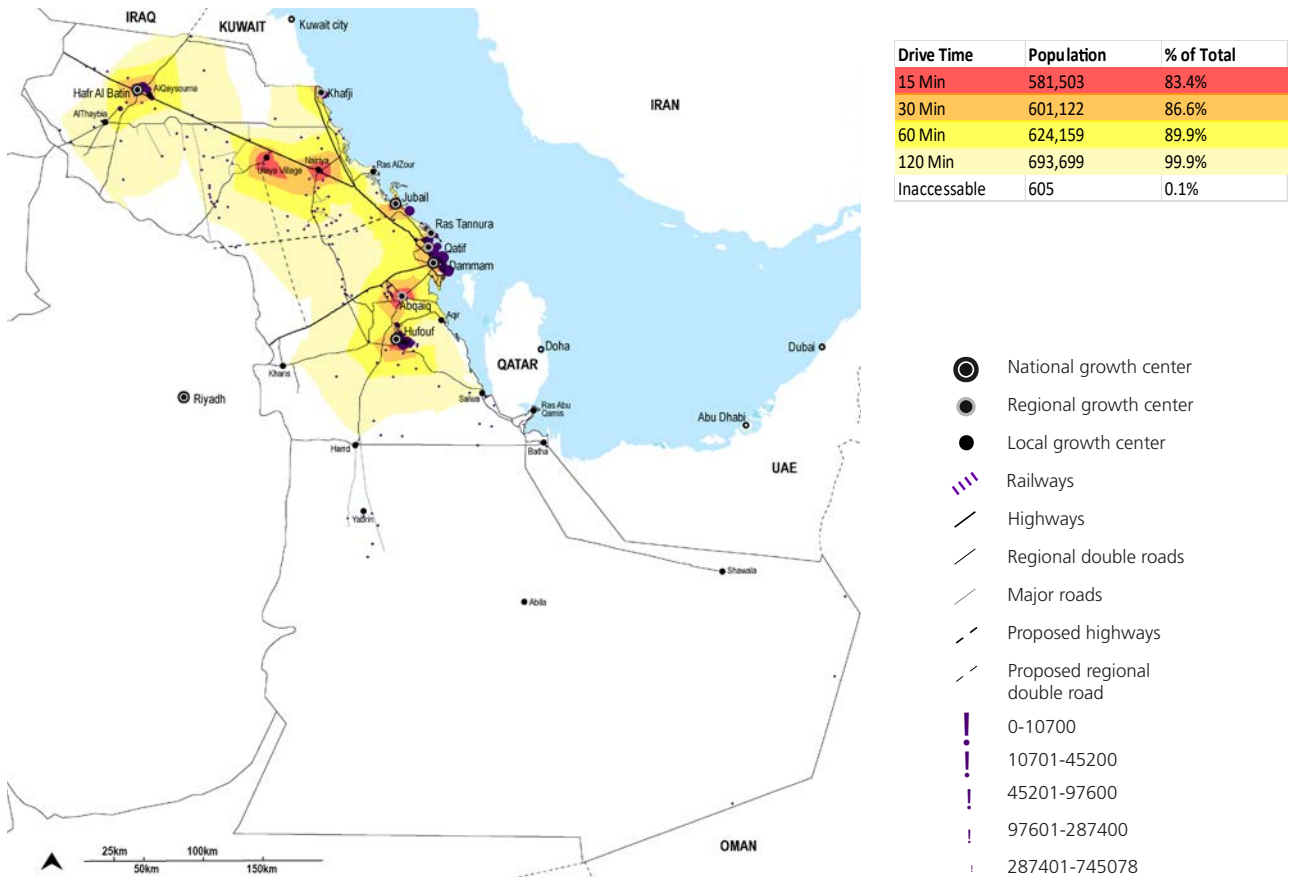


Fig. 7. Access and connectivity in the Eastern Region

mangroves and 1,480 square kilometres of coral reefs. Qatif consists of low-lying coastal plains, and the soil is composed of dolomitic limestone covered with layers of sand, silt, clay, and sandy limestone, also known as Neogene Layers. The land surface rises from the East to West to a summit of 10 to 12 metres inland. Protrusive rocky areas lie one to two metres high and constitute the basis of the settlements' growth. Groundwater is found at one to two metres deep from the surface. Groundwater is available through artesian wells and springs. For centuries, over 1,200 artesian water wells and springs have provided a dependable water supply for agricultural activities. In addition to the artesian wells, there are approximately 70 hand-dug wells, each being 50 to 100 feet deep.

The Arabian Gulf is rich in marine resources, which have been traditionally exploited by small fishermen. Along the coastline exists an aquatic plant locally named Al-Shura, which grows in abundance, and supports crustaceans and fish, providing oxygen and nutrients. These resources are of considerable significance to the nature and location of settlements onshore and inland. For many years the gulf waters yielded some of the finest pearls in the world and pearling became a widely practiced economic activity in the region. There are 25 variously sized settlements scattered throughout the oasis region, and some are surrounded by agricultural lands from all sides, while others are bordered with farms on two or three sides. Before the discovery of oil, Qatif played the traditional agricultural role of supplying food, particularly dates, vegetables, and fish,

not to mention pearls from the gulf waters. Until the 1930's, human occupancy of the oasis was primarily dependent on agriculture and fishing.

At the national level, trends indicate that average temperatures have been increasing by 0.2°C to 0.3°C per decade,¹ due to climate change, which negatively impacts water, and green infrastructure. In Dhahran, a city that with Qatif, forms part of the Greater Dammam Metropolitan Area, the average temperature is expected to rise from 3.4°C to 3.6°C by 2080. Heat waves are more frequent and extreme, and records (up to 2013) show how peak temperatures have increased from 13 events of heat waves between 1978 and 1995 to 57 events between 1996 and 2003.² Furthermore, the higher temperatures are exacerbated by the frequent sandstorms coming from the Northwest into the city, which have increased in frequency by 88%.³

This affects the area's agricultural potential, limiting its expansion, especially around Qatif, and limiting the development of open green spaces across the city. Agricultural land has decreased in the region, and little land is dedicated to green space. Overall, the few green spaces configure a discontinuous green system that does not contribute to protecting and replenishing water-tables, nor does it mitigate the urban heat island effects.

Coastal areas, such as Qatif, are particularly affected by climate change, and an estimated 401 to 1,726 hectares along the



Vegetable farming is one of the major economic activities in Qatif

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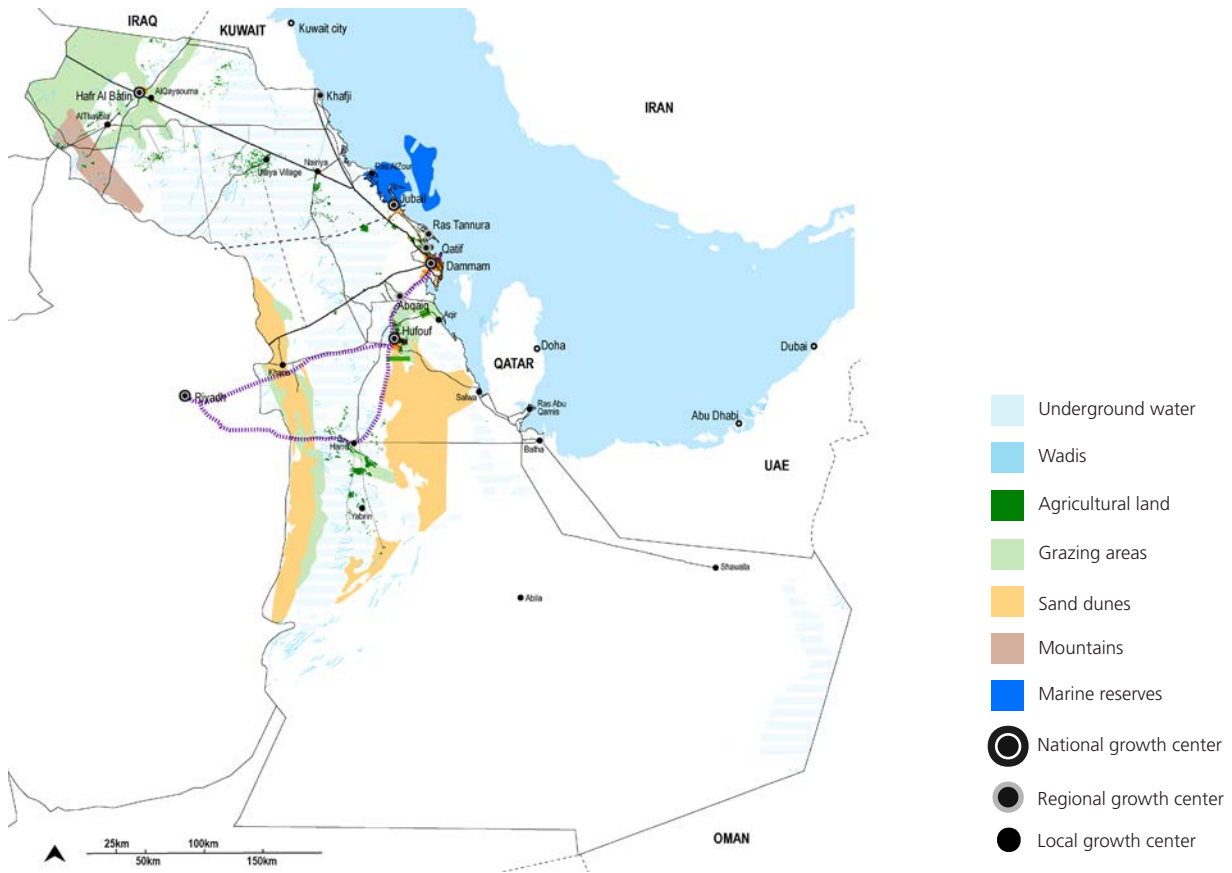


Fig. 8. Natural resources

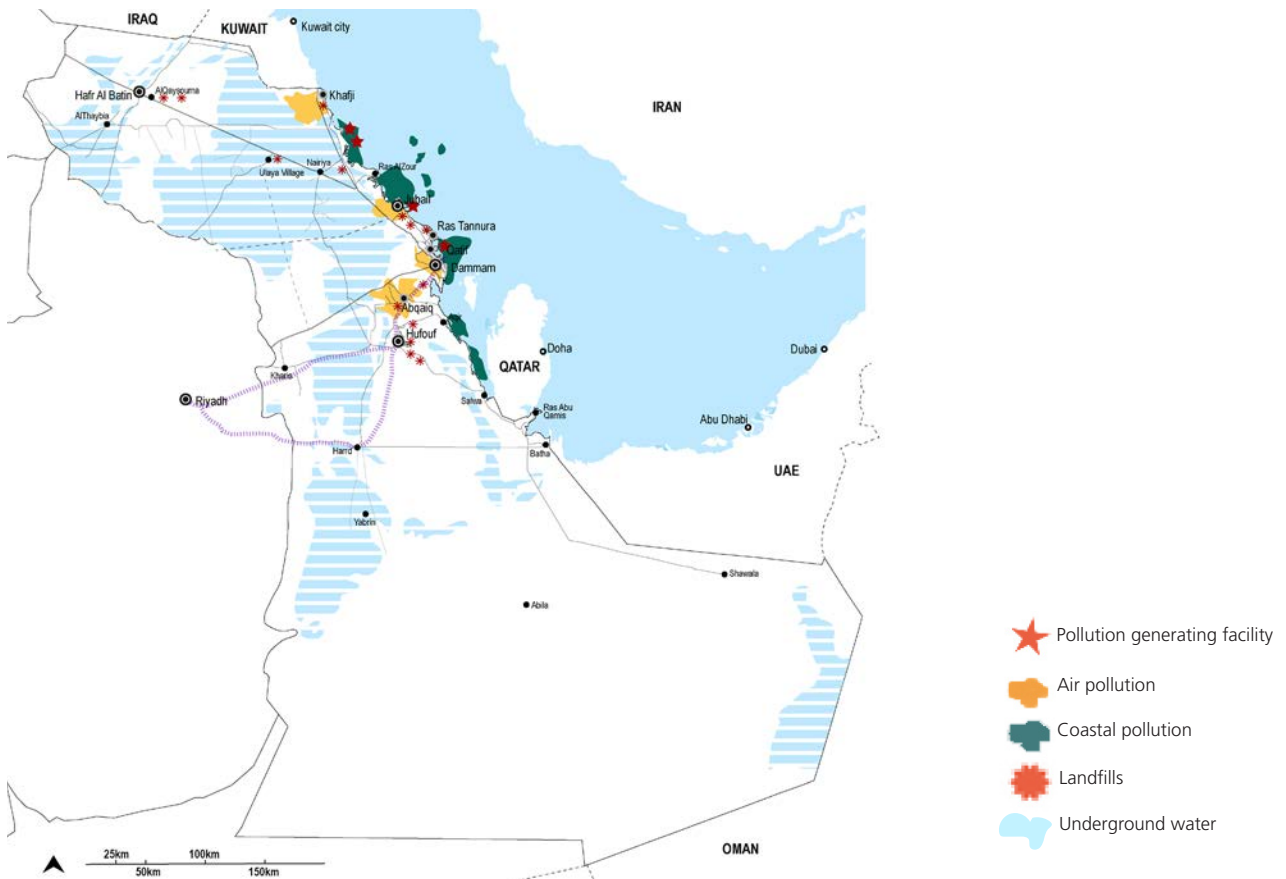


Fig. 9. Pollution and environmental conditions

Arabian Gulf.⁴ are expected to be lost by the year 2100. This will impact a significant portion of Saudi's population, as an estimated 12% reside in urban coastal zones with low elevation, and 50% reside within 100 kilometres of the coast.⁵ It will also disturb natural habitats, such as coral reefs, which represent the most significant habitat found along the Arabian Gulf. These reefs, as well as the mangrove forests, provide shelter and food for a wide array of marine life and are likely to be negatively impacted by global warming, and by sea-level rise.⁶

There are areas in Qatif that have already been identified as vulnerable. Tarout Bay has been defined by the Saudi Wildlife Commission as a Resource Use Reserve, equivalent to a protected seascape. However, 3,810 hectares of landfill development has encroached into the marine environment of Tarout Bay. Degradation of the marine environment has already been noted, and it is estimated that 485 hectares of mangroves have been lost. In addition to the damage noted in natural assets, the urban environment is also at risk, particularly the reclaimed areas on the coastline.

Land Use and Urban Clusters

The Oil and Gas Sector

The oil and gas sector is the largest and most important economic contributor in the Eastern Region, where all productive oil and gas fields of the Kingdom are located. These include Dammam Field, the first field discovered in the Kingdom; Ghawar Field, the largest oil field in the world; Savanya, Al-Wafra, and Al-Shaibah fields in the Empty Quarter, which are the latest discoveries

and contain large oil and gas reserves. Amongst other fields discovered, these are the most important.

The oil reserves in the Eastern Region rose in production levels to 265.9 billion barrels in 2012, equaling 25% of the global supply. These reserves are equipped with the necessary infrastructure to stabilise, transport, and refine large volumes of crude oil, and are in an opportune position to export to both the East and West. The Saudi ARAMCO has its headquarters in Dammam and runs the entire line of operations for the sector, from prospecting, exploring, and extracting, through collecting, processing, refining, and finally, distributing, shipping, and exporting.

Dammam is the starting point of the East-West pipeline, which runs from the port of Yanbu on the Red Sea to Abqaiq in Eastern Saudi Arabia (a total of 1200 kilometres). Refining and processing takes place in Abqaiq, Saudi ARAMCO's processing, and stabilisation plant (the world's largest), with a capacity of over seven MBOD. Saudi ARAMCO operates many refineries in the country and is currently producing than 10 million barrels a day.

In regards to export, Saudi Arabia's crude and refined exports exit the country through major oil ports on the Arabian Gulf, (notably the Ras al Ju'aymah Oil Terminal and the port city of Ras Tanura) and on the Red Sea (Yanbu). Saudi Arabia's access to Eastern markets through the Arabian Gulf, and Western markets through the Red Sea are a tremendous asset.



Oil pipelines along the territory of the Eastern Region



Industry

Manufacturing is the second most important sector in the region. The Eastern Region hosts the largest number of industrial cities in the Kingdom, and the largest industrial city in the Middle East, Jubail, which has expanded and grown exponentially. Dammam hosts three industrial plants, while Al-Ahsa hosts one, and Hafr-Al Batin hosts another. The large petrochemical complexes located in Jubail Industrial City are among the most important in the Kingdom due to their large production capacities, most products of which are exported.

Agriculture

Agriculture is also an important economic sector in the Eastern Region. In 2011, the total area for crop cultivation was 56,000 hectares, representing 7.1% of the total cultivation area in the Kingdom.

1.3 City-region Structure and Dynamics

Qatif City forms part of the Coastline Sector that runs from the South to the North of the Eastern Region, which is composed of Al Hofuf, Abqaiq, Al Khobar, Dammam, Qatif, Ras Tanura, and Jubail. The Coastline Sector hosts almost 85% of the total regional population and 46% of the total urban clusters. It has a strong system of functional and economic relationships between different Regional and National Growth Centers. The main economic drivers of this city-region corridor are administrative, oil-related industry, industrial, services, and tourism.

Structural Elements

The city-region is connected through a modern and developed network of motorways, highways, and bridges that connect the major cities to the different main economic sectors, such as agriculture and fishing, and the main industrial facilities both within the region and in those adjacent to it.

The Eastern Region accounts for 9.8% of total roads of the Ministry of Municipal and Rural Affairs. The region is currently witnessing new projects and expansions in its internal road network, including those linking the region with surrounding areas. Several new projects are currently under implementation. 83.4% of the population in the city region can access the city centres within a 15-minute drive. The city-region corridor circulates more than half of the GDP of the region, connecting the agricultural activity in Al-Ahsa, and Qatif, with the major industrial activity in Dammam, Dharan, and Ras Tanura, where most of the oil-related economy is.

Functional Connectivity

A diverse set of city functions can be identified on the regional scale for the cities in the Eastern Region. Qatif forms a part of this system as a city with an historic importance, as well as agricultural and oil related industry.

The system of cities in the Eastern Region is connected by the exchange, flow and movement of goods, services and people. This cities are also politically and economic related, in terms of industrial clusters and territorial planning.

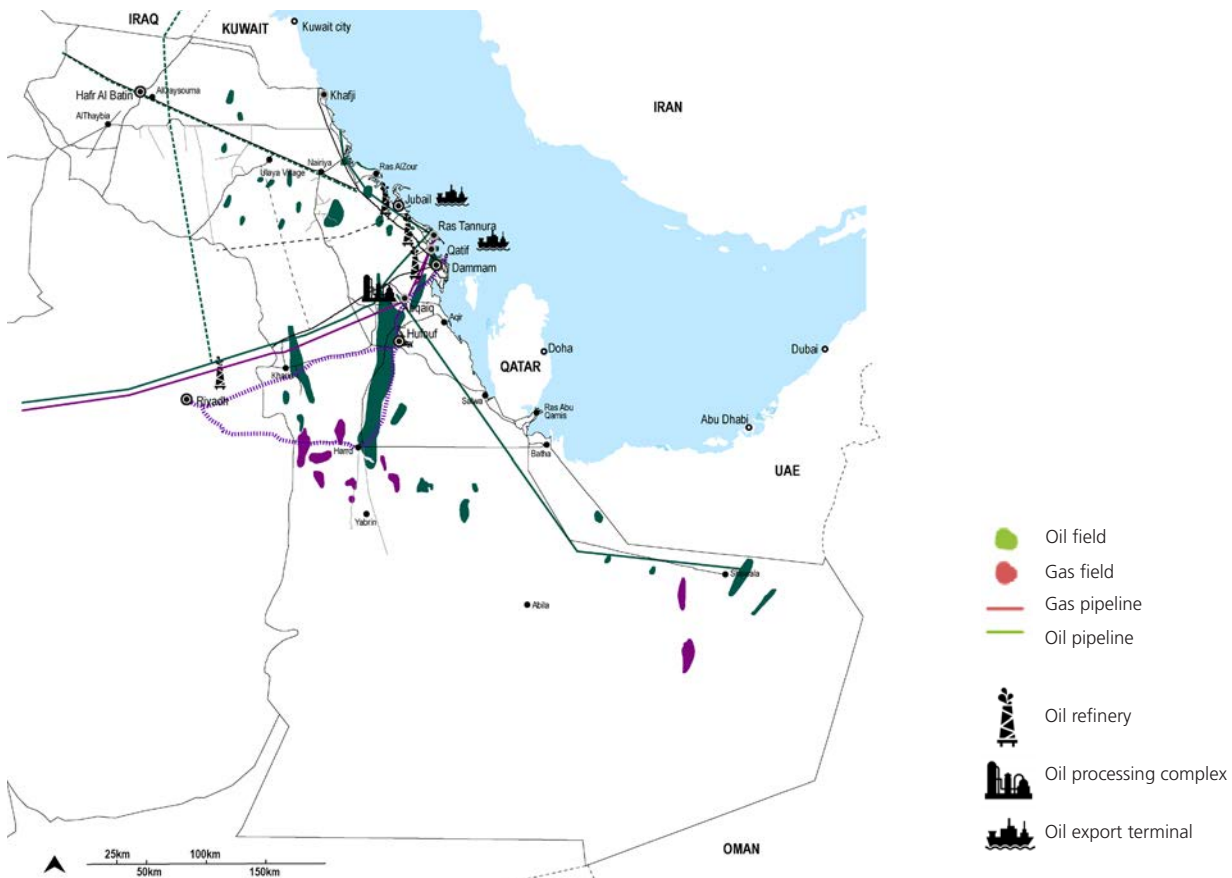


Fig. 10. Oil and gas reserves

While Dammam has a mixed-use function of industry, trade, and commerce, with some agriculture practiced in the suburbs, the cities around it can be given a more specific functional identity. For example, Jubail to the North acts as the main industrial hub in the region.

Jubail is the largest industrial city in the Middle East and is close to the similarly functioning city of Ras Tanura. Qatif carries a strong cultural identity known for its historical village and souks and a strong agriculture activity that comes from ancient times. In the South, Al Hofuf is the urban centre of the Al-Ahsa Oasis, also known culturally for its old souks and palaces.

The different cities along the coast of the Eastern Region, support each other economically and in function. It is important to provide better connecting infrastructure, in order to strengthen the local economy in the region and the political relations between urban clusters.

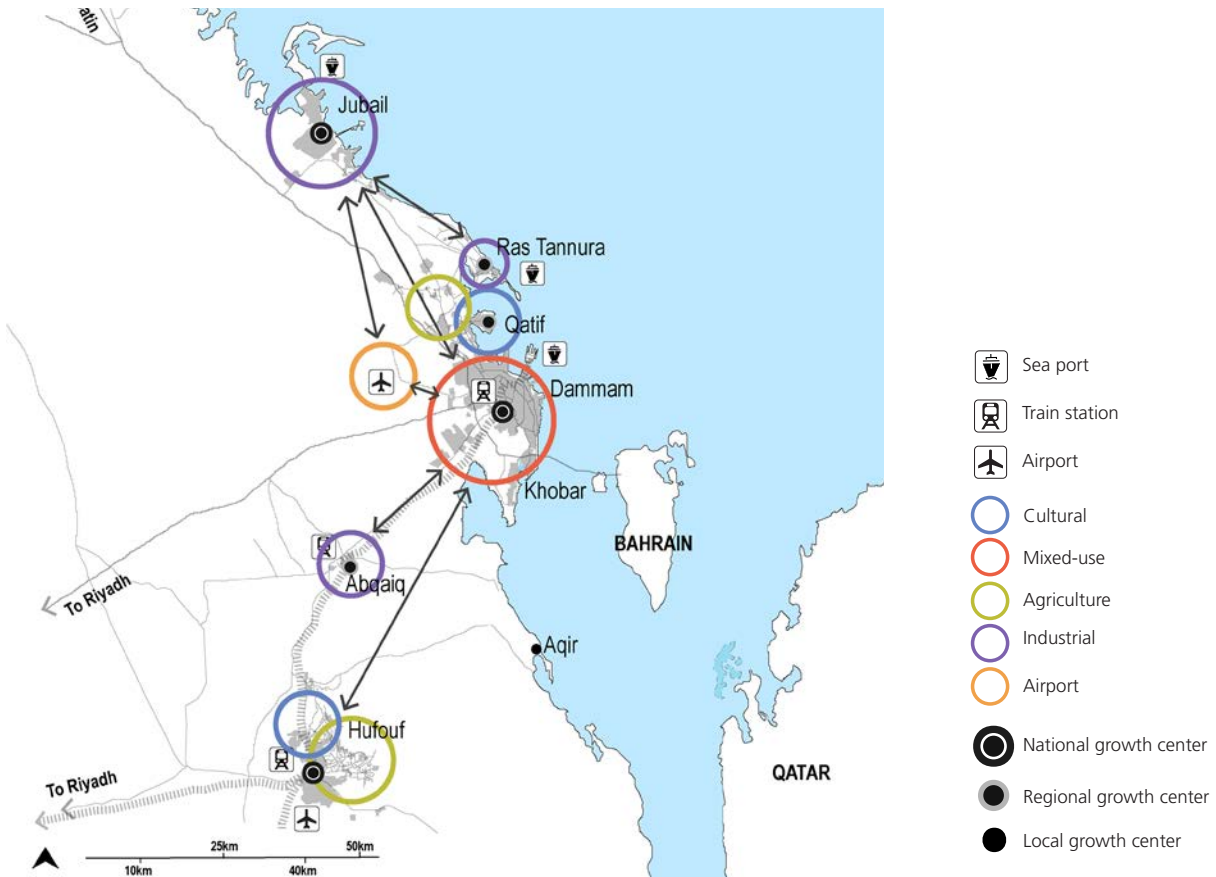


Fig. 11. Functional connectivity



Vernacular architecture in the historic centre of Tarout Island

3

GOVERNANCE AND FINANCIAL FRAMEWORK



2.1 Qatif’s Legal and Institutional Context

Qatif’s legal planning framework is shaped by the Kingdom’s legislative environment, which is based on Islamic Sharia Law. The law-making authority is vested in four entities, the King, the Shura Council, the Council of Ministers, and the Ministerial Departments. Consequently, there are five legislative instruments (Royal Order, Royal Decree, Supreme Order, Council of Ministers Resolution, and Ministerial Decree) that function in a hierarchical order, underpinning their authority and validity. Given this non-centralised law-making process, the city of Qatif is guided by over 500 existing urban planning related instruments with most of these having been promulgated at the lowest administrative level (Circulars),⁷ lacking authoritative legal force.

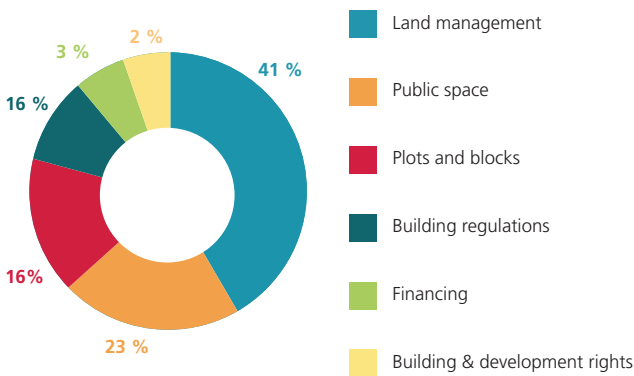


Fig. 12. Number of urban laws in KSA based on the Main Themes of Urban Planning Legislation (UN-Habitat)

The Ministry of Municipal and Rural Affairs (MoMRA) is considered to be the planning authority for most of the Kingdom’s cities. The Municipality of the Eastern Region (Amanah) plays a significant role in Qatif’s growth and development pattern because it is legally entrusted with the task of conducting urban planning of Qatif. The Amanah, as the local level actor for Qatif, acts as an implementing arm for MoMRA. Qatif Municipality is the third level actor, which solely manages the permitting of all types of construction activity. The institutional budgetary system is also centralised, meaning that Qatif’s development intervention is reliant on funding allocation from MoMRA, through the sole fiscal resource of annual line-item budgeting.

The Kingdom’s planning system, which follows a hierarchy of spatial levels and is predominantly top-down, influences the spatial system of Qatif. The National Spatial Strategy (NSS) of 2001 is the guiding plan for the Kingdom. The Strategic Regional Plan for the Eastern Region, 2005 addresses the natural, urban, social, and economic regional development aspects. Qatif is one of the large governorates of the Eastern Region. The Dammam Plan includes Qatif, which is composed of a strategic component (the Structural Plan), supported by a regulatory document (the Local Plan). The plan identifies strategic land use and infrastructure

networks within the area, and it applies controls to urban land use and building regulations within the municipal boundary. The Urban Growth Boundary aims to prevent urban sprawl in the outskirts of cities without adequate urban infrastructure while the Land Subdivision Plans are the basic building blocks that guide Qatif’s development.

Apart from NSS, which is enshrined in law, the remaining planning instruments are defined only by procedural manuals, (issued by MoMRA) which compromises their legitimacy. By nature, these instruments cannot construct a system of legal accountability and transparency among the relevant actors. Moreover, it seems that land use and building control regulations have facilitated urban sprawl within Qatif. For example, a high percentage of areas have been approved for low-density detached houses with a height limit of two floors, which has resulted in large amounts of land used for residential purposes. Qatif faces similar problems to the other cities in the Eastern Region with widespread ARAMCO protected lands within the urban boundary. As these lands are protected, instead of remaining vacant, they could be developed to be recreational or natural areas connected to the existing neighbourhoods.

In terms of reform, Qatif would benefit from both fiscal and jurisdictional decentralisation to facilitate independent and innovative solutions to urban social problems at the municipal level. This should entail:

- The transfer of local planning power, authority, and function to the municipality with provision for independent action without recourse to effectively address community needs. This is supported by the New Urban Agenda, which specifies that territorial urban design and planning processes should be led by sub-national and local governments, but their implementation will require coordination with all spheres of governments and participation from the civil society, the public sector, and other relevant stakeholders. This would require establishing an Urban Planning Department in the Qatif Municipality with sufficient numbers of specialised planners and architects.
- Fiscal decentralisation, to give autonomy to the Qatif Municipality to source funds to finance development activities. Revenue generation activities in cities may also include taxes and levies. Urban areas should be allowed to collect some form of property taxes to fund development activities. The recent White Lands Act that imposes fees on undeveloped plots in urban areas to tackle land speculation, housing shortage and indiscriminate land development shows that regulatory mechanisms can be leveraged to generate revenue while fostering an efficient development framework.
- The opening of avenues for actors, including the private



and voluntary sector, and the general community, to participate in decisions regarding projects that affect them.

The legal framework should enshrine an acceptable mode of public participation in public decision making, to foster equality and inclusion. The consolidation of the urban legislation would also give legitimacy to the plans that Qatif relies on.

Revising the Urban Growth Boundary Law to include clear criteria on how it is set would enhance technical and vertical accountability. The law also needs to place more emphasis on establishing the Development Protection Boundary as a no-development zone not only to prevent haphazard development but to discourage the advantage taken by private interests from laxity in the legal text. These initiatives will strengthen policy formulation designed to move the city towards a more sustainable, compact, and dense future. Primarily, post-legislative scrutiny of the UGB law should be undertaken to assess whether it has met its policy objectives. This could, in turn, inform the legal reform process as well as planning policy options.

2.2 Planning Instruments and Procedures

2.2.1 Hierarchy of plans - Qatif

The planning system of Qatif is derived from the de facto planning hierarchy of the Kingdom. In this framework, there are four different levels of spatial plans: national, regional, local, and district. Figure 13, highlights the planning instruments in force in Qatif.

2.2.2 The Strategic Regional Plan for Eastern Region

Regional planning represents the second-tier of spatial planning in the KSA, which aims to address the natural, urban, social, and economic regional development aspects. The Strategic Regional Plan for Eastern Region of 2005 was prepared and approved by MoMRA. The plan aims to:

- Take advantage of the region's strategic location at the Arabian Gulf as a link between the Kingdom and the other states of Gulf Cooperation Council and Southeast Asian countries;
- Enhance the contribution of the region's non-petroleum resources in national development to achieve balanced growth;
- Exert expansion in projects in diverse industries, which



Tarout Island corniche

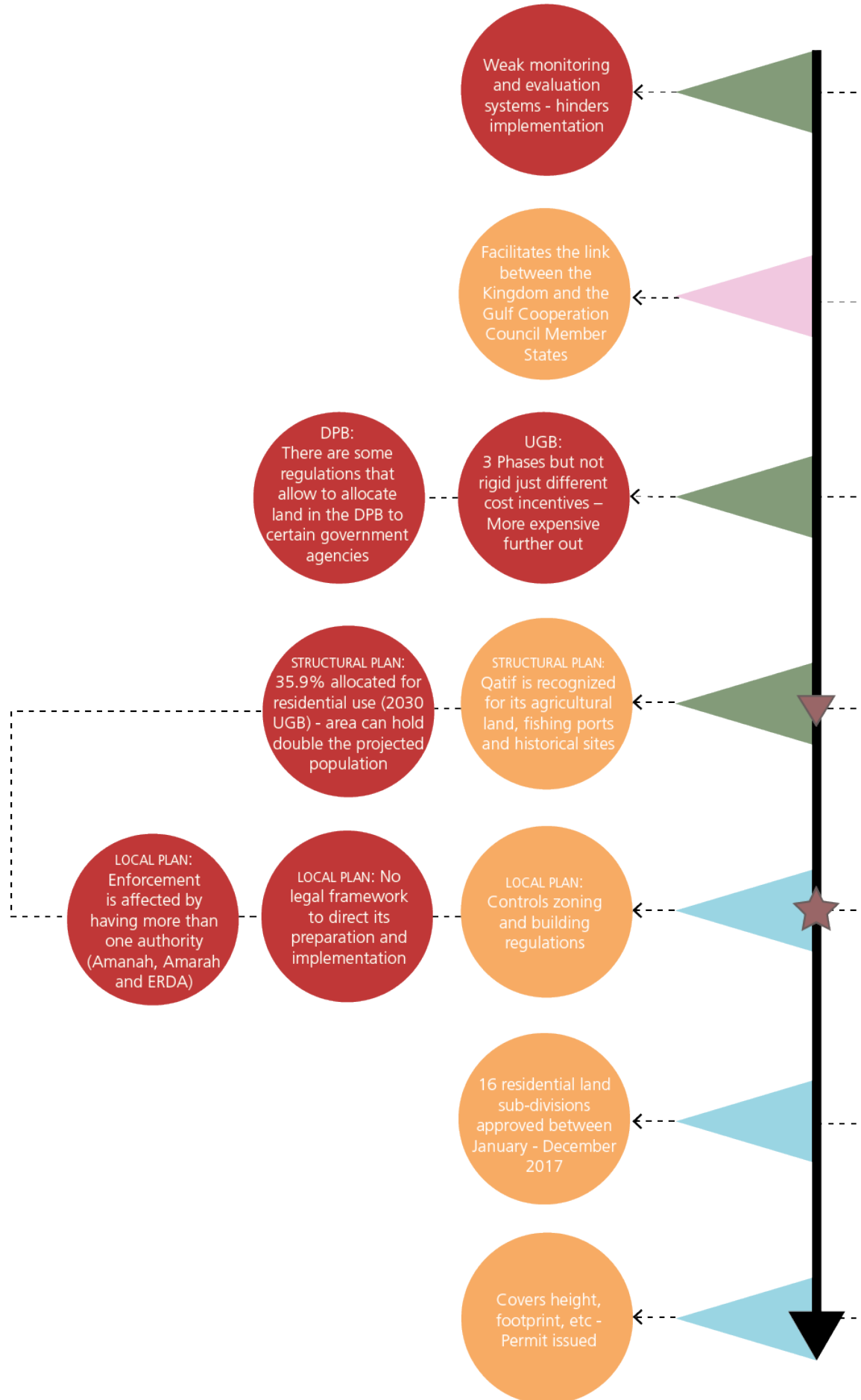
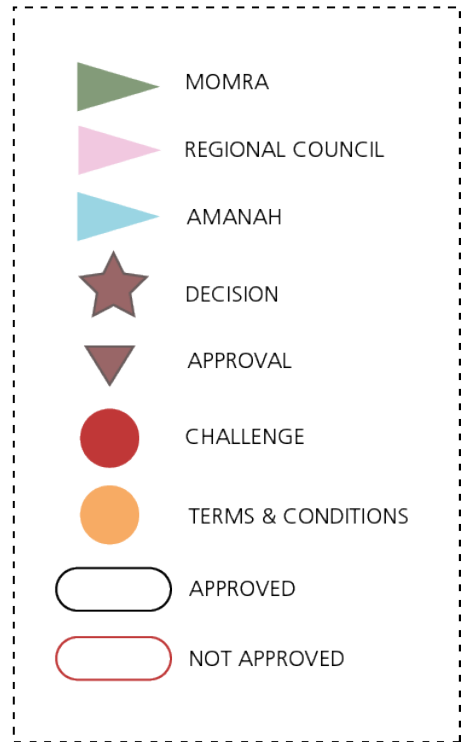
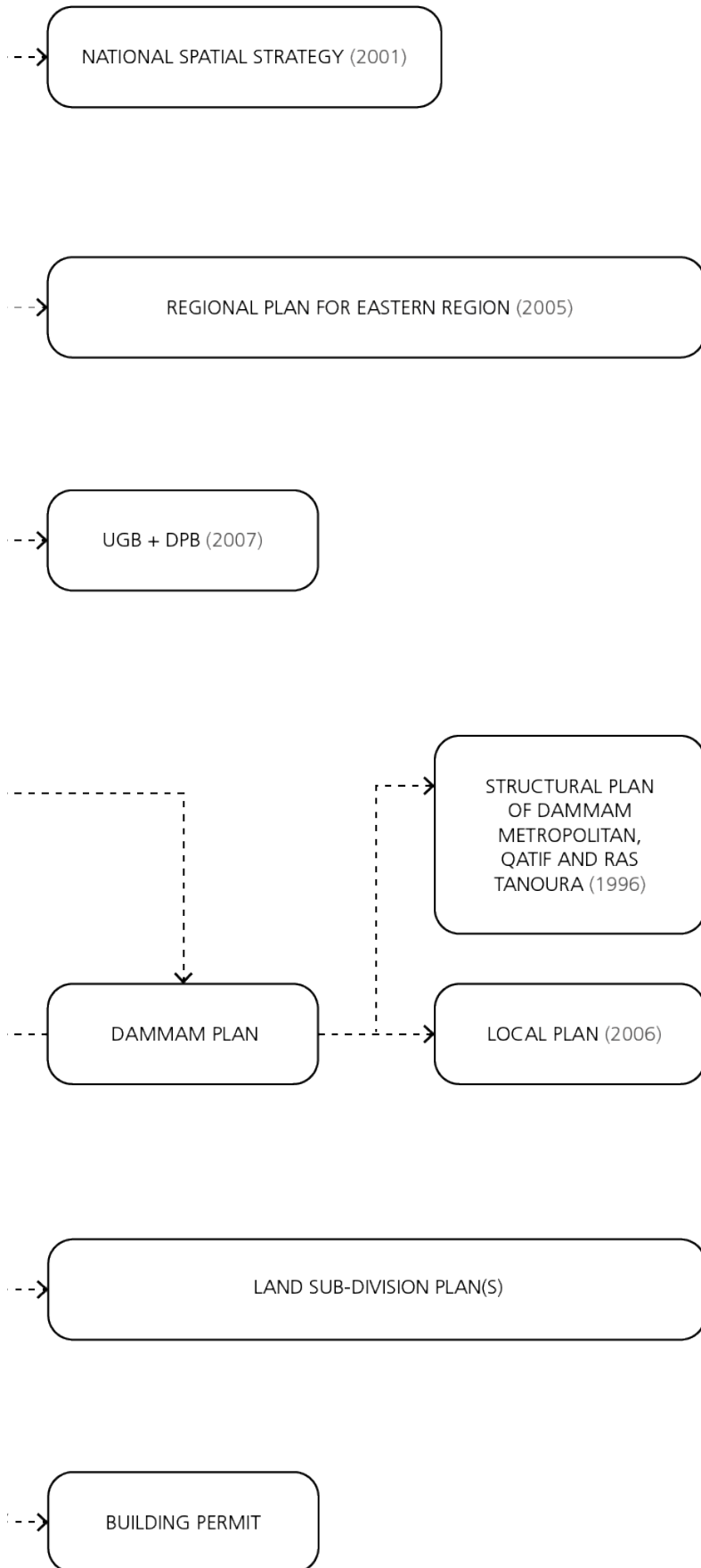


Fig. 13. FSCP simplified representation of hierarchy of plans and the planning instruments for the city of Qatif





are particularly dependent on the region's non-petroleum resources;

- Enhance the participation of the private sector in the provision of education and training across the region;
- Address the developmental concentration on the coastal strip to achieve balanced urban development in the region; and
- Support a balanced pattern of cities in the region that confirms the hierarchy of functions and population sizes.

2.2.3 The Dammam Plan

The Dammam Plan, which includes the city of Qatif, is a planning tool composed of a strategic component (the Structural Plan,⁸), supported by a regulatory document, (the Local Plan) for selected areas within the city. The scope of these plans includes:

- Long-term strategy for the city;
- Identification of relevant development areas;
- Identification of urban/non-urban land;
- Main mobility system;
- Environmental protection;
- Infrastructure provision;
- Detailed land use;
- Urban regulations; and
- Detailed proposals for selected areas.

Structural Plan of Dammam Metropolitan, Qatif, and Ras Tanura

The Structural Plan aims to identify key spatial structures like those provided for in the Regional Plan. It was prepared by the Amanah and approved by MoMRA (1996-2043). This plan, in line with the Regional Plan, highlights different objectives for the different cities that are located within the metropolitan area. For instance, Qatif is distinguished and characterised by its agricultural lands, fishing ports, heritage, and archaeological sites. Some strategies are considered to enhance these economic and environmental features.

In terms of land use, this plan identifies strategic land use and infrastructure networks within the metropolitan area of the 2030/1450 Urban Growth Boundary (UGB). Within the Qatif UGB, 35.9% of the land is allocated for residential land use, and 26% of the urban area is preserved for oil pipelines. The area allocated for residential purposes is bigger than the projected population because the plan promotes a low-density residential typology. Moreover, the area identified in the plan as preserved act as buffers for the oil and gas pipelines and instead should be used for a green network of open spaces that connects to a hierarchy of parks, (city-district-neighbourhood).

This plan also does not promote a clear mixed land use strategy as it encourages a mono land use typology instead. Mixed land use, (commercial and residential) is only proposed along the major corridors. Sustainable urban form, such as the

concept of compactness to promote walkable communities, is not adopted.

Local Plan

The Local Plan represents the third level of the urban planning system in the KSA and is largely focused on those areas of a municipality contained within the UGB with a special focus on housing. The Local Plan contains the Urban Atlas, which details the allowed land use for every part of the city. It is complemented by a regulations report which contains specifications on the permissible development rights, such as floor area ratio, street dynamics, building heights, areas of special building regulations, etc.

The aim of the Local Plan is to a) apply 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.

The Local Plan is prepared by various consultants following the "Booklet of the Terms of Reference for the Preparation of the Local Plan," which is formulated by MoMRA. This booklet was updated in 2015 indicating one key technical change which requires that the lifespan of new plans should be 14 years (2015-2029). However, this booklet has no legal standing, and there is no accompanying legal framework to support the enforcement of the local plans.

The development of the Local Plan is complicated by the fact that there are parallel structures set up by MoMRA and the Ministry of the Interior. While the legal mandate for planning lies in the Municipalities (under MoMRA), there are jurisdictional overlaps with the Mohafizat (Governorates – sub-regional) and Markaz (Districts), which are under the Ministry of Interior. In other words, the Ministry of Interior is the oversight entity for regional project implementation,⁹ while MoMRA is the central spatial planning institution, but there is no clear coordination mechanism. This frequently leads to an impasse in decision-making, which affects the delivery of technical standards within municipalities such as Qatif.

The Qatif Local Plan was prepared in 2006 by the Amanah and approved by MoMRA. This plan has no real mixed land use strategy, even though such characteristics are still present in a few parts of the city, for example in the city centre. However, the plan does not spread commercial activities along the urban tissue, and mixed-use is proposed along main roads to preserve privacy in residential areas. This is one of the factors that engender car dependency and poor-quality public spaces. The plan is not only obsolete and does not reflect current urban dynamics but also includes massive expansion areas, (between city footprint and urban boundary) which encourage urban sprawl.



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UN-Habitat workshop with municipal authorities of Qatif

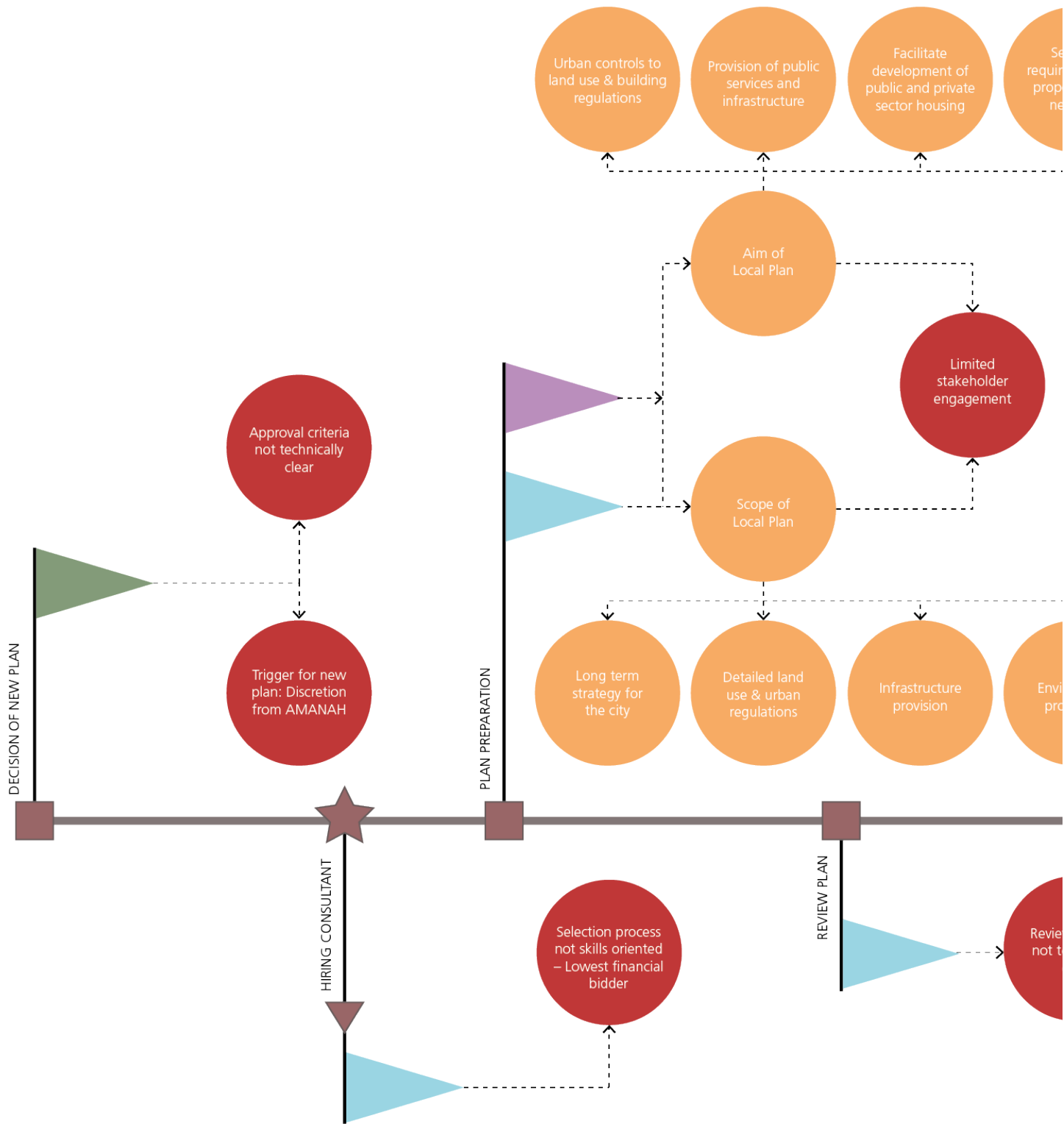
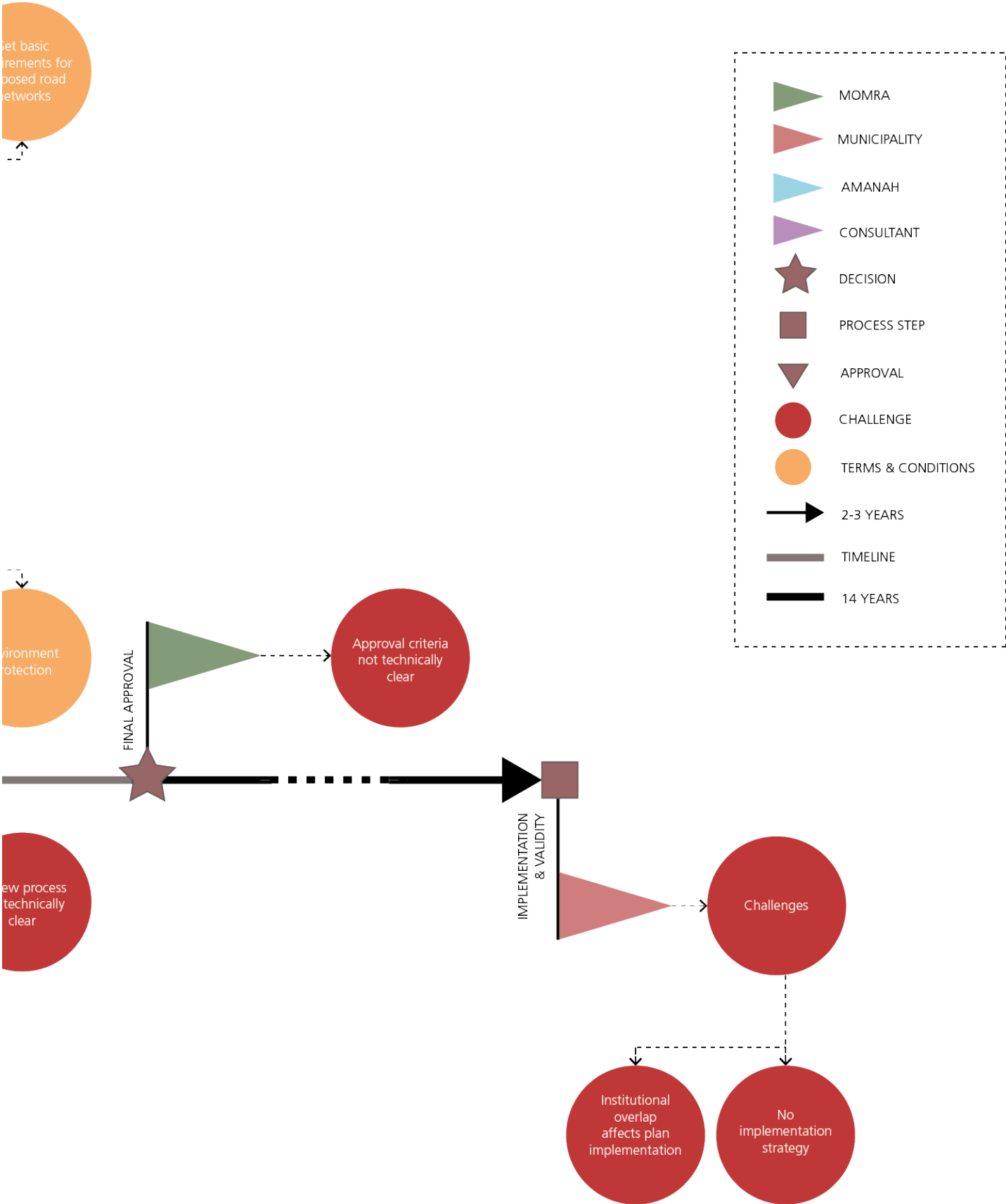


Fig. 14. FSCP simplified representation of Planning Process and Actors involved in the preparation of Qatifa Plan





2.2.4 The Qatif Urban Growth and Development Protection Boundaries

Legal Framework

In 2008, the Prime Minister issued Decree No. 157, which sets the overall regulations for both the Urban Growth Boundary (until 2030) and the Development Protection Boundary. The executive regulations were issued in 2010 by the MoMRA Ministerial Decree No. 11769 followed by the current revision, (MoMRA Ministerial Decree No. 66000) which was enacted in 2014. The Urban Growth Boundary is intended to control urban expansion and prevent sprawl in the outskirts of cities without adequate concomitant infrastructure, whereas the Development Protection Boundary sets a long-term plan for future development, preserving land for growth beyond the 1450 (2030) Urban Growth Boundary.

The 2014 Decree stipulates several general development principles including:

- Strategic development projects that are part of the spatial strategies, including major road and railway networks passing through private land should be prioritised over any other development projects;
- Development projects outside of the boundary are only permitted with the approval of MoMRA; and
- Large-scale development projects should follow specified detailed standards.

The law also defines development standards that a developer is obliged to comply with based on strategic categories of national, regional, and local centres, and the size of the lot. Qatif is categorised as a Regional Growth Centre.

Legally, the area between the Development Protection Boundary and the 1450 Urban Growth Boundary is protected and not earmarked for development, but the law also outlines mechanisms for building mega or national-regional economic projects therein.

Moreover, given the law, certain agencies have rights to land situated in such areas, where approval of development projects is routinely by set of regulations in this regard. Additionally, given the legal flexibility around the definition of “mega” or “strategic” projects, private residential developments exist outside the 2030 UGB. These factors have undermined the functional effectiveness of the regulations, the rule of law, as well as the compact development of urban areas.

Setting the Boundary

The UGB for Qatif, along with other cities, was set by MoMRA through a Committee under the Unit of Coordination and Projects. The composition of the Committee is not clear but,

URBAN BOUNDARY CLASSIFICATION OF LAND SUBDIVISION APPROVALS AND THE URBAN BOUNDARY PHASES		
EXECUTIVE REGULATION ISSUED BY THE MINISTERIAL DECREE NO 66,000 IN 20/12/2014		
1 ST PHASE (2014-2018)	2 ND PHASE (2019-2024)	3 RD PHASE (2025-2030)
REGIONAL GROWTH CENTRES: (AL-QATIF- ALKHARG- ALZULFI- SHAGRA- ALMUZHMA- ALAFLAJ- AFIF- KHURMA- YANBU- ALO-LA- ALRUS- ALRUS- ALASIAH- ALKAFJI- RAS TANURA- BISHA- JABAH- MAHAIL- SOUTHERN DAHRAN- DABA- TARIF- RAHFA- SABIA- SHAROURA- BALJARASHE- ALQERYAT- DOUMAH ALJANDAL)		
MORE THAN 500,000 SQM		
- Tarmacking of internal roads - Sanitation and electricity - Water if available - Storm water infrastructure	- Tarmacking of internal roads - Sanitation and electricity - Water if available - Storm water infrastructure - Connect to closest main road - Percentage of residential area completed not less than 50% - Provide land for social services (schools, kindergartens, hospitals, etc.)	- Tarmacking of internal roads - Sanitation and electricity - Water if available - Storm water infrastructure - Connect to closest main road - Percentage of residential area completed not less than 50% - Provide land for social services (schools, kindergartens, hospitals, etc.)
- Tarmacking of internal roads - Sanitation and electricity - Provide land for social services (schools, kindergartens, hospitals)	-	-

Fig. 15. Matrix showing the development options within the phases of the Urban Growth Boundary in the Regional Growth Centres including Qatif



for instance, it did not involve the Eastern Region Municipality, which is responsible for planning at the city level.

There is an understanding that the calculations were based on various factors, such as historical growth and expected population growth in the city. However, there are no accurate criteria published on how the size of the boundary was calculated. Spatially, the Committee was not guided by existing infrastructure and services, as the boundary was set symmetrically so that “all sides of the city” can benefit.

Challenges

There is evidence from the Local Plan that Qatif neighbourhoods are scattered within the UGB. Moreover, the disparity between the size of the boundary and the demographic dynamics of Qatif, (based on the Committee’s calculations) undermine densification. In other words, based on current population growth projections, the 2030 density will be 30 p/ha, which is below any recommended target, including the UN-Habitat recommendation of 150 p/ha.

Permitting

Development within the UGB is closely linked to permitting and development control. The process is as follows:

- A developer submits a Land Subdivision Plan with detailed implementation plans for the installment of the requisite infrastructure to the Qatif Municipality;
- The Municipality assesses the application in accordance with development standards and applicable building codes;
- A building permit is either refused or granted by the Municipality;
- A developer whose permit has been refused has two options of appeal: a) recourse to the Amanah and MoMRA calling for them to re-study the application; and b) file the case in the relevant jurisdictional administrative court;
- The decision in the above appeal process is final and binding on all the parties.

White Lands Act - Qatif

The percentage of undeveloped land, (“white lands”) in Qatif within the 7% of total land available for urbanisation, is low. The existence of white lands has been a major contributor to a growing housing shortage particularly for the youth and the growing population as owners choose to hoard property to maximise value rather than develop it.

The government recently issued the White Lands Tax Law,¹⁰ that imposes an annual land tax of 2.5% of its value on ‘white land,’ which is defined as vacant land located in ‘populated areas,’ zoned for residential or for dual residential and commercial use. The law aims to: a) increase the supply of developed land to better address housing shortages; b) make residential land

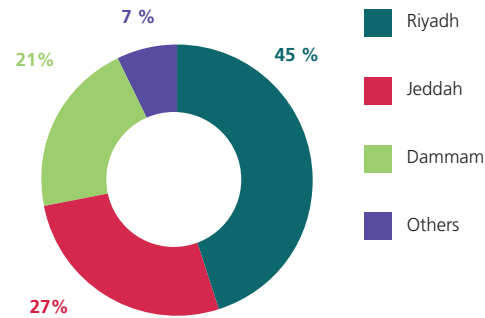


Fig. 16. Percentage of White Lands – First phase of implementation of the White Lands Law

available at reasonable prices, and c) combat monopolistic practices. The Ministry of Housing, which is the implementing authority, will implement the law in phases. At the moment, the Act is operational only in Makkah, Riyadh, Dammam and Jeddah.

2.2.5 Land Subdivision Plans

The Land Subdivision Plans are the basic building blocks for the KSA cities’ growth and development. The Mayor of the Eastern Region has the power to approve land subdivision in accordance with the following criteria (Ministerial Decree No. 17777 of 2010):

- The land must be within the approved urban boundaries;
- Land use specified for the land is consistent with the instructions and regulations governing it;
- The subdivision will not result in cancellation or modification of an approved regulation, planning, or authorised land use;
- All necessary planning procedures have been completed and the Deputy Ministry for Town Planning (DMTP) has been issued with a certified copy of the plan after its approval;

The Amanah has approved 16 residential land subdivisions between January and December 2011.¹¹

2.3 The Institutional Context

2.3.1 Urban institutions in KSA

The Municipality of the Eastern Region (Amanah) plays a significant role in Qatif’s growth and development patterns because it is legally entrusted with the task of conducting urban planning of Qatif. Despite this, Qatif’s growth and development pattern is impacted by the centralised planning institutional framework of KSA under the Ministry of Municipal and Rural Affairs (MOMRA) as plans made at the local level require its approval.



2.3.2 Regional context: Eastern Region

According to the Ministry of Interior administrative classification, the Eastern Region is divided into 11 governorates, (6 are class A while 5 are class B) and 107 centres (71 are class A while 36 are class B). Qatif, being one of the governorates of the Eastern Region, is included in this classification and is governed through a “municipality” headed by a chairperson. Given this structure, the Qatif Municipality, through the Amanah of the Eastern Region, is allocated funds by MoMRA for development action and municipal services through an annual line-item budgeting,¹² which is the sole fiscal means available to Qatif,¹³.

There are additional institutions in the Eastern Region that manage and regulate the development process. The Amanah of the region, headed by the Regional Prince, pursuant to the Regional Law,¹⁴ reports to the Ministry of Interior. The same law mandates the Emirate to oversee all authorities and institutions operating within the Eastern Region. This supervisory role is related to supporting citizens’ welfare as well as mediating the disputes arising between two or more government agencies.

The Regional Council,¹⁵ is based in the Amanah of the Eastern Region and is required to.¹⁶

- Identify the needs of the region and propose their inclusion in the National Development Plan;
- Identify beneficial projects for the region and submit these as activities requiring funding. These requests are vetted, and viable projects are selected for funding. Funding is provided as part of the National Development Plan and a yearly budget of the country, which is the sole means available to municipalities;
- Study the organisational arrangement of the regional administrative centres, and follow up on the implementation of any modifications; and
- Implement the provisions of the development and budget plan and carry out the needed coordination.

The Municipal Council, also located in Qatif municipality, with two-thirds of its members elected by citizen’s votes while the rest are appointed by the MoMRA, supervises the activities of the municipality to make sure that they conform to the Local Plan and meet the current needs of the governorate. It approves:

- The municipal budget sourced from the cash allocation from national government. This is constantly subject to revision as it is based on the agreed priorities between the Council and the Mayor;
- Examines the residential plans focusing on whether any procedural violation occurred;
- The scope of municipal services; and
- Expropriation projects based on the priorities of the Mayor.

The Council has no executive powers as this is vested in MoMRA, by the Regional Prince, and the Regional Council; but it contributes to the overall planning process.

The High Commission for the Development of the Eastern Region (HCDER) was established to contribute to the comprehensive development of the region, (Resolution of the Council of Ministers No. 64 of 2015). The same law establishes a Council composed of 14 members that should, inter alia, draw up general policies for projects within the region and follow-up on their implementation in coordination with the Regional Council and the Amanah. However, more recently, a decree defining a new authority, named Eastern Region Development Authority (ERDA), was issued.

2.3.3 Local context: Qatif

The Eastern Region is composed of several cities including Qatif, which is the third largest city. As mentioned earlier, Qatif is one of the governorates of the Eastern Region and is governed through a “municipality,” headed by a mayor. The mayor is appointed by MoMRA based on their professional qualifications.

The Qatif Municipality does not have an urban planning department, and there are no other actors involved in the urban planning process.

The private sector, such as the Saudi Arabian Oil Company (ARAMCO), has a significant contribution in Qatif’s land development projects.¹⁷ Their activities in areas outside the urban development boundary have played a role in the urban sprawl.¹⁸

2.3.4 Legal and institutional implications for Qatif

Most of the technical decisions and approvals passed in the local governance system, including planning decisions, are made on a discretionary basis according to the priorities set by the Mayor and the Municipal Council. Coherence cannot improve until measures are taken to instill legal mechanisms that harmonise and guide the planning system. This ambiguity, together with the rule of law concerns, negatively affects foreign direct investment, which undermines the economic pillars of the Kingdom’s Vision 2030.

2.4 Financial Context

Qatif is one of the Eastern Region’s governorates and is home to a diverse environment, e.g., an environment with deep cultural heritage and long waterfronts. Qatif is an economic centre, hosting most of the economic activities including agriculture, which is a large part of the economy. Manufacturing, mining, quarrying, construction, wholesale, retail trade, and education are the main economic sectors and combined employ more than 53% of the workforce, (see figure 17).¹⁹



In order to foster economic diversification and innovation in Qatif, the government is working to identify strategic economic sectors. Economic development is considered to be key in achieving the national economic goals of the Vision 2030. Consequently, the development of public infrastructure and public facilities (e.g., transportation, water treatment facilities, etc.) serving Qatif’s key economic sectors (e.g., industry, agriculture, tourism) is a priority for the government. This pertains to its effort to increase agglomeration economies, spur competition, and harness productive capacity in Qatif and its contribution to the province and national economy (figure 18).²⁰

Part of the government’s strategy is to reach its economic goals, and this includes a renewed commitment to strengthen the feedback loop among (1) regional and local needs, (2) education and training, and (3) the economic landscape. The government aims at fostering growth in human capital and better market conditions that are likely to develop research, innovation, and economic diversification,²¹.

2.4.1 Financial system

Public finance and sound fiscal management play a key role in supporting local development goals. Currently, the National Development Plan leads Qatif and its province public financial

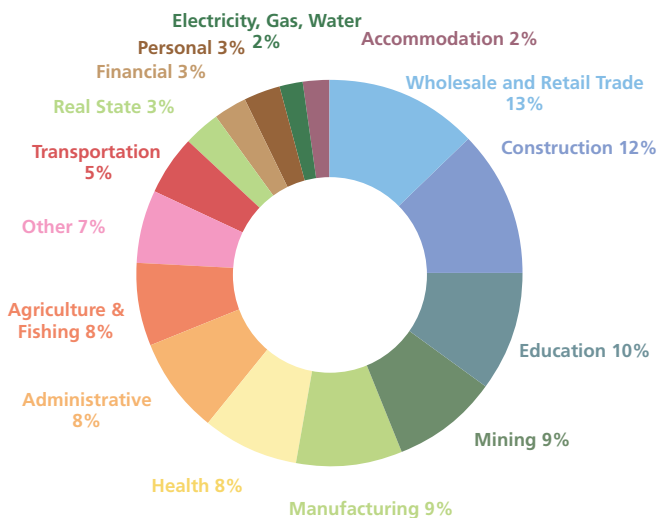
system. This system depends on intergovernmental transfers (vis-à-vis line-item budgeting in the National Development Plan), funding local activities and projects.

In 2017, the central government allocated 5% of the total budget to municipal services, which also covered projects and programmes managed by the Ministry of Municipal and Rural Affairs (MoMRA) . MoMRA, via the Amanahs,²² is responsible for financing activities categorised as “municipal services,” such as urban planning, building licensing, sanitation, and road maintenance. In addition to MoMRA, several other government ministries and entities, such as the emir and regional councils fund, implement projects at the municipal level (e.g., the Ministry of Education provides direct funding for city schools).

2.4.2 Municipal revenue

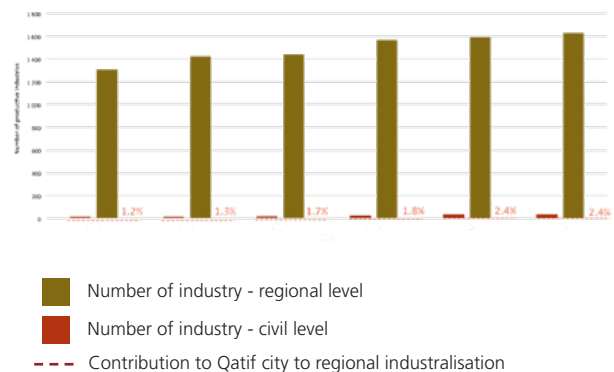
Currently, the Amanah only has a few sources of revenue and limited authority to collect fees. MoMRA has recently introduced municipal fees although local revenues remain insufficient. Consequently, the Amanah continues to rely on intergovernmental transfers from the Ministry of Finance, (MoF).

Inter-governmental transfers from the MoF are based on



Source: General Organisation for Social Insurance (GOSI), 2016

Fig. 17. Employment by sector, 2016



Source: Saudi Industrial Development Fund. (2016)

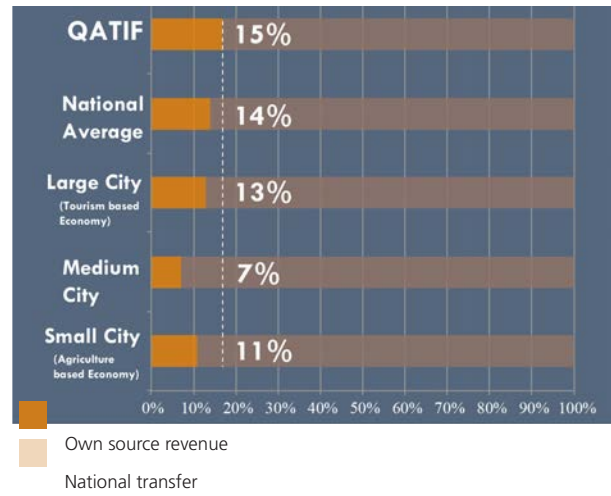
Fig. 18. Industrial concentration, 2010-2015

annual budget proposals submitted by the various ministries. In MoMRA, the budget drafting process tends to be influenced by local government needs and priorities. Municipal governments submit project proposals for the next budgetary cycle, which subsequently are submitted to MoMRA's leadership for final approval. The authorised projects are included in the MoF's budget review, and proposed for assent to receive funding.

2.4.3 Financing municipal operating costs

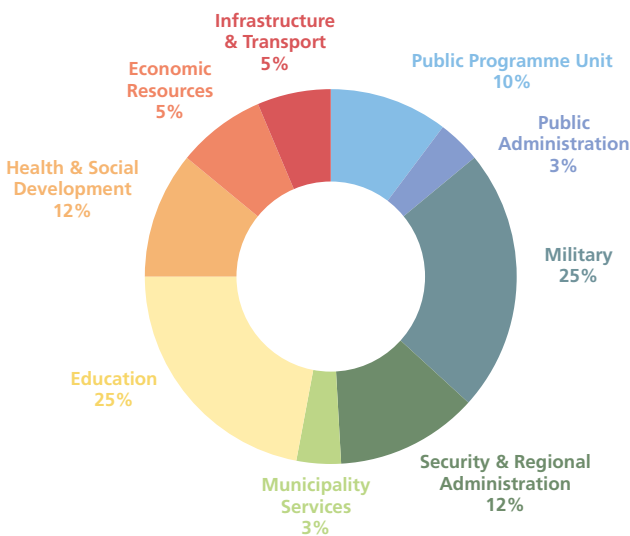
In 2016, Qatif collected more than SAR 51.6 million in own-source revenue, corresponding to 15% of the city's budget,²³ putting Qatif above the national average in terms of own-source revenue generated by middle-sized cities with economies based primarily in agriculture and tourism.

In an effort to improve municipal finance management and reduce the dependency from the central government, the National Transformation Program 2020 (NTP) directs the local government to establish sound fiscal policies through the introduction of new financial instruments.²⁴



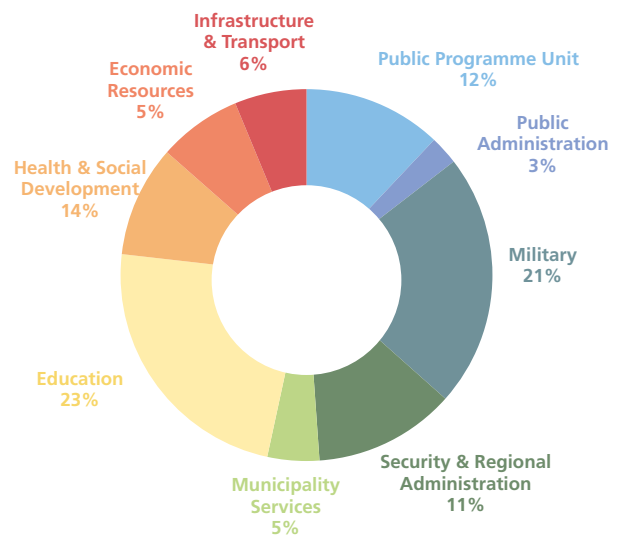
Source: Ministry of Finance, Saudi Arabia (2016)

Fig. 19. Comparison of own-source revenue among sampled cities, 2016



Source: Bhatia, R. (2017). Saudi Arabia Budget 2017. The Gulf's International Bank.

Fig. 20. Saudi Arabia national expenditures by sector, 2016



Source: Bhatia, R. (2017). Saudi Arabia Budget 2017. The Gulf's International Bank.

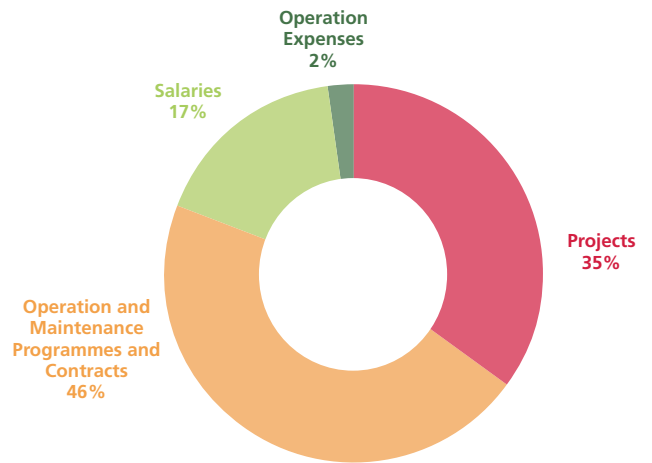
Fig. 21. Saudi Arabia national expenditures by sector, 2017



Budget Category	SAR (thousands)
Salaries	51,175
Operation Expenses	5,573
Operation and Maintenance Programmes and Contracts	139,450
Projects	104,650
Total Budget	793,348

Source: Ministry of Finance, Saudi Arabia (2016).

Fig. 22. Amanah budget, Qatif (2016)

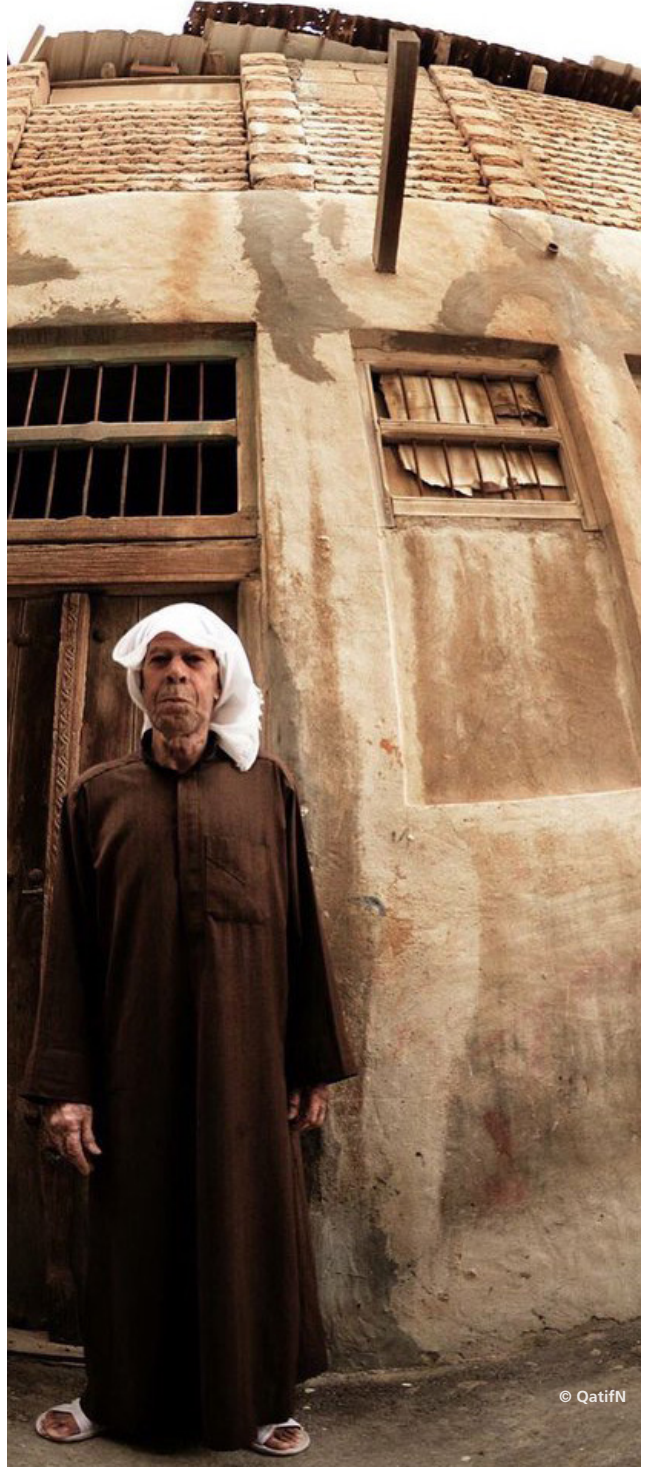


Source: Ministry of Finance, Saudi Arabia (2016).

Fig. 23. Amanah budget breakdown (2016)

4

THE CURRENT CITY





3.1 Urbanisation Patterns

3.1.1 The city's development patterns

Rapid urbanisation is a common trend in Saudi Arabian cities and Qatif is no exception. In 1934, Qatif had an area of 46 hectares and a population of 6,000 people. It was an ancient oasis that depended mainly on agriculture and fishing. However, the discovery of oil in the Eastern Region in 1938 boosted an important change in the productive structure and the main economic activities in the area, promoting a more rapid development and urbanisation process.

Until 1957, coastal settlements in Qatif maintained gradual urban growth, but after the oil boom and ARAMCO as a major industrial actor, financial prosperity was brought into the region pushing the existing coastal settlements to transform their traditional role and structure as agricultural villages into urbanised towns. The subsequent influx of population called for high demand for housing accommodation, and this was capitalised by farmland owners to increase the value of their land and gain a better economic return. Due to these combined factors, a large amount of agricultural land was lost and converted to commercial, residential, and industrial uses.

In the early 1960s to late 1970s, Qatif expanded from 33 hectares to 71 hectares, and after the 1970s the biggest expansion took place, causing an increase from 71 hectares to 1,265 hectares. This increase was almost 17 times its original size and the city reached 270,166 people in 12 years. The transformation from a small village into a developing urban centre generated an understandable switch in the financial activities, moving from an ancient oasis that produced dates, fruits and vegetables to an oil-oriented economy. The oil-boom not only injected large amounts of money to the city but also started a process of progressive deterioration of the ecological systems, mainly affecting the coastal and agricultural areas.

In 1992, and as a response to the increased economic opportunities in Qatif, the area of the city doubled in size, from 1,265 hectares to 2,263 hectares in 10 years, with a population of 392,859 people. At that time, the city still had a high density, with 173 p/ha. Most of the new residents settled in the urban centre and the historical parts of the city, but satellite towns in the Northwest and Southwest of Qatif started to develop occupying historical agricultural sites. This second urban expansion process, through several land infills, encroached on the coastline destroying a large number of mangrove forests, damaging Qatif's marine ecology, and affected a high number of families that depended on fishing as their primary source of income.

Tarout Island suffered major modifications from these infills, transforming from an island to an archipelago, with 591 hectares of new land added and reclaimed from the sea. This expansion of the built-up area took place at the cost of agricultural land, the stock of which shrank from 1,103

POPULATION

474,000 *2010 Census

PROJECTED POPULATION BY 2018

650,092 Growth rate 4%

POPULATION DENSITY on built-up area

37.9 p/ha

AGE PROFILE

33% > 15

POPULATION GROWTH RATE

4.0 %

1,040,000 Expected population by 2030

QATIF CITY COMPARED TO BARCELONA

Population: 1,609,000
Area: 101.4 km²
Density: 160 p/ha



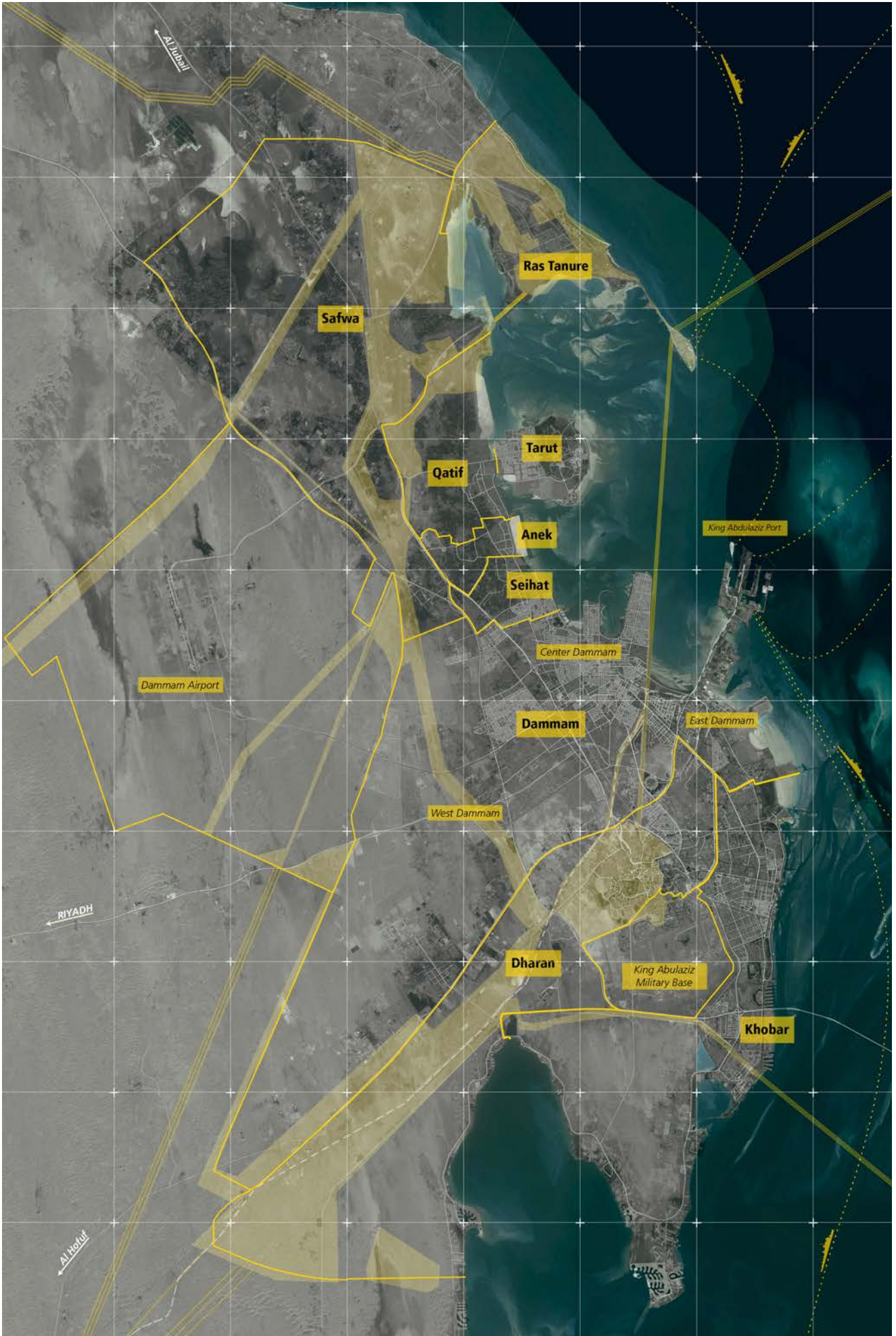


Fig. 24. Boundaries, neighborhoods and key infrastructure

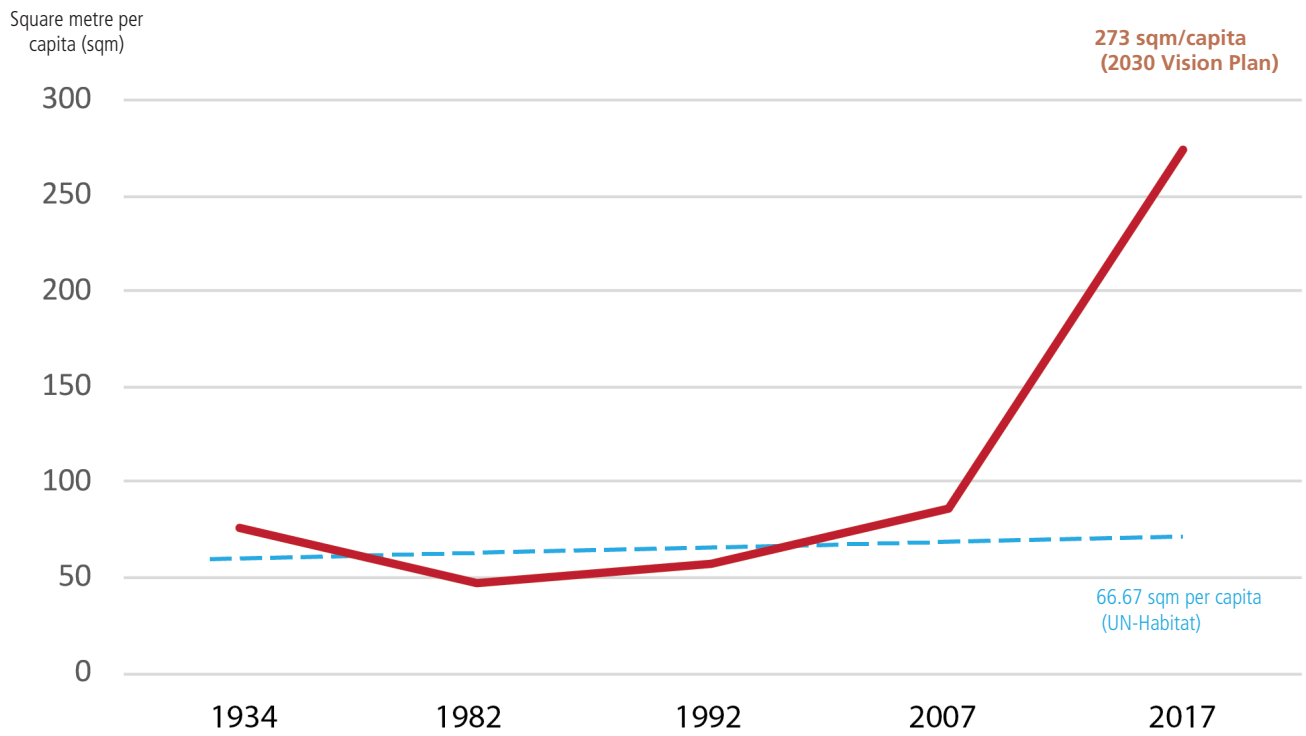
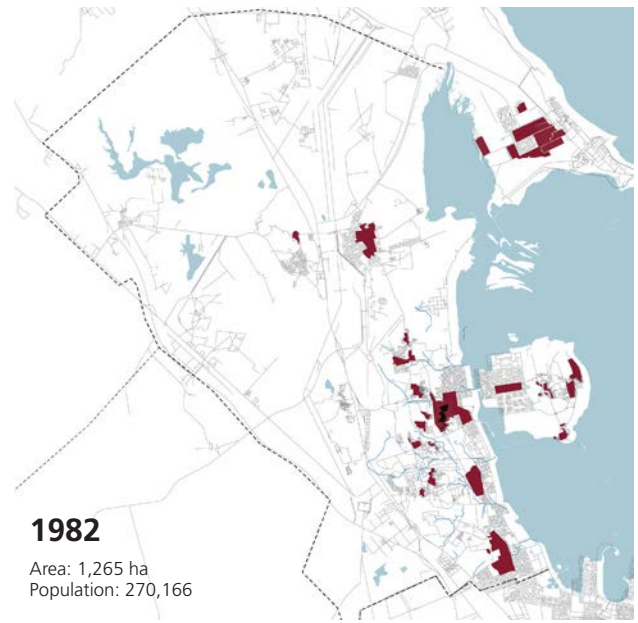
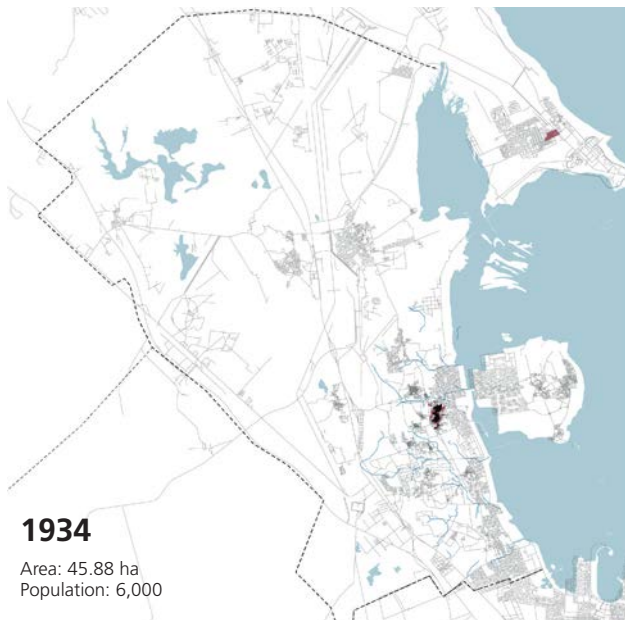


Fig. 25. Land allocated per capita

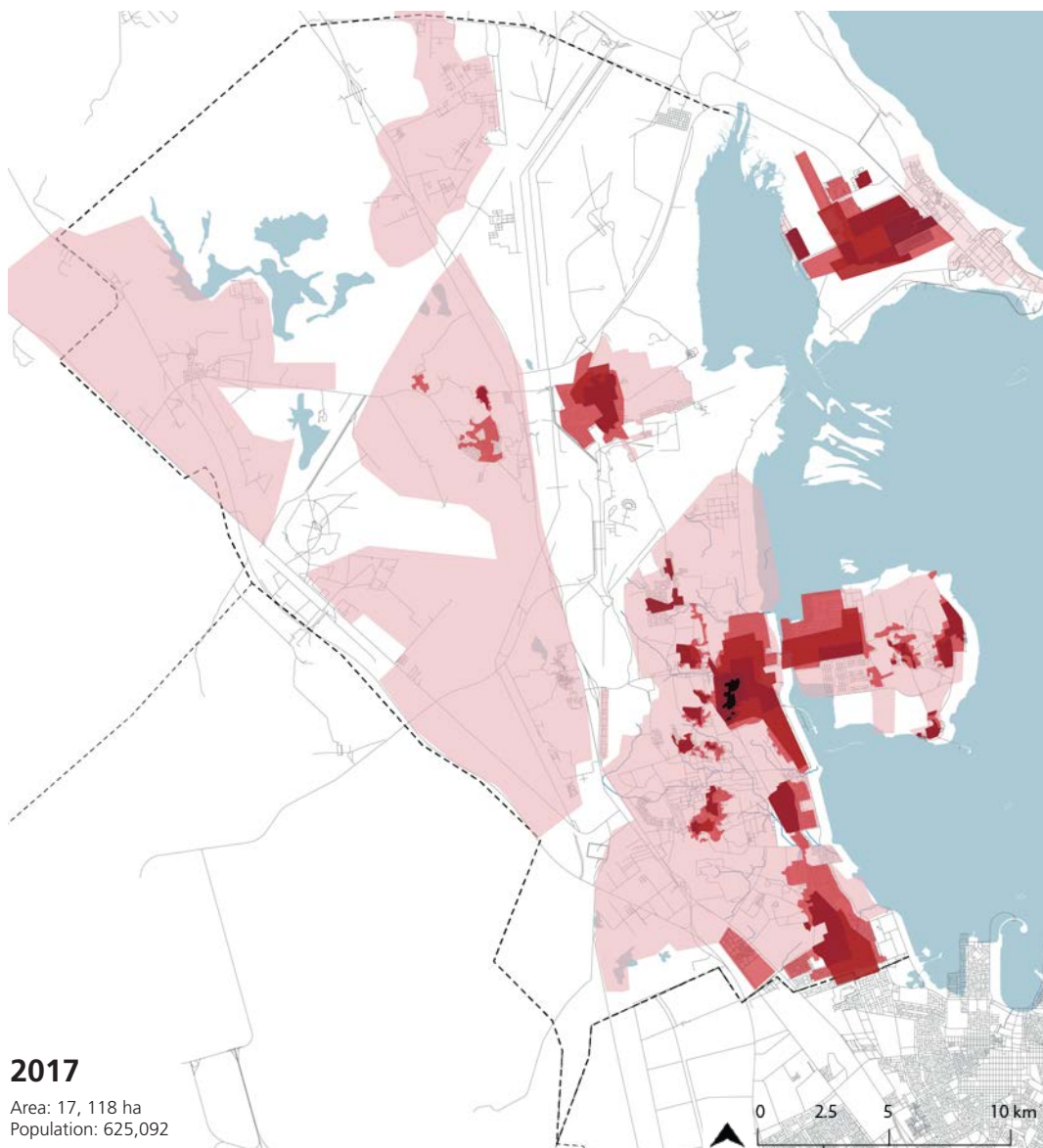
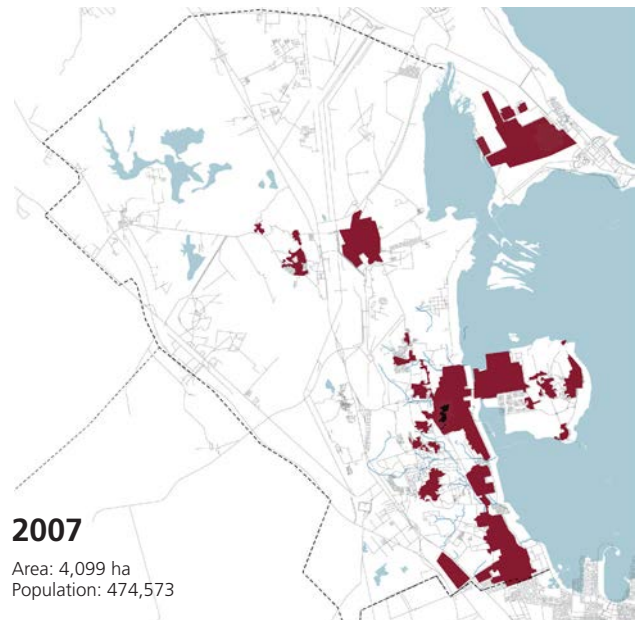
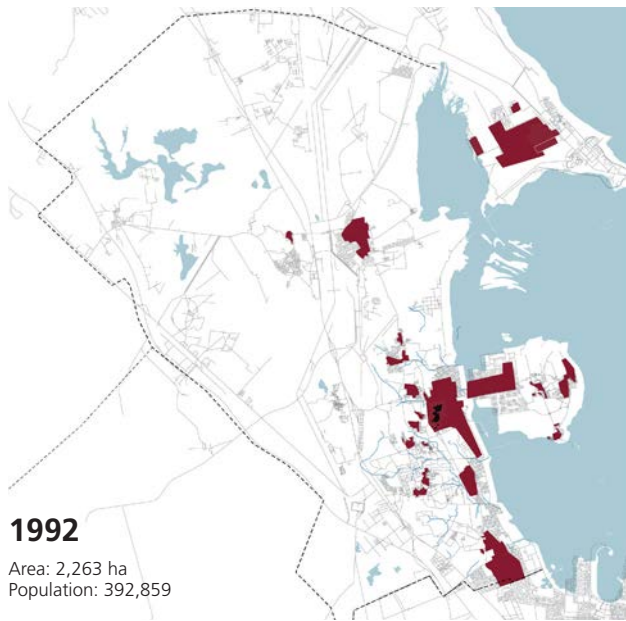


Fig. 26. Urban growth stages



hectares to 685 hectares, with a total loss of 418 hectares of agricultural land. However, the historical urban pattern of Tarout Island is still present and holds strong potential to be restored to attract tourism and contribute to local economic development.

In 2007, the area of Qatif with its different settlements had an extension of about 4,099 hectares for 474,573 inhabitants. By this time, most of the new towns along the coast consolidated into a continuous urban structure, and more satellite villages expanded in the North-West area of the city. The density was 115 p/ha, which for the Saudi context is considerably high. In the consecutive ten years, the city experienced the highest urban expansion in terms of area but not in terms of population, which dramatically decreased the overall density, and left large amounts of vacant land undeveloped within the expanding new urban footprint area. By the year 2017, Qatif's area was 17,118 hectares, three times more of what it was in 2007, while the population only increased by 152,000 inhabitants.

3.1.2 Administrative boundaries

As in many other Saudi Arabian cities, in early 1977, the Council of Ministers' Resolution No. 1170,(7) asked for the establishment of UGBs for towns and cities for the following 20 years. MoMRA and the Amanahs established these administrative boundaries with the aim of controlling urban sprawl and to better manage the territory, but like in most cases, Qatif boundaries were delimited without a

clear strategy to orient the future growth incrementally, and without adequate consideration of the environmental context of the territory.

The 1435 (UGB) for Qatif includes 61,915 hectares, a number that is far too generous compared to the actual size of Qatif's urban footprint, which only covers 17,118 hectares of land. Considering that within the built-up area there are still large amounts of available vacant land that can be developed, the 1435 UGB seems to be consistently over-dimensioned. According to MoMRA, the land within this boundary shall be subject to land subdivision without the request from the owner, provided that the land dedicated for roads and municipal services does not exceed 33%. The 1450 (UGB) includes 62,164 hectares that will be developed at a later stage, and according to MoMRA, the land within this phase shall not be subdivided prior to the enforcement date of this phase except for the main roads, which might be constructed without the owners' request. These conditions withstanding, an owner willing to subdivide his land within the second phase shall be responsible for servicing the land, with the installation of water, electricity, telephone networks, and the upgradation of streets, etc.

The Development Protection Boundary (DPB) is defined over an area of 482,000 hectares, including a variety of landscapes, parks, wadi, desert, dunes, and beaches. It is considered to be the largest metropolitan extent in terms of size in the Kingdom, as along with Qatif, it also includes the cities of Dammam, Dhahran, Safwa,



Fig. 27. Administrative boundaries



Vernacular architecture in Al Rabiayah



Al Khobar, and Ras Tanura, which forms the Greater Dammam Metropolitan Area. The DPB was delineated to prevent possible developments and subdivisions of private land located beyond the UGB until MoMRA proposed further directions and control mechanisms.

3.1.3 Urban density

According to the last official census in 2010 (1429H) and the annual population growth rate of 4%, Qatif hosts 650,000 inhabitants, distributed over an urban footprint occupying 17,118 hectares. As a result, the average density of the city is 38 p/ha, considering only those living within the existing built-up area. Compared to other Saudi cities that have followed a similar development pattern, Qatif can be considered to have a relatively high-density level, particularly in relation to its size and urban structure.

As in most Saudi Arabian cities, the highest population densities are located in the areas characterised by historical vernacular urban patterns. In Qatif, only 19.7% of the population lives in areas with densities higher than the UN-Habitat recommended density of 150 p/ha, this means that only 128,138 inhabitants are living in these areas. Only about 8.2% of the city achieves density levels between 100 to 149 p/ha.

Qatif's urban form is mostly fragmented, with many detached

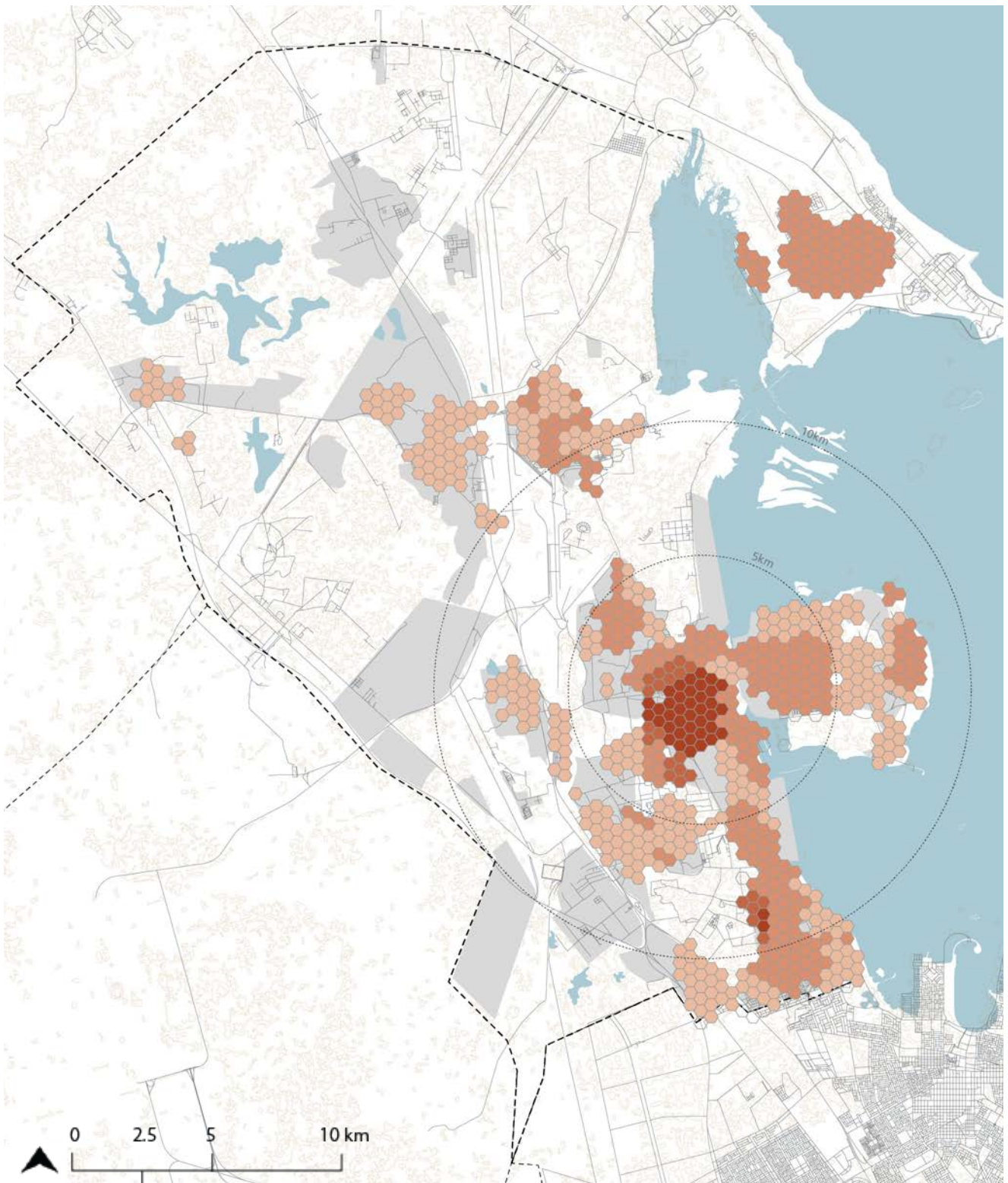
patches, which makes it difficult to consolidate a continuous, high-density, and compact urban structure. In these areas, detached from the footprint, the density decreases to below 50 p/ha. Dwellers inhabiting these areas represent 33.4% of Qatif's total population.

The largest amount of population, equivalent to 38.7% of the total population lives in areas with a density ranging from 50 to 99 p/ha, which is comparatively high for any Saudi Arabian city. These medium-density areas, hosting 252,130 inhabitants, are adjacent to the main urban cores, within the existing footprint, creating a relatively continuous urban structure.

In conclusion, the density number in Qatif is mainly affected in a negative manner, by the new residential developments ongoing at the coast and at the city's periphery, which cause urban sprawl and by the large amount of vacant land within the urban footprint (6,679 ha) that is still not developed. Qatif needs to promote policies that aim to intensify the population numbers within the existing areas of the city, rather than allowing the construction of new developments along the coast and outside the built-up area.



High density buildings in Greater Dammam



Residents:
650, 092
 Average population density:
37.9 p/ha

- 0-49 p/ha
- 50-99 p/ha
- 100-149 p/ha
- 150-207 p/ha

Fig. 28. Current distribution of population density



3.1.4 Existing and proposed land use

The 1938 oil-boom in the Eastern Region boosted a rapid change in the major economic and productive activities sustaining the coastal cities of the Kingdom. Qatif was a historic oasis depending primarily on agriculture and fishing; therefore, most of the available fertile land was devoted to farming. With the discovery of the ample fossil reserves, many hectares of the territory was designated as ARAMCO protection zones, fragmenting the territory and destroying many agricultural fields.

The switch to an oil-oriented economy generated a high demand for housing. Therefore, large areas originally designated to agriculture land use were changed to other uses, from industrial and services to mostly residential land use. As a result of these development policies, an imbalance in the proportion of residential use exists, and this covers 35.9% of the current footprint or 6,145 hectares. Most of these residential areas have low-density, that can potentially be increased in order to re-distribute the land use across the city.

Commercial and mixed land use only constitute 4.1% of the total built-up area. Most of the land is designated as single use, allowing very limited interaction between sectors. This presents a ratio that is significantly lower than UN-Habitat’s recommended 40% mixed-use, with a negative impact on job creation and distribution, affecting the local economy and the financial dynamics of the city.

Despite the oil sector boom, agriculture is still the major economic activity in Qatif. Approximately 16.9% or 2,892 hectares of land within the urban footprint is used for farming activities, producing mostly dates, olives, and minor productions of vegetables and fruits. The farming activity still generates significant revenues and employment and would require protection to the land use against indiscriminate urban expansions. It is worth mentioning that Saudi Arabia currently imports most of its food stock, while some of its needs could be fulfilled locally through promoting and investing in sustainable agriculture.

The industrial land use represents only 5.5% of total land use in the city, occupying 941 hectares, this does not include the oil-related ARAMCO Reserves (ARAMCO owned land), which includes pipelines, oil wells, and vacant land. Industries in Qatif are mainly situated on Tarout Island, in An Nabiyah (South of the city), as well as in the North, in Ras Tanura, where the biggest refinery is located.

The above-mentioned imbalance in land use distribution continues to manifest in the most recent approved land use plan for the city. For instance, the amount of land dedicated to residential land use increased to 70%, which is more than double the new city’s footprint, whereas the industrial and mixed land use substantially decreased in comparison to the current figure. This is mostly due to the widespread preference

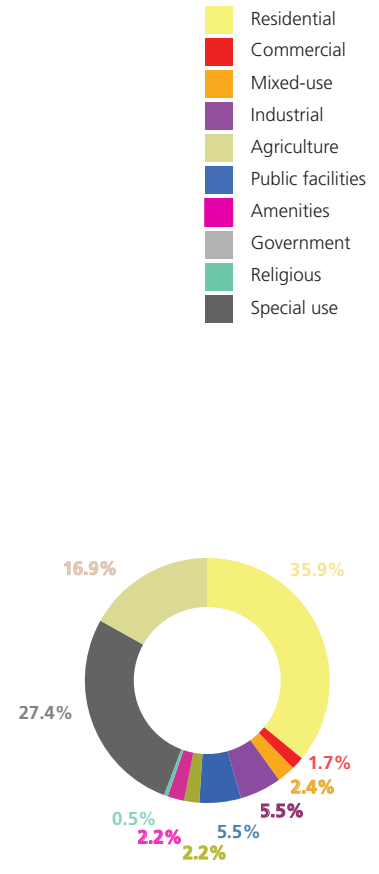
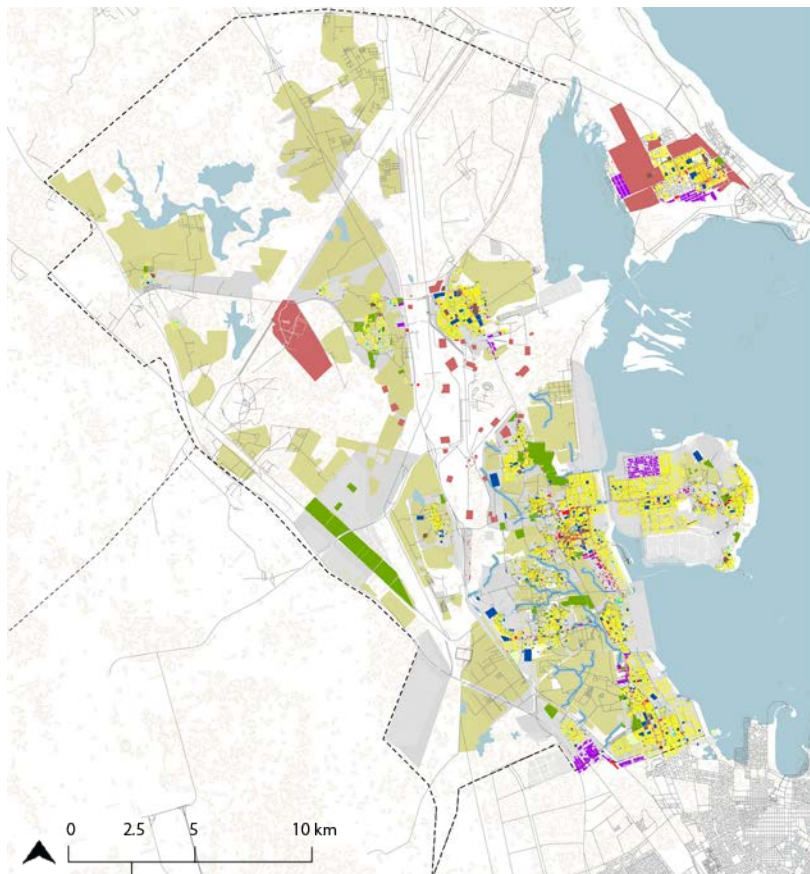


Fig. 29. Existing land use



for low-rise villa-type dwellings, which utilises more land for housing purposes than what would otherwise be necessary, promoting an urban pattern that is highly unsuitable for a rapidly urbanising town.

This means that the city is dangerously moving towards prevailing monofunctional urban patterns. These patterns, characterised by low-density residential land use, carry extensive cost implications for public infrastructure, increase car-dependency, therefore traffic, as well as spatial fragmentation.

In summary, the current tendency and development direction for Qatif is indicative of a movement towards consolidating a low-density, fragmented, and disperse urban form, with prevailing monofunctional land use. An alternative Land Use Plan is needed to promote a more vibrant, accessible, and prosperous city, creating a balance between the natural resources available in the region and the major economic activities that sustain the metropolis.

The Land-Use Plan for Qatif could be improved via a more balanced approach that would typically imply:

- Diversified land use, increasing the land for commercial and industrial uses;
- Development of economic nodes and corridors;

- Strengthened urban-rural linkages;
- Preservation of agricultural land and development of a strategy to manage it sustainably;
- Prioritised infill development on vacant land;
- Incremental densification and promotion of mixed-use development;
- Allocation of sufficient land use for open public space and parks.

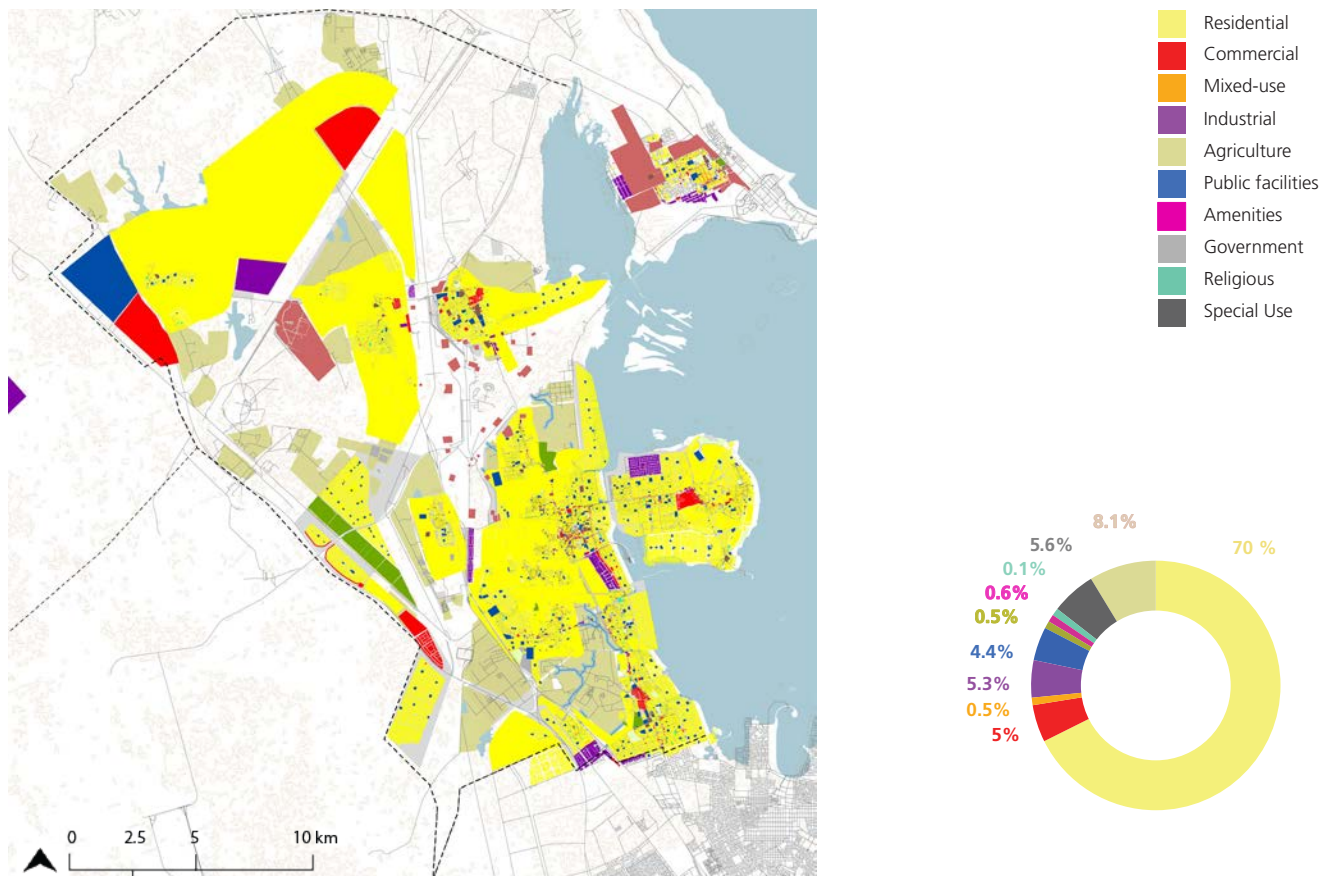


Fig. 30. Proposed land use in The Qatif Plan by the Amanah



3.1.5 Vacant land

Land is an important economic resource if used efficiently as it represents an opportunity for economic growth and rehabilitation of different degraded urban areas. Qatif's urban form is quite scattered and connoted by a large amount of vacant land within the existing footprint, and even more when considering the 1450 UGB. The total amount of vacant land in Qatif is 32,107 hectares, representing 51.6% of the total territory within the 1450 UGB. This means that more than half of the municipal area is not developed.

The total amount of vacant land located inside the existing urban footprint is 6,679 hectares. A large part of this is located on Tarout Island, which is currently under development and holds the potential to become an important tourist attraction and a new important economic centre of activity in the city, with the already existing in Qatif.

The available vacant land within the footprint has many the potentials to be developed increasing residential density and commercial activities, consolidating the existing neighbourhoods of the city, re-activating them by shaping a vibrant and sustainable urban environment, that supports more efficient use of the existing infrastructure.

Most of the existing vacant land in Qatif is privately owned, and there is not much public land available for development. This means that policies oriented to boost new developments

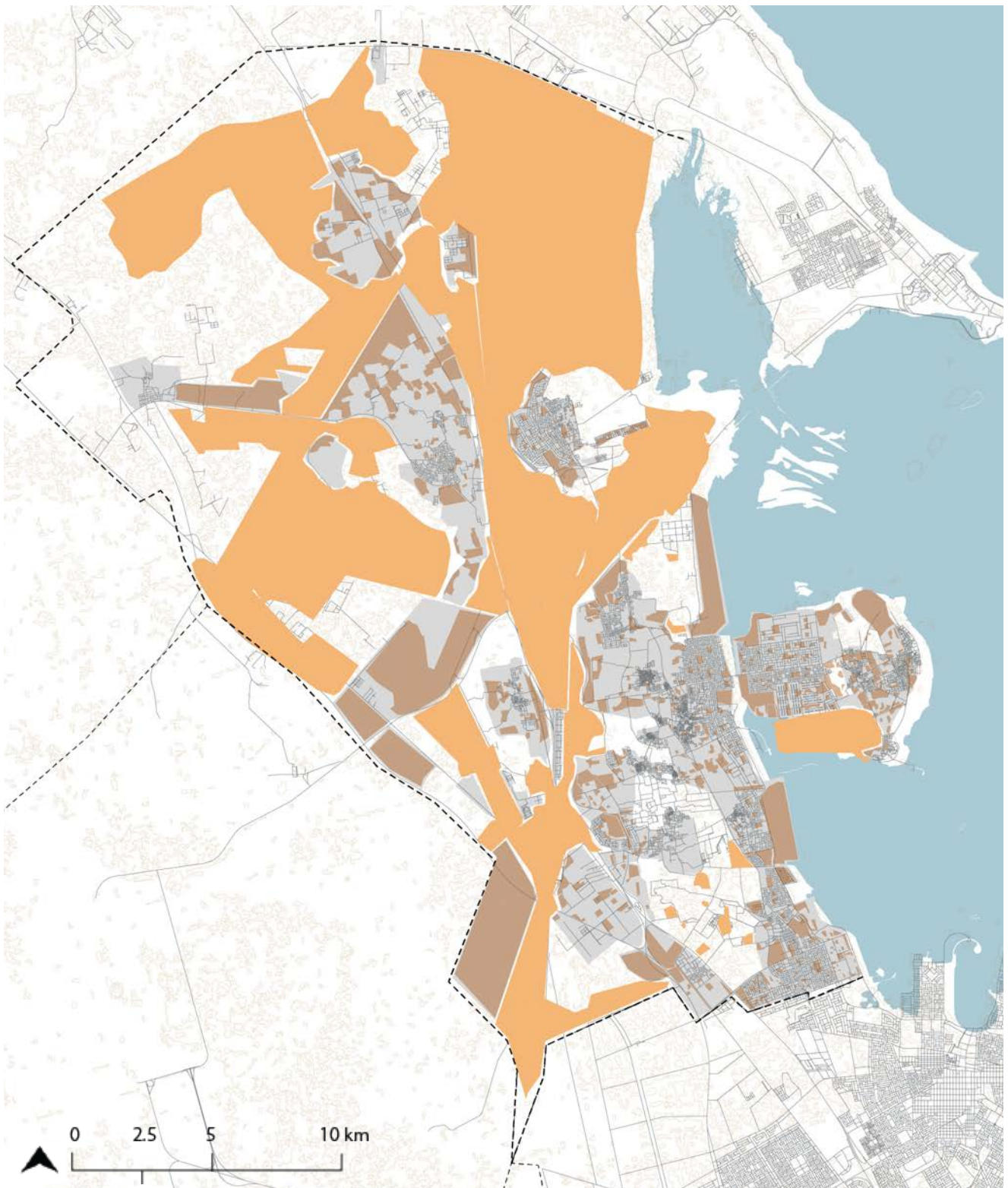
inside the existing footprint, rather than on the urban fringes, should leverage financial incentives and taxation systems to encourage and promote private sector contribution to the city's densification.

The analysis shows that there are substantial opportunities for new development within the existing built-up area. The utilisation of these well-located land portions in an integrated development approach could yield substantial benefits in the future. The correct, strategic development of available vacant land within the urban footprint is critical for overall economic growth and is key to regenerate abandoned or degraded areas. As such, Qatif needs to promote more "infill" policies rather than allow more land reclamation for new developments on the coast.

The 6,679 hectares of vacant land allocated within the urban footprint added to the 25,428 hectares of vacant land outside the built-up area, conform 51.64% of the total land within the 1450 Urban Growth Boundary. This represents that, more than half of the territory of Qatif its vacant, which decreases the numbers of population density and the infrastructure efficiency of the city.

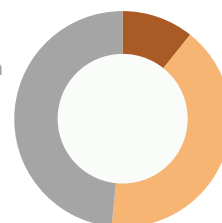


Vacant land in the city's outskirts



- Built-up area
- Vacant land within the built-up area
- Undeveloped land within 1450 UGB

30,457 ha
Area within 1450 UGB



10.7% 6,679 ha
Vacant land within built-up area

40.9% 25,428 ha
Undeveloped land within 1450 UGB

Fig. 31. Vacant land and undeveloped area



3.1.6 ARAMCO owned land

Owning 16,094 hectares of land, ARAMCO is considered to be a major actor in Qatif and to its future urban development. There are many oil wells and pipelines disseminated across the oasis. In order to protect the wells, and ensure their smooth operation, large tracts of land have been allocated to ARAMCO, and are known as the "ARAMCO Reserve." This land is not available for any development, resulting in an overall shortage of land for urban development purposes.

The ARAMCO owned land is located in a central area of the city, cutting through and dividing the territory into two parts; therefore, preventing a compact and contiguous urban expansion of Qatif. This non-developable land pertaining to ARAMCO has induced fragmented expansion and indirectly generated urban sprawl across the city with the rise of peri-urban villages. Even though these villages are connected by road and are accessible by car, they are segregated from the main urban cores because of the positioning of ARAMCO land.

As 26% of the total territory is privately owned, the private sector plays an influential role in the shaping of the city, possibly greater than the Municipal planning department's role. This allowed it to impose projects, such as expanding large urban developments onto the coast by land-filling, causing massive mangrove loss and other negative environmental impacts on the marine ecology, with no sanctions.

Despite the existing low-density, new developments spreading towards the city's outskirts, substantial private sector investments have been directed towards buying cheap land outside the urban footprint, and in the vicinity of ARAMCO land. Since the White Lands Tax is fairly recent in targeting undeveloped vacant land, the private sector actors buy land without immediate plans for developing it and hold the land while the value appreciates.

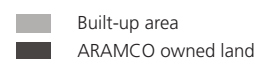
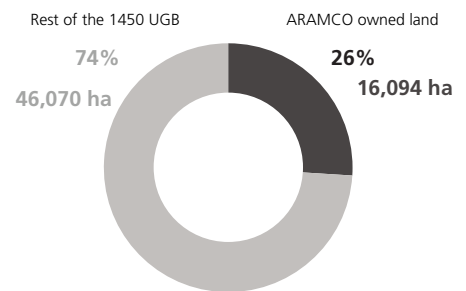
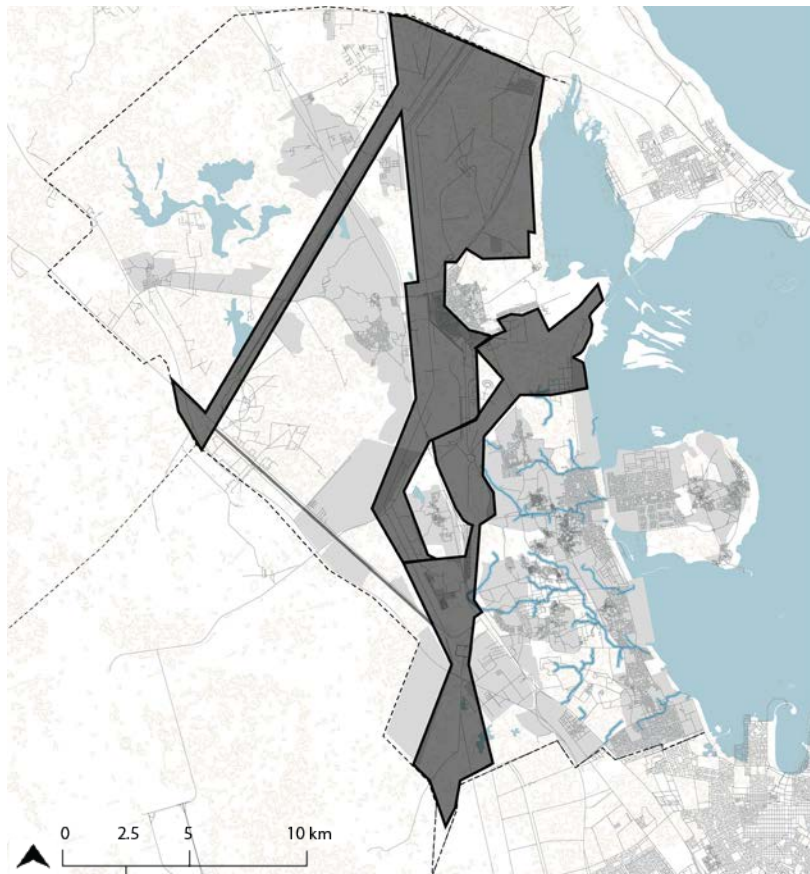
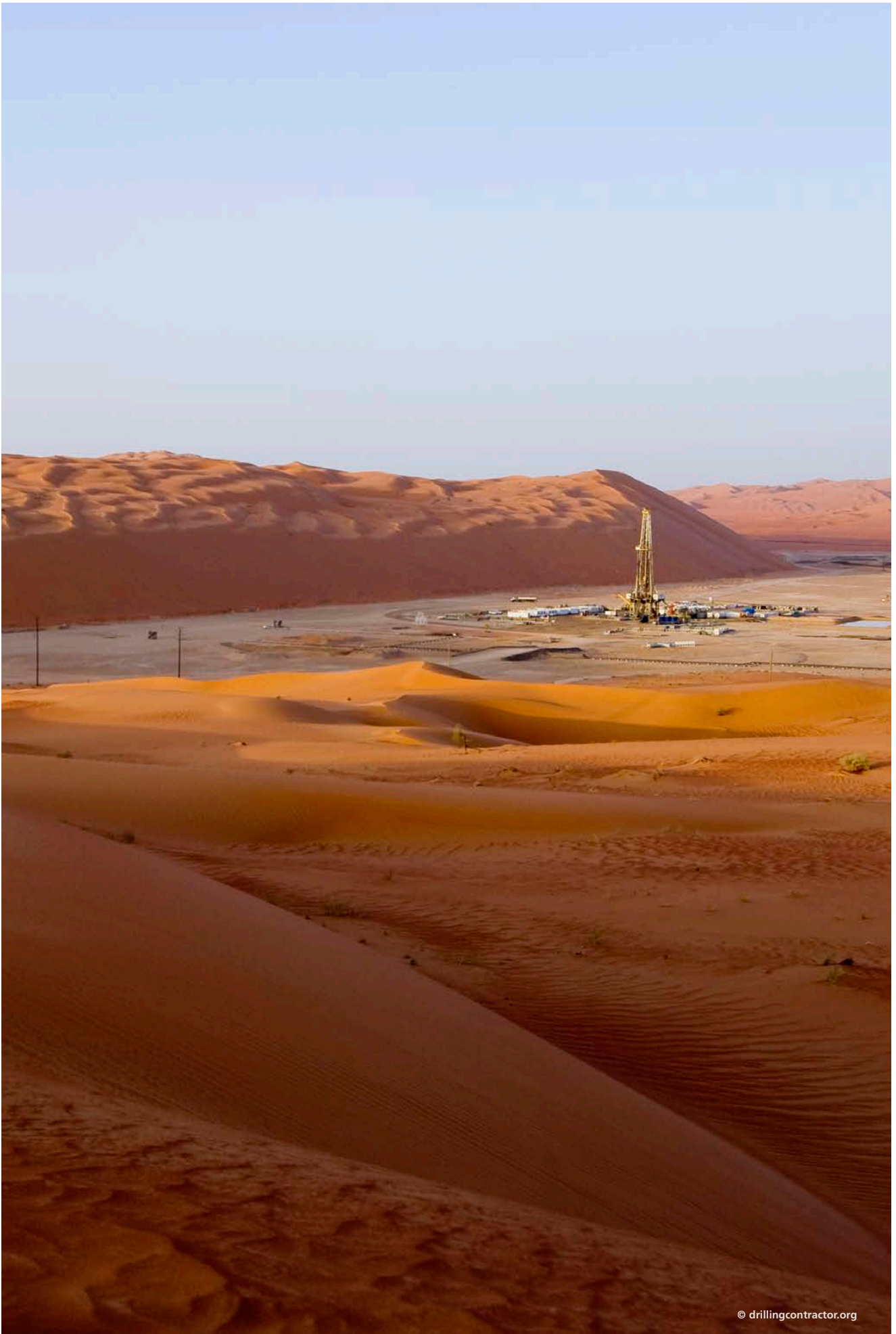


Fig. 32. ARAMCO owned land



© drillingcontractor.org

ARAMCO reserve land in Greater Dammam Metropolitan Area



3.2 Structuring Elements

3.2.1 Major infrastructure and economic nodes

Within the NSS, Qatif is considered a Regional Growth Centre, forming part of a more significant development corridor in the Eastern Region, which starts with Safwa in the South and passes through Al Khobar, Dharan, Dammam, towards Qatif, Ras Tanura, Jubail, and Khafji, in the Northeast of the Kingdom.

Qatif is strategically located within this corridor as it is in close proximity to important natural resources, such as agricultural land, water bodies, oil reserves, and the sea. Its geographical location being situated North of Dammam, the biggest city of the region, and South of Ras Tanura, where the largest oil refinery is situated, gives Qatif an opportunity to benefit from functional relations with these economic areas.

Oil and agriculture are the major economic sectors in the area, and the infrastructure built in Qatif was planned to serve both, although the urban/industrial development benefited more than the rural sector. After the oil boom, there was effort put into the construction of new major roads and highways connecting areas devoted to oil exploration, oil extraction, processing, storage, and distribution. The development of secondary and local roads and the provisions of electricity,

water, and telephone networks followed in an organic manner, and the combination improved the quality of life in the rural settlements, while at the same time exposing agricultural fields to the pressures of urban development. As a result, the overall road network and basic infrastructure are well-developed.

Concerning public transport, Qatif has proposed a Public Transport Plan that is part of the Metropolitan Public Transport Network of Dammam. The plan proposes a link between Qatif and the Dammam Metropolitan Area by the Light Rail Line-1, with 50 kilometres, and eight stops serving 100,000 inhabitants, with a catchment area of 15.3% of the city's territory.

In terms of air connectivity, the city is served by the King Fahd International Airport, located in the outskirts of Dammam, which is one of the biggest airports in the world in terms of area, and connects the city globally, as well as with the major cities in the Kingdom. There is also a seaport, located in Tarout Island, that although is of modest dimension, attracts catches from all the ports in the Arabian Gulf.



Qatif fish market

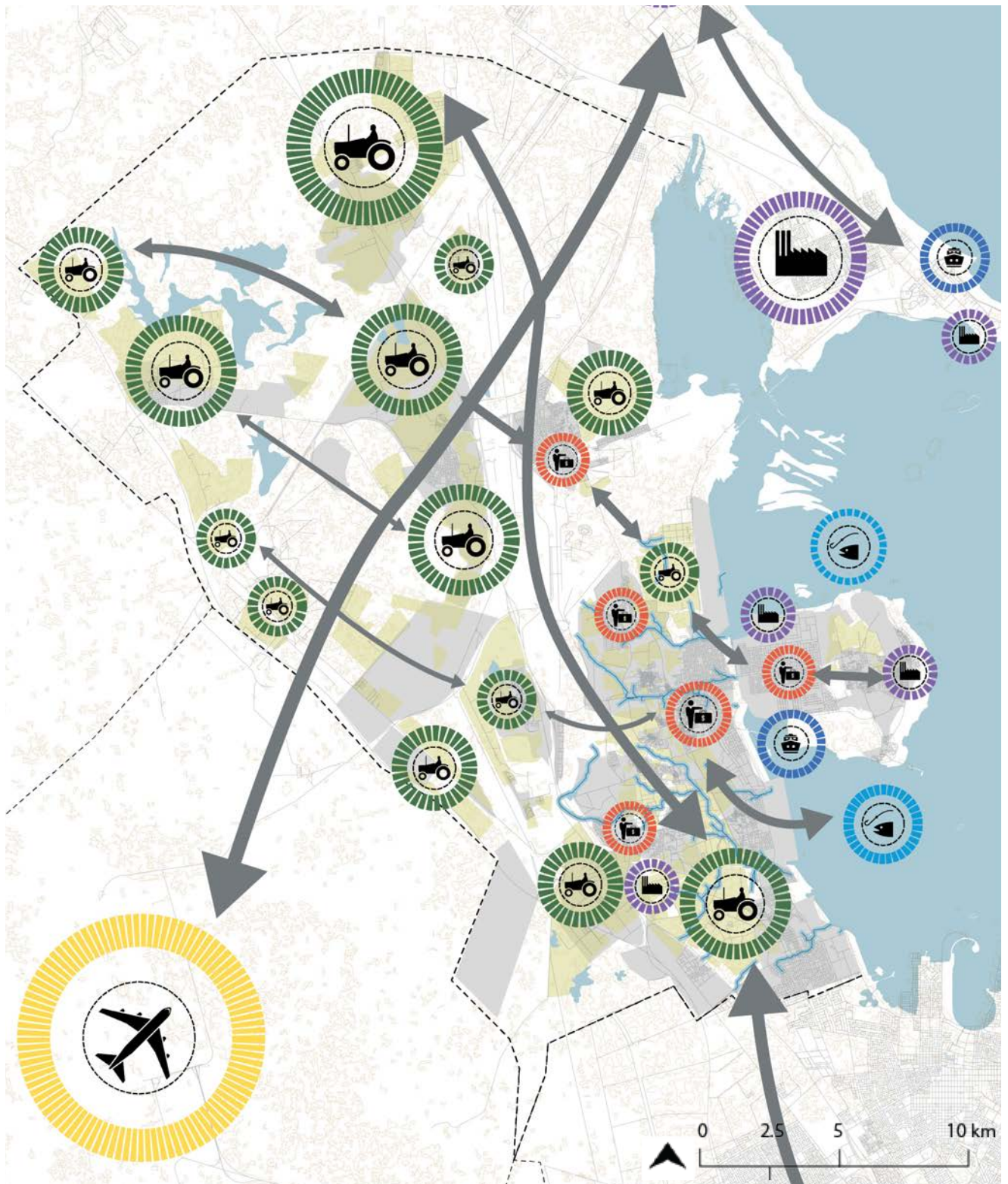


Fig. 33. Economic nodes and network



3.2.2 Natural and topographic elements

Qatif consists of low-lying coastal plains, and the soil is composed of dolomitic limestone covered with layers of sand, silt, clay, and sandy limestone, also known as Neogene Layers. The land surface rises from the East to West to a summit of 10 to 12 metres inland.

Qatif, as an oasis, is large and the only comparable oasis in the KSA is Al-Asfa, also in the Eastern Region. Due to the discovery of underground fossil reserves, which began in 1938, Qatif underwent a progressive transformation of its characteristic and socio-ecological environment as it moved from an agricultural economy to a more oil-based one. This change kickstarted a process that resulted in the loss of a high number of agricultural fields causing damage to the natural environment.

Water and agricultural land are the two main natural elements of Qatif. These elements contribute to the blue and green network, which supports diverse economic activity in the region and have an important social and environmental role in the territory, and the city. These networks include the wadi system, and the floodplains and aquifers, dunes, desert, agricultural land, coastal areas, mangrove forests, protected areas, green urban areas, and parks.

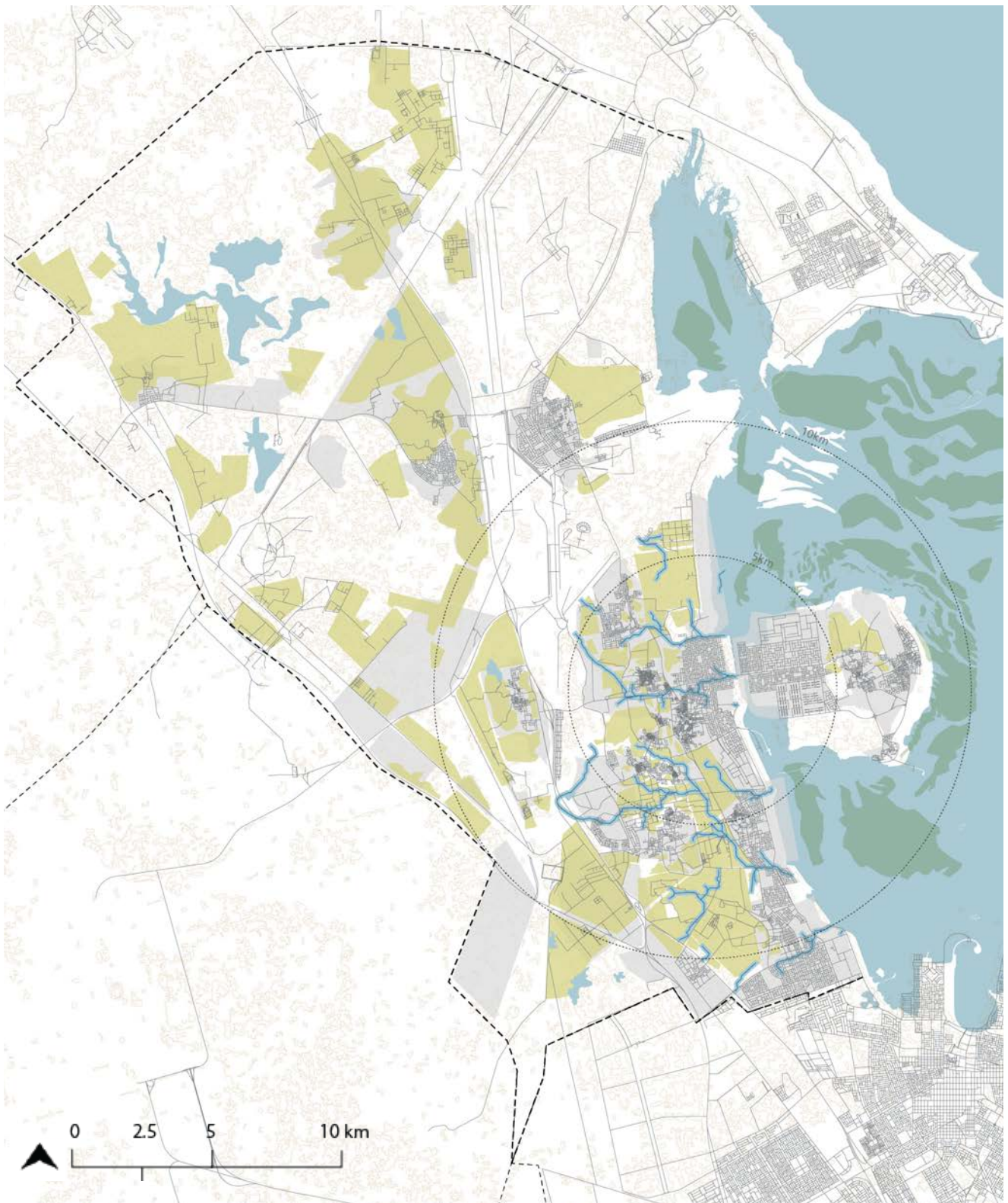
Although the entire 1,103 hectares of farming land was lost between 1935 and 1993, Qatif has maintained 14,201 hectares of its agricultural areas. These farms mainly produce dates, alfalfa, fruits, tomatoes, and other vegetables that depend on inland aquifers. According to an analysis carried out for Qatif, the water resources face serious risk due to the oil industry pollution and lack of a clear strategy to manage existing aquifers in the city.

In Qatif, the urban-rural linkage should be strengthened in order to maintain the agricultural contribution to the economic sector. This can be done using policies aimed at protecting the existing farmland from encroachment and land speculation. There are several hectares of green land located inside the urban footprint of the city that can be linked and used to create a green system of public spaces and urban agriculture, thus, creating a link with the coastal environment and inland agricultural fields.



Vegetables farming within the urban footprint

© wikimedia.org



- Water bodies
- Wadis
- Built-up area
- Agricultural land
- Mangroves

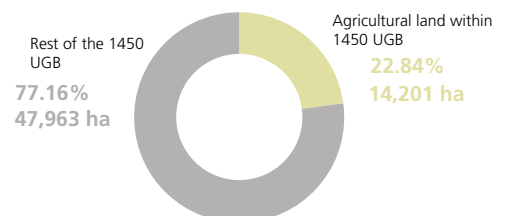


Fig. 34. Agricultural land



3.2.3 Historic and vernacular areas

Qatif is one of the oldest coastal settlements of the KSA. Its foundation dates back to 3,500 BC also known as the bronze age. The few remains of castles, citadels, ancient ruins and cemeteries are an example of the deep historical roots of Qatif. Currently, only 612 hectares of the original walled city maintains the old, rich, and organic urban pattern.

To better understand the transformation of Qatif and its historical parts, the city can be subdivided into four constituent sectors using unique geographical and socio-economic characteristics. These are: (1) Tarout Island; (2) the Coastal Settlements, consisting of Qatif, Anak, and Saihat; (3) the Central Oasis, consisting of 11 settlements; and (4) the Oasis Frontier, consisting of six settlements located between the Jubail - Dammam Highway and Abu Hadria Highway.

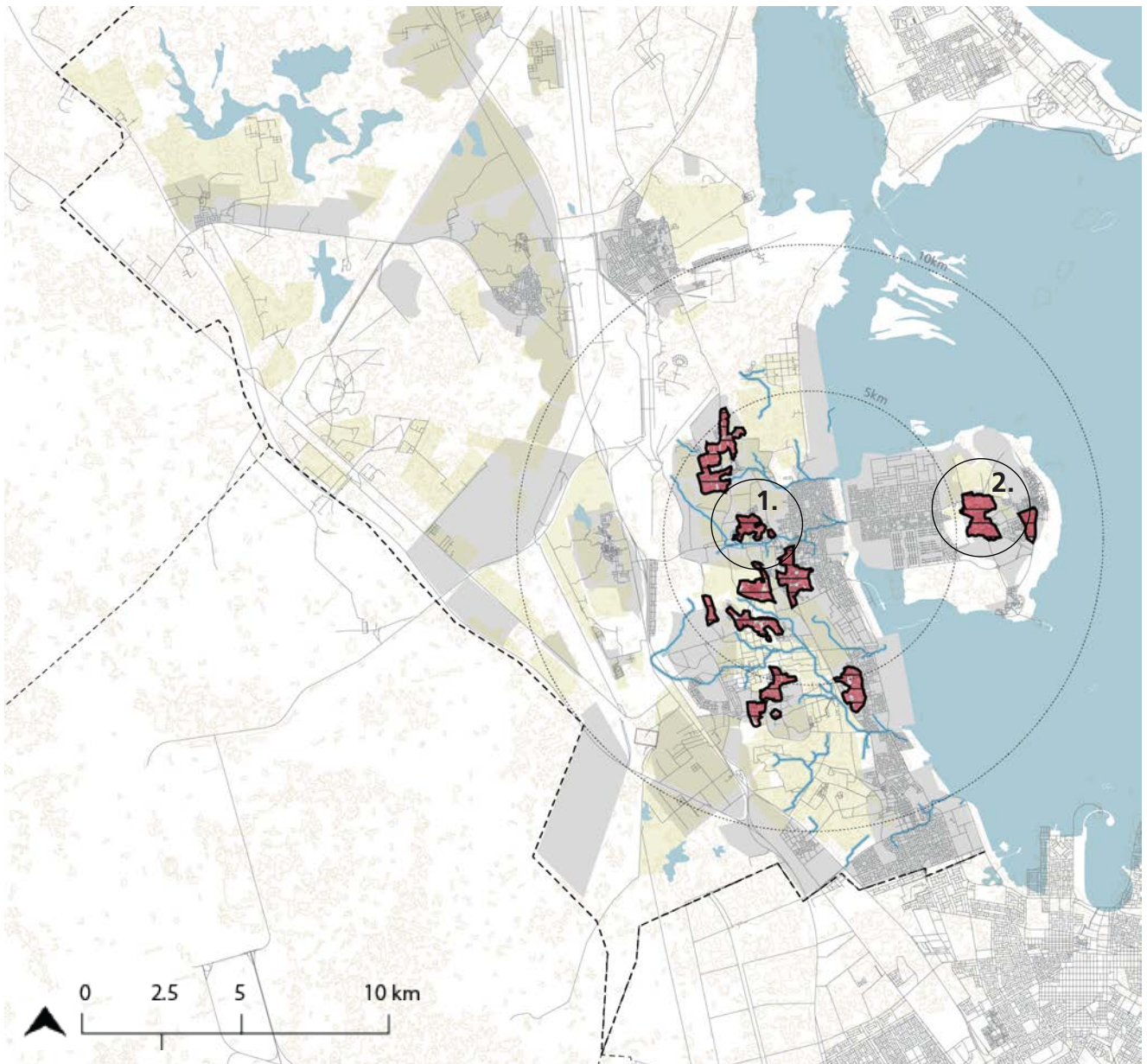
Historically, Tarout Island hosted different ancient civilisations and castles that date back to 3000 B.C. The surrounding agricultural areas and mangrove forests are at risk of disappearing due to urban expansion and land infill projects. The Tarout Castle, which is in good condition is one of the most relevant historic structures and, if restored and reactivated could become a primary tourist attraction. Unfortunately, many valuable historic buildings and vernacular areas across the island are being demolished.

The central oasis is where most of the historical and vernacular areas of the city are located. It is formed by ten settlements, which are Safwa, Awamiyah, Al-Qudaih, At-Tobi, Khwaildiah, Jarudiah, Hillat Muhaish, Umm Al Hammam, Al-Mallaha, and Al Jish. Other than Safwa, all the other settlements are within a 2 to 10 kilometres radius from Qatif City. These settlements have agricultural origins and are still surrounded by date palm gardens.

Historical areas represent 4% of the urban footprint of the city, and 21.8% of residents inhabit them. The issue of their restoration and upgrading should be addressed urgently as they are inhabited, and this can be done via policies directed to protect and restore these areas, improving quality of life, services, and buildings conditions.



Ancient walled city of Qatif



■ Historic / vernacular neighbourhoods



Most of the historical parts of the city are surrounded by agricultural land and green spaces



Tarout Island has one of the ancient sites in Qatif and the heritage buildings

Fig. 35. Historic and vernacular areas



3.2.4 Accessibility analysis and movement structure

Qatif has good road infrastructure that is used to connect the inner city with the Metropolitan Area, although it appears that the city's development has been dominated by car-oriented policies rather than investments in alternative transit and pedestrian friendly options.

Walkability to Commercial Centres

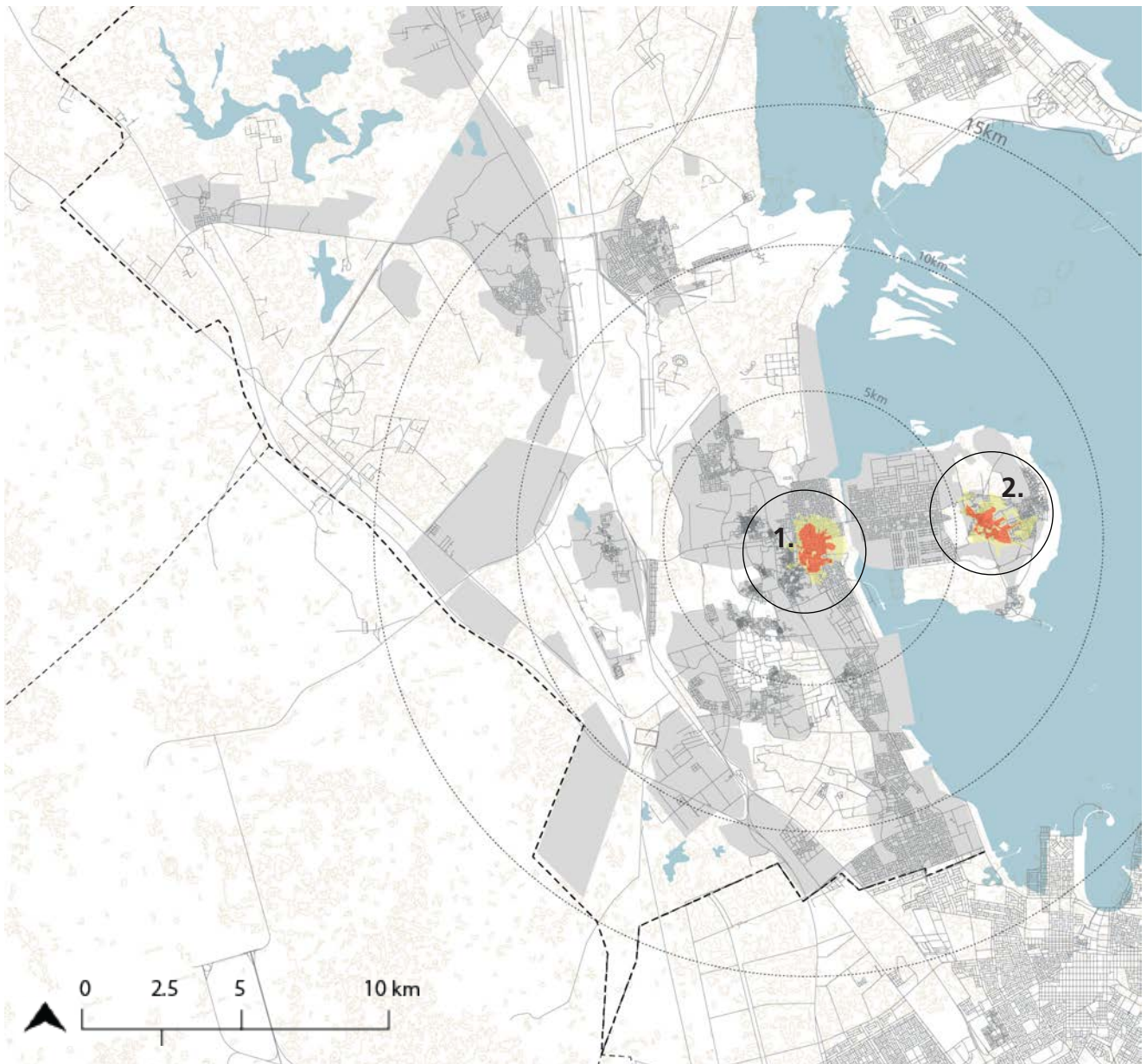
12.2% of the total population, or 79,447 people, can access the centre of Qatif by walking, providing access to shops, public services, schools, hospitals, and markets. In the case of Tarout Island, only 7,170 inhabitants, which represent 1.1% of the total population, have access to the closest urban core, within a 10-minute walking distance. This figure represents a lower performance compared to the centre of Qatif and other Saudi Arabian cities.

An important difference between the centre of Qatif and Tarout Island is the distribution pattern for mixed-use. Tarout Island performs mostly as a monofunctional area while Qatif has a mixed-use centre, and another noticeable difference is reflected in their diverse urban character and vibrancy. While Qatif has a higher density, ranging between 150 to 200 p/ha, Tarout centre presents an average density of 50 p/ha. In future plans, Qatif municipality needs to foster intensification and diversification of uses and residential densification, especially on Tarout Island.

Apart from these two main urban cores of activity, Qatif lacks a clear hierarchy of roads and adequate levels of street networks that would support not only vehicular traffic and public transport but also pedestrian and cyclists. This is particularly true in the city's outskirts, where circulation planning was focused on the automobile, and there are no public transport project plans to connect peripheral areas to the city's centres.



Qatif City in early 1950's still surrounded by the oasis



■ 5-minute walking distance
■ 10-minute walking distance



5-minute walking distance - 31, 281 p (4.8%)
10-minute walking distance -- 79, 447 p (12%)



5-minute walking distance - 3, 475 p (0.4%)
10-minute walking distance- 7, 170 p (1.0%)

Fig. 36. Walking accessibility to the city centres



Walkability to Public Facilities

Accessibility to public facilities in a city helps to assess the quality of life of inhabitants. An inclusive city should offer equal access to services and opportunities to every inhabitant, excluding no one.

In Qatif, access levels to public facilities, such as education and health prove that the city is accessible to the majority of the population. The analysis indicates that 79.7% of the population have access to education facilities, (primary and secondary schools) within a 10-minute walking distance. Access to health facilities in Qatif is reasonably high, with 58.29% of the population in the city being able to access one within a 10-minute walking distance. The considered health facilities include hospitals, healthcare clinics, Red Crescent, and other specialised hospitals in Qatif. The coverage distribution pattern highlights the densest areas of the city and their high levels of access to public facilities which results in a reduction of costs per capita for the municipality. Overall, the accessibility analysis shows that Qatif performs well in terms of accessibility to public facilities, although walkable access to commercial areas and production centres is limited.



© Eurosynapses

Al Mousawat Hospital in Qatif

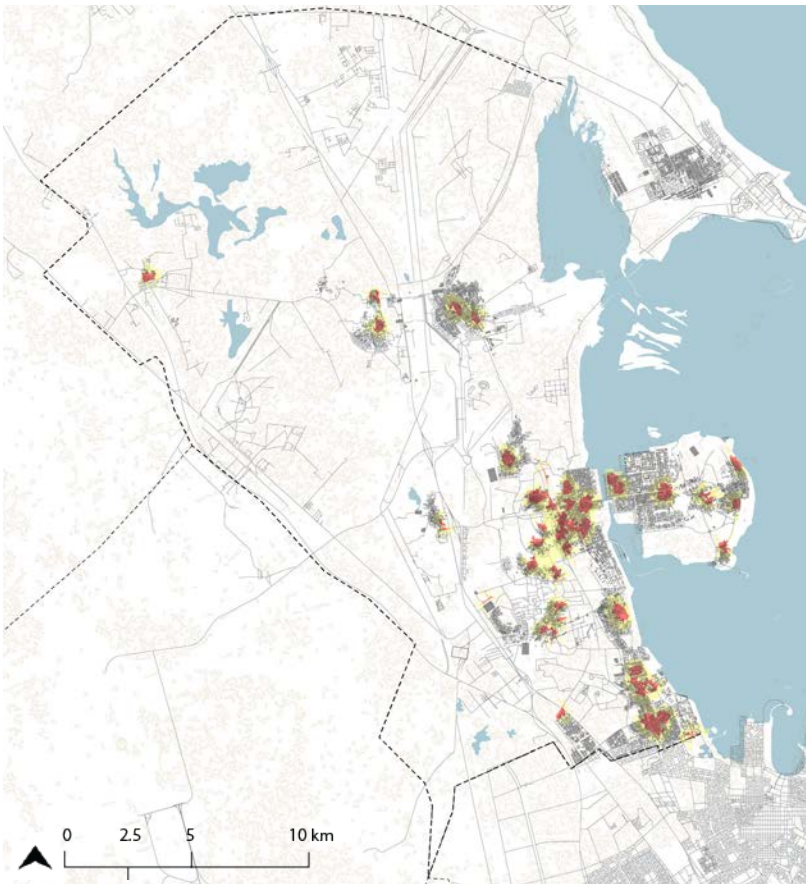
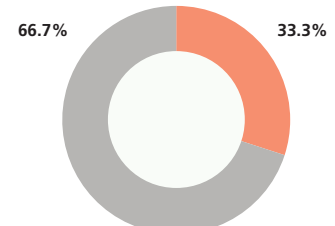
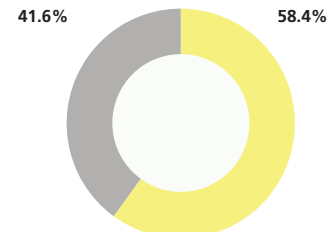


Fig. 37. Walking accessibility to health facilities



Health accessibility within 5-minute walking distance



Health accessibility within 10-minute walking distance

- 5-minute walking accessibility
- 10-minute walking accessibility

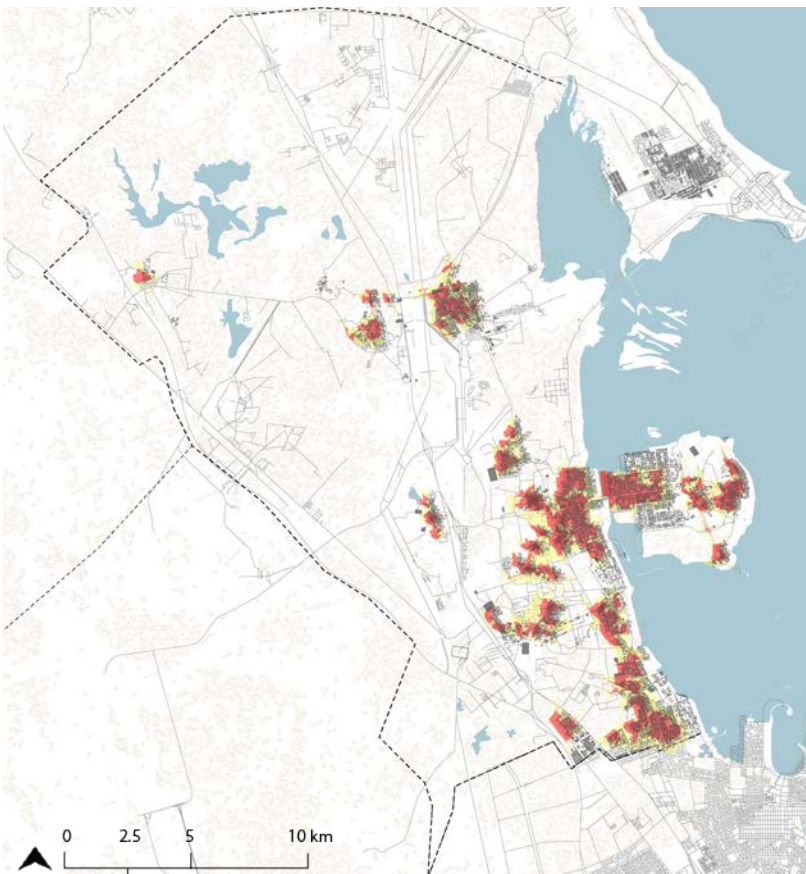
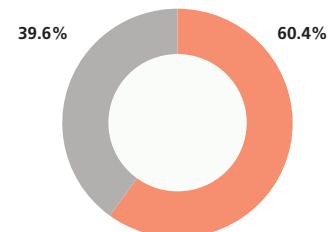
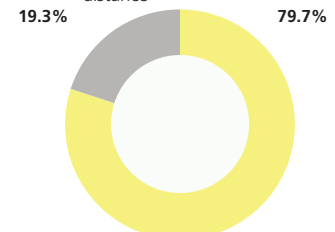


Fig. 38. Walking accessibility to education facilities



Education accessibility within 5-minute walking distance



Education accessibility within 10-minute walking distance

- 5-minute walking accessibility
- 10-minute walking accessibility



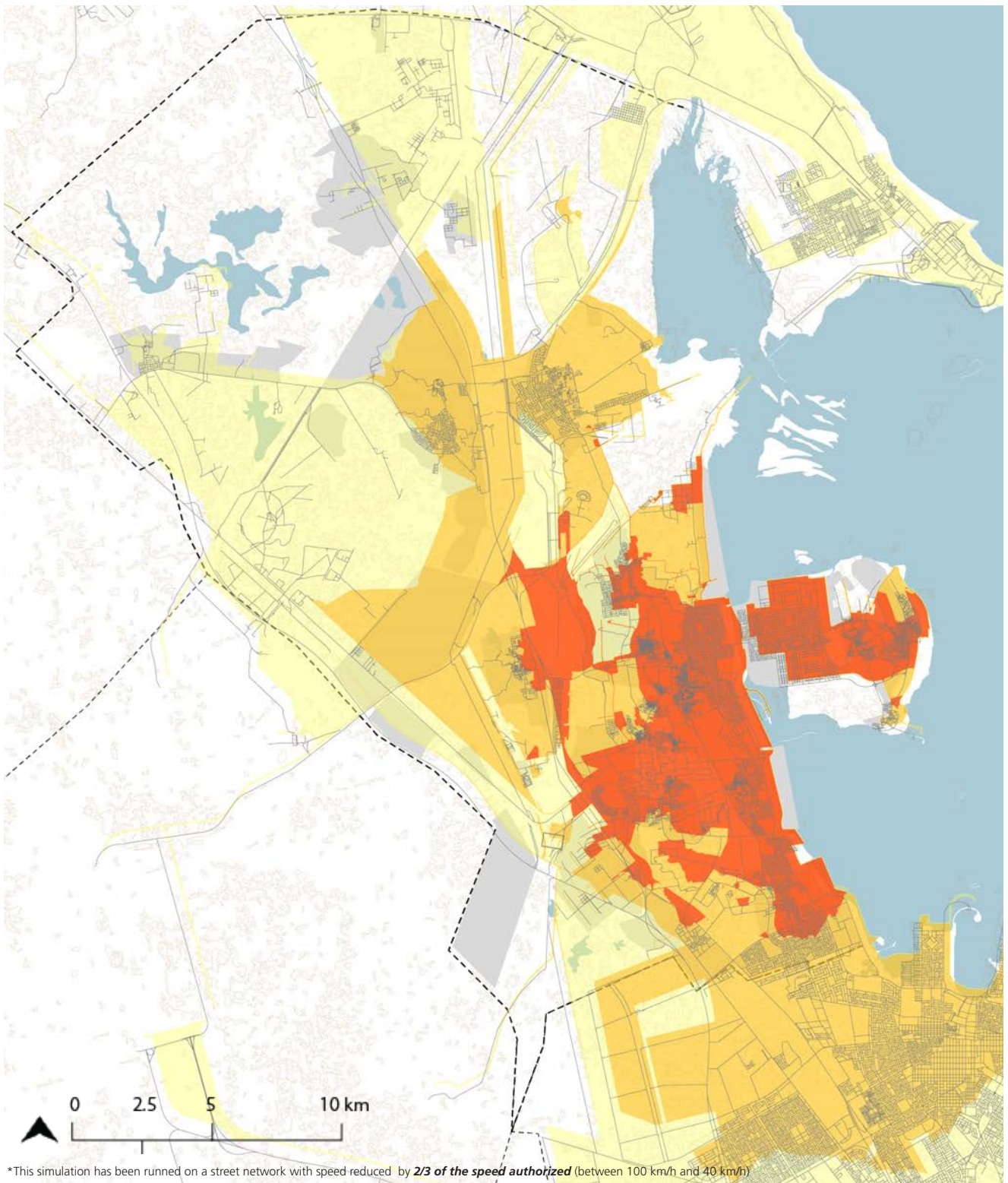
Drivability to Commercial Centres

Vehicular accessibility was also assessed through a drivability analysis. The road network is relatively well structured, with 77.8% of the total population residing within a 15-minute drive to the main cores. This means that 504,960 inhabitants are within a 15-minute drive to markets and shops, business centres, schools, and hospitals. Similarly, the analysis highlighted that 89.4% of the population has access to the urban cores within a 30-minute drive. Most of the people located within this distance-range live in rural villages that are disconnected from the city. Although driving accessibility is relatively good, some of these peripheral settlements would need to improve their road infrastructure.

These results show that the city performs well in terms of vehicular accessibility and that currently, traffic is not an issue in Qatif. However, if the future urban mobility policies are not oriented to discourage the dominant car-dependency, there is a serious risk of congestion for Qatif 's main arteries. The policies should start to invest and encourage alternative transport infrastructure as in the long term, relying on private car ownership as a major form of transportation will cause negative side effects, such as an increase infrastructure cost, health issues, and air pollution.



Automobile oriented street in the city



- 15-minute driving distance from city centre
- 30-minute driving distance from city centre
- 60-minute driving distance from city centre

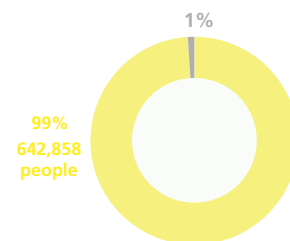


Fig. 39. Driving accessibility to city centres



Accessibility to Public Transport

Qatif city forms part of a proposed project for an Integrated Public Transport Network Plan (IPTNP) that will increase the connectivity and mobility between the different cities that conform the Greater Dammam Metropolitan Area (Al Khobar, Dhahran, Dammam, Qatif and Ras Tanura).

The project includes 50 kilometres of Light Rail (LRT), 110 kilometres of Bus Rapid Transit (BRT), and 350 kilometres of Feeder Buses. The main goal of this plan is to connect the Greater Dammam Metropolitan Area from the South to the North. The first line would run from Tarout Island via Al Qatif, Dammam, and Dhahran, to Al Khobar. The second line would run along on King Fahd Road in Dammam Northwest, towards King Fahd International Airport. The IPTNP is expected to be completed by 2021, and it will be developed as a Public Private Partnership.

According to the analysis performed by UN-Habitat on the proposed Public Transport Master Plan, the LRT in the Phase One will grant accessibility within 10 minute walking distance from each stop to 17% of the total population of Dammam. For Phase Two, the proposed Light Rail Transport - line 2 - will give accessibility within 10 minutes walking from a LRT stop to 27% of the total population. A total of 615,495 people will be therefore served by an easily accessible public transport system at walkable distance once the two main light rail lines are set in place. For the BRT proposed plan, with the completion of the first line, the network will be serving complessly 37% of the

total population of the city within a 10 minute walking distance. With the completion of the second line of the BRT, the entire Public Transport system will be granting overall accessibility to about 47% of the total population, (1.043.507 inhabitants of GDMA), and, most importantly, provide a linkage to the Dammam International airport.

In the case of Qatif, the new LRT line with 50 kilometres long and eight stops in the city, will provide accessibility to public transport within 10 minute distance to 15.3% of the total population of the city, this means that 99, 340 residents will be connected to the Greater Dammam Metropolitan Area. Therefore, they will be more close to jobs, commercial areas, mixed land use areas, public infrastructure and public facilities.

The implementation of this Public Transport Network, will also connect the different existing urban cores of Dhahran, Dammam, Qatif and Tarout Island, where most of the commercial activity and high density areas are concentrated. This accessibility will create a more inclusive and sustainable Metropolitan Area.



One of the main arteries connecting Dammam, Qatif and Ras Tanura

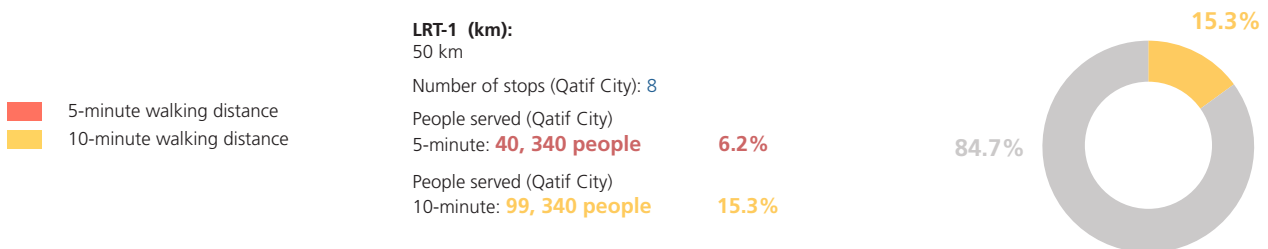


Fig. 40. Walking accessibility to proposed public transport network for Greater Dammam Metropolitan Area (focusing only in Qatif City)



3.3 Urban Density Scenarios

Crosscutting the diagnosis of the current urban conditions and the approved/submitted projects proposals, FSCP conducted an analysis for increased urban density using various scenarios. The scenarios depict three conditions: the current situation, the situation developed in line with the approved planning instruments, and the situation where density distribution is allocated following the recommendations and based on UN-Habitat recommendations. This UN-Habitat scenario is based on the Five Principles for Sustainable Neighbourhood Planning, which are as follows:

1. Adequate space for streets and an efficient street network: The street network should occupy at least 30% of the land and at least 18 kilometres of street length per km²,
2. High density: At least 15,000 p/km², that is 150 p/ha or 61 p/acre,
3. Mixed land use: At least 40% of floor space should be allocated for economical use in any neighbourhood,
4. Social mix: The availability of houses in different price ranges and tenures in any given neighbourhood to accommodate different incomes; and 20% to 50% of the residential floor area should be dedicated to low-cost housing, and each tenure type should not be more than 50% of the total,
5. Limited land use specialisation: This is to limit single function blocks or neighbourhoods as single function blocks should cover less than 10% in any neighbourhood.

Current Condition

The current population of Qatif is 650,092 with a population density of about 37.9 p/ha within the 17,118 hectares of the built-up area and is well below the UN-Habitat recommended density of 150 p/ha. However, considering the size of the city and comparing it with other density figures across Saudi Arabian cities, this number can be considered adequate. The main issue is that high-density is only found in a few areas, particularly in the remaining historic parts, connoted by a low-rise but a more organic and denser urban pattern. In recent years, several new settlements started to appear outside the urban core, disrupting the compactness of the city and adding financial pressure to the local municipality in terms of demand for basic services and infrastructure, (e.g., water, electricity, waste management, education, and health) for these new areas. Apart from showcasing an unsustainable trend, these patterns reflect a divided and unbalanced urban structure, which in turn reflects a divided and unequal society.

Scenario 1: 2011 Qatif Structural Plan

Based on the Structural Plan for Qatif, approved in 2011, the Future Development Strategy for Qatif aims at expanding the current urban footprint by adding 8,945 hectares of new developments. Most of these new proposed developments have low-density residential land use, and they are planned at the expense of existing agricultural land, both inside and outside the urban footprint. According to the annual urban growth rate of 4%, by the year 2030, Qatif will have 1,040,000 citizens. Considering the projected urban footprint of 26,063 ha (17,118 existing + 8,945 projected expansion), the city's average density will become 39 p/ha, which means that it will remain almost unvaried, but land consumption will undoubtedly increase.

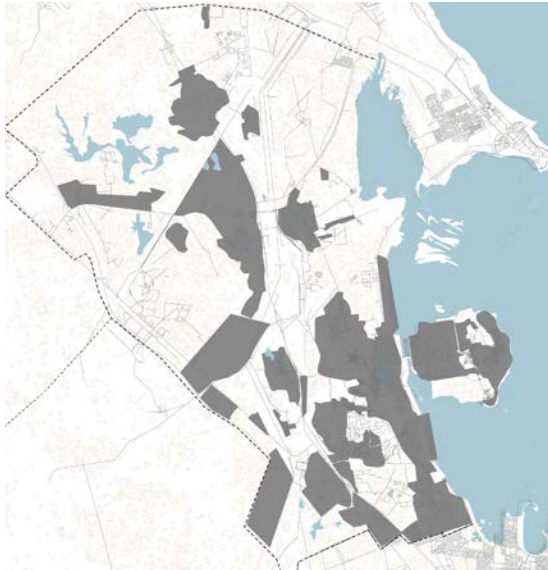
Scenario 2: UN-Habitat Recommendations


The UN-Habitat scenario supports a more integrated and sustainable planning approach for Qatif, starting with the promotion of an increased density, in line with the average UN-Habitat recommended density of 150 p/ha. Currently, there are 6,679 hectares of developable land available within the existing urban footprint and this scenario shows that only 2,593 hectares of land would be required to accommodate Qatif's future population growth by 2030 when taking into consideration the UN-Habitat recommendation. This represents 10% of the built-up area proposed by Scenario 1. Scenario 2 shows that it is not necessary to expand outside the current urban footprint, rather, it suggests strategic densification in existing urban areas, in order to provide citizens with maximum benefits and an improved quality of life at an affordable cost for the municipality.


A sustainable urban development strategy for Qatif requires densification of the existing urban footprint to enhance a compact city form, enhancing and rebalancing accessibility to services and opportunities. Hence, the proposed scenario based on the UN-Habitat recommendations suggests limiting the urban expansion of the city and increasing the density within the existing urban footprint by introducing strategic densification, promoting mixed land use, and prioritising the development of existing vacant land inside the urban area to provide land for public facilities and open spaces.




CURRENT CONDITION

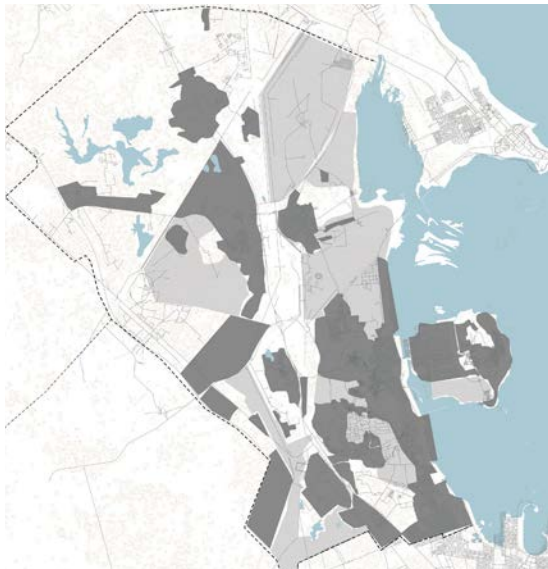



population  **650,092**


built-up area  **17,118 ha**


average density on built-up area  **37.9 p/ha**

SCENARIO 1: QATIF STRUCTURAL PLAN 2011




population  **1,040,000**


planned built-up area  **26,063 ha**


average density on planned built-up area  **39.1 p/ha**


SCENARIO 2: UN-HABITAT RECOMMENDATIONS



population  **1,040,000**

built-up area needed according to UN-Habitat recommendations  **6,933 ha**

vacant land needed to accommodate population growth  **2,593 ha***

average UN-Habitat recommended density  **150 p/ha**

* 1/10 of the built up area proposed by the Qatif Plan

5

STRATEGIC DIAGNOSIS



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4.1 Identifying and Defining Main Strategic Issues

During the evidence-based and cross-scalar analysis, four main issues affecting sustainable urban development in Qatif were identified. These issues represent the strategic framing of a complex diagnosis, synthesised through four conceptual lenses. These lenses are firstly defined in their conceptual nature, and later contextualised by an examination of their spatial manifestation in Qatif, at different scales.

4.1.1 Endangered historic / vernacular urban pattern

Planning regulation systems in Saudi Arabian cities are currently under development within a unified framework. One of the challenges that will need to be addressed concerns the need for a comprehensive set of criteria that distinguish historical vernacular urban patterns from informal, unplanned settlements. In the absence of such a regulatory framework, historical neighbourhoods in Saudi cities are being erased to make space for new developments. Not only does this endanger heritage and disrupt the sense of identity tied to a historically stratified urban environment, but these new developments additionally disrupt the connectivity to the surrounding urban fabric, whilst alienating themselves to the neighbouring building typologies and established patterns. The introduction of appropriate heritage protection rules for articulated portions of the urban patterns, extended to streetscapes and fabric layout, will reduce risk to traditional urban layouts. These traditional layouts are characterised by narrow alleyways, that excel climatically in terms of passive energy performances and function as vibrant public spaces that generate social value.



1 [HERITAGE LOSS]

4.1.2 Divisions and lack of cohesion in city structure

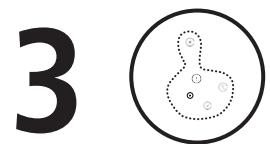
In cases of unbalanced growth, sprawl, and inharmonious development, forms of non-contiguous and non-cohesive city structures tend to co-exist, without integration. Pockets of leapfrog development are widespread. Undeveloped land, overdimensioned infrastructures and/or large extensions of monofunctional developments, hinder the continuity of the city's fabric, and therefore, its social, economic, and ecological performance. As in cases of sprawl, this renders the equal provision of infrastructure and services to the entire city difficult and costly. The fragmentation phenomenon also spatially affects the social dimension of sustainability, creating urban inequalities and segregation in areas that lie at a distance to the largest hubs, and become isolated by a discontinuous urban landscape.



2 [FRAGMENTATION]

4.1.3 Monofunctional and polarised development

When a city showcases a predominance of extended monofunctional zones and lacks in mixed-use areas, this implies a polarised development. This is particularly acute in cases in which monofunctional developments are distantly scattered and isolated from the rest of the city. In Qatif, the urban structure is characterised by monofunctional clusters of economic or social activity that amounts to socio-spatial polarisation, creating inequality with highly variable levels of access between different urban areas. Overall, various forms of polarised development result in inequality in a city, the most obvious example of which can be characterised by socio-economic segregations such as private compounds and gated communities, with high quantity and quality of services when compared to the majority of the consolidated city, in which they are lacking.



3 [SPATIAL INEQUALITY]

4.1.4 Socio-ecological and economic imbalance

Each city is formed by complex social, economic and ecological systems. In a sustainable city, the balance between these three interrelated systems is maintained and enhanced over time. If any one system is given continued preference over the others, over time, a structural imbalance will emerge that alters the sustainable trajectory of the city's growth and development. This misalignment generates an issue in terms of water provision and food security, heavily impacting other socio-spatial aspects of the city's health. Segregation between agricultural lands and the urban fabric is a good example of this condition. The city does not interact with green space and is disconnected from farmlands by a strong boundary. A resilient city would integrate its natural and built elements, ensuring their balanced coexistence.



4 [LACK OF RESILIENCE]



Ongoing destruction of vernacular and heritage architecture in Tarout Island centre

© FSCP



4.2 Analysing Qatif's Four Issues in Depth

4.2.1 Qatif's endangered historic and vernacular urban patterns

Qatif, an ancient walled city, has managed to preserve some of its historical vernacular areas that demonstrate typical organic urban patterns. Unfortunately, due to security and issues related to social, environmental and health risks, some of the historical areas and neighbourhoods have been deteriorated over time and due the lack of maintenance. Currently, only 614 hectares of vernacular urban patterns are still standing and should be preserved and rehabilitated. Considering that 21.8% of the urban population lives in these areas.

According to the Qatif Amanah, a new development project is being implemented over a two-year period in Al-Masoura District, which is a 400-year-old district in the Eastern Qatif and is home to 3,000 people, in recent years, historic roads, shops, homes, and schools were deteriorated. It is considered an historical model of a walled village, and hosts mosques, farms, farmers markets, places of worship, and businesses. Considering that the plan does not propose the construction of new housing buildings, the residents fear it will lead to a further rise in housing and land prices.

The old centre of Tarout Island, especially in the area around Tarout Castle and Deerah town is one of the oldest, dating back to around 5000 BC, making it a unique heritage landscape for the Saudi Arabian heritage. Many historical buildings that are a testimony to disappearing vernacular construction methods and techniques based on mud, clay, and wood exist here. Unfortunately, the area is not a priority for maintenance or upgrades yet. Tarout Island, due to its historical importance and heritage buildings, and rich human-scaled fabric, has the potential to attract tourists to the city. This is indicative of the fact that the remaining historical areas should be preserved, restored, and revitalised by promoting mixed-use. This would entail supporting small shops and local businesses and orienting overall strategic development towards enhancing fishing and tourist activities.

The historical areas of Qatif hold importance not only to local people, but also as part of the national cultural landscape. However, as part of Vision 2030, the Kingdom is currently witnessing unprecedented attention to its national heritage under the umbrella of the Program for Caring for Cultural Heritage.

1.



Qatif is rich in heritage, which must be preserved to support the Kingdom's vision 2030 to raise the number of historical sites registered in UNESCO.

2.

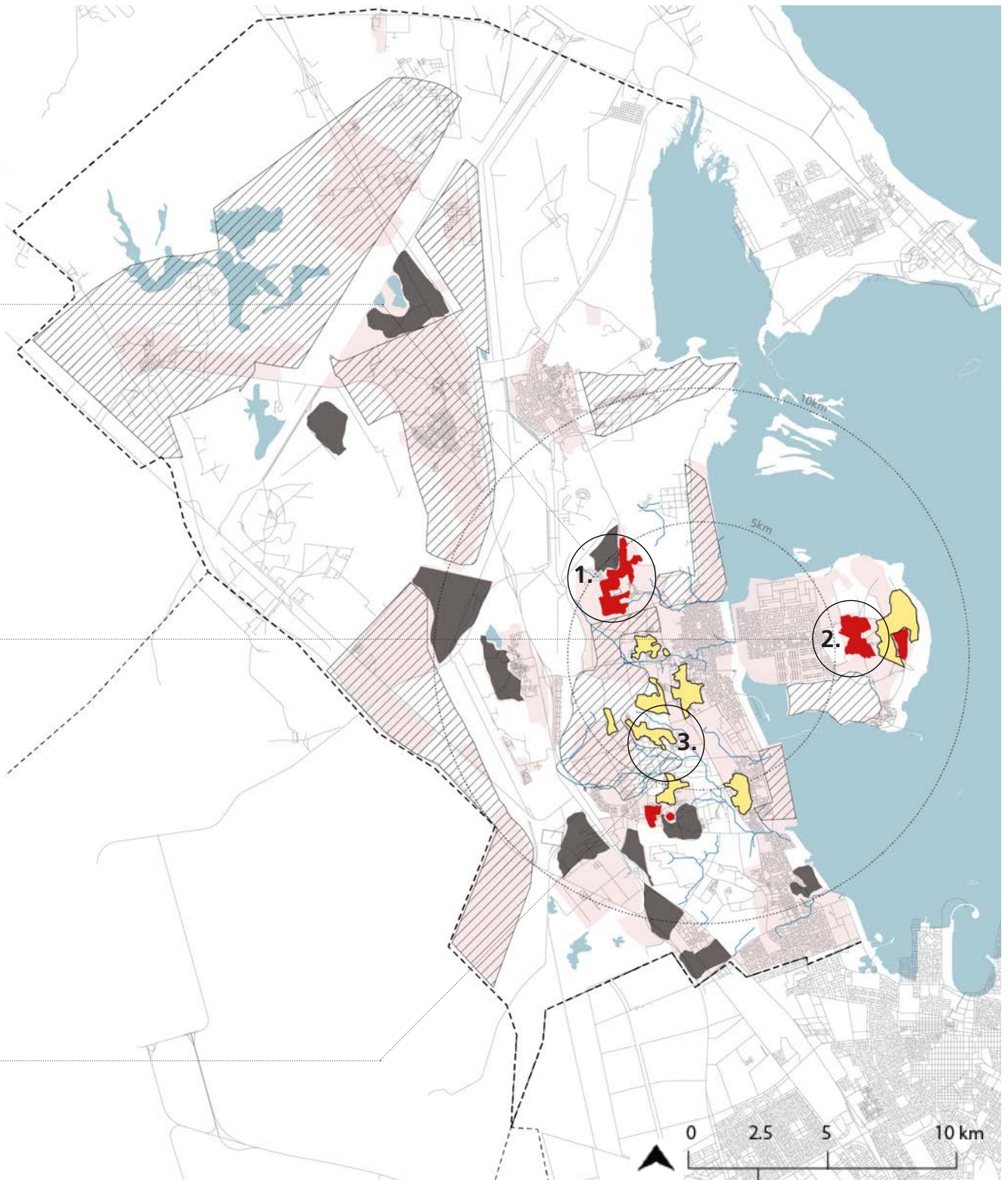


Different buildings with historic heritage around the area of Tarout Castle.

3.



There are just a few remaining vernacular buildings around central Qatif, but still there is a possibility to recover and renovate some of them.



- Built-up areas
- Residential developments under construction
- Historic areas should be preserved and rehabilitated
- Historic and vernacular areas
- Proposed developments

Fig. 41. Qatif's endangered historic and vernacular urban patterns



4.2.2 Divisions and lack of cohesion in Qatif's urban structure

Many factors have caused Qatif to evolve from the historic system of agrarian settlements and oasis, to a fragmented and divided city. Firstly, the lack of integration or even separation between the historical parts of the city and development was instigated during the oil boom in 1938. The construction of these new areas overlooked the need for integrating the old urban fabric and structure, which is typical of the historical Arab city. This fabric is a perfect example of an organic, dense, and mixed-use urban environment, where a high-density and small-scale fabric predominates, merging in the same urban area with houses, schools, shops, markets, and mosques, and linking different zones by pedestrian paths and human-scale roads. Unfortunately, the majority of the development do not preserve these characteristics.

Even with 14,201 hectares of agricultural land within the urban areas, a well-established rural-urban linkage does not exist and presents a disconnected green network in Qatif. Most of the historical sites are surrounded by interstitial green spaces where small-scale farming production is still happening, but urban strategies and policies aimed at integrating larger agricultural fields, small public spaces, and smallholding farming systems are lacking. This is visible in Qatif's city centre and in the fringe settlements towards the Northwest and Southwest, which are surrounded by neglected agricultural land. This degraded urban farmland should be restored and regenerated as productive agricultural landscapes, linked to the wider green network, and recognised as a fundamental part of the urban structure.

In terms of fractures and divisions in the urban fabric, ARAMCO owned land, due to its location, going from the North to the South of Qatif, it divides the city into two parts and breaks the continuity of the urban form. The reserve land is protected by the law, making it unavailable for any development, inducing a shortage of land for developing the city in a continuous and compact manner. The 16,094 hectares of ARAMCO reserve land have forced the city to embrace a leapfrog development pattern towards the West. These new developments are characterised by low-density and detached from the urban cores, generating urban sprawl and a high cost for the municipality for infrastructure provision to further away areas.

Another element adding to the overall division and lack of cohesion of Qatif's urban fabric is the countless number of over dimensioned infrastructures, dividing Qatif in various ways. After the 1970s, a widespread infrastructure development saw the opening of numerous highways that connected areas of oil extraction to storage and distribution. Although such infrastructure development was intended to benefit both industry and agriculture, only industrial development reaped the benefits, while the overall accessibility and porosity of the fabric of the city were disrupted. Infrastructure is indeed needed to support urban life and economic development; however, it also needs to be understood and framed within a broader context, considering its possible disruptive impact on other kinds of connectivity, networks, and relations of proximity. In conclusion, Qatif's fabric is divided into different areas and sectors that are not interrelated or linked, either spatially, socially, environmentally, or economically. There is an urgent need to reconsider the possibility of integrating ARAMCO owned land to the city's spatial fabric and its agricultural landscapes, as well as the

new developments to the historic neighbourhoods, to overcome a fragmented and divided urban structure.

1.



Residential developments under construction without spatial link to their immediate context.

2.

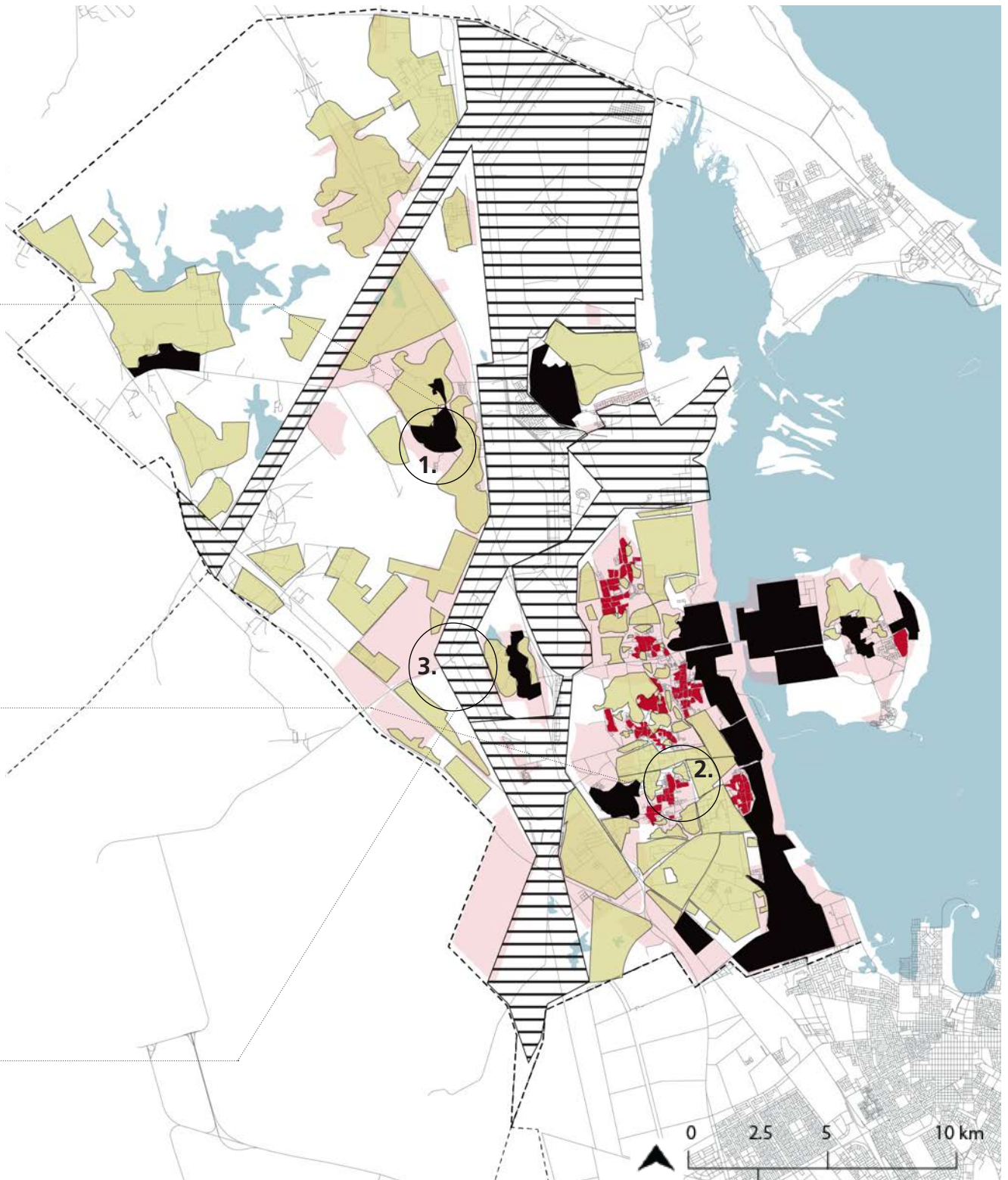


Abandoned agricultural land next to the historic areas of the city, without being integrated into the economic and spatial dynamic of Qatif.

3.



ARAMCO reserve land is gated and without any use or activity. It divides the city in two parts creating spatial segregation between Qatif and the different territorial components.



- Developments under construction
 - ARAMCO reserve land
- Agriculture land
 - Urban footprint
 - Historic and vernacular urban pattern

Fig. 42. Divisions and lack of cohesion in Qatif's urban structure



4.2.3 Qatif's monofunctional and polarised development

Over time, Qatif has grown in a polarised manner spatially, socially, and economically. The oil boom created a strong growth-pole, and this is reflected in the way the city changed its growth pattern, becoming a highly industrialised territory and overlooking agriculture and fishing. This heavily impacted the distribution of functions and land use across the city, where an unbalanced distribution of public services, infrastructure facilities, commercial, and public areas, creates inequality between different urban areas.

In the centres of Qatif and Tarout Island exist high levels of density and accessibility to schools, jobs, business, hospitals, shops, and markets, meanwhile, in the peri-urban areas there is no diversity of uses and access to public infrastructure and services. Neighbourhoods, such as Al Juaima'h, Ar-Ruwaiyah, Ad Duraidy, An Nahdah, etc., which are mainly located in Northeastern Qatif are largely residential without a clear urban core of activity.

Qatif, according to the proposed and approved Master Plan is subject to the risk of unbalanced development. As previously mentioned, the plan proposes to double the amount of land for residential use, increasing it from 35.9% to 70% of monofunctional residential areas. This would create several monofunctional residential islands that lack services, commercial facilities, and opportunities. The plan also proposes to reduce the ratio of mixed-use areas from 2.4% to 0.5% whereas the UN-Habitat recommendations indicate that in a prosperous city, mixed-use areas should range between 40% and 60% of the total land use. The development model proposed by the plan perpetuates social and spatial inequalities by consolidating these monofunctional urban islands and by increasing the quantity of poorly serviced, detached, monofunctional areas. Therefore, an opportunity of redirecting Qatif towards an integrated, well-balanced, and an interconnected urban system is lost.

In addition to an overall land use distribution rebalance, an appropriate plan for Qatif should also consider agriculture and fishing, both as important spatial elements constituting the identity of the city, and as drivers of economic development for the region to help diversify the economic structure of Qatif, which is currently oriented towards an oil-based economy. As such, agricultural, industrial, commercial, residential land use, and other important urban functions must be integrated and harmonised with the city's' spatial and socio-economic structures. This needs to be supported by economic and spatial policies aimed at consolidating the regional economic development around diverse activities, while protecting and strengthening natural resources and ecosystems, and linking them spatially, economically, and socially to the current and future urban development dynamics.

1.



New residential communities being built at Qatif's outskirts, without any commercial areas and without accessibility to public or social infrastructure such as hospitals or schools.

2.



Exclusive industrial areas related to oil extraction and oil refining, that are spatially disconnected from the rest of productive dynamics of the city.

3.



Solely agricultural land and vegetable farms without housing areas for the workers and commercial zones to sell the products.

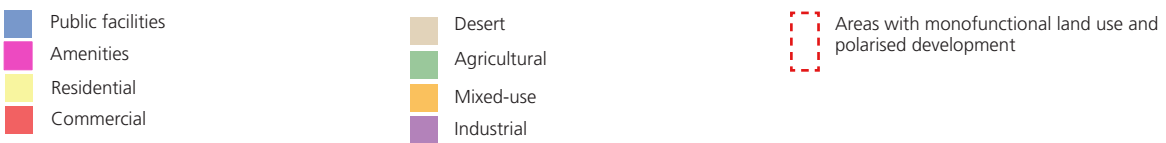
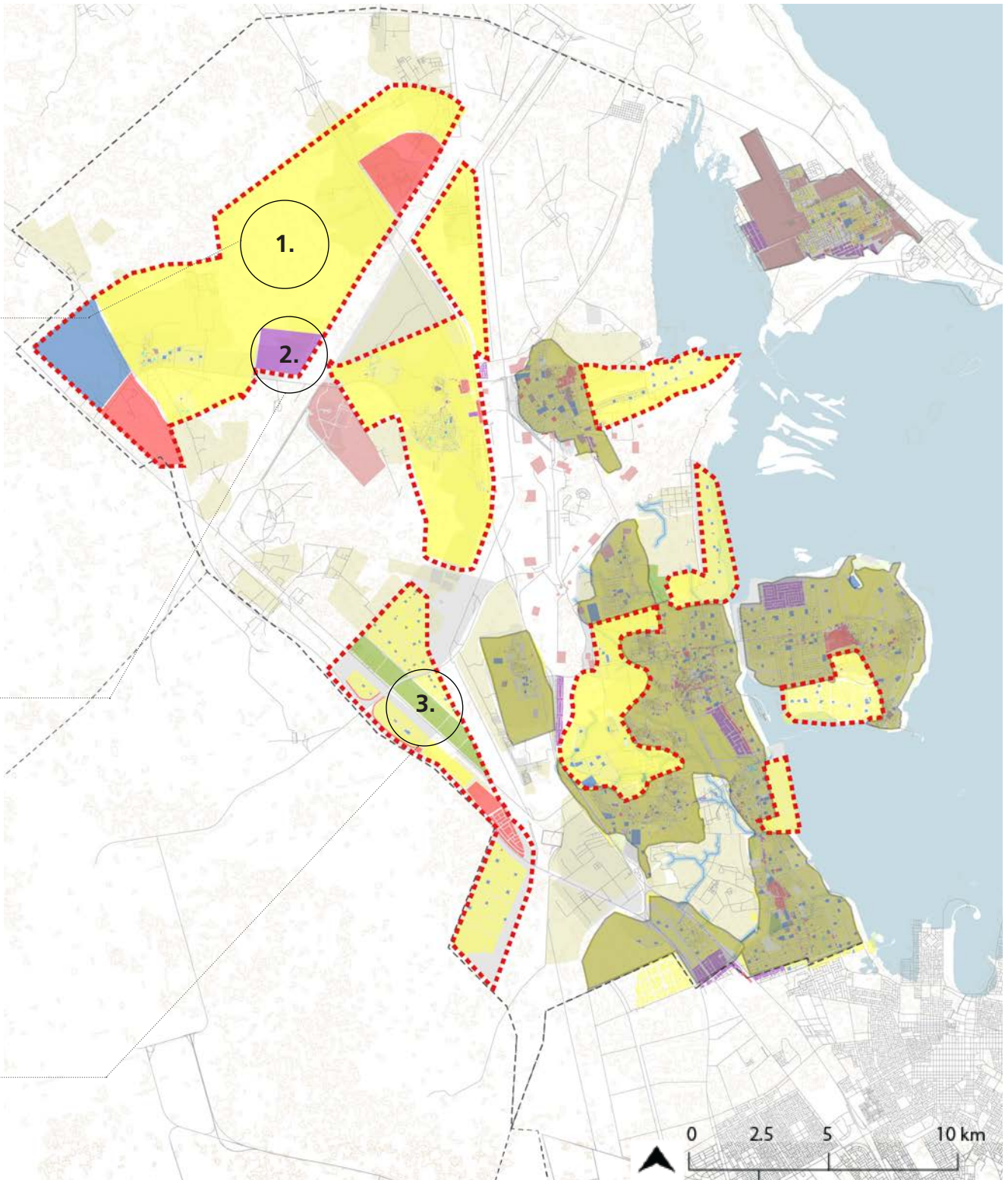


Fig. 43. Qatif's monofunctional and polarised development



4.2.4 Socio-ecological and economic imbalance in Qatif

During previous decades, the Al-Qatif oasis has been undergoing a radical transformation in terms of urban expansion and socio-economic dynamics, and territorial ecology. Most of these changes brought about several negative impacts to the territory, specifically due to the changes in land use from agriculture to industrial and residential uses. Between 1935 and 1993, a total of 11,003 hectares of agricultural land was lost. If this land use trend continues, the historical characteristics of the and its agricultural land risk completely disappearing in the next 20-30 years. Although 14,201 hectares of agricultural land and farmland still exists in Qatif, 5,706 hectares is located within the existing urban footprint, and is vulnerable to erosion by land speculation and associated development pressure. In order to respond to this trend, and prevent a further loss of agricultural land, the local government should define a comprehensive strategy for revitalising and integrating small urban farms into the overall socio-economic and spatial fabric of the city. Along these lines, a system of policies aimed at preserving agricultural land by supporting small-scale farmers should be set in place.

Urban encroachment over natural resources and land reclamation are a widespread challenge in the Eastern Province. Qatif is one of the region's adversely affected by these kinds of operations in the Arabian Gulf. Here, 3,100 ha of reclaimed land was added to the coast, resulting in severe and permanent destruction of the marine, coastal habitats over 27 linear kilometres of Qatif's shoreline. This has caused a change in the nature of Tarout Island, from an island to a peninsula. This also destroyed the natural oasis habitat, which, together with the loss of geographical landmarks and of some of the city's most important archaeological sites, compromises the preservation of the socio-ecological and economic identity of the historic oasis of Qatif.

This kind of development along the coastline has caused an important loss of natural vegetation and historic farms, especially to the coastal deforestation of mangroves and to the drastic reduction of palm tree plantations, which used to surround the area. In only 30 years, from 1979 to 2011, 688 ha of mangrove forests located on the coasts of Qatif and Tarout Island have been destroyed, negatively impacting fishing and other related local economic activities. This means that the remaining 1,043 hectares of coastal mangroves forests need to be protected, trying to revert the degeneration of the coastal ecological systems.

The effects of the coastline alteration, land-reclamation, and encroachment on natural ecosystems have already reduced opportunities tied to prawns and lobster fishing, as well as pearl-farming activities. These actions have other long-term side effects. For instance, 2,900 hectares of urban areas on reclaimed land along the coast are subject to natural hazards such rising levels of the sea.

1.



Qatif and Tarout Island have still an important number of hectares of mangrove forest, that are in need of being protected from land reclamation activities and from poachers. Mangrove forest form a belt of protection against erosion and storms, and are vital to preserve the existing marine resources.

2.



Land reclamation is one of the most disruptive activities to coastal and marine resources.

3.



Oil related industry is polluting some of the non-renewable ground water resources in Qatif, putting at risk the accessibility to clean water and availability of this natural resource.

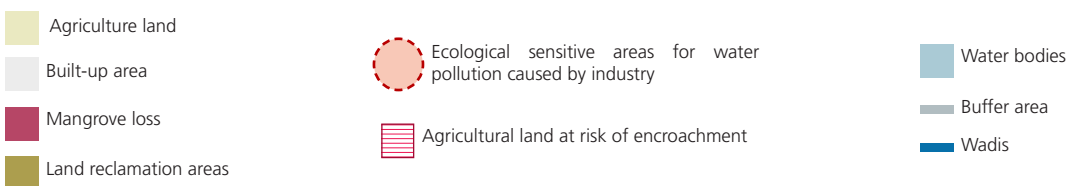
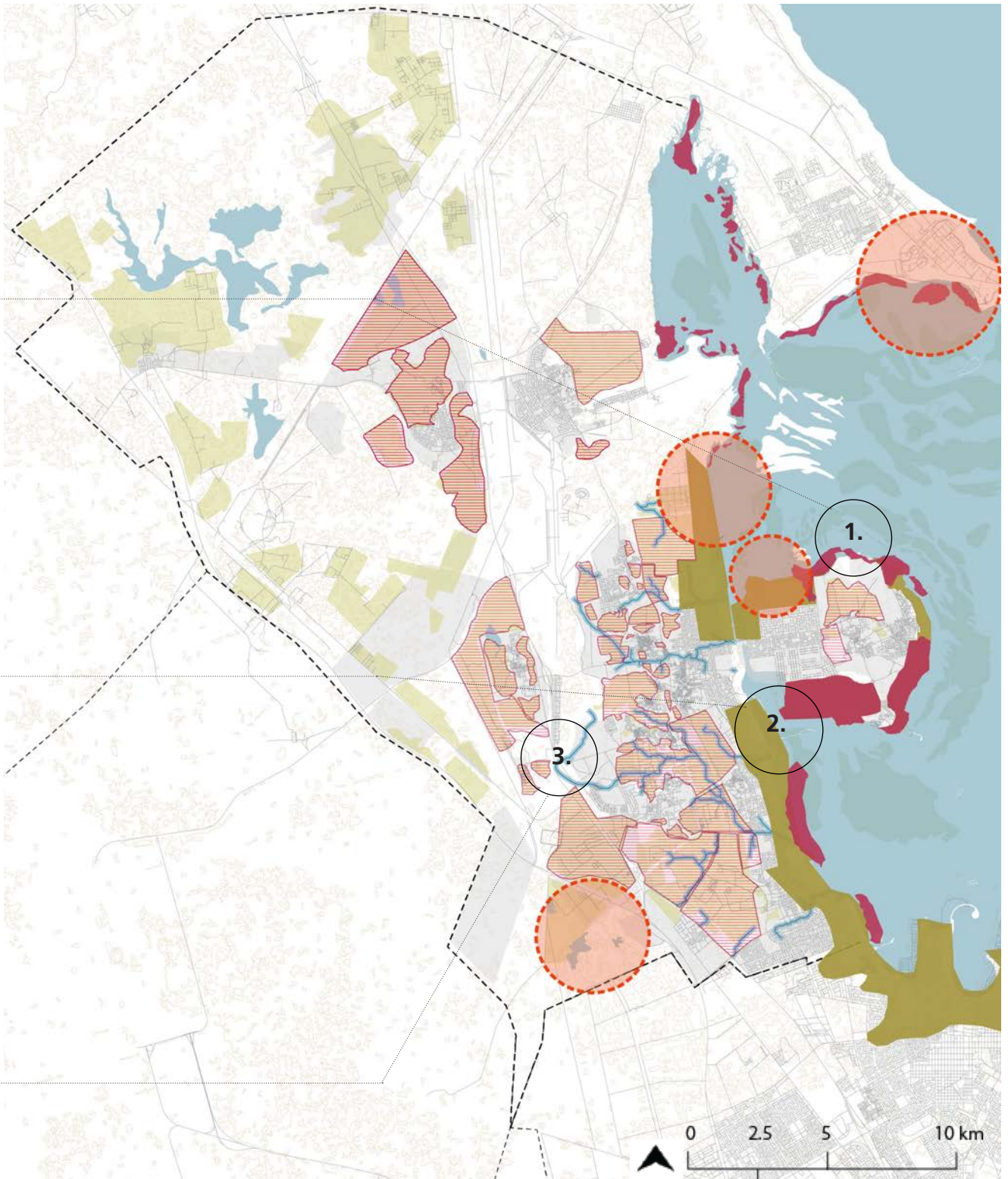


Fig. 44. Socio-ecological and economic imbalance in Qatif

6

THE FUTURE CITY



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5.1 Strategic Responses

After performing a strategic diagnosis, and identifying four main issues affecting the urban development of Qatif, four strategic recommendations were identified in response. Akin to the four strategic issues, the above-mentioned four strategic recommendations define the conceptual framing for a systemic and strategic level of solutions. Once defined in their conceptual nature, they are developed into a more detailed description, spatially interpreted and contextualised in Qatif, at the various scales. This is followed by a roadmap to implementation, in the form of an articulated Action Plan.

5.1.1 The Historic City

A Historic City is defined as an active human settlement, strongly conditioned by a physical structure that originates from its past, and recognisable as representing the evolution of its people. Following this definition, it is fundamental for historic areas to be inhabited and form a live cultural nucleus, with a strong urban identity. Over the last few decades, inner-cities and their historic districts all over the world have been deteriorating. Saudi cities are facing high-pressure from development, and often, in historic cities, architectural heritage has been allowed to deteriorate or eradicated to make space for new development, in place of conservation in historic areas. Responding to this scenario requires firstly the establishment of categorisation of these areas, followed by precise regulatory systems for their preservation, restoration, rehabilitation, and revitalisation, aiming not only at protecting the heritage buildings but the entire historic urban fabric, inclusive of all its elements, from streetscapes to residents.



[PRESERVATION]

5.1.2 The Connected City

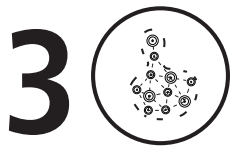
The Connected City is envisaged as a continuous, well connected, and well-balanced network of neighbourhoods, each with its own parks and public spaces, and accommodating a diversity of overlapping private and public activities, shaping a healthy and vital urban environment. Most importantly, these neighbourhoods create opportunities and conveniently accessible facilities which, in turn, reduces the need for private vehicles. In large cities, mass transit systems can provide high-speed, cross-town travel by linking one neighbourhood centre with another, leaving local distribution to local systems and foot traffic. This reduces the volume and impact of traffic, which can be calmed and controlled, particularly around the public cores of neighbourhoods. Local trains, light railway systems, and electric buses become more effective, and as a result, cycling and walking become more pleasant. Moreover, congestion and pollution are drastically reduced, and a sense of security and conviviality in public spaces is increased.



[RE-STITCH]

5.1.3 The Inclusive City

The New Urban Agenda (NUA) requests commitment from cities in the promotion of diversity in cities and human settlements, to strengthen social cohesion, intercultural dialogue, understanding, tolerance, mutual respect, gender equality, innovation, entrepreneurship, inclusion, identity, safety, and the dignity of all people, while fostering liveability and a vibrant urban economy. Qatif needs to implement UN-Habitat Principles and develop a vibrant, sustainable and inclusive urban economy, building on endogenous potentials, competitive advantages, cultural heritage and local resources, as well as resource-efficient and resilient infrastructure; This can be achieved through the promotion of sustainable and inclusive industrial development and sustainable consumption and production patterns. This should be considered in parallel with fostering an enabling environment for businesses and innovation for provision of sustainable livelihoods.



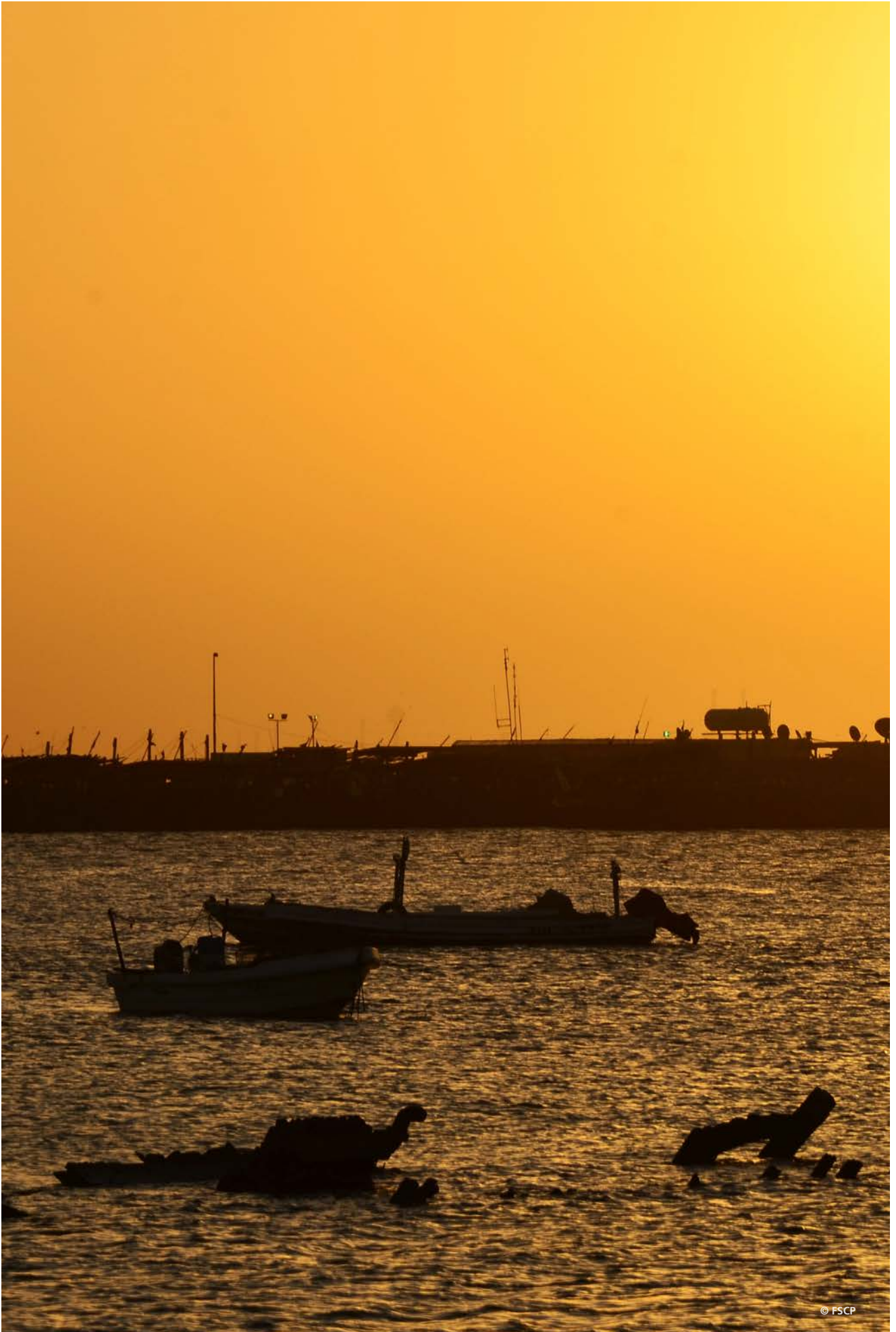
[REBALANCE]

5.1.4 The Resilient City

A Resilient City takes into consideration appropriate built form, and physical infrastructure to increase resilience to the physical, social, and economic challenges that arise from depleting carbon-based fuels, and climate change. A Resilient City can be defined as “a sustainable network of physical systems and communities.” These physical systems consist of both the constructed and natural environmental components of the city. They include roads, buildings, physical infrastructure, communications facilities, soils, topography, physical features, geology, waterways, population density, etc. In sum, the physical systems act as the body of the city, its bones, arteries, and muscles. Resilient cities are cities that are capable of withstanding severe shock and stress without either immediate chaos/damage or permanent deformation or rupture. Rebalancing the urban system, to consider stress conditions, is therefore key for Qatif.



[PROTECT & IMPROVE]



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Fishing boats at Tarout Island



5.2 Appropriate Models for Qatif's Urban Development

5.2.1 *The Historic City: Preserving and enhancing Qatif's identity*

The organic urban patterns, made of narrow, intricate streets, and dense buildings embeds local socio-spatial qualities and are a historical testimony to the values that cannot be replaced or reproduced by new developments. The historic areas should be integrated and connected to the recent urban developments, to re-establish an overall continuity of the urban structure, and regenerate their urban and economic fabric. Most of these areas are close or adjacent to the developments built after the oil boom and are not spatially connected. Other parts are surrounded by agricultural land, resulting in the preconditions for a re-linkage of the historical parts of the city, the urban farms, and the modern developments.

If these historic areas are upgraded with high-quality public infrastructure and complemented by well-managed and well-designed services, they can become model neighbourhoods that also attract tourism and economic-related opportunities. There are many examples of areas in medieval European cities, and with appropriate urban renewal and regeneration strategies, these areas transformed substantially. Various spatial and social projects were used to transform them into vibrant areas with a high-quality urban environment that appreciated the value of land.

In order to preserve its historical and cultural heritage, Qatif needs to set up a similar approach, by developing a series of inter-related socio-spatial and economic strategies, targeting the upgradation and revitalisation of these historically relevant but neglected neighbourhoods. Therefore, it is urgent for the city to preserve and protect the remaining parts of Qatif that hold a unique heritage aspect. Additionally, a series of preservation and restoration programs should be set in place to celebrate the historic and vernacular architecture, followed by regeneration projects that bring new activities and provide new uses for these buildings. Overall, this will help to restructure the urban form of Qatif by shaping the continuity of the urban fabric across various neighbourhoods.



Restore neighborhoods providing with new social housing projects, promoting the creation of local business and shops, and renovating the street life through urban design projects for creating pedestrian streets.



Protect Tarout Castle and consolidate it as a main tourist attraction point to boost the local economy of the Island with more commercial activity.



Rehabilitate the streets in the historical and vernacular urban pattern of Tarout island, in order to consolidate a pedestrian friendly area for the incoming tourists and the local inhabitants.

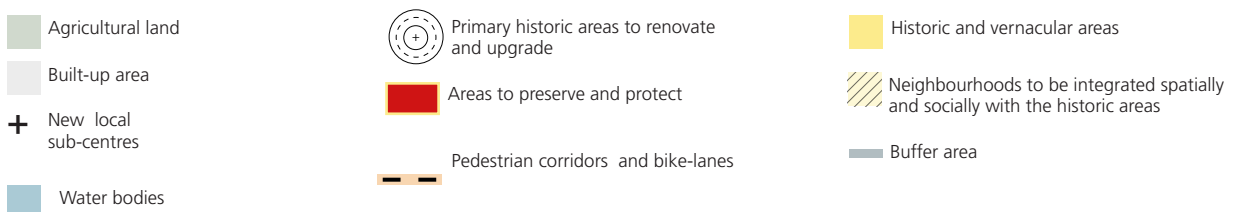
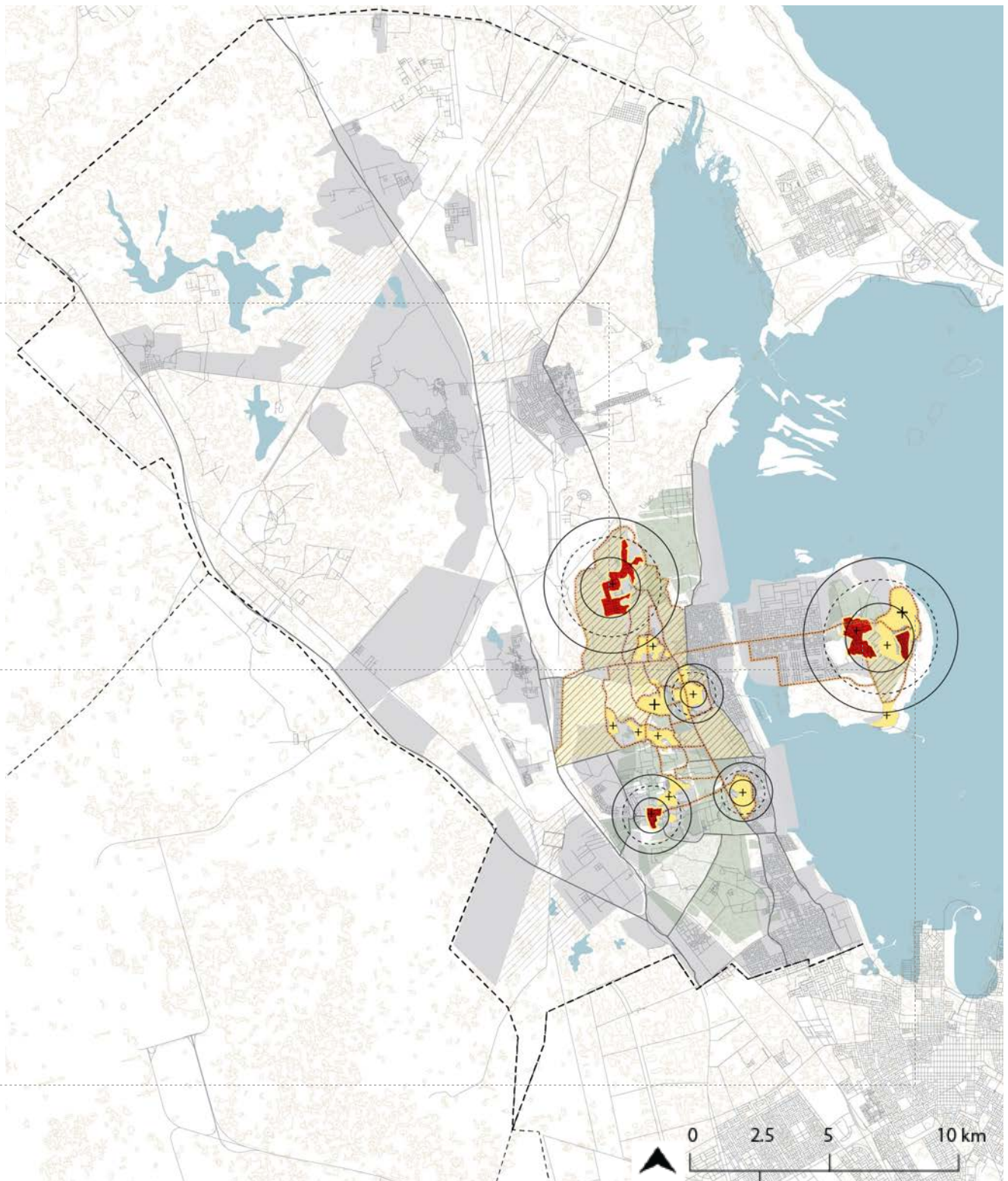


Fig. 45. The Historic City: Preserving and enhancing Qatif's identity



5.2.2 The Connected City: Bridging Qatif and re-stitching the urban fabric

Qatif composed of different urban areas lacking spatial integration and connection with each other, that lack dialogue with their immediate context. Such disconnected spaces are the ARAMCO owned land and the historic neighbourhoods, as well as the vast agricultural land within and outside the city, and the new developments situated on the city outskirts and the coast.

To counteract this tendency of fragmentation, improved connectivity should be promoted, and this can be done via the provision of an integrated public transport system that includes BRT, feeder buses, bike lanes, pedestrian streets, and walking paths. Consolidating an efficient, capillary distributed, and intermodal transport network would consistently improve the overall urban connectivity, increasing accessibility to peri-urban settlements, rural villages, and historic neighbourhoods.

In parallel, a series of operations aimed to re-stitch and integrate the different parts of the overall urban fabric should also be set in place. For instance, the ARAMCO reserve land could be transformed to an urban development of Qatif to a driver and connector of urban structure.

This means that ARAMCO should be brought in to the planning discussion to find ways to integrate the land into the city's plans through alternative uses that do not impact ARAMCO's day-to-day operations. A new role for this land is to act as a soft infrastructure, such as linear parks and porous public spaces, in order to promote the active use of the space, linking diverse areas currently separated by inaccessible areas, while not interfering with the underground oil pipes and supporting infrastructure.

A set of new urban nodes of activity should be implemented within different neighbourhoods and contexts in Qatif, with the aim of reactivating the deteriorated districts, particularly the ones situated at the city's outskirts and in the areas with historic and vernacular urban patterns. Implementing a comprehensive public transport system, composed by primary and secondary arteries, BRT and Feeder buses, pedestrian streets and bike-lanes, will strengthen the mobility and connectivity between neighbourhoods, boosting the local shops and business, as well as providing better accessibility to jobs in Qatif.



Establish the BRT Line that links Qatif's and Tarout urban cores with the rest of the Greater Dammam Metropolitan Area.



Create a Feeder bus system that support the main BRT line, and helps to connect Qatif's satellite villages from West to the East.



Implement bike-lanes inside the city centre, promoting mobility between the different neighbourhoods and historic areas, as well as implement a green corridor in ARAMCO owned land with bike mobility.

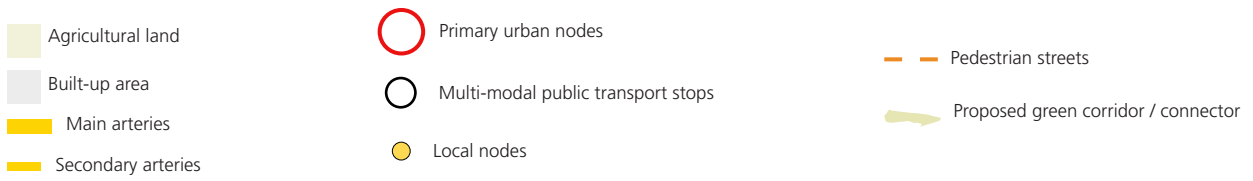


Fig. 46. The Connected City: Bridging Qatif and re-stitching the urban fabric



5.2.3 The Inclusive City: Rebalancing the diversity in Qatif

Qatif's land use pattern is characterised by many monofunctional areas, shaping an urban environment that is highly polarised, spatially, socially, and economically. Extensive residential-only and monofunctional neighbourhoods with limited access to business, commerce, local shops, public spaces, markets, schools, and hospitals are an example of this unequal pattern. The creation of a more inclusive and balanced city, where neighbourhoods have equalised access to public facilities, commerce, and job opportunities is needed. This is particularly true when targeting the city's peripheries, where most of the monofunctional developments are located. To shape a more Inclusive City, efforts should build on the Connected City strategy, leveraging the public transport system to connect and provide access to previously divided and disconnected areas of the city.

The implementation of public infrastructure is often a powerful tool to transform a disconnected and unbalanced urban system to an integrated and connected one, where a system of new and well-connected centralities helps to rebalance access to services and opportunities across the city. In order to fully take advantage of the public transport system, intensification of mixed-use centralities should be implemented around the multimodal and public transport stops. This will create a system of new urban centralities for Qatif, some of which should be more neighbourhood-oriented and others providing access to metropolitan services, such as specialised hospitals or public universities. This would allow a counteraction to the current polarisation by providing a series of new, well-connected centralities linked to the main public transport network and subjected to strategic densification, and intensification of mixed-use development.

These new high-density, mixed-use centralities will not only redistribute equitable access to services, facilities, commerce, and job opportunities, but also provide better conditions for more efficient and sustainable service delivery. A strategy to introduce and promote diversification and intensification of land use should be introduced in parallel, particularly targeting underserved areas like the historic neighbourhoods, the new developments, the informal areas, and the areas located at the urban periphery. This will increase the actual amount of public space, schools, mosques, souqs, businesses, and shops. The implementation of this new system of urban centralities around the main public transport nodes will equalise access to culture, health, education, amenities, and basic infrastructure.



Creating main arteries with intensified mixed-use will promote social and commercial activity at the ground level.



With the implementation of secondary nodes where the public transport stops are, the local shops and markets will increase their commercial activity and the prosperity.



Densifying the residential areas located at the city's outskirts will create demand for commerce and services, and the establishing of more mixed-use land at the urban periphery.

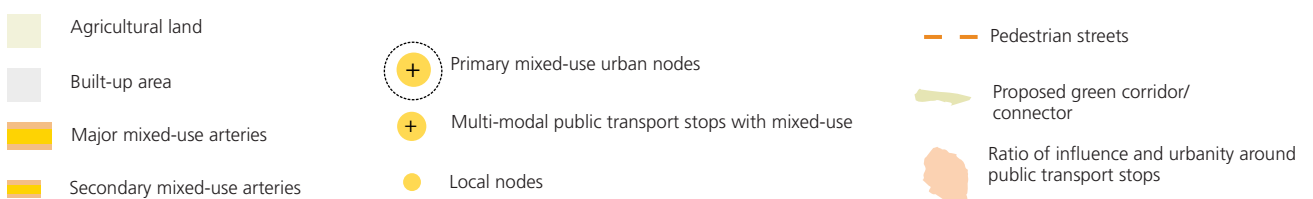
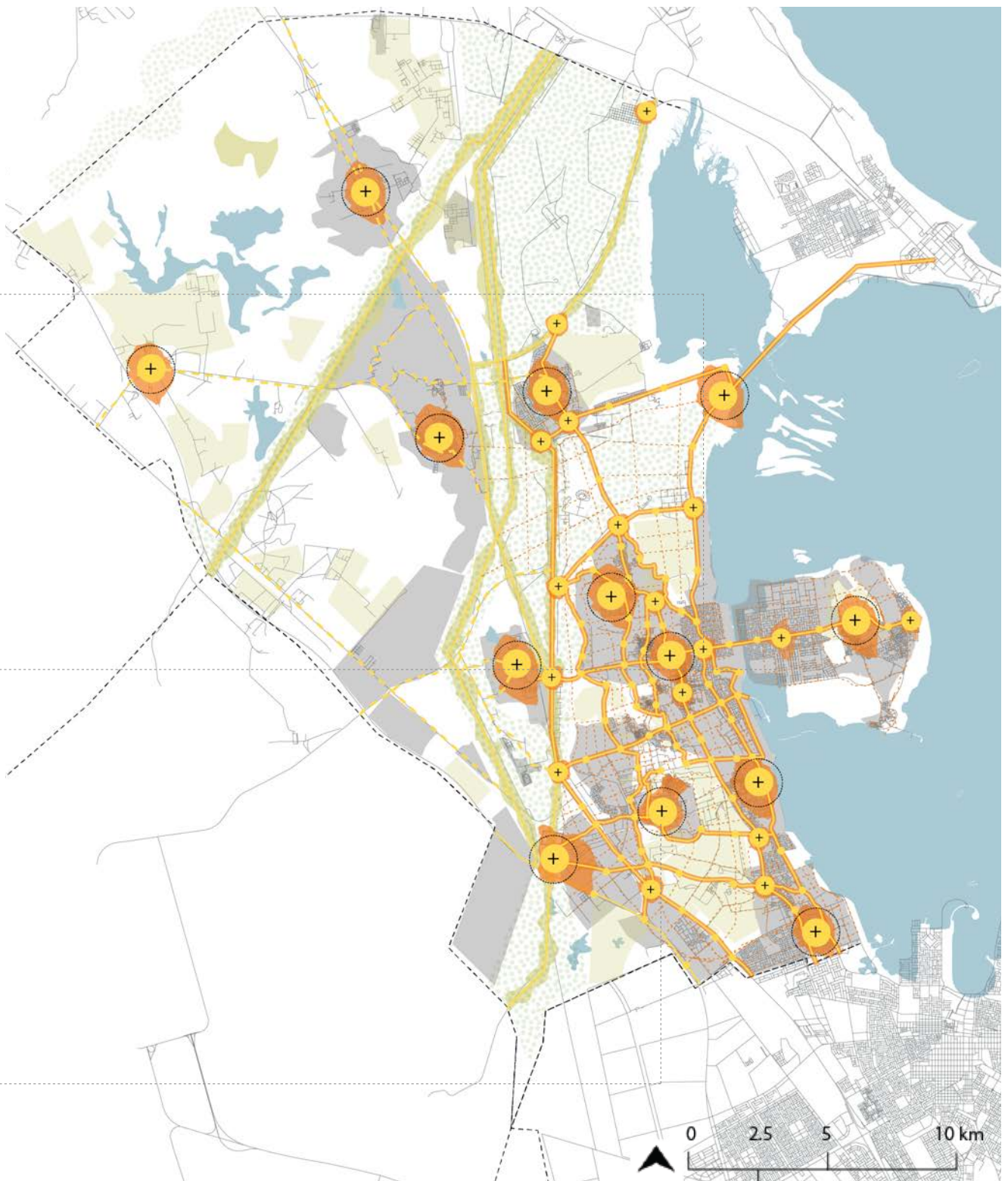


Fig. 47. *The Inclusive City: Rebalancing the diversity in Qatif*



5.2.4 The Resilient City: Rebalancing Qatif's socio-ecological and economic systems

Qatif grew rapidly, overlooking the preservation of the same environmental structure and ecological systems that gave birth and supported the city's original settlement. The massive changes in land use, from agriculture to industrial and residential, caused extensive loss of agricultural land and farmlands. Additionally, the disproportioned land-reclamation projects damaged the natural coastline and dismantled large areas of mangrove forests.

The recovery of the coastal ecology is vital to the local economy as it depends on fishing, and to support other inland natural systems. Therefore, it is urgent to stop any new infill and land-reclamation actions for new developments on the coastline that will involve land reclamation, as it will not only harm the environment but is not cost-efficient. The city has no shortage of land, and it is unnecessary to continue to reclaim land from the sea when there is more than 31,900 hectares of vacant land available. This strategy needs to be supported by legal instruments and sustainable actions to preserve and protect the remaining 1,043 hectares of mangrove forests and start a programme of mangrove reforestation on the coast of Qatif and Tarout Island.

A large number of abandoned green spaces within the urban footprint of Qatif exist and are part of the agro-ecological heritage of the ancient oasis but are perceived as a residual wasteland. These interstitial spaces of varying types and sizes are a potential opportunity to implement a systemic network of new diverse public spaces, made of linear and pocket parks, urban agriculture areas, playgrounds, and sport-fields. Re-activation of these spaces will also bring new services to various neighbourhoods and would provide an increased amount of high-quality environmental, and social services to the wider city, thereby increasing the quality of life of the inhabitants. Beside structuring a green, public space network, it is vital for Qatif to revive the agriculture sector as a relevant contributor to the local economy. Traditional agriculture is a highly valuable and sustainable economic activity, as it preserves traditional knowledge and provides food, and employment opportunities. Policies aimed at supporting agricultural development should be set in place and accompanied by economic incentives for small-scale farmers, preserving the productivity of the urban and peri-urban agricultural landscapes.

Overall, the city needs to develop a strategy aimed at recovering abandoned urban farms within the urban footprint that will promote a natural balance between the natural resources and ongoing urban expansions. The strategy will also rebalance the impact of the oil industry, which is a major economic activity towards a more traditional and sustainable one, such as the agriculture and fishery sectors. The aim is to develop Qatif as a sustainable city, structured around a well-connected green network where the existing natural elements and resources are supportive of both Qatif's biodiverse ecological systems and its major economic activities.



Restore the existing wadis in Qatif urban areas, that were part of a larger system of wadis in the ancient oasis of the city. Create linear green corridors that connect to the multi-modal public transport system.



Integrate the urban farms existing within the urban footprint with a spatial and financial strategy to boost local jobs.



Protect the existing mangrove forest and design an environmental plan to protect the existing coastal ecology of Qatif and Tarout Island.












- | | |
|-----------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
|  Agricultural land to be protected |  Water bodies to be protected from industrial pollution |
|  Built-up area |  Wadis to be restored |
|  Coastal environmental protection |  Buffer area |
|  Sensitive ecological areas |  Proposed green corridor / connector |
| |  Pedestrian streets |

Fig. 48. The Resilient City: Rebalancing Qatif's socio-ecological and economic systems

5.3 An Action Plan for Qatif

Transforming conceptual recommendations into concrete and implementable strategies requires detailed systemic actions that can incrementally trigger the envisaged spatial, economic, and social transformation. As such, an Action Plan rooted in four strategic recommendations and grounded in a series of systematic and incremental interventions for Qatif is proposed. It serves as a guide when prioritising and detailing subsequent actions needed for building a historical, connected, inclusive, and resilient city. In essence, the Action Plan outlines four actions, explicitly envisaged for Qatif, operating systemically and incrementally, and defined as:

- **ACTION 1: Establish a comprehensive and capillary public transport network to re-link isolated areas and support densification**
- **ACTION 2: Create new centralities around main transport nodes and promote strategic densification**
- **ACTION 3: Protect, reactivate, and integrate historical and vernacular areas.**
- **ACTION 4: Establish an extensive green network, restoring and relinking Qatif's ecological systems**

Action 1 sets the precondition for reconnecting the various disconnected areas of the city by providing easier and better accessibility through a well-structured and capillary public

transport system, and a supportive, pedestrian-friendly streetscape including bike lanes, generous sidewalks, and pedestrian walkways. Action 2 builds on Action 1 by promoting strategic densification around the main transport nodes to create new mixed-use centralities and support incremental densification along the public transport lines (Transit-oriented development principles).

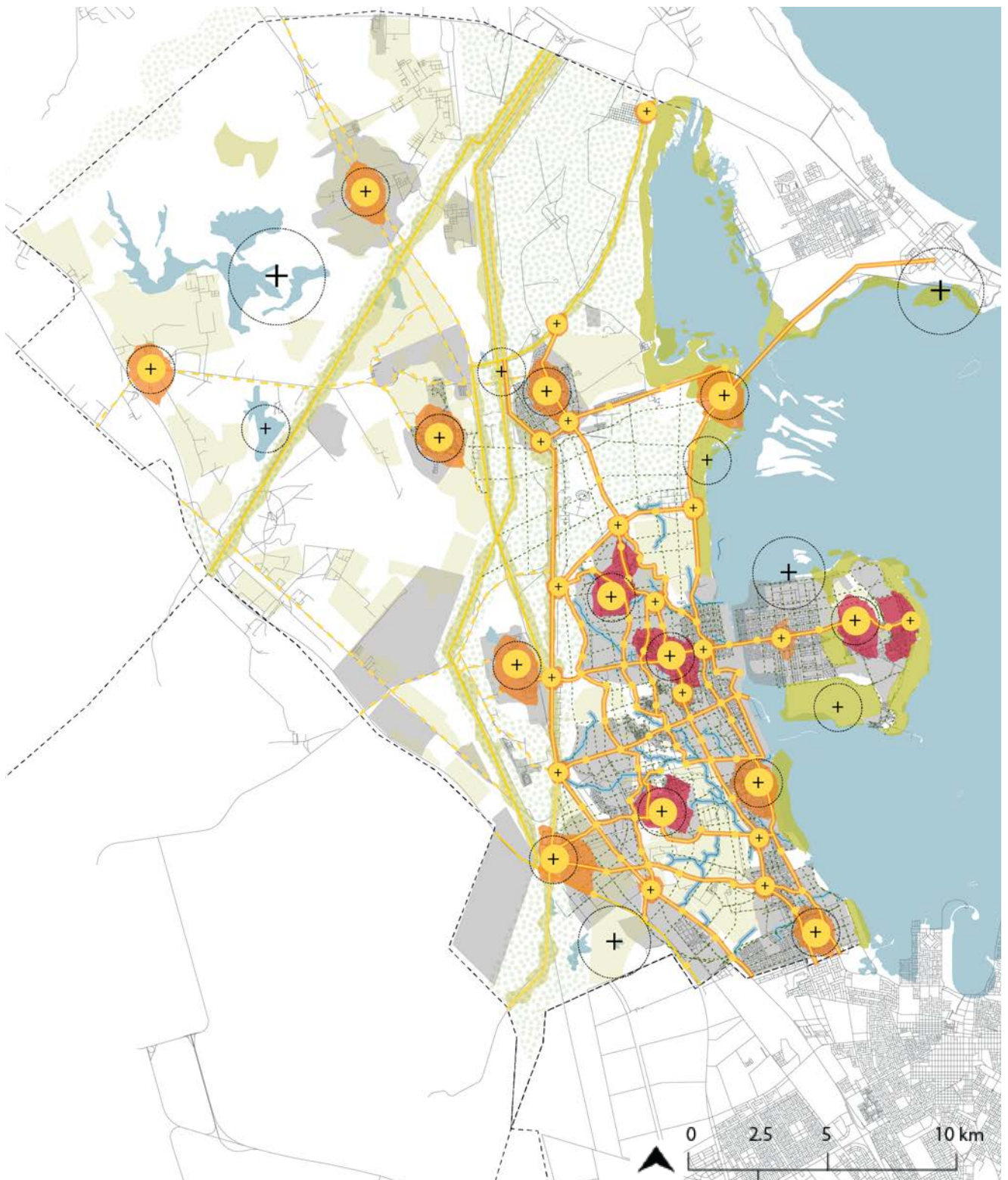
Action 3 targets preservation and restoration, upgrading and revitalisation of vernacular areas, heritage sites, and historic neighbourhoods. Finally, Action 4, focuses on building cross-scalar ecological infrastructure that will link urban and peri-urban agriculture, the wadis, and the coastal ecological systems to ensure connectivity across the various ecological elements and with the city.

Overall, the Action Plan creates an impact at three scales: the territorial, the urban, and the neighbourhood scales. At the territorial scale, it relinks the natural systems within the city to the larger territorial network towards the coast and the Northwest of Qatif. It increases the density and intensifies mixed-use in strategic locations across the city and reutilising the available vacant land to promote a denser and better serviced urban fabric. Lastly, the Action Plan supports the re-activation of agro-heritage sites, the protection of vernacular urban patterns, preserving and enhancing Qatif heritage, and identity.



Taroot Castle

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- | | | | | | |
|--|---------------------------------------------------|--|--------------------------------------------------------|--|-------------------------------------------------------------|
| | Sensitive ecological areas | | Proposed green corridor / connector | | Proposed green corridor / connector |
| | Primary mixed-use urban nodes | | Coastal environmental protection | | Pedestrian streets |
| | Multi-modal public transport stops with mixed-use | | Agricultural land to be protected | | Buffer area |
| | Major mixed-use arteries | | Built-up area | | Historic and vernacular urban areas to upgrade and renovate |
| | Secondary mixed-use arteries | | Water bodies to be protected from industrial pollution | | Ratio of influence around public transport stops |
| | Local nodes | | Wadis to restore | | |

Fig. 49. Strategic recommendations for Qatif

5.4 Four Systemic Actions for Structural Change

5.4.1 Action 1: Establish a comprehensive and capillary public transport network to re-link isolated areas and support densification

The first action addresses the need for restructuring the city starting from its transport patterns. It fosters a new comprehensive mobility system at different levels and scales, using Dammam's proposed BRT system as a departure point to consolidate and densify two new main mixed-use urban cores. Linking the existing urban centres with the BRT system and supporting it with a capillary feeder-bus network, bike lanes, and pedestrian-friendly streets will support dense, mixed-use development and will provide easier and improved accessibility. Lastly, this consolidated connectivity can be extended to satellite urban villages close to central Qatif in order to link them to the rest of the city and the coast and will support the creation of new centralities. As such, Action 1 can be summarised in the following steps:

1.1 Implement the proposed BRT line for Qatif

The first step is the implementation of the already proposed BRT Line that runs along Qatif, as part of Dammam's public transport system. The aim is to connect the metropolitan area of Dammam from South to North and strengthen the mobility between the cities of Dhahran, Al Khobar, Dammam, and Qatif. This plan already proposes stops in the two main urban cores of Qatif and Tarout Island.

1.2 Consolidate the secondary network to improve connectivity within the existing built-area and to the coast

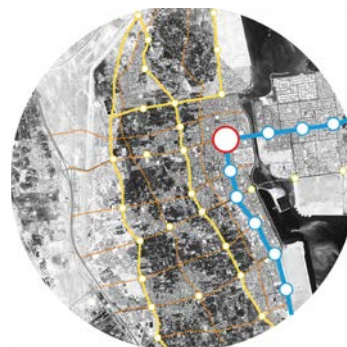
Subsequently, implement a secondary transport network composed of a capillary feeder-bus system, bike lanes, and pedestrian-friendly streets, to create an extended intermodal system that links the different urban centres and connects the waterfront to the inland territories. This secondary system of connections is essential to ensure that the public transportation lines have last mile connectivity.

1.3 Expand the connectivity to the satellite urban areas

Once the connectivity in the existing urban footprint is developed and consolidated, it should be expanded outside of the urban core into the satellite villages detached from the city, granting such areas better access to the new centralities and linking them back to the historic cores.



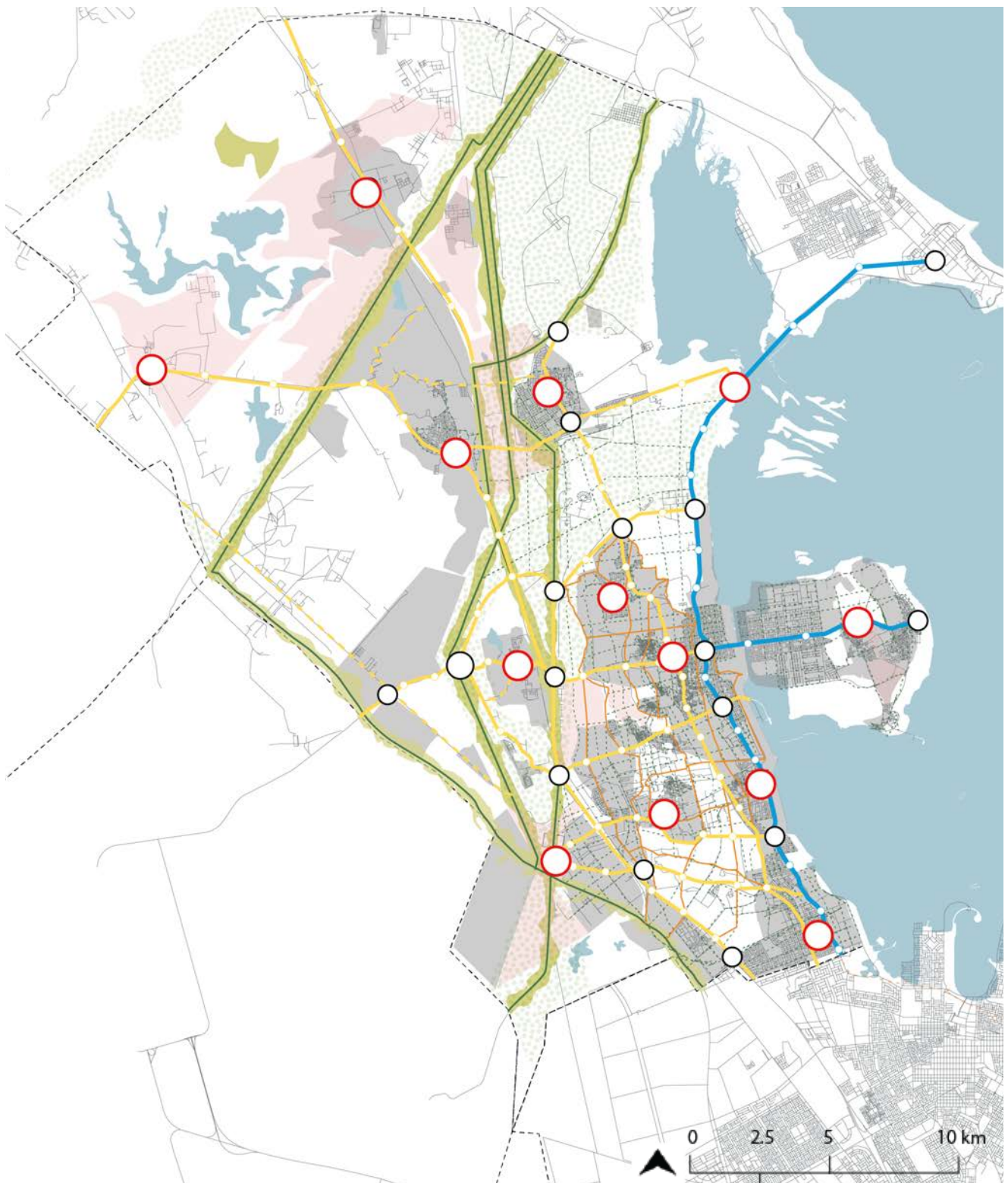
The BRT system will act as the main connector of the city, providing better accessibility from north to south. With this action, the different urban centres of activity, around the Greater Dammam Metropolitan Area will strengthen the commercial activity.



The second step is to consolidate the first area around the old city centre of Qatif, creating better accessibility with feeder buses, pedestrian streets and bike lanes.



The third action, is to extend the public transport system to the Western part of Qatif, connecting the satellite rural villages with Qatif City centre and Tarout Island centre.



- Built-up area
 - ARAMCO reserve land
 - Proposed BRT line
 - Feeder bus system
- Primary urban nodes with public transport stop
 - Multi-modal public transport stops
 - Local nodes
- Proposed green corridor / connector
 - Pedestrian streets
 - Secondary arteries
 - Proposed developments

Fig. 50. Action 1: Establish a comprehensive and capillary public transport network to re-link isolated areas and support densification.

5.4.2 Action 2: Create new centralities around main transport nodes and promote strategic densification

Following the implementation of a public transportation network, the city should start actively incentivising residential densification and mixed-use development in the areas with walkable access to public transport. Strategic densification should be applied to selected major nodes to define emergent new centralities, as this will rebalance the city's overall distribution of services and facilities by encouraging mixed-use development and concentration of services, and facilities around them. Implementing strategic densification at an accessible distance from public transport and along transport lines should become a priority when addressing any further development. This should be done by prioritising the development of interstitial spaces and available vacant land within the urban footprint, in order to consolidate and densify the existing urban fabric and prevent sprawl. As such, Action 2 is composed of the following steps:

2.1 Strategically identify and develop secondary urban centres across the city

The first step focuses on strategically selecting some of the main public transportation nodes that can become new centralities and investing in their redevelopment as high-density and mixed-use cores. The creation of new centralities connected by the linear public transport system will rebalance access to urban centres. Public facilities, such as health, education, and social services will need to be located around these new centralities in order to redistribute accessibility, counteracting the existing polarisation, and increasing the population around these new urban centres.

2.2 Densify around public transport stations and along axis (TOD), prioritising available vacant land

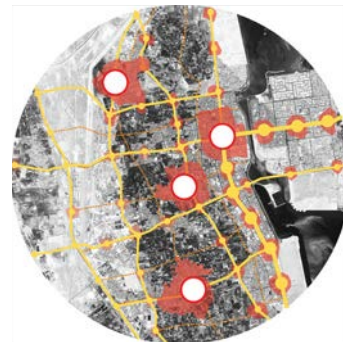
Following the creation of new urban centres as secondary economic and service nodes around the public transport stops, densification should then be strategically operated guided by the Transit Oriented Development (TOD) principles and prioritising the development of available vacant land across the city. This action should target areas in close proximity to public transport, promoting incremental density increases by incentivising mixed-use and high-density development on interstitial spaces and vacant land within the existing built-up area.

2.3 Establish policies to increase density within the city limits (1450 UGB)

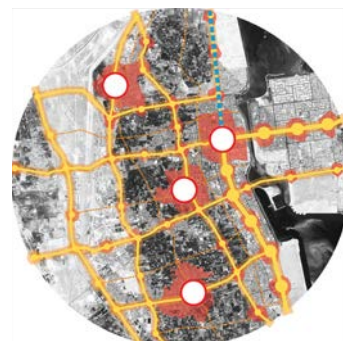
Qatif has the potential to increase its density in a relevant manner within the existing urban footprint. This action would consolidate the urban form and control the urban encroachment, as well as help to preserve agricultural land inside the city.



Create secondary urban centres apart from the two existing. This strategy is focused on diversification of land uses, and an intensification of population, to increase density within the urban footprint.



The second step is to densify around the local nodes of public transport stops and increase the density around as well. Prioritize the development of the available vacant land.



Establish policies to stop the construction of new developments that are not attached to the existing urban fabric. First, the available vacant land should be developed and after filling up the interstitial plots, future development of Qatif can be expanded towards the city's periphery.

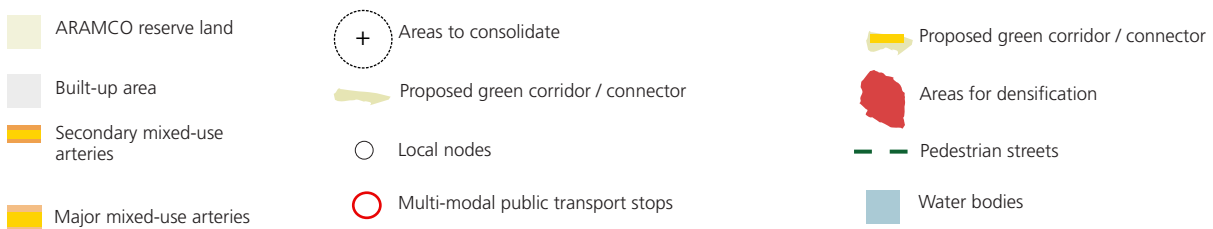
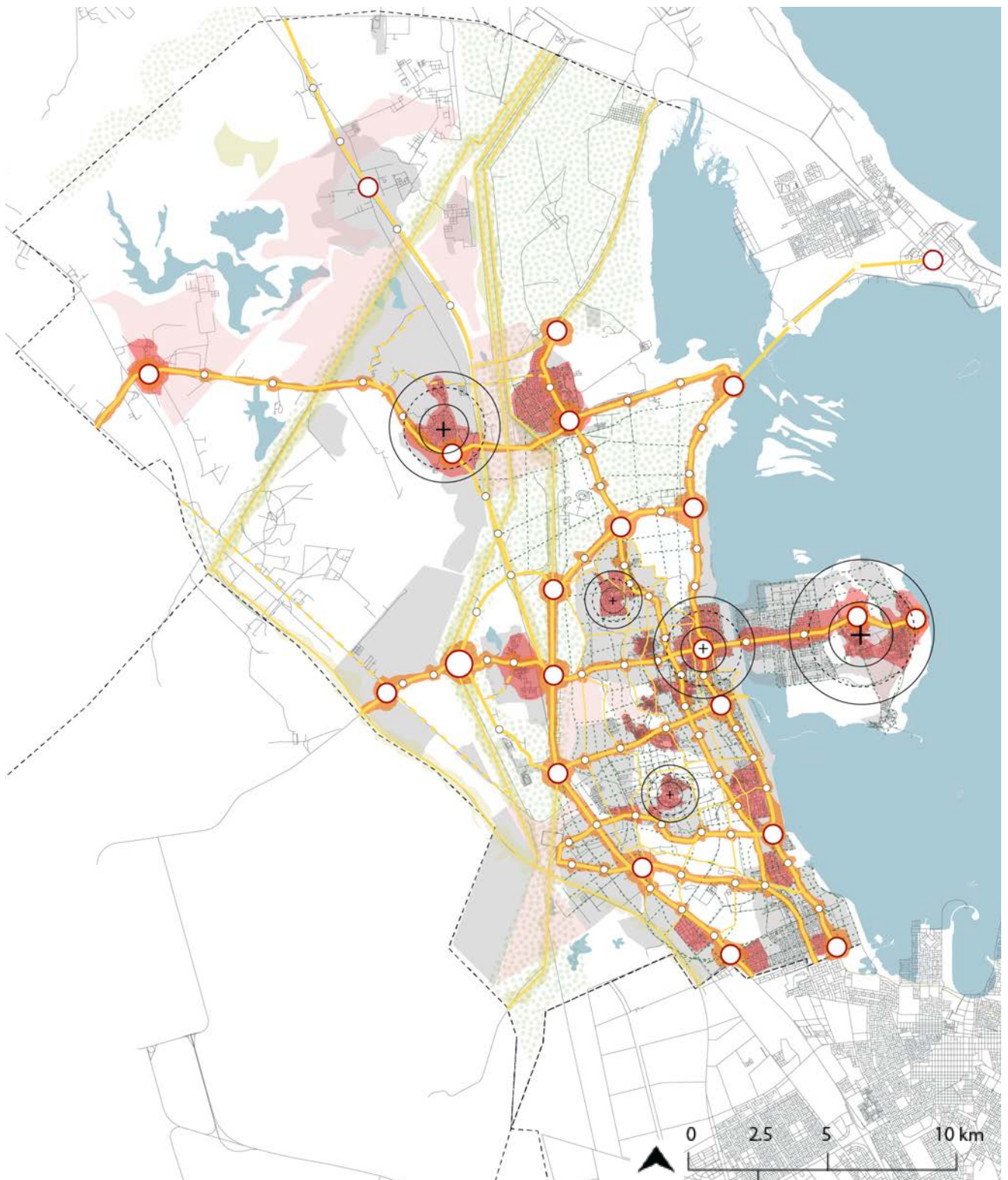


Fig. 51. Action 2: Create new centralities around main transport nodes and promote strategic densification

5.4.3 Action 3: Protect, reactivate, and integrate historic and vernacular areas

Action 3 focuses on the preservation, upgradation, and revitalisation of historic and vernacular areas. The first step is to preserve and protect historic and vernacular areas in Qatif in an urgent manner. This should be followed by a redefined regulatory system and related intervention guidelines aimed at protecting and enhancing the history and identity of the city. These historic and vernacular areas also need to be reintegrated and connected to the rest of city through the public transport network, in order to support the social and economic activities around the transport infrastructure while linking them to the different urban areas. In the historic Islamic city, streets and public spaces were vital areas for social interaction and important elements that characterise the urban landscape. The public realm of these areas will need to be improved and enhanced through diffused public space interventions aimed to reactivate the social life of these neighbourhoods

3.1 Establish regulatory system for the preservation, upgrading and revitalisation of historical and vernacular areas

Preserve and protect historic and vernacular urban patterns and buildings in the historical areas and neighborhoods, with an organic vernacular fabric, rich in valuable historic buildings, and contribute to the heritage and identity of Qatif and need to be preserved.

3.2 Re-link and connect the historical areas with the rest of the city

To bring new life to these areas, it is necessary to reconnect them with their immediate context, and with the rest of the city by the public transport system. This will contribute to increased connectivity and build continuity in the urban structure.

3.3 Upgrade the public realm to reactivate the social and economic life in these areas

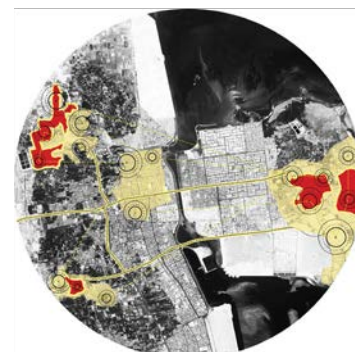
Life inside the heritage sites needs to be revived, and these neighbourhoods need to be equipped with public facilities and services, as most of them lack basic infrastructure, services, and public facilities, such as hospitals, schools, and parks. The public realm in these areas needs to be upgraded and equipped with squares, pocket parks, markets, shops, well-designed sidewalks, and bike lanes, green areas, mosques, schools, hospitals, police stations, etc. Increasing the vibrancy of street-life and public spaces is key to ensuring neighbourhoods are safe.



The first movement is to preserve and protect vernacular buildings in the historic areas of Qatif, in order to preserve the local and regional identity.



The second step is to develop a strong connection between the different historic neighbourhoods, implementing pedestrian-friendly streets, public transport routes and bike-lanes.



Establish urban interventions within the historic neighbourhoods. Upgrading the spatial conditions and promoting local markets, parks, schools, shops and social housing.

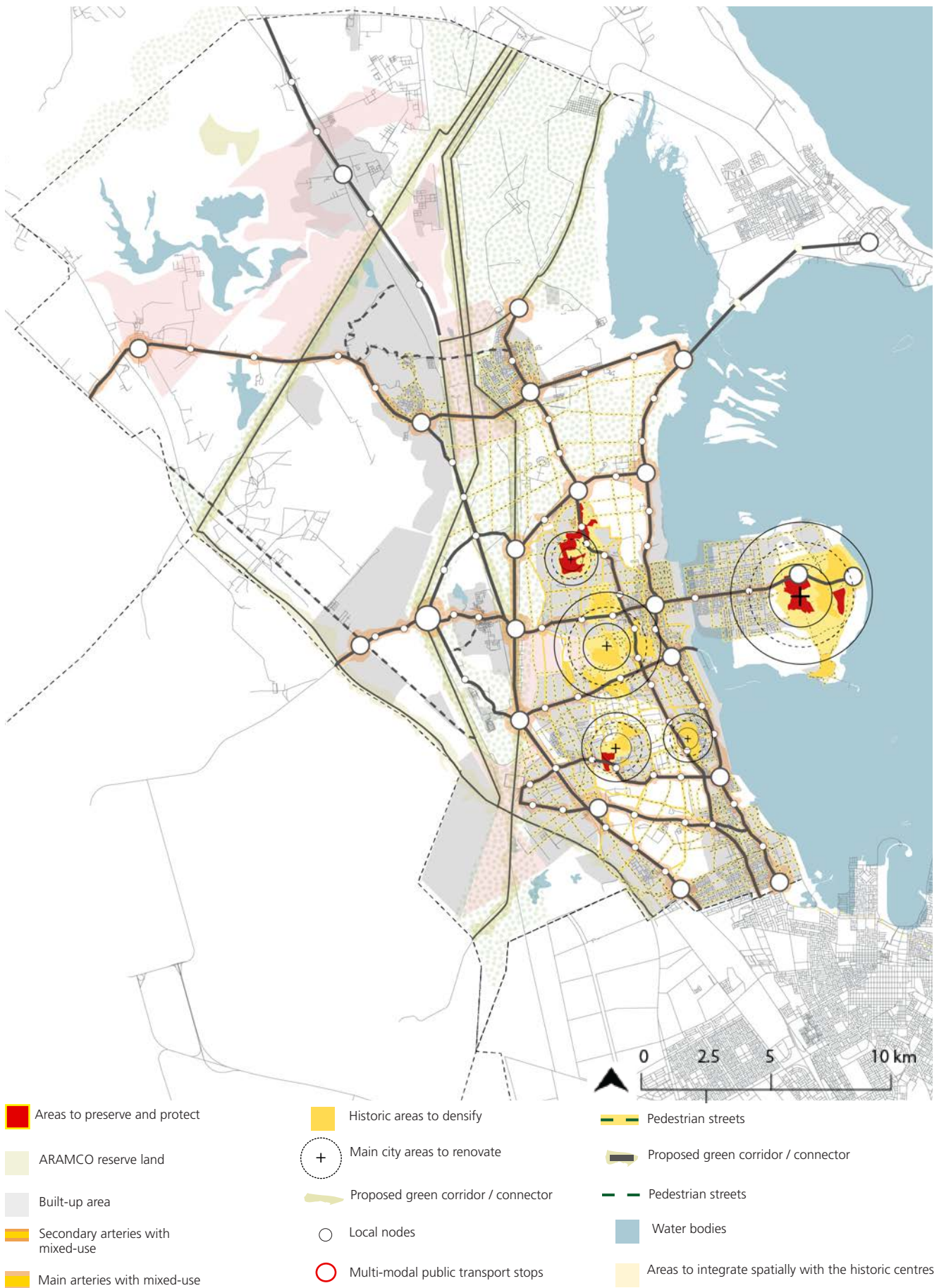


Fig. 52. Action 3: Protect, reactivate and integrate historic and vernacular areas

5.4.4 Action 4: Extend and re-link the green and blue networks, restoring and re-connecting Qatif's ecological systems

Action 4 aims to build a more resilient city, strengthening Qatif's ecological infrastructure, and preserving existing natural resources while supporting major socio-economic activities in the region in a balanced way. This can be achieved by protecting the existing agricultural land by stopping development encroachment. Additionally, through supporting urban farms and small-scale agriculture production through appropriate legal and financial mechanisms. Small farmers will be able to retain their land as agriculture and will not be forced to sell it to developers for higher returns. Subsequently, creating an extensive and well-connected green network, extending from the coast to the built-up areas and inland agricultural fields will link the different natural systems of Qatif. This will redefine a new strong ecological system, promoting the relationship between different habitats constituting Qatif, and linking the rehabilitation and strengthening of green and blue networks to the protection of biodiversity on the coast and the inland territories. As such, Action 4 can be summarised in the following steps:

4.1. Preserve and regenerate mangrove forests and agricultural land within the urban footprint

The first step needs to address the protection from urban encroachment of the remaining mangrove forests and agricultural land within the city. Currently, 5,706 ha of urban agricultural land is at risk in Qatif, as well as two remaining coastal areas of mangrove forests that are already subject to further land reclamation projects. These areas need local authorities to set up special regulatory systems, and appropriate legal and financial mechanisms aimed at preventing the destruction of existing agricultural land, promoting urban and small-holding agriculture. Similarly, a strategy for ecological restoration for the coast by re-naturalising the coastline and replanting mangroves forests should be implemented.

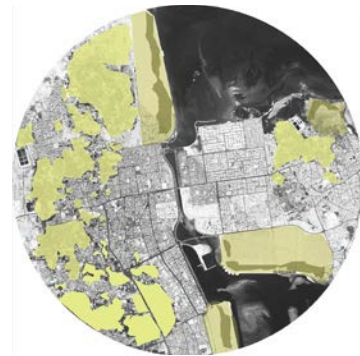
4.2 Establish a well-connected and capillary green network, re-linking it to the blue network and the coastal ecosystem.

Building on the previous step, and following the protection of traditional farming, (both within and outside the city) and the ecological rehabilitation of the coast, the city should structure an extensive green network, made of green public spaces of various sizes and types, using part of the available vacant land for this purpose. The green network should also be re-linked to the blue one, made of wadis, irrigation channels, water reservoirs, and the sea. The structuring of a consistent, well-connected green network, integrated with the blue one will build an extensive ecological infrastructure that will support the city and contribute to improving environmental conditions, from reducing the evapotranspiration phenomena impacting on watersheds and favouring the replenishment of water tables, to improving urban microclimate and coastal resilience.

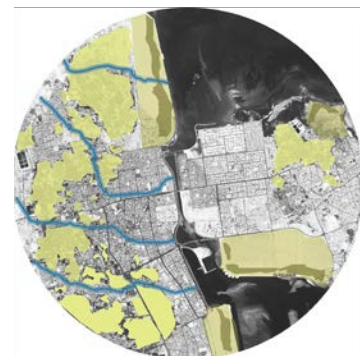
4.3 Extend the green network to cultural and heritage sites

Lastly, the ecological infrastructure, made of the extended, enhanced, and rehabilitated green and blue networks, should be expanded to include cultural and heritage sites, with the goal of linking green public spaces, traditional agricultural activities, cultural, and heritage sites, and coastal ecosystem. Promoting improved connectivity and better accessibility to these areas through public, green spaces will help re-

activate and bring new energy and economic activities to these areas, while providing environmental and social services, thereby increasing the quality of life of the city's residents.



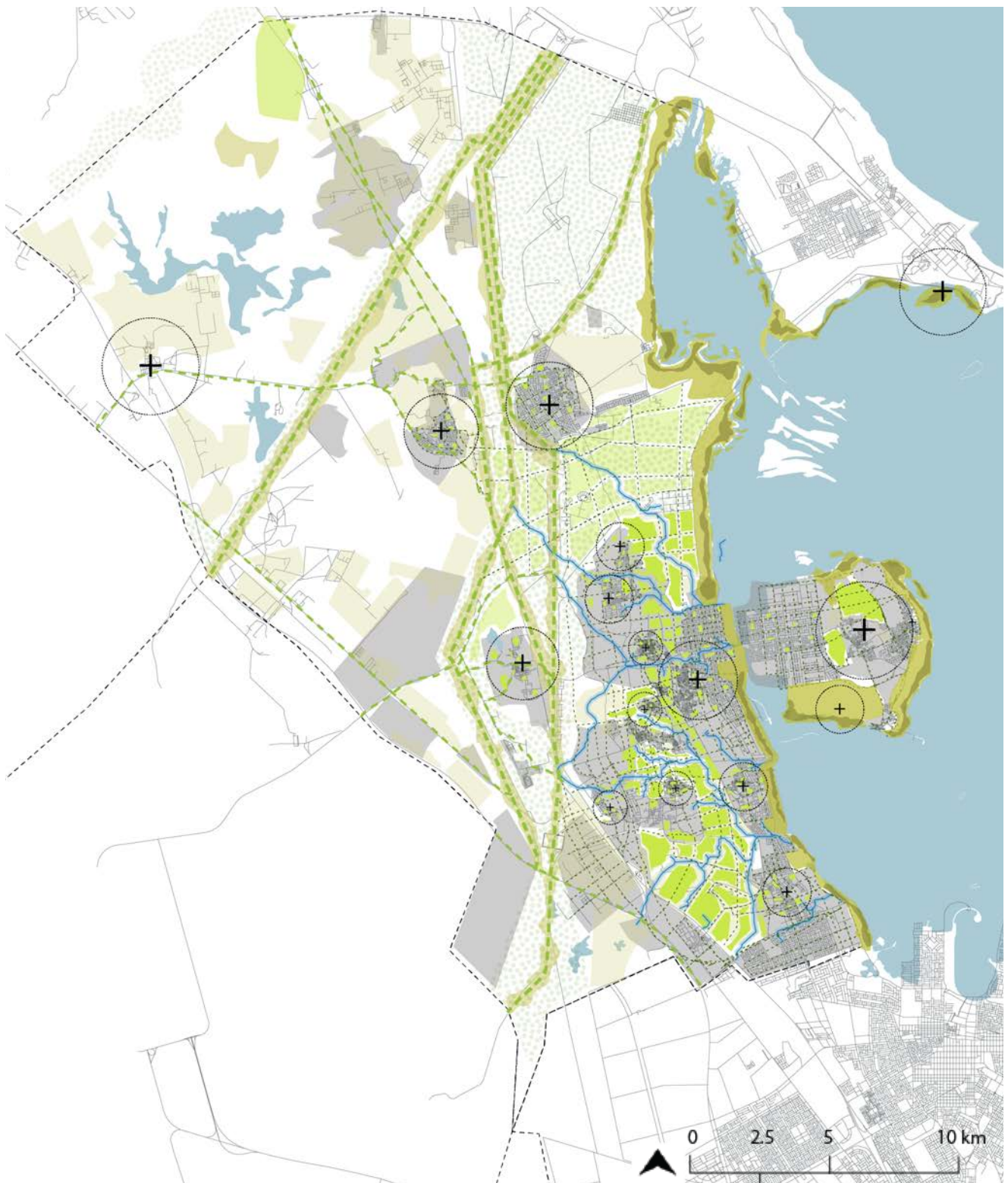
The first action, is to protect the mangrove forest along the coastal ecological systems, as well as protecting the urban agricultural areas within the city's urban footprint.



The second step is to link the urban farms with the coastal environment, restoring the existing wadis and creating green corridors around them.



The third step is to link the historic and vernacular urban pattern areas with the green system (urban farms, wadis, green corridors, mangroves). In order to strengthen the outdoor activities and boost the local farms in the city.



- | | | |
|-----------------------------------------------|--------------------------------------------------------|-------------------------------------|
| Agricultural land to be protected | Urban areas to integrate with green network | Pedestrian streets |
| Built-up area | Wadis to consolidate as green connectors | Mangrove forest to be preserved |
| Urban farms and parks within the city | Coastal environmental protection | Buffer area |
| Agricultural land outside the urban footprint | Water bodies to be protected from industrial pollution | Proposed green corridor / connector |

Fig. 53. Action 4: Extend and re-link the green and blue networks, restoring and reconnecting Qatif's ecological systems

FINAL RECOMMENDATIONS: THE THREE-PRONGED APPROACH

7



6.1 Spatial Recommendations

6.1.1 A strategic view on the Eastern Region spatial development

The Eastern Region is the Eastern Gate of the Kingdom, connecting it to other GCC countries. Its strategic location should be taken advantage of as currently, there are hardly any strategies leveraging on spatial synergy in the GCC area, where there is high competition but no strategic cooperation. The area of the region is the largest in the Kingdom, and despite the significant extension, the population concentration is limited to a few major cities along the coastal strip, namely Dammam, Dhahran, Al Khobar, Jubail, and Qatif.

Currently, and in comparison, to the main urban centres on the coastline, medium and small cities do not provide sufficient public services as they lack infrastructure networks and have scarce basic education and health services. This leads to an increase in migration from rural areas to coastal cities, such as Dammam and Jubail. This uneven access to services and opportunities, together with the unbalanced population distribution, shows the need for a territorial rebalancing strategy. This strategy should aim at redefining a hierarchical system for the cities of the region, building opportunities for secondary cities to contribute to the diversification of the economy in the region, progressively rebalancing the population distribution, and capitalising on the potential role of these secondary cities.

From an economic point of view, the Eastern Province is the main economic engine for the Kingdom, as is the main location for petroleum production. Over 86% of the Kingdom's basic industries are in this province. However, the expansion and diversification of the economic base in the region is a necessity in any long-term plan. While industrial areas in Dammam and Jubail show significant achievements and unique developments in the entire region, there is a need for expansion in other sectors, especially when capitalising on non-oil resources of the region. As such, a diversification strategy should support the emergence of new economic sectors by leveraging other regional and territorial resources.

One of the possible sectors that hold great potential towards achieving this goal is cultural and ecological tourism. A regional strategy for economic diversification should, therefore, aim to develop tourism activities through the preservation of monuments and cultural heritage in the region, as well as to support marine tourism, and in parallel, develop the agricultural and fisheries sector.

Almost 6.5% of the total area of the region is agricultural land/suitable for agricultural use, because of the presence of



Urban farming in Qatif



UN-Habitat workshop participants in Qatif

underground water reserves, especially in the area of Al-Ahsa, which includes the largest oasis in the region, and is one of the most fertile areas in the entire country. In addition, there are various archaeological sites and tourist attractions, which could add value through both preservation efforts, and by providing the necessary services to attract and revitalise the tourism industry in the region.

It is crucial to point out that there are many sites along the coastline of the region that are environmentally sensitive, such as the coastal strip from Safaniya to Manifa Bay, and Tarout Bay, as well as a group of marine islands. An environmental protection strategy at the regional level needs to be put in place and implemented coherently and be strongly interlinked and considered central in any tourism plan in the region.

6.1.2 Towards Qatif Agro-heritage City

The strategic vision for the future of Qatif, articulated through the Action Plan, aims to develop urban spatial frameworks that leverage the historic identity, and the entire cultural landscape, protecting the historical sites and the vernacular neighbourhoods of the city, to transform them into touristic attractors, as well as revitalising and improving quality of life in heritage areas. To achieve this, the strategy promotes improved connectivity between the historical areas at the north, Tarout island, the coastline, the city centre, the agricultural land and the satellite villages by providing a well-structured, capillary and

intermodal public transport system. Promoting an efficient use of the public transport systems will strengthen the accessibility to public services, facilities, and job opportunities, particularly for the most isolated areas in the city, making it more inclusive.

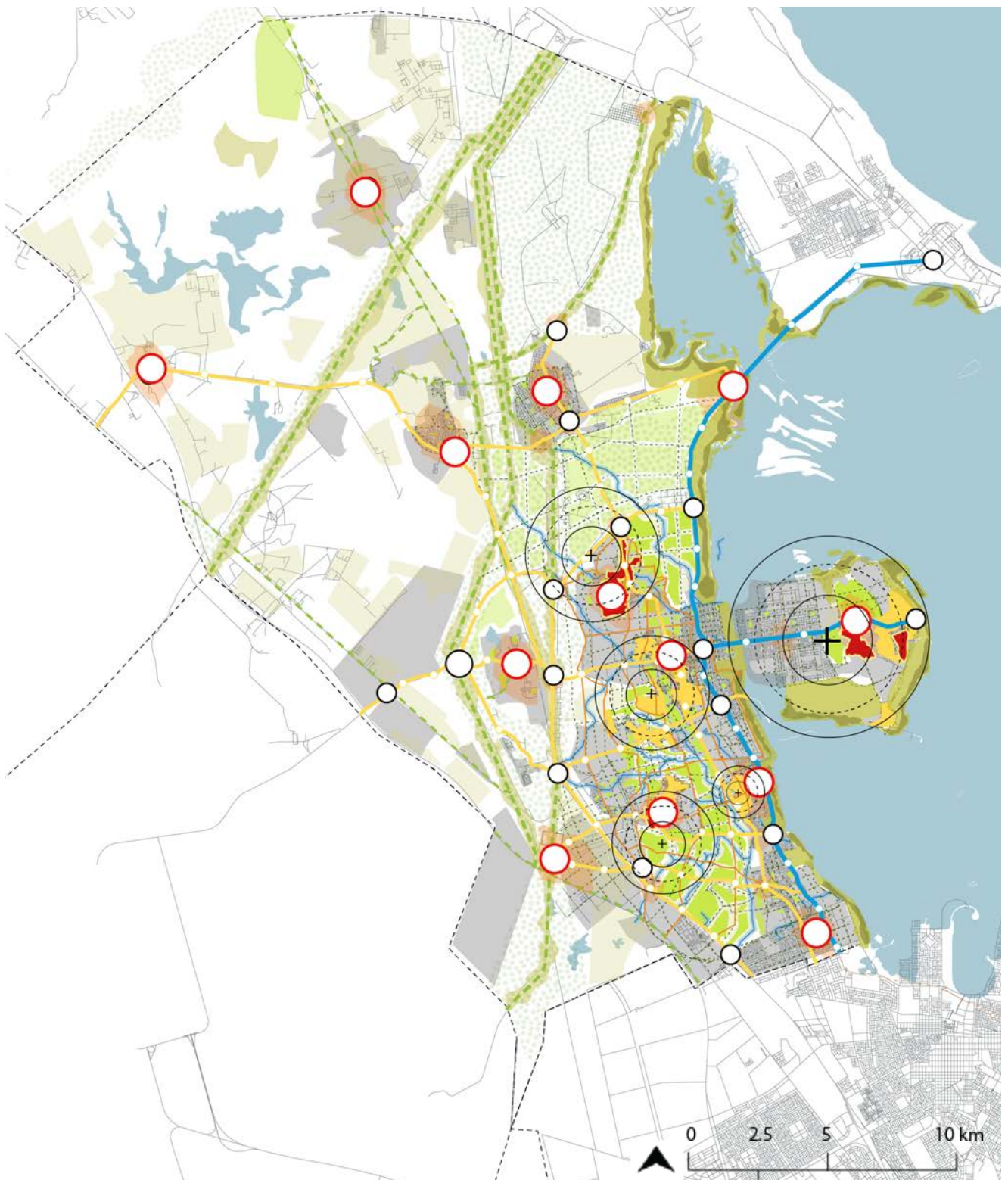
In addition, the redistribution of appropriate compactness and density around polycentrism and mixed-use will make the city more sustainable and efficient. A more compact urban form, structured along public transport networks, will support sustainable management of natural resources and land, greening the city and making it more resilient. As such, the Action Plan translates the strategy into a sequence of systemic actions, which, if implemented, will enable the strategic vision to become a reality, making the city:

- **Historic**
- **Connected,**
- **Inclusive, and**
- **Resilient.**

Overall the city will become more livable and pleasant, vibrant, and attractive, being socially and environmentally more sustainable, and increasing its resilience through the rebalancing of existing natural resources and major economic activities. Defining an Agro-Heritage City as a city where outstanding landscapes of aesthetic beauty that combine agricultural biodiversity, resilient ecosystems, and valuable cultural heritage come together, the strategy envisages the future of Qatif as an Agro-Heritage City: a vibrant modern city



A small scale green pedestrian street in Qatif city centre



- | | | |
|-----------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|
| ■ Areas to stop preserve and protect | ■ Agricultural land outside the urban footprint | ■ Built-up area |
| + Urban areas to be integrated with green network | ■ Urban farms and parks within the city | ■ ARAMCO reserve land |
| — Proposed green corridor / connector | ■ Agricultural land to be protected | — Proposed BRT line |
| — Wadis to consolidate as green connectors | ■ Coastal environmental protection | — Feeder bus system |
| ■ Historic areas to consolidate | — Proposed green corridor / connector | — Secondary arteries |
| ■ Mangrove forest to be preserved | ○ Multi-modal public transport stops | ○ Local nodes |
| | - - - Pedestrian streets | ○ Primary mixed-use urban nodes |

Fig. 54. Action plan for Qatif

where the economic and historical identities are redefined and relinked. Most importantly, both the strategic vision and the Action Plan strengthen two fundamental aspects, previously overlooked in Qatif's development: the natural environment, and a dense, integrated, and well-connected urban structure.

The restructured urban development patterns, grounded in a new and efficient public transport network supporting a new system of mixed-use centralities, will entirely transform the way the city functions. In parallel, by incrementally greening the city while re-establishing a healthy and functioning relationship between the built and the natural environments, Qatif will be able to enhance and rebalance the ecological, the social, and the economic dimensions, providing a healthy and productive urban environment for its citizens, while becoming more attractive to tourism and increasing job opportunities.

The revitalised urban farms, the heritage sites, and the agricultural land surrounding the city, will constitute a new structuring socio-ecological infrastructure, strengthening the physical and functional connectivity between the element composing it, and integrating them through the establishment of touristic and cultural routes.

6.2 Institutional and Legal Recommendations

In terms of legal reform, Qatif would benefit from both fiscal and jurisdictional decentralisation at the municipal level to facilitate independent and innovative solutions to urban social problems. This should entail:

- The transfer of local planning power, authority, and function to the municipality with provision for independent action without recourse to effectively address community needs. This is supported by the New Urban Agenda, which specifies that territorial urban design and planning processes should be led by sub-national and local governments, but their implementation will require coordination with all spheres of governments as well as the participation of the civil society, the public sector, and other relevant stakeholders. This would require establishing an Urban Planning Department in Qatif Municipality with enough specialised planners and architects. Considering the size of Qatif, it could be beneficial to its sustainable development to give the Municipality Amanah status, as with this they could work directly with MoMRA.²⁵
- Fiscal decentralisation gives autonomy to the municipality to source funds to finance development activities. Revenue generation activities in cities may include taxes and levies. Urban areas should be allowed to collect



Legal assessment for the Eastern Region at the UN-Habitat workshop in Qatif

some form of property taxes to fund development activities. The recent White Lands Act that imposes fees on undeveloped plots in urban areas to tackle land speculation, housing shortage and indiscriminate land development shows that regulatory mechanisms can be leveraged to generate revenue while fostering an efficient development framework.

- Opening avenues for actors, including the private and voluntary sector, and the general community to participate in decisions regarding projects that affect them.

Consolidation of the planning legal instruments would also support development interventions in Qatif, along with the review, update, and modernisation of these laws to increase its relevance to the current development situation. This should also entail re-thinking the lawmaking process to limit the number of actors. The mere existence of the urban laws will not guarantee sustainable urban development as they must be functionally effective, i.e., precise in achieving their intended results, clear, consistent, and simple to understand. There is a need for a functionally effective urban planning law that, inter alia:

- Introduces incentives/requirements that will enable more compact city growth;
- Defines clear institutional roles and responsibilities at each level;

- Enforces linkage between all levels of plans (national-regional-local);
- Provides effective coordination and monitoring mechanisms; and
- Increases meaningful public participation and engagement in planning

The legal framework also needs to enshrine an acceptable mode of public participation in public decision making to foster equality and inclusion.

Revising the Urban Growth Boundary Law to include clear criteria on how it is set would enhance technical and vertical accountability. The Law also needs to place more emphasis on establishing the Development Protection Boundary as a no-development zone, not only to prevent haphazard development but to also discourage the advantage taken by private interests from laxity in the legal text. These initiatives will strengthen policy formulation designed to move the city towards a more sustainable, compact, and dense future. Primarily, a post-legislative scrutiny of the UGB law should be undertaken to assess whether or not it has met its policy objectives. This could, in turn, inform the legal reform process as well as planning policy options.²⁶



Discussion with local stakeholders, during the UN-Habitat workshop regarding economic potentials for the city

6.3 Financial Recommendations

In 2015, the KSA began implementing reforms aimed at creating sustainable local public finance. The central government continues to promote strategies to increase own-source revenue at the local level through better tax administration and economic diversification.

Qatif’s public finance priorities are closely aligned with Saudi Arabia’s larger national development goals, which include supporting local entrepreneurship in key sectors like agriculture, tourism, and manufacturing. Therefore, expanding the public sector’s capacity to finance essential local infrastructure and projects supporting development in these areas is imperative for the city.

International experience within own-source tax mechanisms represents the optimal set of financing tools needed to expand local revenues supporting sound fiscal policy,²⁷ (specifically, through the taxation of the real estate value capture mechanisms). Although some cities of the Kingdom have been experiencing new property taxes, such as the White Land Tax, exploring other tax instruments will be a priority for Qatif in order to generate a diverse income stream portfolio.²⁸

Land taxes are a good option since they establish a stable and reliable own-source revenue stream for local governments. Moreover, the benefits associated with development projects, (e.g., public transportation and social infrastructure) are increased substantially by their multiplier effect, (directing a portion of land

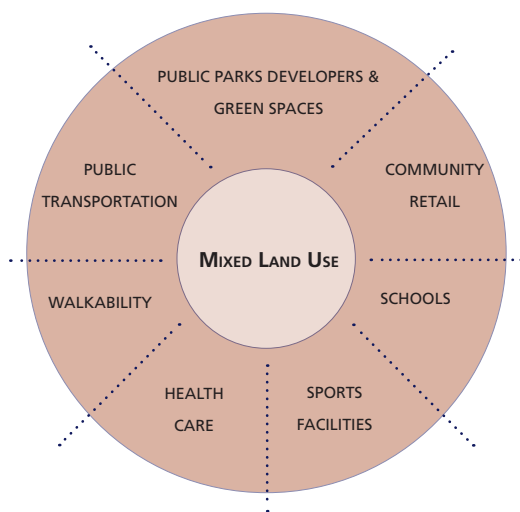
value increases back into the government revenue stream).²⁹ UN-Habitat suggests that Qatif makes use of land-based tax mechanisms, (i.e., betterment levies) in public projects.

Public investment in small and medium scale projects, like the waterfront and investments in public facilities and transportation, can spur adjacent residential and commercial development, enhance mixed land use and create jobs, (see figure 55). Local development driven by public projects can also produce appreciation in the land value and indirectly engender a number of other community benefits, (see figure 56).³⁰

While betterment levies are well suited for infrastructure projects, fiscal instruments such as waste management fees, parking fees, and congestion fees are useful tools in the process of reducing vehicle dependency and increasing pedestrian traffic, especially in commercial and leisure areas.

Several finance tools are available to local governments interested in expanding own-source revenue. Municipal governments can maximise the benefits of these instruments by:

1. Coordinating and collaborating with different levels of government to connect national strategies to local priorities. For example, establishing a local liaison office, or a local PPP unit linked to the National Centre for



Source: United Nations Human Settlements Programme (2018)

Fig. 55. Components of mixed land use

THE IMPACT OF INFRASTRUCTURE DEVELOPMENT ON LAND VALUE

Case Examples	Key Findings
Bogotá, Colombia	Research suggests that for every additional 5 minutes of walking time to a public transportation station, rental prices fall by 6.8 - 9.3%
Dubai, UAE; Cairo, Egypt	<ul style="list-style-type: none"> • Urban development that included retail facilities resulted in a price premium of 15 – 20%. • Schools increased residential land prices by approximately 13% • Walkability within a residential community increases home values by up to 9%

Source: Colliers International (2017); Rodriguez and Targa (2004).

Fig. 56. The impact of infrastructure development on land value

Privatization in charge of proposing, implementing, and monitoring PPP projects.

2. Investing in capacity building and improving tax administration.³¹
3. Tailoring fiscal instruments according to local needs (e.g., fiscal cadaster in Bogotá, Colombia)

Lastly, coordinating among planning, legal/regulatory frameworks, and local finance is crucial to creating the necessary local conditions for sustainable and equitable development, as outlined in the New Urban Agenda.³²

CASE STUDIES AND BEST PRACTICES

WASTE MANAGEMENT FEES

In the Tamil Nadu State of India, a waste management project proposed the central government (35%) and the state government (15%) share 50% of the total project costs. A private entity (via a PPP) would provide the remaining 50% of project funding. The private concessionaire would be responsible for planning, designing, building, financing, operating, and maintaining the municipal solid waste management facility for the concession period. Land would be provided by the municipality through an annual lease as specified by the Government of Tamil Nadu.

PARKING FEES

Chicago leased 34,500 curb side parking metres to the bank Morgan Stanley for 75 years, trading metre revenues for an upfront payment of nearly USD \$1.16 billion. This type of PPP contract includes a fixed schedule of metre rate increases, which raised rates two to four-fold by 2013. As a result, Chicago had the highest curb side metre rates in the United States. Metres were netting USD \$20 million annually while Morgan Stanley managed pricing and maintenance of the metres.

CONGESTION FEES

In 2007, Stockholm introduced a cordon pricing-based scheme to reduce congestion, local pollution, and generate local revenue. Following the introduction of the cordon, traffic decreased by 19% in the first year in addition to generating € 59 million annually. In Singapore, the implementation of an Area Licensing System (ALS) reduced traffic from 12,400 vehicles in May 1995 to 7,300 vehicles in August 1995 during restricted hours. Moreover, revenue from the sale of area licenses amounted to US\$ 47 million with capital costs were US \$ 6.6 million in 1975 with an additional US \$17 million from ALS revisions in 1989.

Source: Ernst and Young Pvt Ltd., Ministry of Urban Development of the Government of India, & the Confederation of Indian Industry. *Compendium on public private partnerships in urban infrastructure: case studies*. (2017). World Bank. Washington, DC.; Weinberger, R., Kaehny, J., & Rugo, M. (2010). *U.S. parking policies: an overview of management strategies*. Institute for Transportation and Development Policy. New York, NY.; Croci, E. (2016). *Urban Road Pricing: A Comparative Study on the Experiences of London, Stockholm and Milan*. *Transportation Research Procedia* 14, 253-262.; Phang, S., & Toh, R.S. (2004). *Road Congestion Pricing in Singapore: 1975-2003*. *Transportation Journal*, 43(2), 16-25.

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7.3 Notes and References

- 1 The World Bank. 2012. Adaptation to a Changing Climate in the Arab Countries
- 2 UNFCCC Designated Authority in Saudi Arabia 2016, Third National Communication to UNFCCC
- 3 UNFCCC Designated Uthority in Saudi Arabia
- 4 FAO-RNE. Response to Climate Change in the KSA
- 5 UNFCCC Designated Authority in Saudi Arabia 2016, Third National Communication to UNFCCC
- 6 FAO-RNE. Response to Climate Change in the KSA
- 7 Represent the instructions issued by a Minister, his representative or any official of the Ministry to announce new regulations and updates regarding any intent or action to be undertaken]
- 8 The official name from MoMRA is Local and Action Plans for Cities of Dammam Metropolitan and Governorates of Qatif and Ras-Tanura
- 9 According to Article 7 and 8 of Regional Law, the Minister of Interior charis the meeting with all Regional Amirs to discuss issues affecting each region and the general services required
- 10 Royal Decree No m/4 dated 24 November 2015 (the law) and Council of Ministers Desicion No. 377 dated 13 june 2015 (the regulation)
- 11 Al-Qatif Workshop, October 2018
- 12 Qatif Workshop, October 2018
- 13 Chapter 5 of the State of Saudi Cities Report, "Managing Urban Transformation in Saudi Arabia - The Role of Urban Governance (2018)" pg. 16
- 14 See Article 5 of the Law of Regions to Royal Order No. A/92 (1993).
- 15 It consists of a) the Prince/Governor of the Region as president; b) Deputy Governor of the region as the vice president; c) Deputy Mayor of the Emirate/AMARAH; d) Heads of government authorities in the Region who are determined pursuant to a decision issued by the Prime Minister according to the directives of the Minister of Interior; and e) Ten citizens who are scholars, experts and specialists and are appointed by order of the Prime Minister based on the nomination of the Prince of the Region and the approval of the Minister of the Interior, for a renewable four year term
- 16 See ibid n.15, Article 23
- 17 Shearman and Sterling LLP, 'Understanding the Key Government Institutions and Ministries in the Kingdom of Saudi Arabia' (2016) <<https://www.shearman.com/~media/Files/NewsInsights/Publications/2016/09/Saudi-Arabia-Publications/Understanding-the-Key-Government-Institutions-and-Ministries-in-the-Kingdom-of-Saudi-Arabia.pdf>> accessed 09 February 2018.
- 18 See supra footnote 3. From a UN-Habitat workshop, it emerged that there was a city constructed by Aramco outside the urban boundary (in a location between Al-Ahsa, Begig and Ihsaa). The location suitability was not decided by the regional plan; rather it was a decision by Aramco to carry out that development.
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- 20 The contribution of Eastern Province to national GDP is 24%. Saudi Arabian General Investment Authority. (2014). Makkah Region Economic Report 2014. The Kingdom of Saudi Arabia.
- 21 Agriculture, Tourism and Waterfront development are priorities for local economic development and were key topics emerged during the Rapid Planning Studio workshop held in Qatif (October 2018).
- 22 Each of the 13 regions is divided into governorates and the region capital. The capital of the region is governed by an Amanah (municipality), which is headed by a mayor.
- 23 Approved 2016 Budget for Qatif, Ministry of Finance, The Kingdom of Saudi Arabia
- 24 NTP goal is to increase own-source revenue to 40% of municipal budgets by 2020. In 2016, intergovernmental transfers comprised 85% of the total budget for Qatif. Approved 2016 Budget, Ministry of Finance, The Kingdom of Saudi Arabia.
- 25 Shearman and Sterling LLP, 'Understanding the Key Government Institutions and Ministries in the Kingdom of Saudi Arabia' (2016) <<https://www.shearman.com/~media/Files/NewsInsights/Publications/2016/09/Saudi-Arabia-Publications/Understanding-the-Key-Government-Institutions-and-Ministries-in-the-Kingdom-of-Saudi-Arabia.pdf>> accessed 09 February 2018.
- 26 See supra footnote 3. From a UN-Habitat workshop, it emerged that there was a city constructed by Aramco outside the urban boundary (in a

location between Al-Ahsa, Begib and Ihsaa). The location suitability was not decided by the regional plan; rather it was a decision by Aramco to carry out that development

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