



وزارة الشؤون
البلدية و القروية
Ministry of Municipal & Rural Affairs

TAIF

City Profile



مستقبل المدن السعودية
FUTURE SAUDI CITIES



UNO HABITAT
FOR A BETTER URBAN FUTURE

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TAIF

الطائف



FUTURE SAUDI CITIES PROGRAMME

CITY PROFILE



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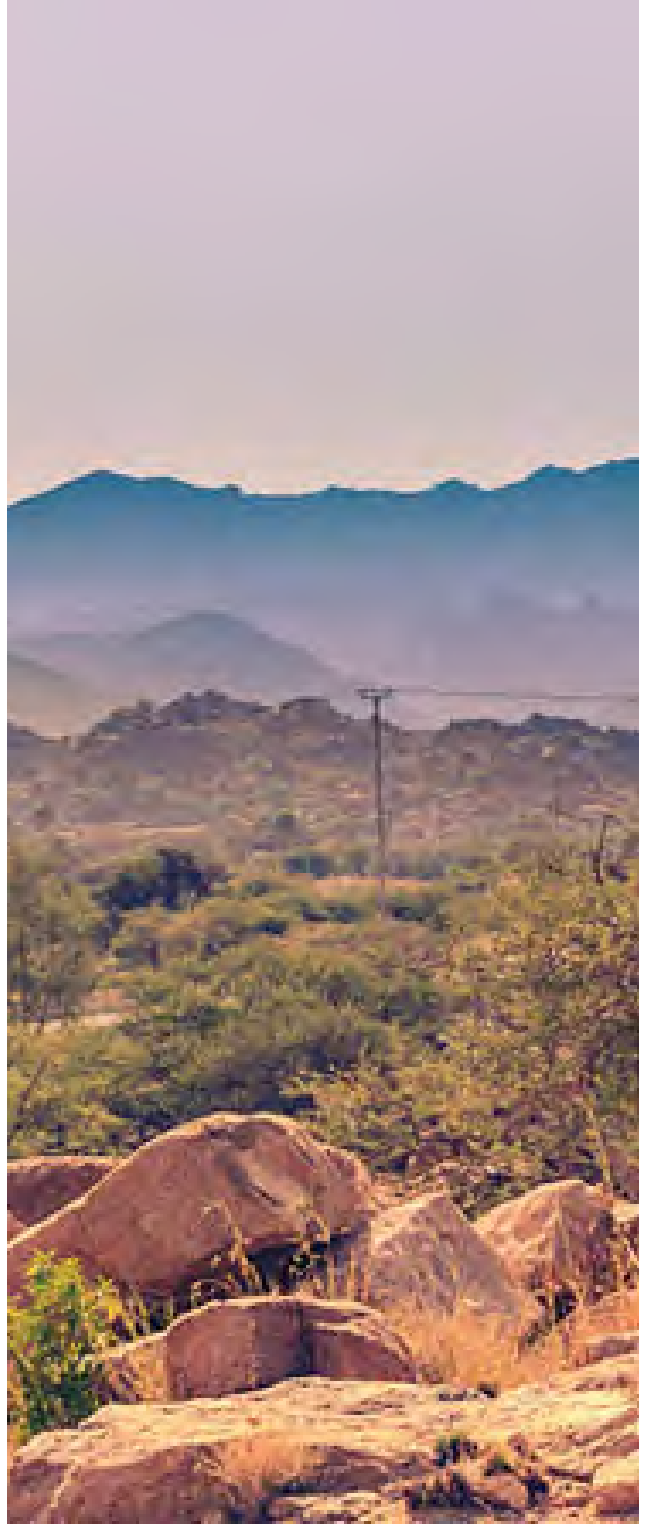
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INTRODUCTION **1**



1.1 About the Future Saudi Cities Programme

The Future Saudi Cities Programme is a joint programme developed by the Saudi Ministry of Urban and Rural Affairs 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 CPI 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

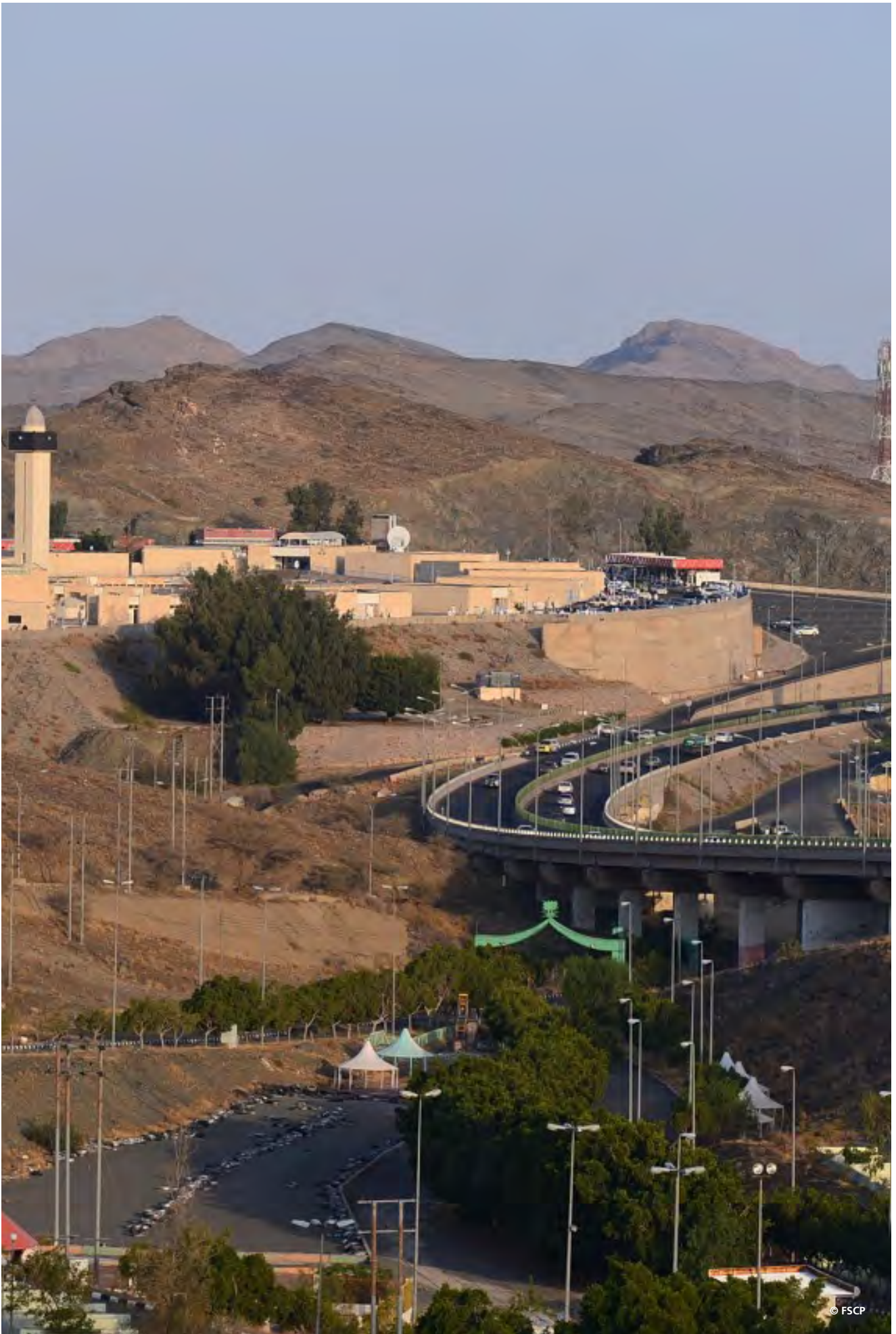
1.3.1 Scope of the city profile

The city-profile combines MoMRA's new strategy, with a review of existing studies, plans, and strategic documents, such as the review of the 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 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



Road connections in Taif

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 Programme 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 reports;
- 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.

By analysing how the structures of spatial, socio-environmental



Highway link to Taif through the Sarawat Mountains

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;
- Makkah Regional Plan;
- New Taif Development Plan;
- Taif Local Plan.

1.4.3 The City Prosperity Index assessment report

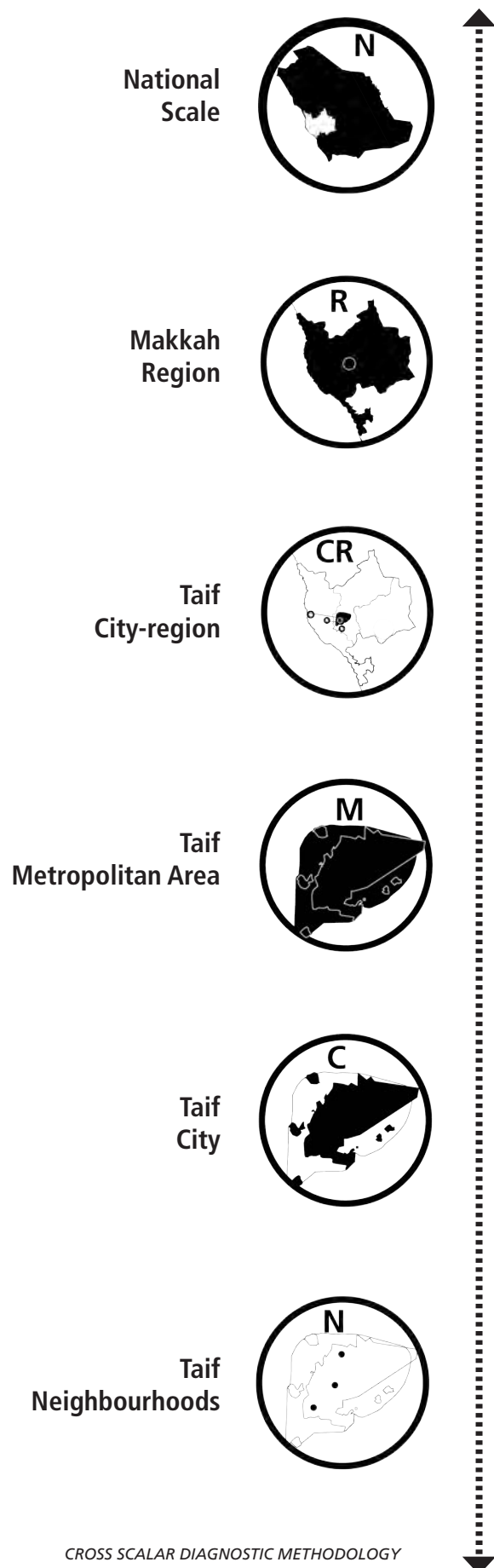
The City Prosperity Index is made up of six dimensions that serve to define targets and goals that can support the formulation of evidence-based policies. These include the definition of city-visions and long-term plans that are both ambitious and measurable. The six dimensions are:

- 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 Taif. There are ten detailed spatial indicators at the FSCP city profile level that link into the 72 flexible indicators of the CPI assessment.

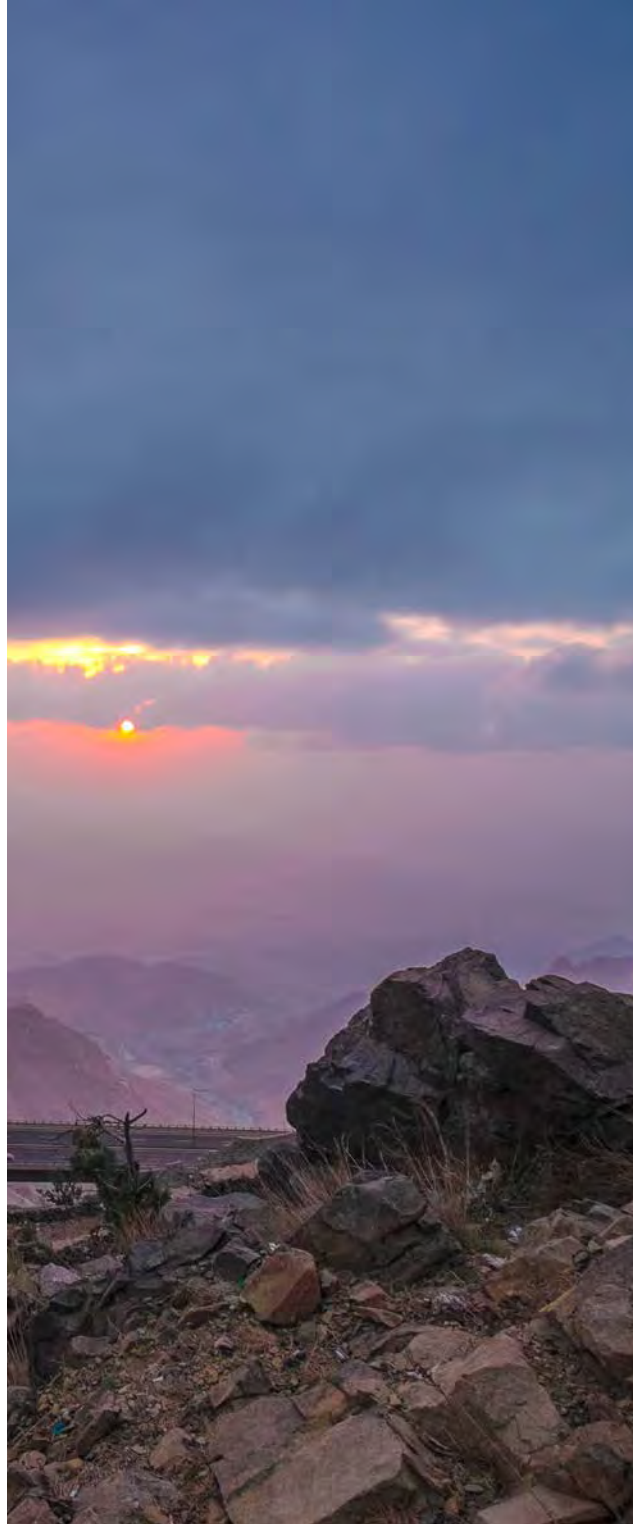
1.4.4 The GIS spatial analysis

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.



NATIONAL AND REGIONAL SPATIAL CONTEXT

2





2.1 The Region’s Role in the KSA

2.1.1 Historical background

The name Taif means “encompassing” in Arabic and has served as a summer capital for centuries, attracting tourists and visitors who enjoy the captivating views from wind-sculpted rocks, a pleasant climate, and the verdant setting of its surroundings, as well as the abundance of fruits which grow in its fertile valley. Located 1,800 metres above sea level, the climate in Taif is suitable for growing wheat, vines, and fruit, earning the title “Garden of the Hijaz.”

Pre-Islam, Taif was home to the Souk Okaz, a famous annual trade and cultural fair, the largest in the Arabian Peninsula. The Souk Okaz took place on what is now a rolling desert plain North of Taif. Beginning in the 1950s, Taif began to grow both in physical size and population, with agriculture as a major component of the local economy. The city limits have spread to encompass several smaller hamlets. Today, more than one million people have made Taif their permanent home, and thousands more visit over the summer months. Pilgrims take advantage of the proximity to Makkah, and the tourism industry also provides thousands of jobs to residents.

2.1.2 Geography and location

Taif is located in the Makkah Region, West of Saudi Arabia, and 100 kilometres from Makkah, which is about 167 kilometres Southeast of Jeddah. Located at an elevation of 1,800 metres above sea level on the Eastern slopes of the Al Sarawat Mountains, Taif covers an area of 1,378 square kilometres. The Taif Growth Protection Boundary covers the satellite towns of Al Shafa, As Sail Al Kabeer, and Al Hadah, and has a total area of approximately 3,826 square kilometres.

Taif has a hot desert climate, with hot summers and mild winters. The summer is not as extreme as the lower-lying regions in Saudi Arabia. In the winter, the temperature can get to as low as 3 degrees and as high as 18 degrees. It is mostly dry with sporadic showers of rains. In the summer, the temperature ranges from 22 degrees with a high of 25 degrees, with an average of 27.1°C, July is the warmest month, while the lowest average temperatures in the year occur in January when it drops to 13.9°C. The driest month is June, with about 2 mm of precipitation, while the highest amount of precipitation occurs in April, with an average of 35 mm.

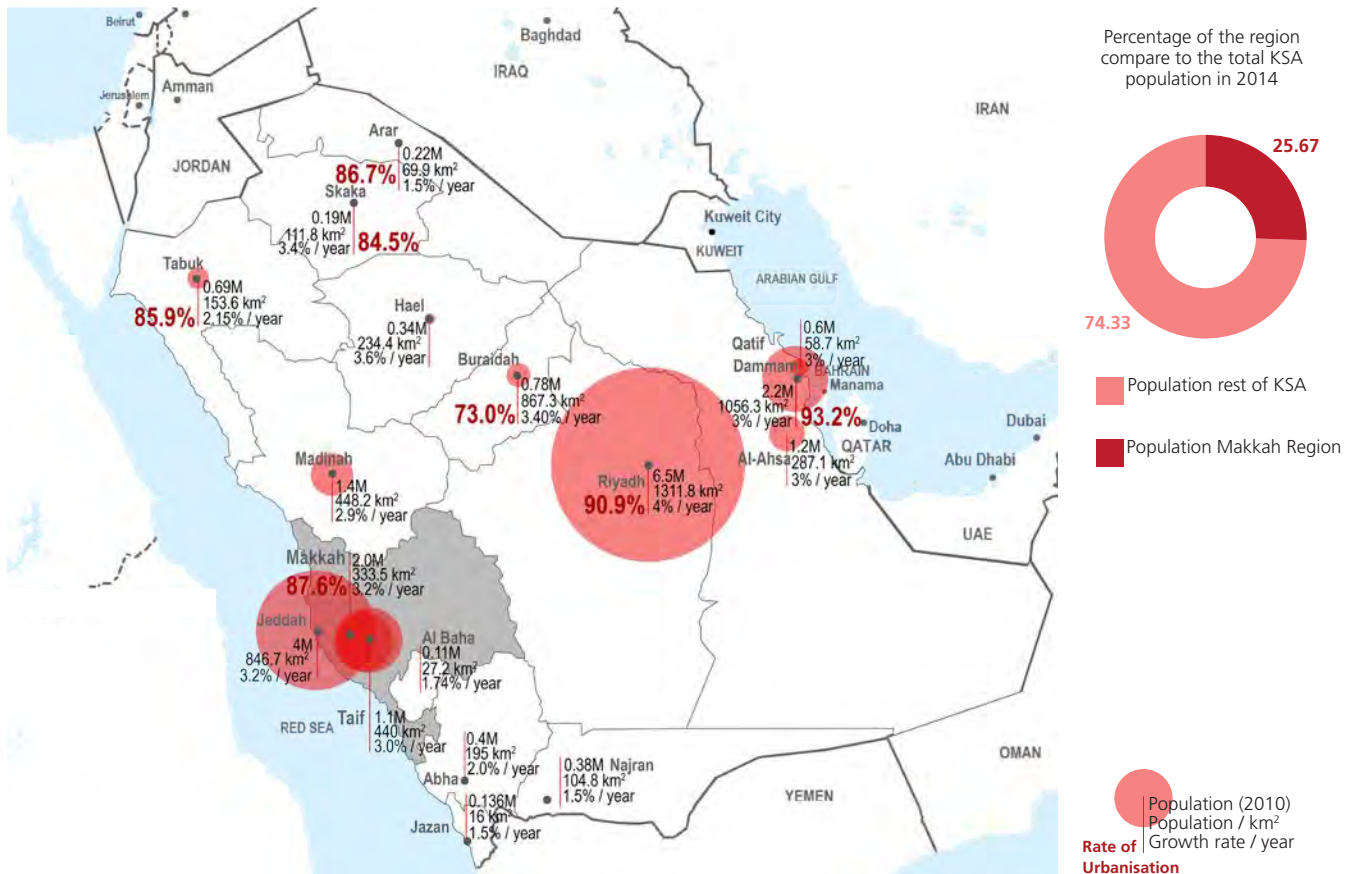


Fig. 1. Population distribution, growth rate and urban areas within the Kingdom of Saudi Arabia



2.1.3 Demographic background

The current conditions confirm that the agglomeration of the population in the Makkah Region is concentrated in two major urban centres, which are Jeddah and Makkah, hosting almost 71% of the total population of the region. There are no other medium-sized urban centres, except for the city of Taif, with a population of 1.1 million people. 96% of the urbanised population lives in these cities, while the rest of the region remains populated by small communities and insignificant urban agglomerations, which emphasises the absence of a balanced hierarchy of cities and growth centres. Over time, these three most populated centres will be better linked through interlocking economic systems, shared natural resources and ecosystems, and common transportation systems.

In 1992, Taif's population was 400,000 people, by 2004, it grew to over half a million, and by 2010 the population was recorded to be 580,000. Today the city's population stands at over one million people, with a growth rate of 3% per annum on approximately 440 square kilometres of built area.

Approximately 50% of the population is under 30 years of age. It's the sixth largest city in the Kingdom and has a population density of 23 p/ha. There were 119,000 households in the city with an average household size of 5.34 people per household in 2016.¹

2.1.4 Socio-economic background

Taif city is a popular tourist destination among Saudis. In the summer months, people travel to the city to enjoy the weather, which is much cooler than Jeddah and Makkah. Nestled in the mountains, Taif has beautiful scenery and a unique relaxed atmosphere. The tourism industry provides thousands of jobs to residents.

Agriculture is one of the major components of the city's local economy. Traditionally the tribes in the Taif area grew wheat and barley, and fruits including limes, apricots, oranges, olives, figs, peaches, pomegranates, watermelons, quince, grapes, almonds, and dates. The region has agricultural areas, and the vegetation cover expanded to almost 3,145 hectares, representing a 291% growth between 1983 and 2013 (CPI). In addition, approximately 2,000 farms in Al Hada and Al Shafa cultivate Damascena roses, known for the production of precious oil; attar.

Gross Domestic Product

The gross domestic product (GDP) of the Makkah Region (2012) was 288 billion Riyals, representing 10.9% of the GDP of the Kingdom, and 20.8% of the GDP of the Kingdom excluding crude oil and gas. The average annual growth

rate of GDP for the region was 30% during the 2009-2012 triennium. The real estate and financial services sector ranked first in terms of contribution to the region's GDP with 18%, followed by industry with 16.9%, trade with 16.7%, transport and communications with 9.5%, building and construction with 6.7%, and personal and community services sector with 3.3%.

2.1.5 National Connectivity

The region has two airports, one being a major international airport in the Kingdom, King Abdulaziz Airport in Jeddah, and a regional airport in the city of Taif. The number of passengers using the two airports in 2012 was 13.7 million. The air traffic movement in the region represents 36% of the total air traffic of passengers in the Kingdom. The quantities of goods transported through these airports amounted to 44% of total air cargo in Saudi Arabia. King Abdulaziz Airport in Jeddah is witnessing a substantial redevelopment to improve the level of services, in accordance with the highest international standards. The redevelopment also aims at intensifying the region's infrastructure and enhancing the capabilities of the airport by increasing its capacity to 30 million passengers in the first phase, and 80 million passengers in the following ones. In addition to the two mentioned airports, there is a runway for small agricultural planes in the Qunfudah Region, as well as a private airstrip in the Rabigh Region, belonging to ARAMCO.

Plans for a new international airport in Taif to serve pilgrims heading to Makkah was first revealed in 2014, and construction started in February 2017, aiming to meet its scheduled completion by the beginning of 2020. Once completed, the new airport in Taif will have the capacity to handle five million passengers per year.

As for maritime transport, there are small marinas in three of the four coastal regions that are used exclusively by Border Guards and small fishing boats. However, the region hosts the Jeddah Islamic Port, the largest port in the Kingdom and one of the largest ports in the region. Jeddah Islamic Port contributes to approximately 31% of the total shipping movement in the Kingdom. The number of passengers (arrivals and departures), travelling via the port accounted for around 24% of the total number of travellers using the Saudi ports. There is also another new port, currently under construction, the King Abdullah Economic City Port, which is expected to be among the top ten ports worldwide once completed. On another front, the region is investing in a significant development of its railways transport system, with the Al Harameen High-Speed Rail Project already operational. The total length of the railways project is 480 kilometres and is designed for passengers. The first phase of the project included

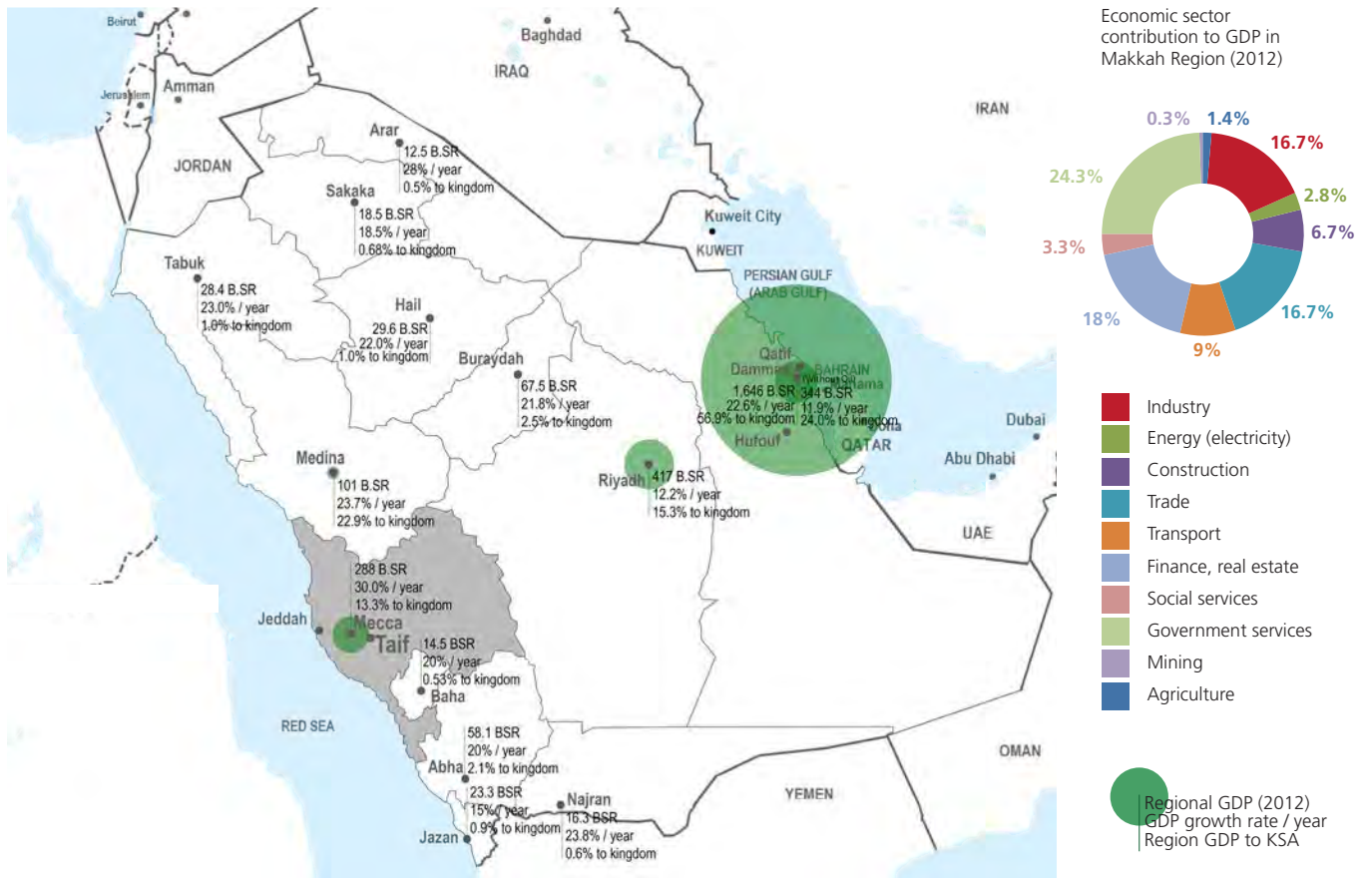


Fig. 2. Regional Gross Domestic Product and economic sector contribution



Fig. 3. Transport connectivity between Saudi cities

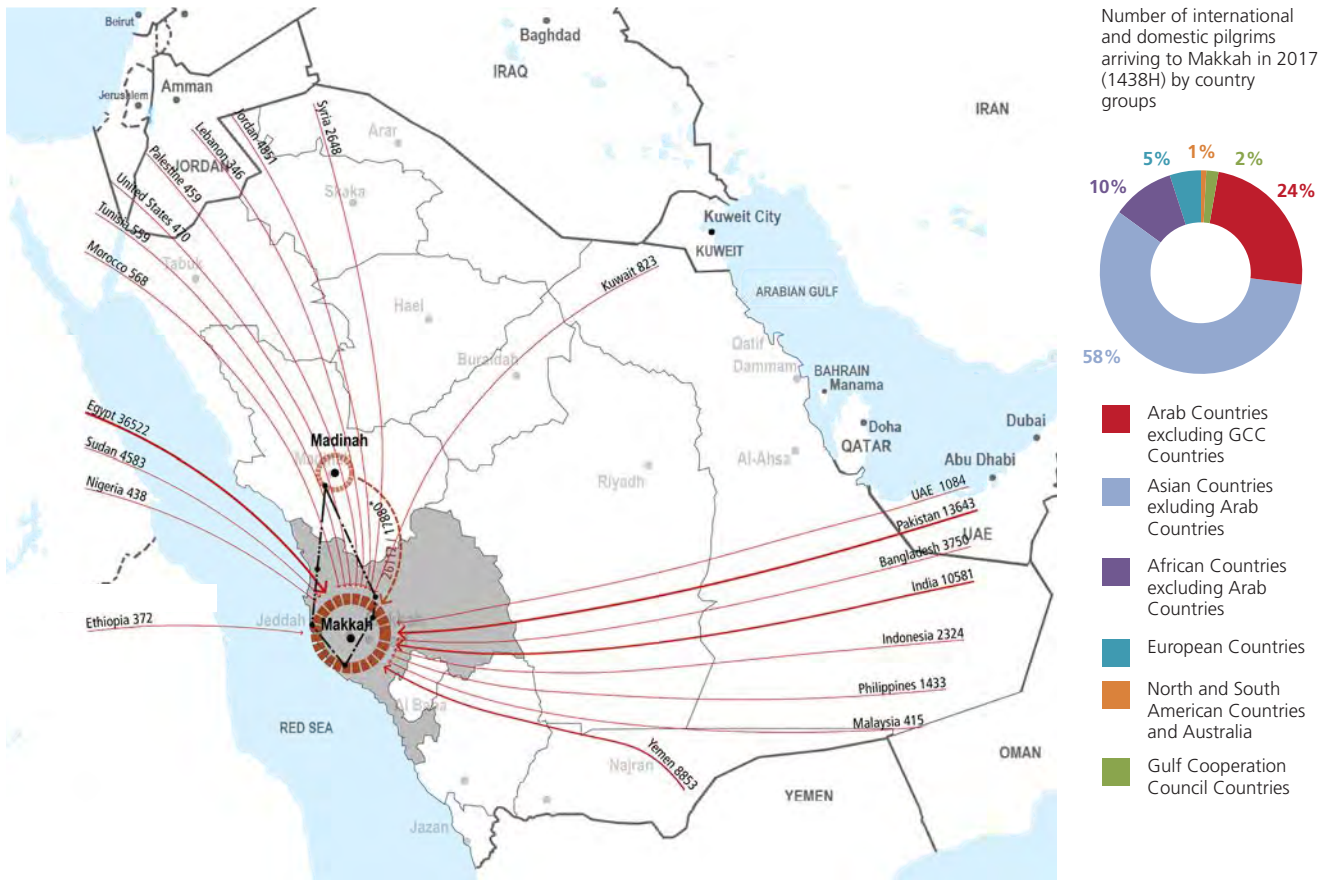


Fig. 4. Non-Saudi domestic pilgrims in 2017

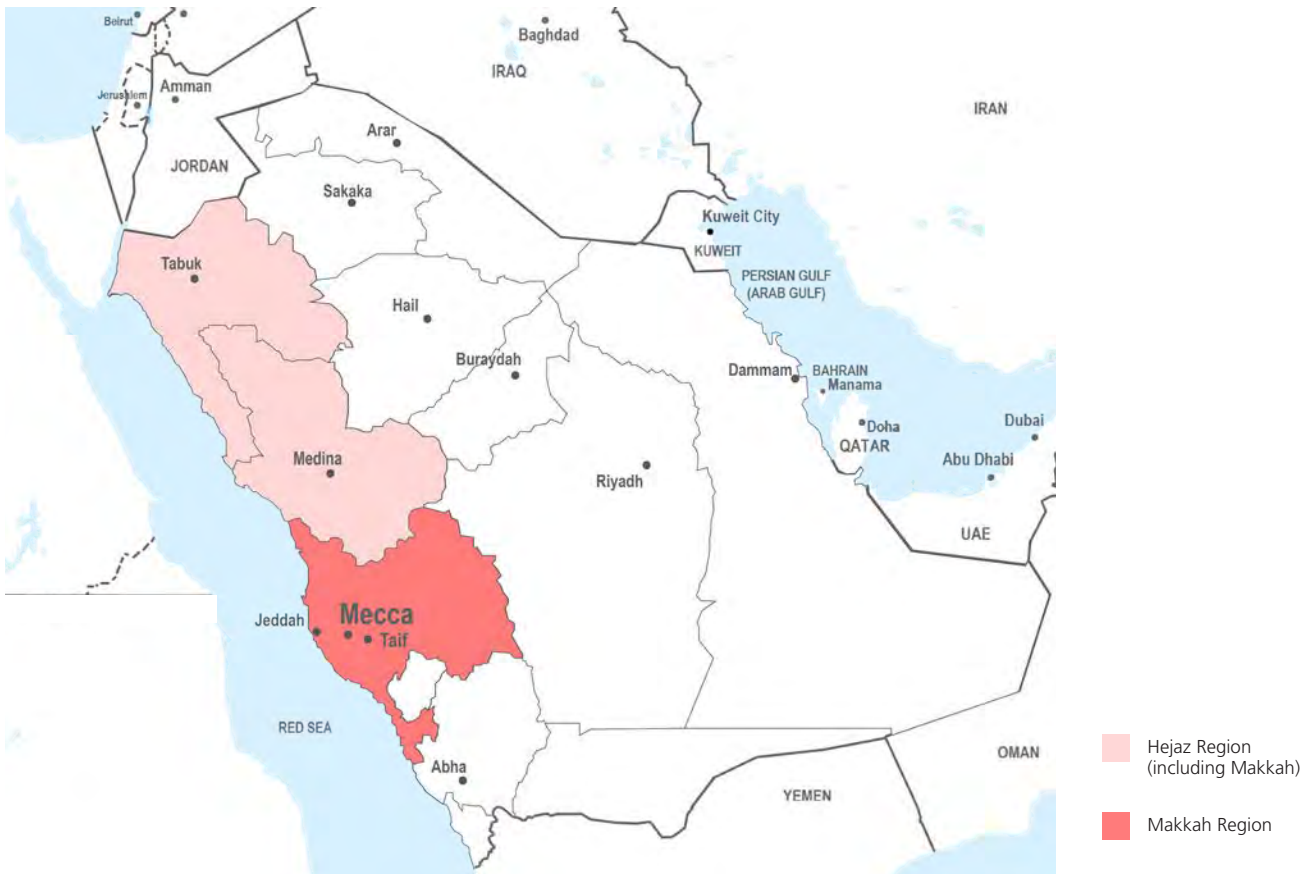


Fig. 5. The Hejaz (literally "the Barrier") is a region that separates the land of the Najd in the East from the land of Tihamah in the West



construction of five passenger stations, one in Makkah, two in Jeddah city (one in King Abdulaziz International Airport and the other one in the downtown), another station in Madinah, and the fifth station in King Abdullah Economic City, in Rabigh.

The railway line serves mainly the pilgrims coming for Hajj or Umrah, with an annual transport capacity expected to reach three million passengers. The new line reduces the travel time between Jeddah and Makkah to less than half an hour, while the distance between Holy Makkah and Madinah, which is 410 kilometres, will now take about two and a half hours. It also reduces the traffic congestion dramatically. Another railway line is planned to connect the region with Riyadh, which is part of the Land Bridge Project. This line will serve transport of passengers, and cargo between the region, and the other regions, in the middle, and eastern parts of the Kingdom.

2.2 Regional Development Patterns and Dynamics

2.2.1 Regional organisation

Administrative Boundaries

The external boundaries of the Makkah Region were revised in 2016 when the number of governorates increased from 12 to 17. The 17 governorates, ordered by population from largest to smallest, are Jeddah, Makkah, Taif, Qunfudah, Bahra, Al Jamoom, Rabigh, Laith, Al Ardhiyat, Maysan, Khulais, Adhaam, Raniyah, Tarabah, Khurmah, Al Muwayh, and Al Kamil.

Raniyah, Tarabah, Khurmah, Al Muwayh, and Al Kamil. The revision of boundaries meant that the administrative area for Taif governorate was almost cut in half, where most of the rural settlements to the far North of the city are now outside the jurisdiction of the governorate.

The Regional Plan of Makkah Region

The plan of the Makkah Region for the year 1460 divides the region into the main development planning sectors and development corridors, as the maps display.

The first sector is the North-Western coastal development corridor. The main economic activities include industrial, mining, and offshore activities, as minerals are abundant in the region. The second development sector in the Makkah Region (including Makkah, Jeddah, and parts of Al Jamoom area), having the highest population density in the region. The third development sector is the South-Western coastal corridor, primarily represented by maritime and related activities. The fourth development sector, represented by the Western and Southwestern parts of the Taif area, is considered to be the main agricultural source in the region because of its mild climate and fertile valleys. It is also one of the most important traditional summer destinations in the Kingdom, hosting many recreational locations, particularly in the Al Hada and Al Shafa areas. Agricultural and industrial activities are the primary economic engine of the region, in addition to a tourism industry largely servicing domestic tourists. The fifth development sector contains some promising mining sites;

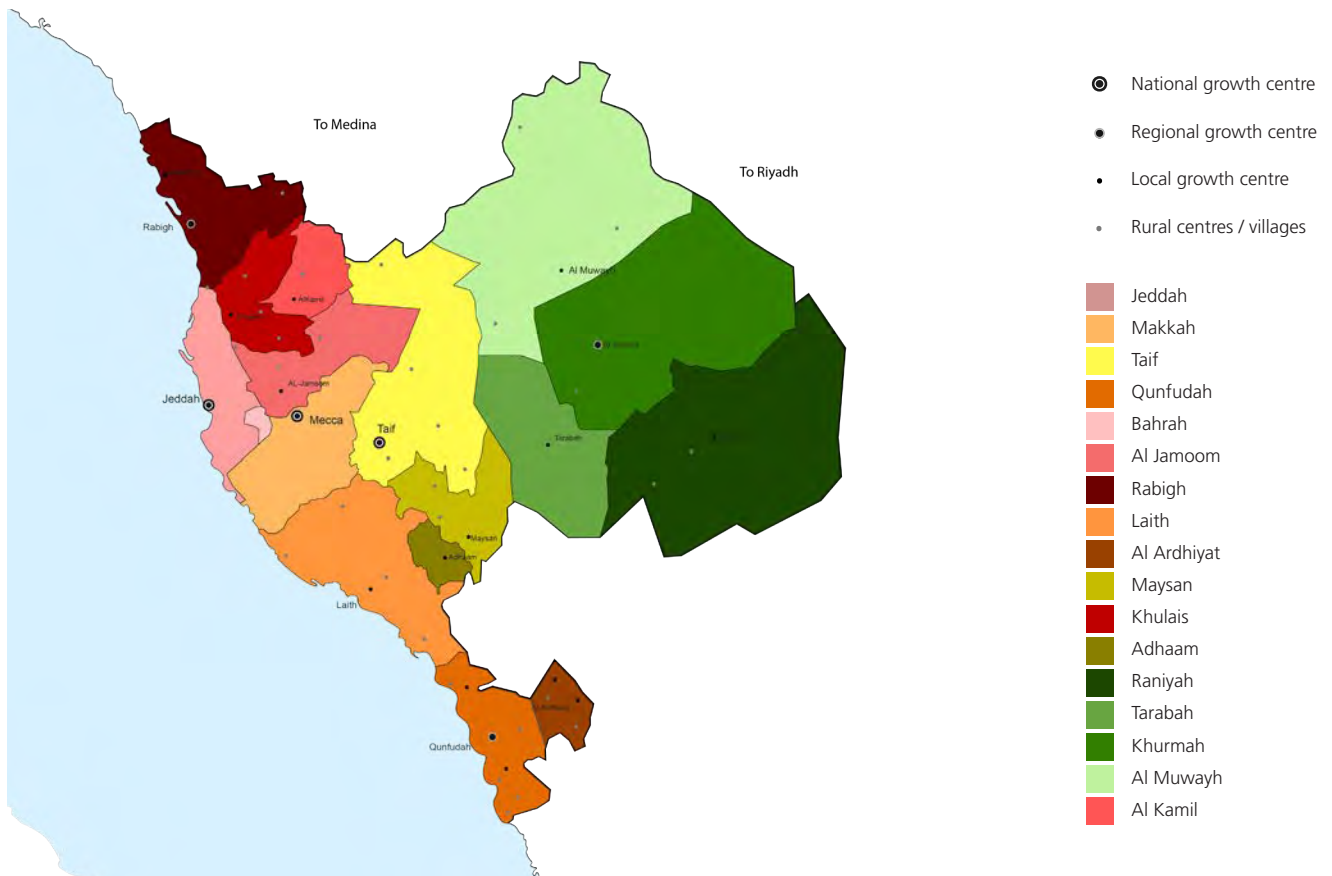


Fig. 6. Administrative boundaries

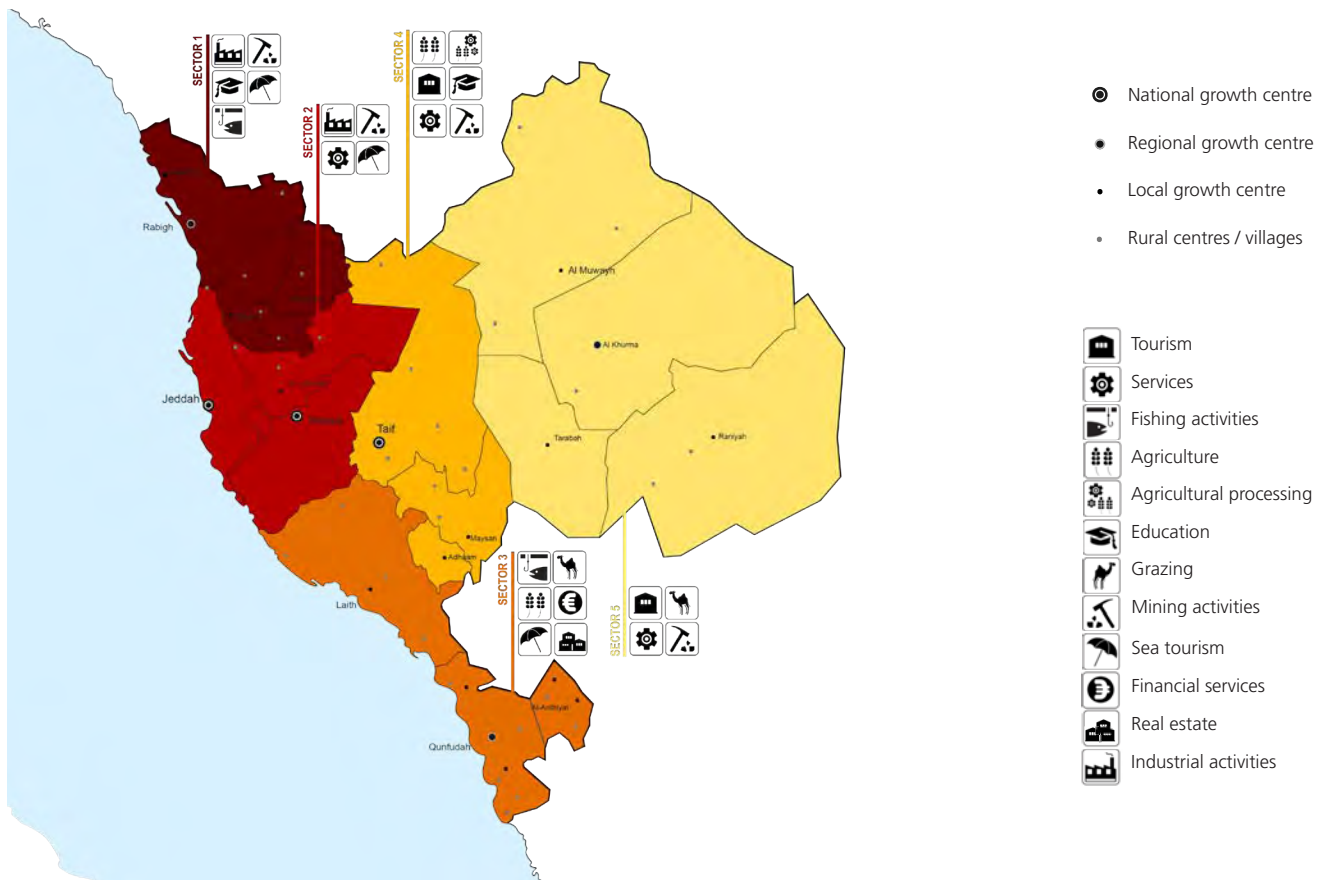


Fig. 7. Development sectors according to the Regional Plan for Makkah Region



Fig. 8. Development corridors according to the Regional Plan of Makkah Region Vision 1460 H (2038)

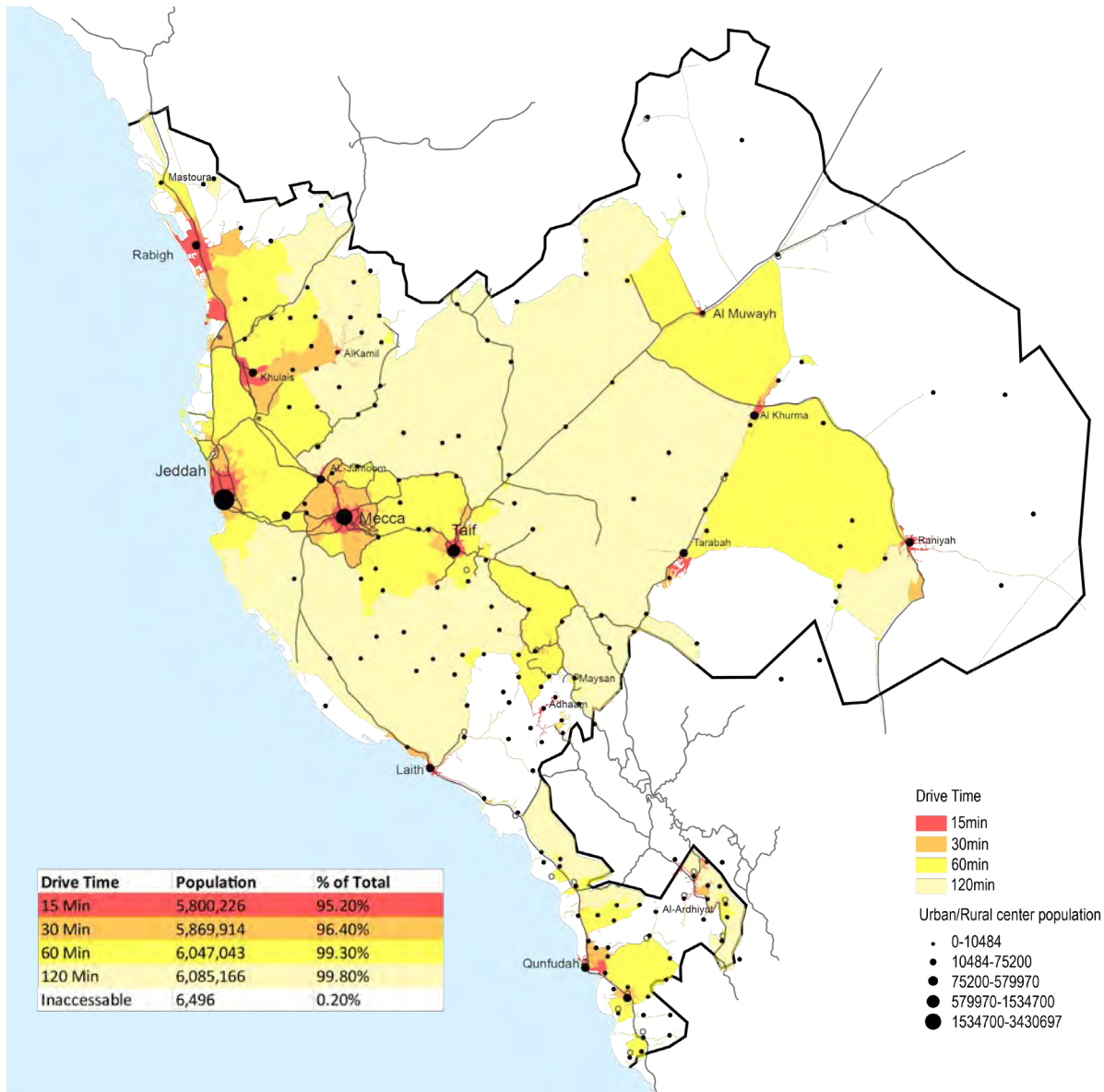


Fig. 9. Accessibility in the Makkah Region

however, it also includes one of the most impoverished areas of the region, in terms of economic resources. Small mining and agricultural activities exist, as well as grazing activities, but arable land areas could be increased if serviced with irrigation and other improvements. In addition to the development corridors identified by the Regional Plan for Makkah, four strong functional/thematic axes have been identified:

- The religious axis between Makkah and Madinah;
- The coastline axis connecting Jeddah with other regional growth centres along the coastline, supported by a major highway;
- The institutional axis directly connecting Taif to Riyadh;
- The Jeddah-Makkah-Taif corridor.

2.2.2 Regional structure and resources

Movement Infrastructure

Although the region is considered well-served with roads in comparison with other regions, the Regional Plan adopted the idea of developing a link to connect various parts of the region, and establishing a road network characterised by a well-structured road hierarchy, including the upgrading of desert roads linking villages and urban centres. According to our drivability analysis, about 95% of the population resides within a 15-minute drive from the major urban centres with more than 80% of the total population living in the three major cities, (and their peri-urban region).



Taif urban core with road linkages and green spaces

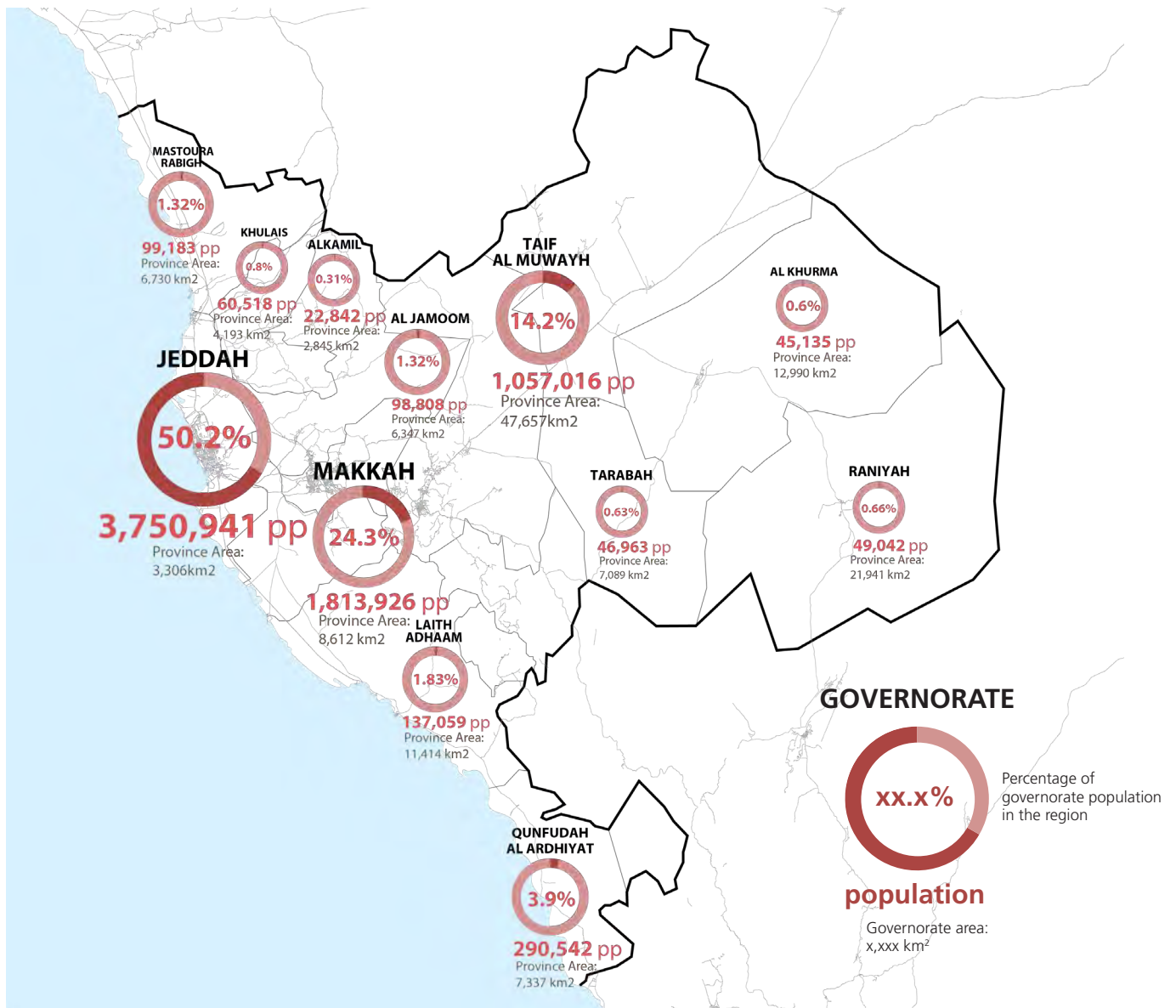


Fig. 10. Population distribution in the governorates according to 2010 census

Land use, physical constraints and urban clusters

The estimated space allocated for mining activities within the region is 3,663 square kilometres, which accounts for 2.6% of the total area. These areas are concentrated in the regions of Rabigh, Jeddah, Makkah, Khulais, and Raniyah. Agricultural uses are allocated to 4.3% of the land, while 12.8% is dedicated for roads and railways, and 4.9% for urban clusters.

Pastures in desert areas represent about 66% of natural land uses in the region. The desert areas, with 53% of total area, are concentrated in the Khomra and Raniaih Region, while pastures are concentrated in the Laith, Gunfudah, and Rabigh Regions. Undevelopable mountainous regions and valleys constitute 9.2% of the total area. For mountainous areas, the gradient level of 20% is considered the maximum level needed for acceptable development, as after that, the cost of construction is considerably higher, with the only exception for

a few special projects, such as touristic or road infrastructure development projects. Regarding the valleys, the Regional Plan recommends their preservation and the prevention of encroachment on the paths of these Wadis.

Urban clusters in the Makkah Region are characterised by spatially spread out cities, villages, and towns, which are distributed along the sides of valleys and road corridors. The cities represent 74% of the total urban land, and the rest spreads over the rural clusters, at different levels. The reason behind the relative rise in the total space of cities is due to the presence of the three large urban clusters in the region, which are Jeddah, Makkah, and Taif.



Typical street section with commercial frontage in Taif



2.3 City-region Structure and Dynamics

2.3.1 City-region connectivity

It can be argued that the Jeddah, Makkah, and Taif corridor is the strongest in the Kingdom, as it hosts 22% of the national population, and contributes to 20% of the total GDP of the Kingdom. With almost 7 million people, the corridor houses 87% of the regional population, and at the current growth rate, its population will rise to over 10 million people in 20 years time. This is also due to the recent inauguration of Al Haremeen railway, and the new Taif Airport, to be operational by 2020. This is the most relevant example of developments that implement the vision of developing Taif as a major hub for international Hajj and Umrah traffic so as to ease the burden on Jeddah's King Abdulaziz International Airport during the peak seasons. Currently, most of the several million Hajj pilgrims, coming from abroad each year, arrive at a special terminal in Jeddah International Airport, while others fly into Madinah.

2.3.2 City-region economy

Jeddah and Makkah continue to be engines of the region's economy as a whole, in addition to their comparative advantage of continuing to attract populations from smaller settlements in the region. According to current rates, this may result in increased unsustainable urban growth patterns, and the consequent widening of the disparity between the governorates of the region.

A great example of these shared resources and the complementarity of functions that already exist within the system of cities in question is the water desalination plant in Jeddah providing drinking water for Makkah and Taif, with Taif being the food basket of the region, exporting crops to Makkah and Jeddah.

2.3.3 Environmental and topographic elements

Taif has a milder climate relative to Makkah and Jeddah, due to its geographic location and higher altitude. As for humidity, Taif has a smaller range of variation across the year, in comparison with the two major cities of Makkah and Jeddah, with a recorded low of 29% in the winter, and a high of 57% in the summer.

This comparison gives Taif an advantage with its pleasant climate as a domestic tourist attraction in the region and nationally. As for rainfall rate, it varies consistently across the terrain of the Makkah Region, starting with very minimal rain in Jeddah, which increases significantly as we move to the Western areas, such as Taif. Taif's topography plays a big role



Cable car in Al Hada

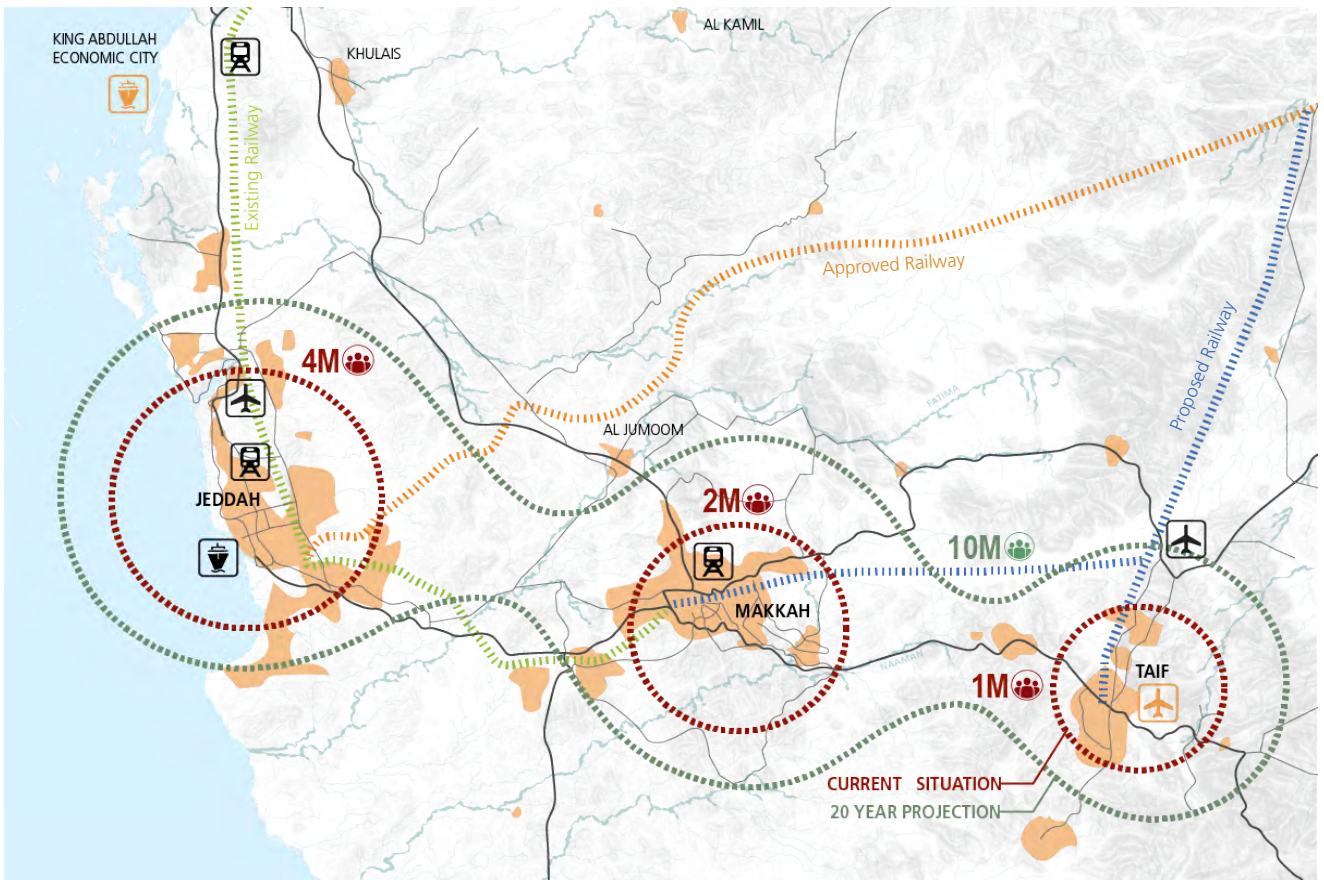


Fig. 11. Current population distribution and 20 years projection

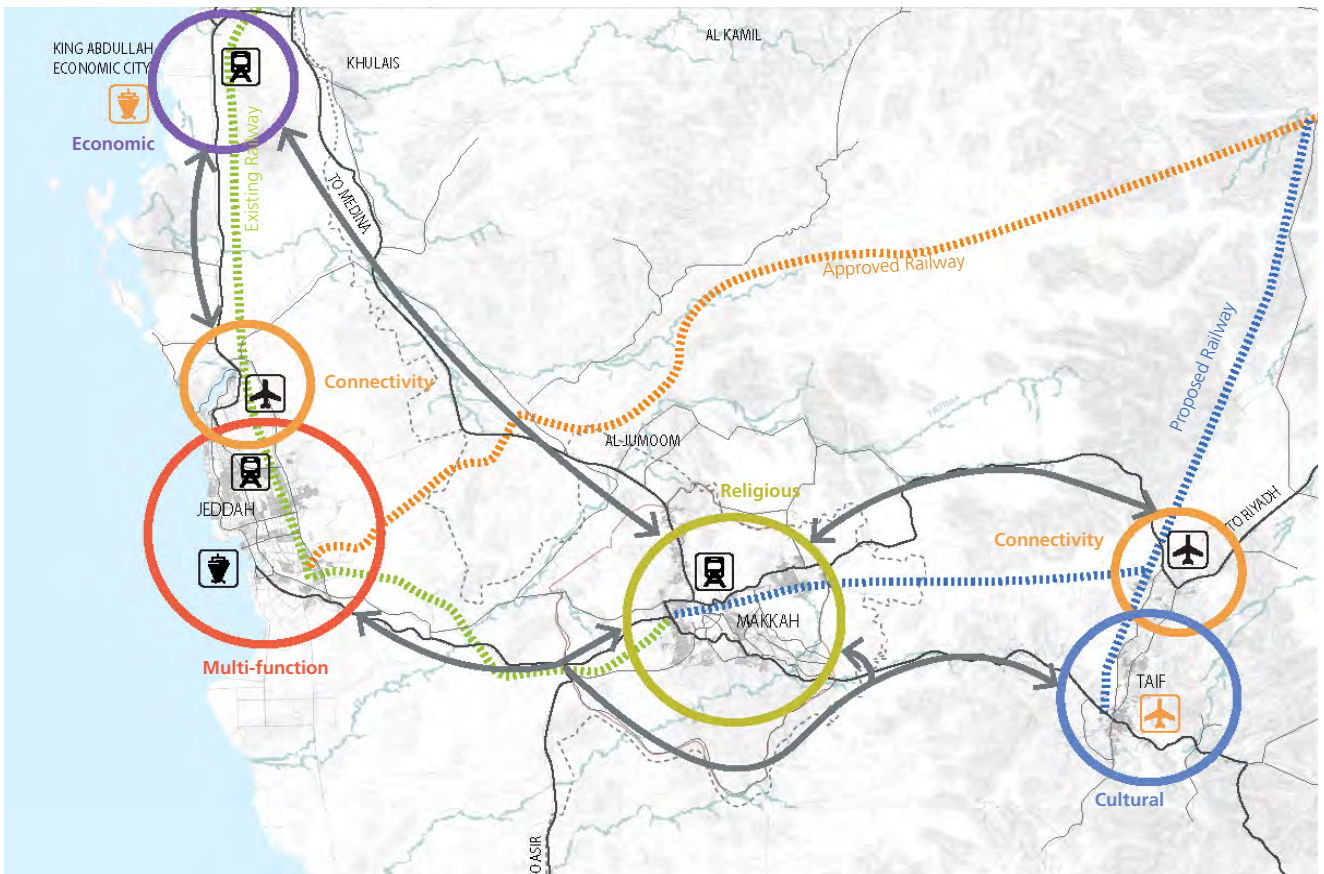


Fig. 12. Major economic activities



in the large variance of rainfall rates, exemplifying how hills and mountain areas experience heavier rainfall, and more frequently throughout the year, as opposed to areas of lower altitude, within the same governorate. The prevailing wind across the scale of the province is predominantly West and Northwestern winds. The wind speed is relatively moderate across the year. During months of seasonal transition, prevailing winds may increase in speed up to 36 km/h, mainly in the form of sandstorms. These mostly occur during the spring and the end of fall, and this phenomenon is considered to be one of the factors leading to air pollution in the region.

Topographically, the city-region shows diversity in terrains. From satellite imagery, the Hijaz Mountains has a major influence between the Taif and Makkah. The elevation of the ground surface in the Southern part of Taif is around 1,700 metres above the mean sea level, decreasing to 1,200 metres in the Northeastern parts.

The Hijaz mountain line comprises of a range of heights, with an upper limit of approximately 2,700 metres of elevation to the South and 1,450 metres to the West. This mountain range is argued to be one of the contributing reasons to not implement the long-proposed Makkah - Taif rail connection, where its feasibility becomes questionable.²



Panoramic view of the Hijaz Mountains

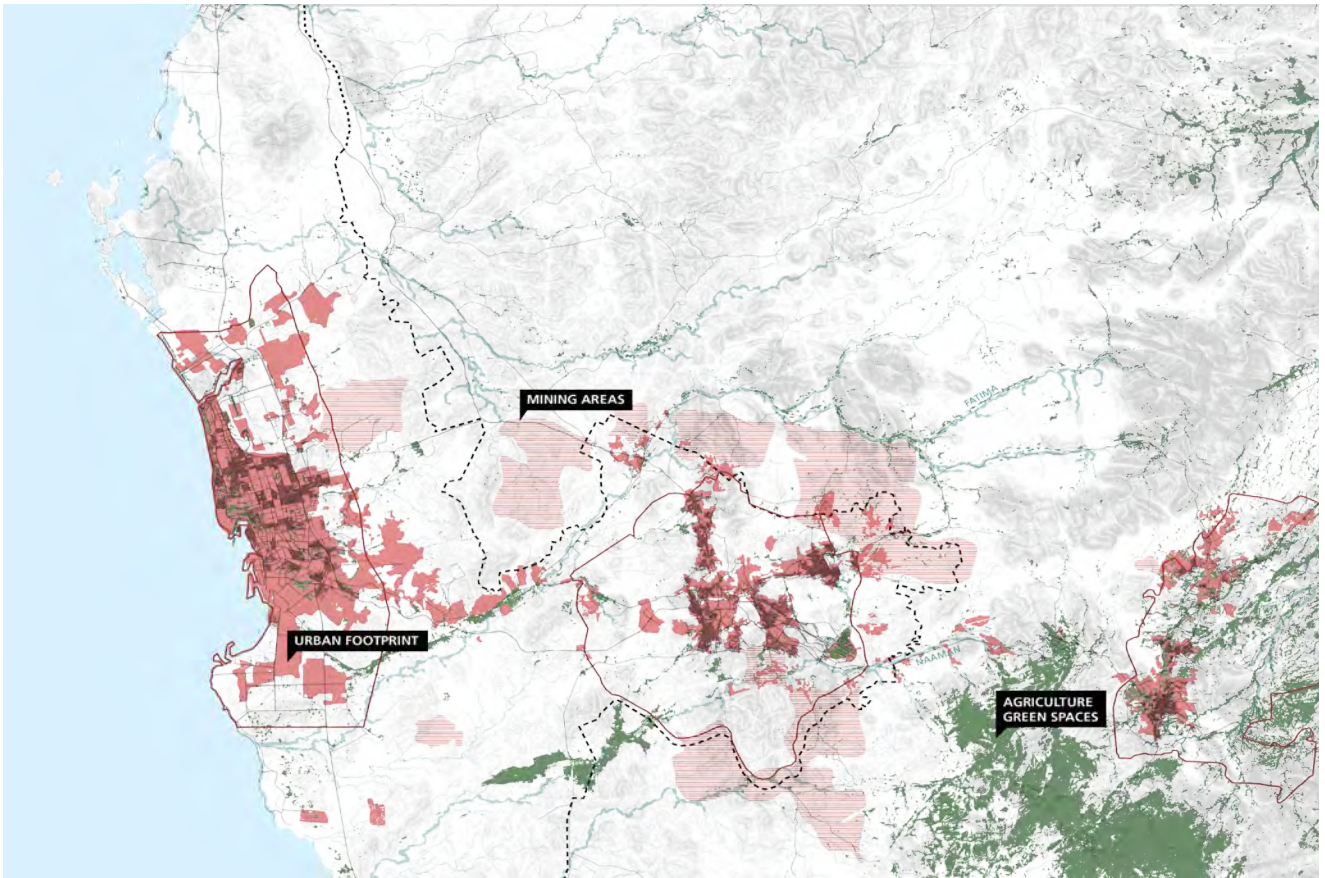


Fig. 13. Urban footprint, agricultural land and mining areas

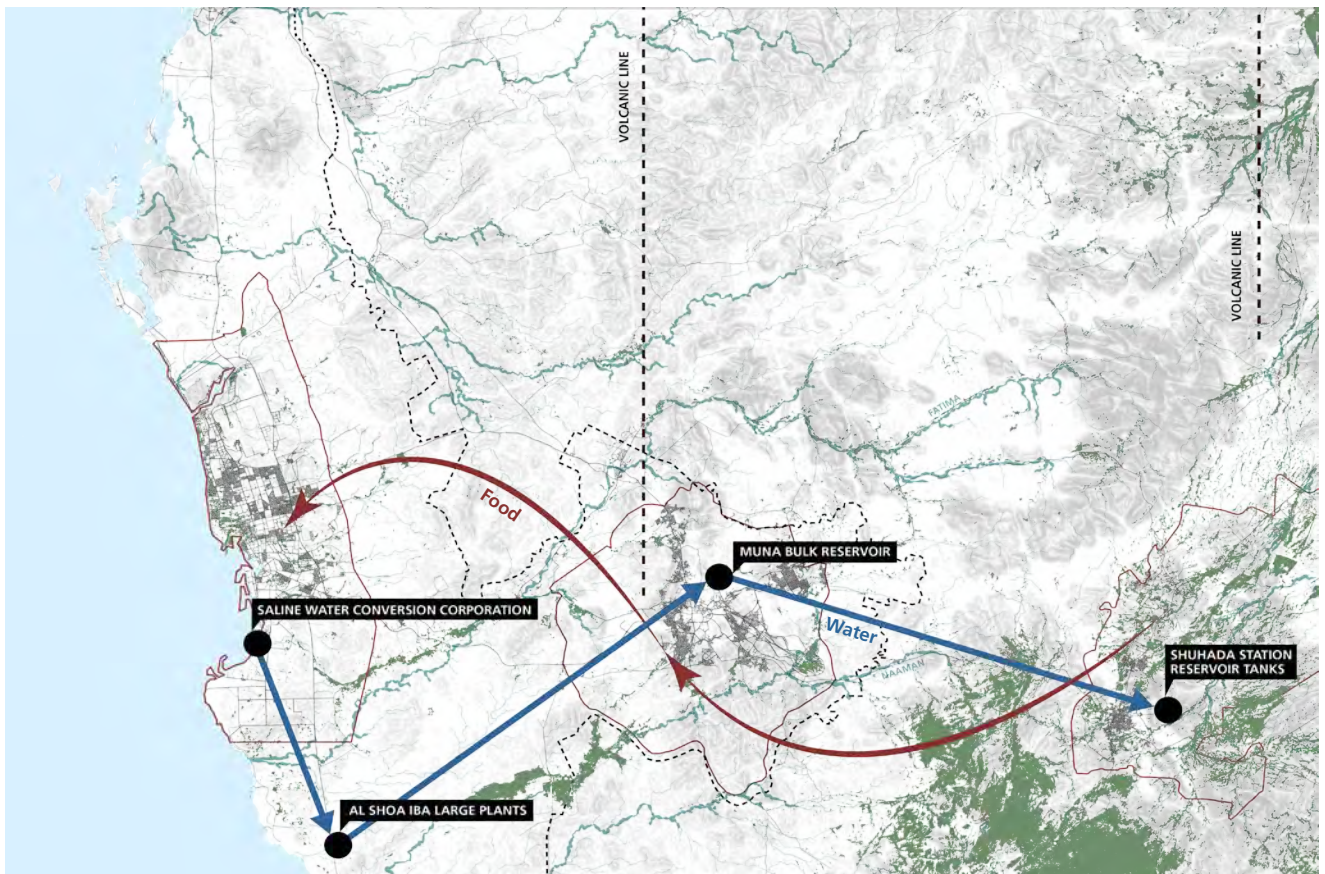


Fig. 14. Wadis, green areas, water distribution and food production.

LEGAL AND INSTITUTIONAL FRAMEWORKS

3



3.1 Lega and Institutional Framework

3.1.1 Legal and institutional context

The planning legal framework for Taif 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.

To deal with the unplanned settlements in the Makkah Region, a bylaw was issued in 2008³ that requires two committees: a) Ministerial⁴, and b) Technical preparatory committees⁵ to develop an Action Plan for developing unplanned areas. This Action Plan has been formulated and it is being used as a guide by urban regeneration companies during their planning processes. The law also contains financial incentives for the private sector through public-private partnerships to invest in areas earmarked as having a probability for high returns.

Furthermore, the city of Taif is guided by over 500 existing urban planning related instruments with most of these having been promulgated at the lowest administrative level (Circulars)⁶ that lack authoritative legal force.

The Ministry of Municipal and Rural Affairs (MoMRA) plays

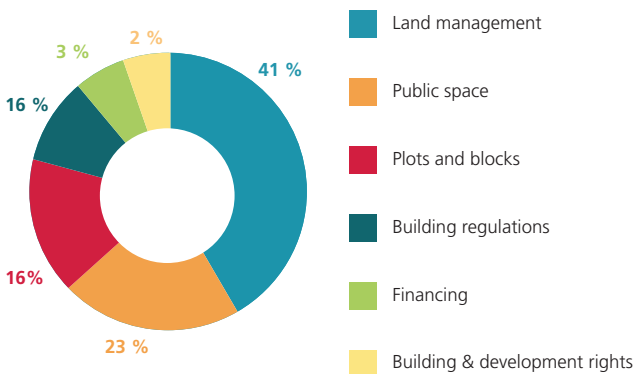


Fig. 15. Number of urban laws in KSA based on the Main Themes of Urban Planning Legislation (UN-Habitat)

a significant role in Taif's growth and development patterns because it is legally entrusted with the task of conducting urban planning of the Kingdom's cities, including the permitting of all types of construction activity. Consequently, the Municipality of the Taif Governorate (Amanah), as the local level actor for Taif, merely acts as an implementing arm for MoMRA. The institutional budgetary system is also centralised, meaning that Taif's development intervention is reliant on funds allocation from MoMRA through an annual line item budgeting, which is the sole fiscal means available.

The Kingdom's planning system, which follows a hierarchy of spatial level and is predominantly top-down, influences the spatial system of Taif. The National Spatial Strategy (NSS) of 2001 is the guiding plan for the Kingdom. The Makkah Regional Plan 2005, which was updated in 2012, highlights the pivotal role that the Taif governorate can play in Makkah Region. The Taif Plan, which is composed of the Comprehensive Plan for Taif and supported by another regulatory document (the local plan), identifies strategic land uses and infrastructure networks within the metropolitan area, and it applies urban 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 Taif's development.

Apart from NSS, these planning instruments are defined by procedural manuals within MoMRA, rather than by Law, and thus they lack legitimacy. By their nature, these instruments cannot construct a system of legal accountability and transparency of the relevant actors.

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

- The transfer of local planning power, authority and function from MoMRA to the Amanah 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 participation of the civil society, the public sector and other relevant stakeholders.
- Fiscal decentralisation, which gives autonomy to the Amanah 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.
- Opening of avenues for actors, including the private and voluntary sector and the general community, to participate in decisions regarding projects that affect them.

Given the property rights pluralism in Taif because of vast tribal land under customary ownership, the in-force land laws need to be revised to support the development, recognition, and application of the Continuum of Land Rights.⁷ The By-Law of Unplanned Settlements of Makkah Region should be

updated to incorporate innovative mechanisms that underpin participatory city-wide slum upgrading. The legal framework also needs to 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 Taif relies on.

Revising the Urban Growth Boundary (UGB) 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 to prevent not only haphazard development but also avert private interests from taking advantage of the laxity in the legal text. These initiatives will strengthen policy formulation designed to make the city more sustainable, compact and dense. Primarily, post-legislative scrutiny of the UGB Law should be done to assess if it has met its policy objectives. This could, in turn, inform the legal reform process as well as the planning policy options.

3.2 Planning Instruments and Procedures

3.2.1 Hierarchy of plans

The planning system of Taif 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 16 highlights the planning instruments in force in Taif.

3.2.2 Strategic Regional Plan for Makkah 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 Regional Plan for Makkah is one of the oldest regional plans in the KSA and one that was leading the regional planning nationwide. The Urban Makkah Regional Plan of 2005, updated in 2012, was prepared and approved by the Regional Council for the Makkah Region and the Emirate of Makkah Al Mukarramah respectively. It is also composed of the sub-regional plan for the biggest governorates within that region, like Jeddah and Taif. The Regional Plan also includes an implementation plan whereby the major projects, their actors and deadlines are decided. 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 the 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 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;



Highway link from Makkah, the Holy City through the Hijaz Mountains

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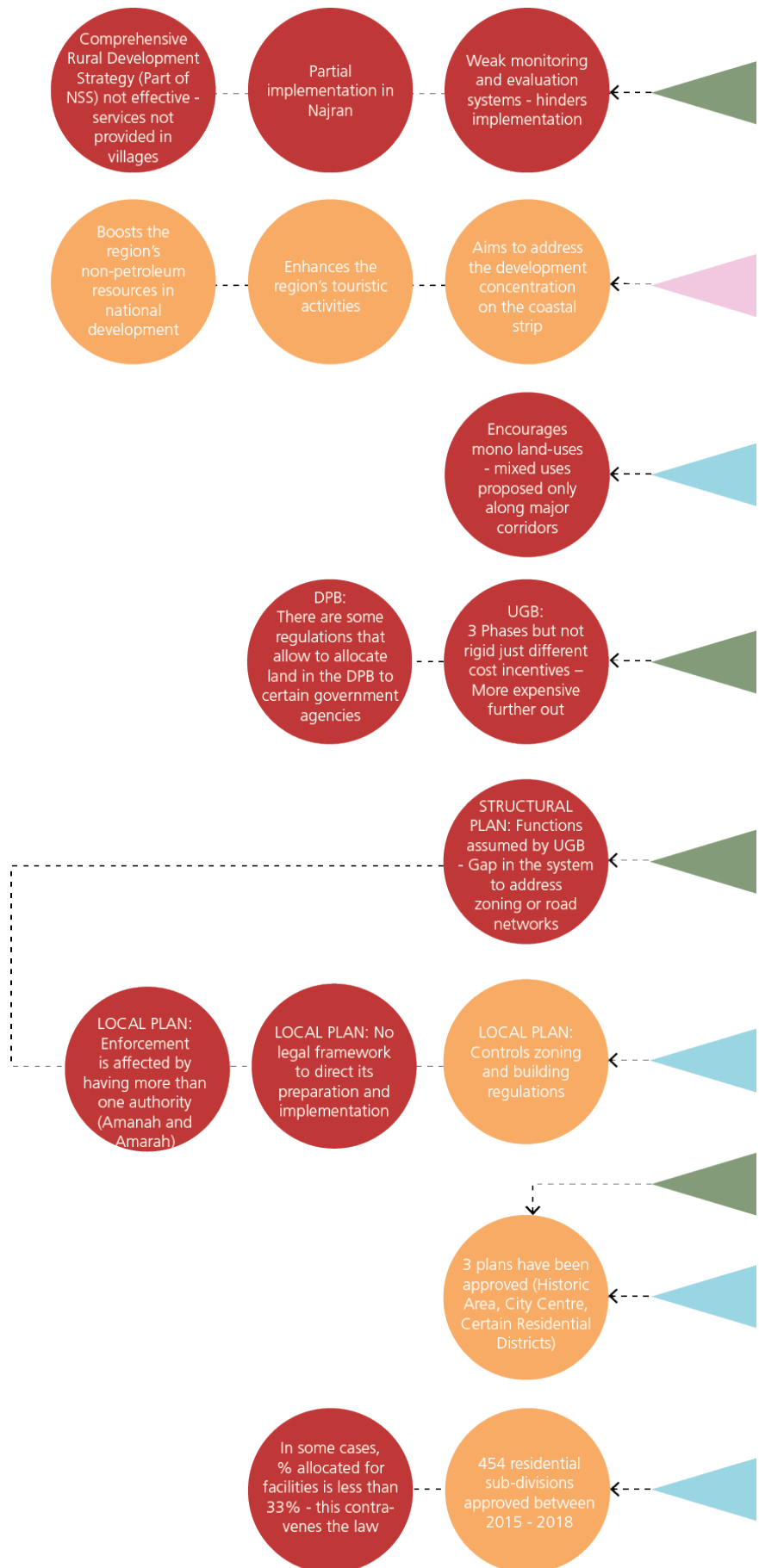
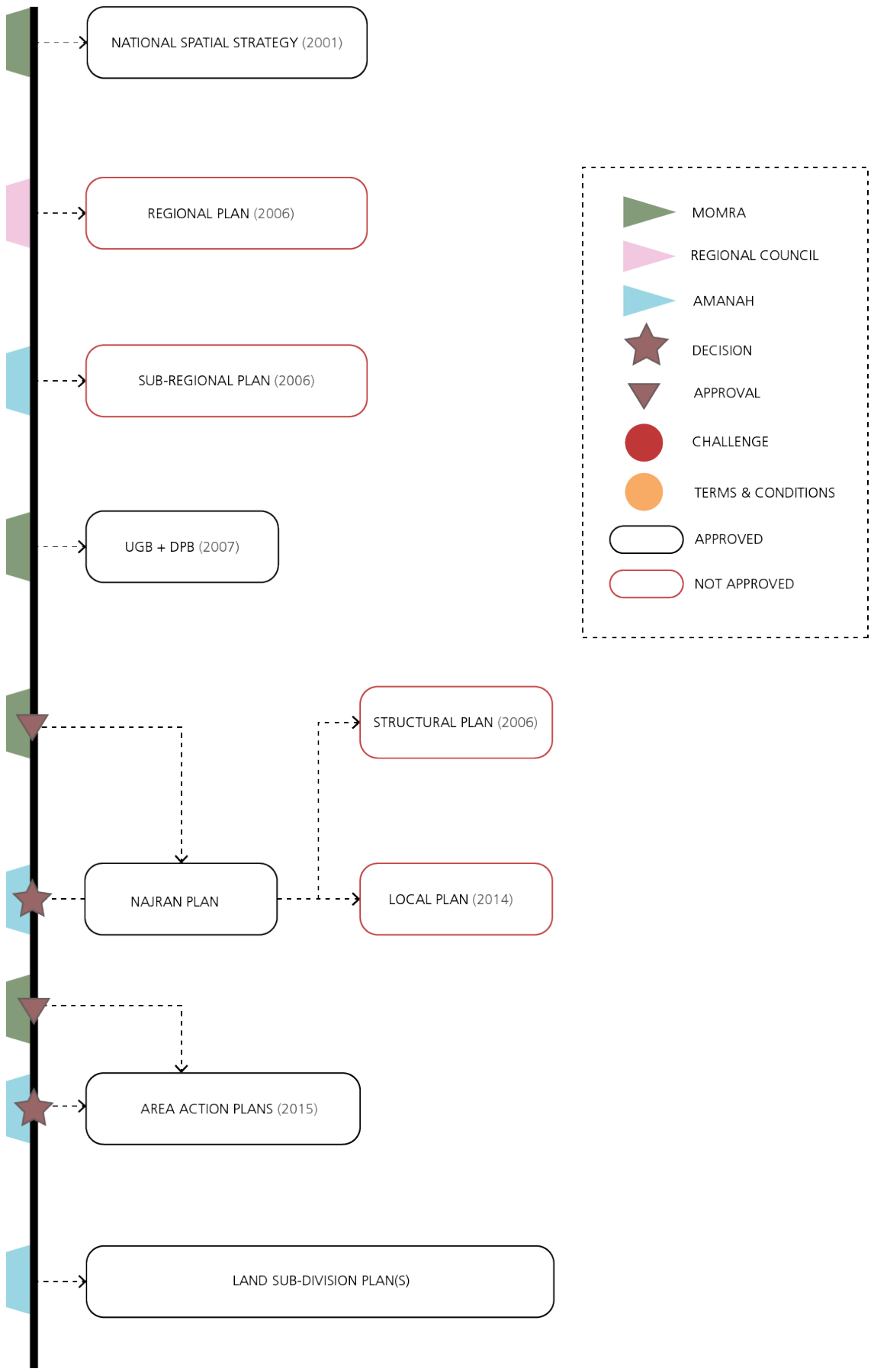


Fig. 16. FSCP simplified representation of hierarchy of plans and the planning instruments in Taif



- Address the developmental concentration on the coastal strip to achieve a 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.

The Sub-Regional Plan, which is part of the overarching regional plan, solely focuses on the Taif governorate. It was prepared by the development arm of the Amanah with inputs from the Amanah and other stakeholders. This arm is presently involved with strategic projects being directed by the Amanah of Taif, such as the New Taif City Residential Project, development of the new airport, tourism initiatives, and other mega projects.

3.2.3 The Taif Plan

The Taif Plan⁸ consists of a strategic component (the Comprehensive Plan), and of a regulatory document supporting the technical implementation (the Local Plan). The scope of these plans includes:

Comprehensive Plan of Taif Al Mukarramah

This plan is prepared by the Amanah, through conducting several workshops with development partners in the region. It was approved in 2010, and updated in 2015 to transform the city into a major urban centre. The following are the major contents of this updated plan:

- To link the urban transformation of the city with the

major national programs within the 5-year development plan, and the revised NSS outcomes, (this was prior to the emergence of the vision 2030 and the current revision of the NSS that was conducted by the Future Saudi Cities Programme);

- To update the urban policies of the 2010 Directive Plan;
- To create new urban corridors of the city and the consolidated agglomerations that comprise the city, (Al Shafa, Al Hada, Al Seil Al Kabeer, and New Taif) as shown in figure 17;
- To develop a new Urban Management criterion that supports the partnership approach, as advocated for in the plan to implement the different transformative projects, especially those in the tourism and conservation sectors;
- To update the GIS database of the city with the newly built-up areas; and
- To centre on environmental conservation through local policies.

The 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 which are contained within the Urban Growth Boundary with a particular focus on housing. It contains the Urban Atlas, which details the allowed land uses for every part of the city. It is complemented by a report on regulations, which contains specifications on the permissible

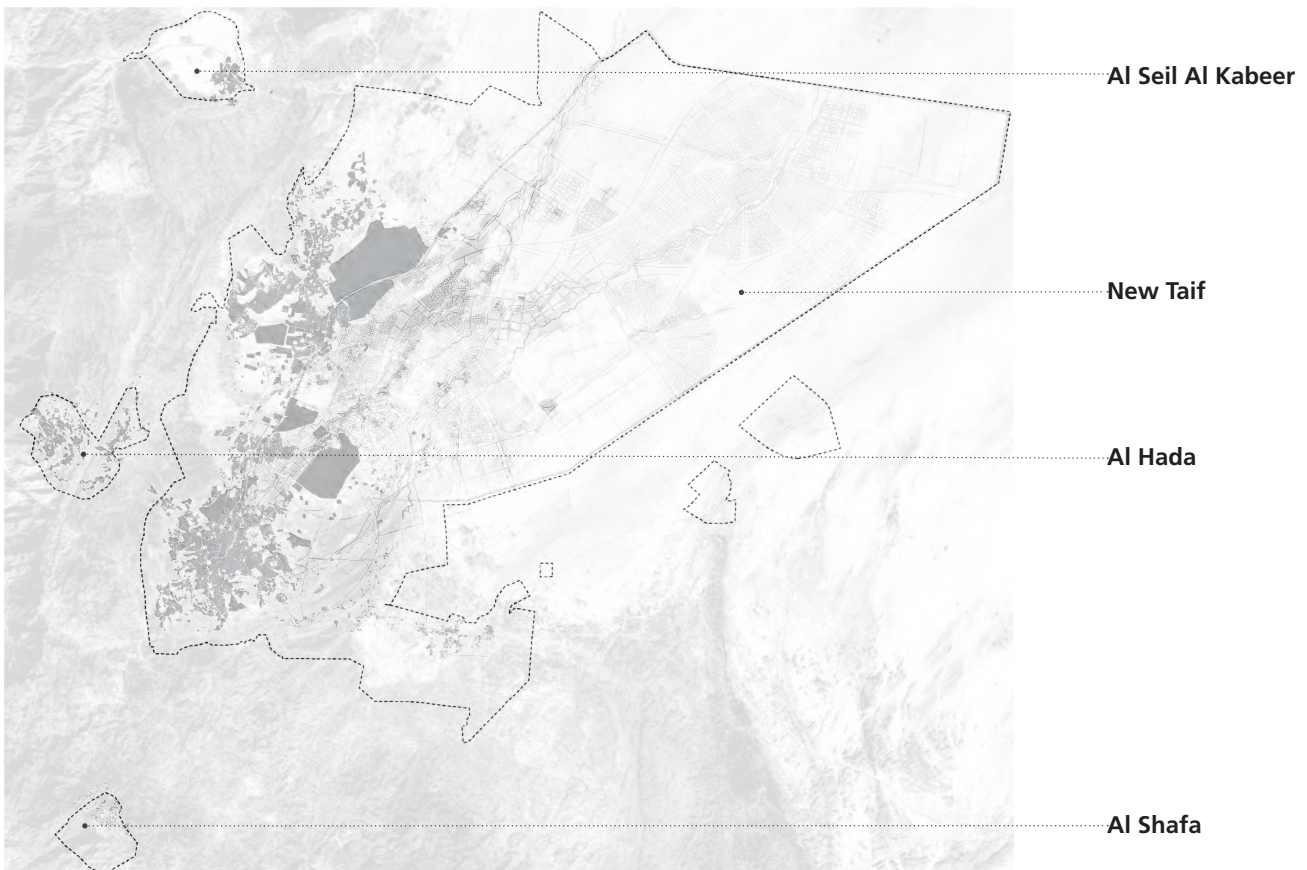


Fig. 17. Locations of different urban constituencies in Taif with unique urban regulations

development rights, such as floor area ratio, street dynamics, building heights, areas of special building regulations, etc.

The aim of the plan is to: a) apply urban controls to urban land use and building regulations; b) to provide public services and infrastructure in a cost-effective and integrated manner; c) set basic requirements for proposed road networks; and d) help facilitate the development of public and private sector housing. The local plan, which was prepared in 2015 and yet to be approved, intends to introduce new urban controls including land uses, heights, setbacks, environmental considerations, parking spaces, social services provision, etc., while the new Urban Atlas has updated maps showing the new land uses for each area, within the Taif plan, on a grid scale. The regulations report contains the sanctioned building regulations for the existing city and the new urban corridors of New Taif, Al Shafa, Al Hada, and Al Seil Al Kabeer.

There is no legal framework to direct the preparation and implementation of this plan. Rather, it 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.

The development of both the comprehensive and local plans are further 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 with the Municipalities (under MoMRA), there are jurisdictional

overlaps with the Mohafazat, (Governorates – sub-regional) and Markaz (Districts), and the newly established Makkah Regional Development Authority.

In other words, the Ministry of Interior is the oversight entity for regional project implementation⁹ while MoMRA is the central spatial planning institution, but there is no clear coordination mechanism. This often leads to decision-making impasse, which affects the delivery of technical standards within municipalities, such as Taif.

3.2.4 The Taif 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 meant to control urban expansion, whereas the development protection boundary is meant to prevent urban sprawl in the outskirts of cities without adequate infrastructure, by demarcating a no-development zone. This boundary has the function of preserving land for future urban development beyond the 2030 Urban Growth Boundary, while supporting the role of the Urban Growth Boundary in preventing sprawl.



Density and vacant land in the city of Taif

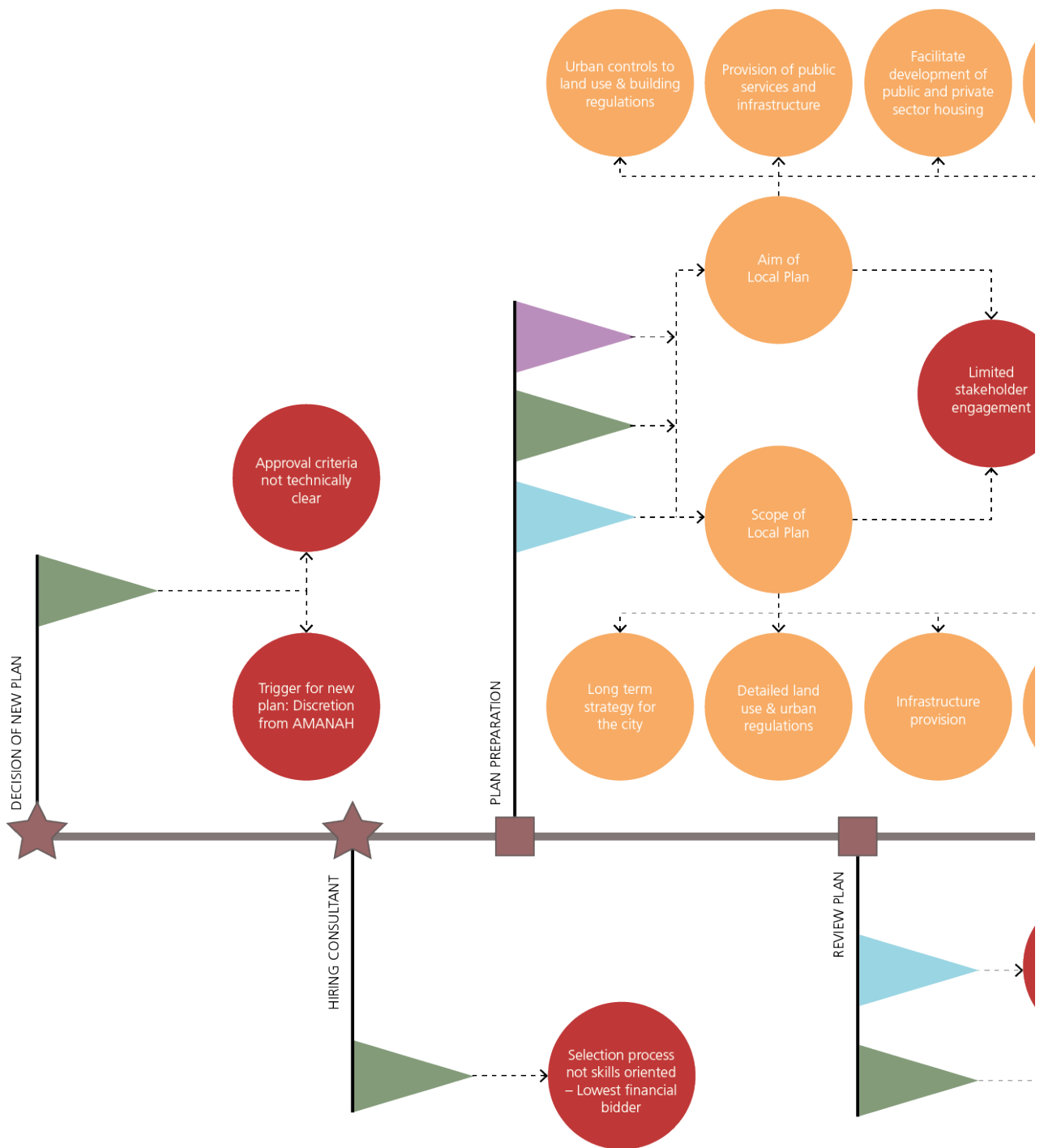
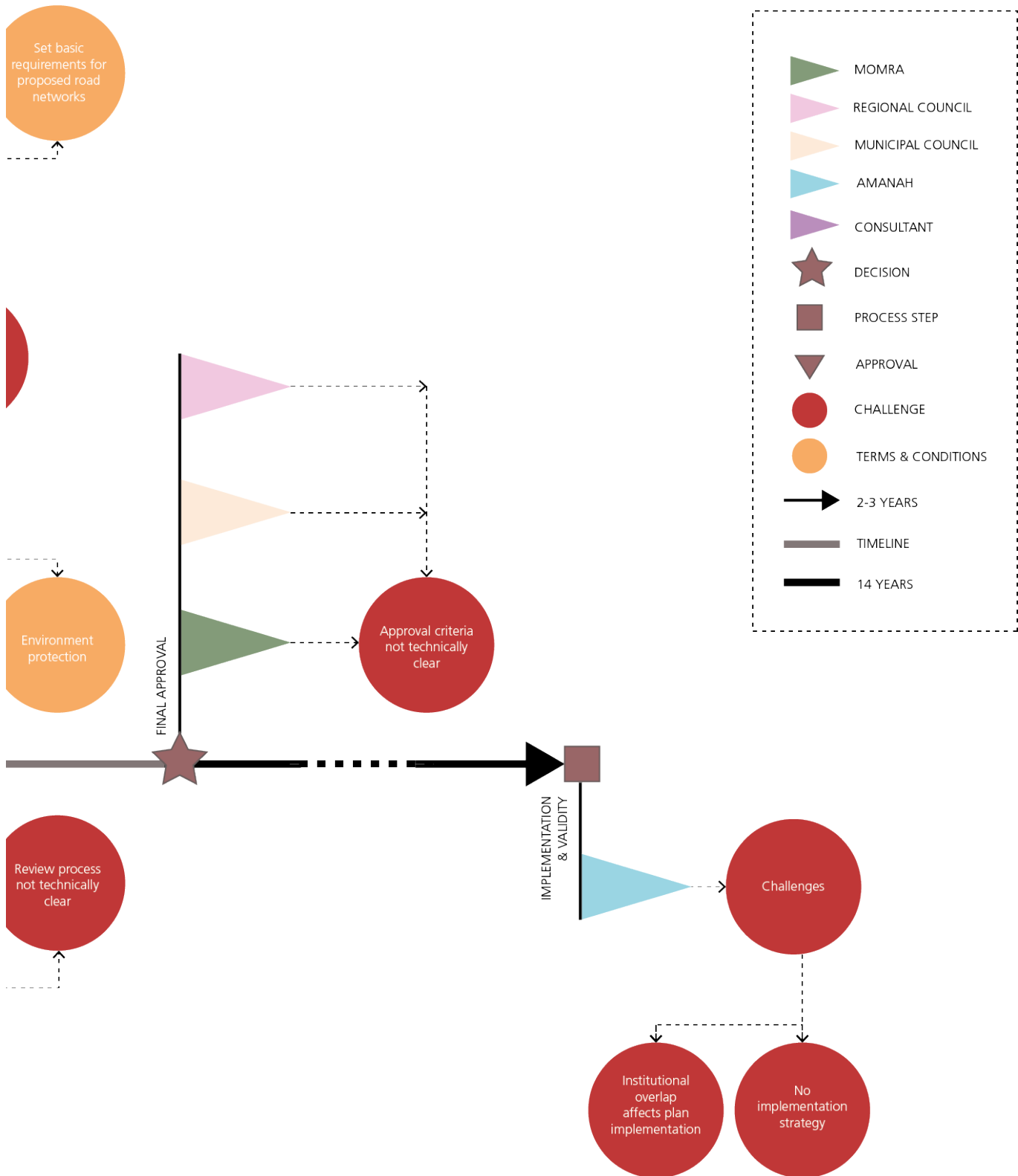


Fig. 18. FSCP simplified representation of Planning Process and Actors involved in the preparation of the Taif Directive Plan



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 lands, should be prioritized 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 on the size of the plot.

Legally, the area between the Development Protection Boundary and the 1450 (2030) 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. For instance, in Taif, airport and mega residential projects have been approved by MoMRA. Moreover, given the law, certain agencies have rights to land situated in such areas, where approval of development projects is routinely controlled 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 1450 (2030) Urban Growth

Boundary. These factors have undermined the functional effectiveness of the regulations, the rule of law, as well as compact development of urban areas, such as Taif.

Setting the Boundary

The Urban Growth Boundary for Taif was set simultaneously, along with other cities, by MoMRA, through a Committee under the Unit of Coordination and Projects. The composition of the committee is not yet clear, for instance, it did not involve the municipality of Taif Governorate, which is responsible for planning at the city level. There is an understanding that the calculations were based on selective factors, such as historical growth and expected population growth in the city; however, there is no accurate published criteria on how the size of the boundary was calculated.

Challenges

In Taif, there are some encroachments in the connection and delivery of services (schools and electricity), especially in villages and hamlets, which are approved by the council of the area, (an example for this is the model village of Al Bayda). Other major projects have been earmarked for implementation outside the boundary, but due to financial constraints, they have not been implemented.

In Taif, there are difficulties for development in many areas within the UGB due to the presence of vast tribal land, as well as large military areas within the urban core. Areas where

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)
NATIONAL GROWTH CENTRES (HAEL, TABUK, BURAIDAH, UNAYZA, ARAR, NAJRAN, JAZAN, AL BAHA, SKAKA, ABHA, TAIF AND AL-AHSA)		
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. 19. Matrix showing the development options within the phases of the urban boundary in the National Growth Centres (including Taif)

development is easier, from a topographical perspective, are far from the city, which is affecting the development of the city negatively.¹⁰ In addition, new buildings have emerged in the unplanned areas outside the UGB.¹¹ The Law on Unplanned Settlements for Makkah Region, which applies to the Taif governorate, has been ineffective in solving the issue of informal settlements because:

- Upgrading initiatives, redevelopment, and relocation is limited to settlements' owners who have their land formally registered; they constitute the minority;
- It has no provisions for land readjustment or land consolidation mechanisms. Moreover, the terms and conditions for urban regeneration are not present;
- The law is incentive-driven to areas where: a) there is investment potential and b) the Amanah is a developer.

Other factors affecting the Law's implementation include:

- The Taif Governorate has limited capacity to run the urban regeneration initiatives including negotiating with constituents to run an effective and participatory programme;
- The Al Massef Company which is meant to supplement the Amanah on the process of urban regeneration is yet to be established;
- The political costs associated with upgrading informal settlements are considered high hence the government's

reluctance to be fully integrated into the process.

There is also a disparity between the size of the boundary and the demographic dynamics of Taif, based on the Committee's calculations, which undermines densification. In other words, based on current population growth projections, the 2030 density will be 102.8 p/ha, which is well below any recommended target, including the UN-Habitat recommendation of 150p/ha.

Permitting

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

- A developer submits a land subdivision plan, including detailed implementation plans for the instalment of the requisite infrastructure to the Amanah;
- The Amanah will then assess the application in accordance with the provisions of the Law on the Urban Growth Boundary; except those cases defined by MoMRA Ministerial Decree No 17777. This Decree delegates certain roles to the mayors in regards to approving land subdivision, solely in relation to the size of residential projects. The Mayor of Taif Governorate is an approval authority under this Law;
- The application is then sent to MoMRA for review in accordance with development standards and applicable building codes, and building permits are either refused or



Historic centre with heritage buildings in Taif

granted by MoMRA;

- A developer whose permit has been refused has two options of appeal: a) recourse to the Amanah and MoMRA calling a re-study of the application; or b) file the case in the relevant jurisdictional administrative court;
- The decision in the above appeal processes is final and binding to all the parties.

3.2.5 White Lands Act

The amount of undeveloped land/vacant land, (“white lands”) in Taif is among the lowest in the Saudi cities. It is estimated to be, excluding mountainous and natural reserve areas, 13%, 12.5%, and 14.32% in the years 2019, 2024, and 2030 UGB respectively. The government recently issued the White Lands Tax Law¹² 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. This Law aims to: a) increase the supply of developed land to better address housing shortages; b) make residential land available at reasonable prices, and c) combat monopolistic practices. The Ministry of Housing, which is the implementing authority, will enforce the law in phases.

3.2.6 Land Subdivision Plans

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

- The land must be within the approved urban boundaries;
- The 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 four residential land subdivisions between January to December 2017.¹³

3.3 The Institutional Context

3.3.1 Urban institutions in KSA

Taif’s growth and development pattern is impacted by the centralised planning institutional framework of the KSA, under the Ministry of Municipal and Rural Affairs (MoMRA). MoMRA is entrusted with the task of conducting urban planning of the Kingdom’s cities, including providing the necessary roads and fixtures, maintenance and cleanliness

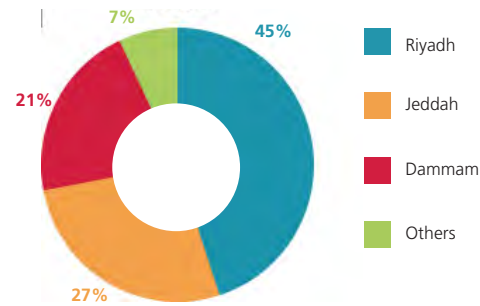


Fig. 20. Percentage of white lands after implementation of the first phase of the White Lands Law

of the environment, as well as of licensing all types of construction activity.¹⁴ The Deputy Ministry of Town Planning under MoMRA and its departments, such as Local Planning, Studies & Research, Projects Coordination and Urban Planning & Design, is mandated to coordinate with “concerned bodies” in charge of planning, to achieve comprehensive urban development. In practice, there is little coordination between these departments and the Amanah, and this affects service delivery and project implementation.

3.3.2 Regional Context – Makkah Region

According to the Ministry of Interior administrative classification, the Makkah Province is divided into 17 governorates (10 are class A while 7 are class B) and 113 centres (36 class A while 77 are class B). Taif is classified as a 2nd level Amanah. It is allocated funds by MoMRA for development activities and municipal services through annual line item budgeting, which is the sole fiscal means available to Taif.

There are additional institutions in the Makkah Province that manage and regulate the development process. The newly established Regional Development Authority and the Amarah of the region, headed by the Regional Prince who, pursuant to the Regional Law,¹⁵ reports to the Ministry of Interior.

The Amanah is involved in the implementation of the Makkah Law for unplanned settlements, including the process of expropriation and compensation procedures pursuant to the Law on Expropriation. A total of 36 unplanned settlements are within the structure of the Amanah. The total area of the informal areas represents 172 square kilometres (33.5% of the total built-up area). There is a comprehensive policy that was prepared jointly with the planning of the city, which classifies areas according to their investment capacity, including the risks associated with them. However, it has emerged that despite the existence of these policy and legal instruments, the issues are still prevalent in the city.¹⁶

Moreover, the informal governance model, the “Development Integration Unit,” which is within the Emirate of Makkah, has

proven to be effective in managing urban growth. For instance, its main task is to provide a better monitoring mechanism for projects and development in an integrated manner, at all levels of development and services in Taif. This helps accelerate decision-making processes for projects at the city level through this innovative coordinating mechanism, without returning to the central government. This mechanism helps to agree on mediating the conflicts between sectoral decision-making ministries and national agencies.

The Regional Council¹⁷ is based in the Amarah and is required to:¹⁸

- 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 yearly budget of the country, which is the sole means available to municipalities;
- Study the organisational arrangement of the regional administrative centres, follow up implementation of any modifications; and
- Implement the provisions of the development and budget plan, and carry out the needed coordination.

3.3.3 Local context – Taif

Taif is managed by the Amanah, which is headed by a Mayor. The Minister of MoMRA appoints the Mayor, and the Civil Service Bureau appoints the rest of the Amanah's executive members based on their professional qualifications. Taif Urban Planning Department (TUPD),¹⁹ ensures compliance with MoMRA's outline for the Kingdom's cities, rural areas, streets, and construction designs. TUPD has roughly 48 planners and architects, including other supporting staff²⁰ distributed in four units: a) city planning department; b) buildings and engineering offices; c) survey and GIS, and d) public projects. The Amanah established a Local Urban Observatory, which is monitored by the National Urban Observatory.²¹ Another challenge for the Amanah is the prevalence of large plots of tribal land within the urban core, which have no records of formal ownership, hence hindering economic productivity as development cannot take place.

During the workshop held in the Amanah, the lack of staffing capacity was identified as a major challenge facing planning in Taif, (there is a total of 48 engineers, that includes 8 planners, 25 civil engineers, and 15 architects). This issue is exacerbated by the limited scope of qualified consulting firms, which are specialised in urban planning, thus undermining the quality of the spatial plans.

The High Commission for the Development of Taif City is another local actor in Taif. It is composed of the Amanah,

MoMRA, the Makkah Amarah and the Ministry of Finance and Tourism. It is concerned with approval and follow-up of development projects within Taif, particularly those concerning tourism and economic development. The Prince of Makkah Region submitted the request to the Prime Minister in 2010. More recently a decree was issued defining a new authority named Royal Commission for Makkah and Holy Sites. Similarly, a new regional authority named Makkah Regional Development Authority was established in 2018

The Al Masef Company, which is yet to be established, will act as an arm of the Amanah concerning urban regeneration projects.²² It will implement the Law for Unplanned Settlements of Makkah Region by creating partnerships with the private sector to undertake development in certain priority areas.²³ More recently a decree was issued defining a new regional authority named Makkah Regional Development Authority was established in 2018.

3.3.4 Legal and Institutional Implications for Taif

Most of the technical decisions and approvals in the local governance (Amanah), including planning decisions are made on a discretionary basis based on the priorities set for the city. Therefore, the system lacks technical accountability, predictability, and practical clarity.

3.4 Financial Context

3.4.1 Financial system

Efficient and sound fiscal management are fundamental for establishing a solid financial base, strengthening the public sector, and, hence, supporting local development. This chapter examines the financial system in Saudi Arabia and in particular, Taif.

The financial system for Taif mirrors the degree of centralisation observed in the overall governance system of the Kingdom of Saudi Arabia (KSA). The Ministry of Municipal and Rural Affairs (MoMRA), via the Amanahs, is responsible for financing municipal service activities such as city planning, building licensing, and road maintenance.

In addition to MoMRA, a number of other specialised agencies, (e.g., the emirs, and national ministries) fund and implement projects at the local level. For instance, the Ministry of Education funds city schools directly, instead of funding them through the Amanahs.

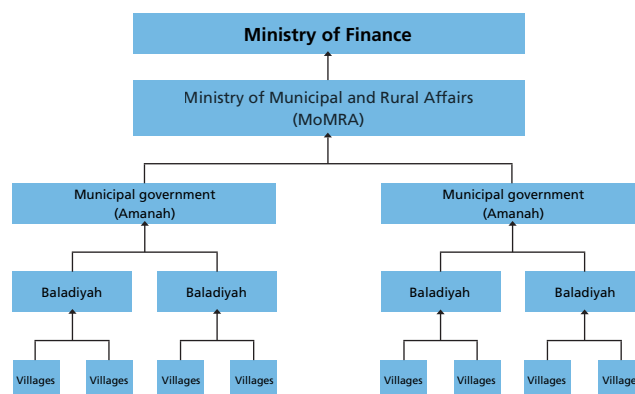
3.4.2 Municipal revenue

Currently, the Amanahs have few sources of revenue and limited authority to collect fees.

MoMRA has recently introduced municipal fees, which expanded their own-source revenue base; however, local revenues continue to be insufficient. Consequently, the Amanahs continue to rely on support from central budget. The central government finances most of the public services and infrastructure at the local level. Baladiyahs²⁴ elaborate and submit project proposals to municipal governments so that they can be submitted for funding. Municipalities send these proposals to MoMRA and the MoF (see figure 21). The MoF allocates funds to ministries and government agencies, (e.g., emirs, and national ministries) and these are allocated based on various factors, such as population. Municipalities spend the amount received on the activities included in the line-item budget proposal.

MoMRA introduced new municipal fees to increase municipal sources of revenue. In the financial year 2016, Taif generated only 11% of its budget with own-source revenue.²⁵ The gap between own-source revenue and the municipal budget is usually filled by intergovernmental transfers, resulting in municipal governments heavily relying on financial resources from the central government.

While own-source revenue has increased over the last few years, it remains below the National Transformation Programme (NTP) target of 40%. To help increase own-source revenue, UN-Habitat recommends introducing new tax instruments and financing strategies at the municipal level.²⁶



Source: Ministry of Finance, Kingdom of Saudi Arabia

Fig. 21. Municipal budgeting process

3.4.3 Financing municipal operating costs

The Amanah of Taif is heavily reliant on central government for funding municipal activities, services, and public infrastructure. In the financial year 2016, own-source revenue represented 11% (SAR 130 million) of Taif's budget. Intergovernmental transfers funded the remaining, and other financial resources are provided by the central government. Figure 22 shows a breakdown of Taif's 2016 budget by expenditure categories. Operation and maintenance/programs made up the largest share of Taif's budget, followed by projects, salaries, and operation expenses. In general, this category represents a large share of total expenditures for many of the Amanahs in KSA representing 30% of budget expenditure. While municipal own-source revenue has increased over the last several years, its share of total municipal revenue has lagged. This evidence that policy incentives and new financial instruments are strategic in order to reach the goals of the NTP.

Budget Category	SAR (thousands)
Salaries	152,850
Operation Expenses	18,387
Operation and Maintenance Programmes and Contracts	304,870
Projects	553,220
Total Approved Budget	1,029,327

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

Fig. 22. Approved Amanah budget, Taif (2016)

3.4.4 Capital financing for municipal development

The demand for capital to finance local infrastructure in emerging countries is becoming a priority, especially in cities like Taif. To fulfill the financial requirements and address these new development challenges, financing options available to countries such as Saudi Arabia has been rapidly expanding.

Recent reforms are aiming to improve the Saudi capital market through increased market capitalisation. For example, the Capital Market Law, the Securities and Exchange Commission, and a privately owned Stock Exchange were recently launched in Saudi Arabia, with the goal of improving the domestic capital market.

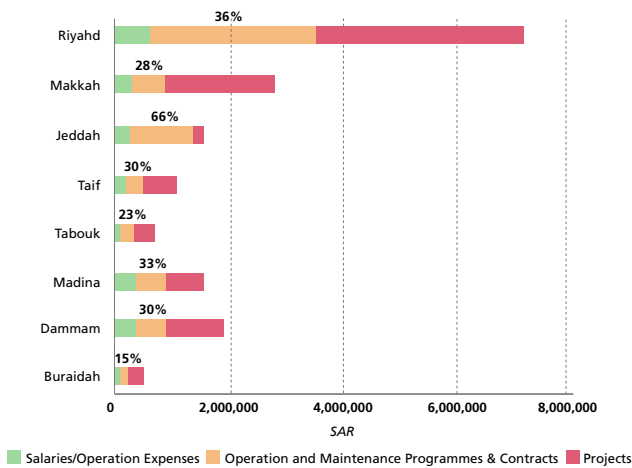
Between 2011 and 2016, Saudi equities increased in value from just over 50% to almost 70% of GDP (Gross Domestic

Product). Today, Tadawul is the sole Saudi stock exchange market and the largest equities exchange market in the Arab world.²⁷ In addition to Tadawul, Saudi Arabia introduced Nomu, an equity market with fewer listing requirements for small and medium-sized enterprises (SMEs). Nomu is a good option for SMEs that are interested in going public.

In addition to providing traditional banking services, Saudi Arabia's domestic banks went through a series of mergers and acquisitions, changed their assets structure, and began to offer both conventional and Islamic financial products to a diversified investor base. The Saudi Arabian market is becoming an example of efficient capital allocation driven by strategic reforms and increased market capitalisation.²⁸

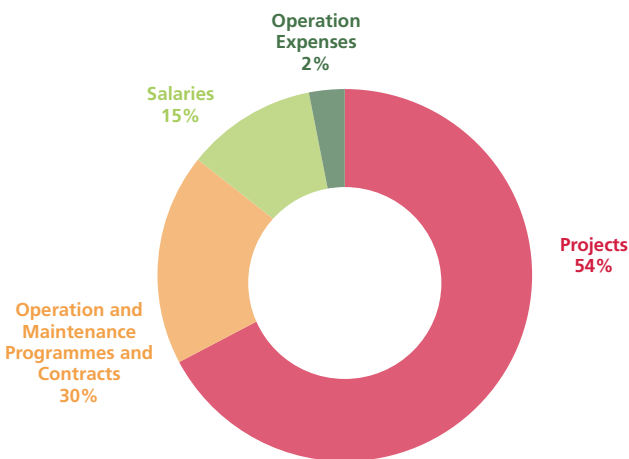
Regarding Saudi Arabia's debt market, the government began issuing bonds for debt financing in 1988. In the last 15 years, the debt market underwent a series of reforms, which changed the process for issuing bonds, pricing bonds, and setting bond maturity terms. One of the major buyers of government bonds is the group Investors in Government Development Bonds (GDBs), which consists of domestic financial institutions, banks, and foreign investors.²⁹ GDBs are Zakat deductible for domestic investors, and exempt from withholding tax on income for foreign investors.

Saudi Arabia's approach to creating the competitive and attractive conditions for capital and equity investors is expected to have a wide-ranging impact on the local economies of cities like Taif in the future, thus increasing the availability of capital to fund urban development.



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

Fig. 23. Operational and maintenance costs (share of total budget), 2015-2016 (thousands SAR)



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

Fig. 24. Amanah budget breakdown (2016)

Housing Finance

The Saudi Arabian real estate market is ten times larger than any real estate market in the Gulf region. Nevertheless, it remains underdeveloped with approximately 30% of Saudi's citizens owning their own home. Home ownership is currently legally confined to Saudi nationals only, although foreigners can buy leasehold property in designated developments. The demand in the KSA is primarily generated by local buyers rather than foreign investors and is driven by the total population growth (3.1%), and the overall Saudi national population growth (2.2%).

Prior to the mortgage law and mortgage financing, either the Real Estate Development Fund or commercial banks financed the housing credit market. The Real Estate Development Fund is one of the main sources for soft loans to Saudi nationals to finance home building. Commercial banks, in general, provide mortgages to those who can provide large down payments. In order to fill the resulting financing gap in the housing market, a series of finance laws were approved consisting of (1) the Enforcement Law, (2) the Real Estate Finance Law, (3) the Registered Real Estate Mortgage Law,

(4) the Finance Lease Law, and (5) the Finance Companies Control Law.³⁰

Initially, the loan-to-value rate for mortgages was fixed at a rate of 70%. Compared to other countries, such as the United Kingdom and India, where the rate is 90%-95% and 80% respectively, the loan-to-value ratio offered in Saudi Arabia was considerably lower. Recently, Saudi Arabia's central bank lifted the maximum loan-to-value rate on mortgages from 85% to 90% in an effort to stimulate the supply of mortgage loans.³¹ Thanks to the recent legislation, international finance companies are now able to extend credit lines in housing.

Financing Utilities

In 2016, the Ministry of Environment, Water and Agriculture, and the Ministry of Energy, Industry and Mineral Resources managed national utilities. The Electricity and Cogeneration Regulatory Authority (ECRA) was established in 2001, and it is responsible for licensing all entities operating in either the electricity or water desalination spheres, in addition to regulating providers. ECRA ensures that the Saudi Arabia's supply of electricity and water is in pace with demand, that quality standards are met, and that water and electricity are priced fairly.

The largest electricity provider is the Saudi Electricity Company (SEC). In 2015, the SEC was solely responsible for distributing electricity to consumers, with the exception of two areas (Jubail and Yanbu), which were operated by Marafiq, the country's first private integrated power and water utility company. Residential customers held the largest share of the SEC client base (6.7 million) in 2015 and consumed 48.4% of its energy output. The second largest consumer group was commercial users (1.5 million consumers, 16.3% of energy sales), followed by government (261,111 consumers, 13% of energy sales) and industry (10,044 consumers, 18.1% energy sales).³²

The primary water provider is the Saline Water Conversion Corporation (SWCC), and it is responsible for approximately 60% of the Kingdom's production of desalinated water. In 2015, 54% of all desalination plant units were owned and operated by the SWCC, with the largest of the SWCC's plants located in Jubail. In 2016, Jubail's production reached 358 million cubic metres, equivalent to 26% of SWCC's total annual production. SWCC also has desalination plants located in Khobar, Jeddah, and Shuaibah. SWCC is also responsible for the transportation of desalinated water from the production plants to the country's main potable water reservoirs. The National Water Company (NWC) manages Saudi Arabia's freshwater reservoirs, which is responsible for the water distribution. The NWC oversees water supply and sanitation in the largest cities, Riyadh, Jeddah, Mecca,

and Taif. Outside of these metropolitan areas, the Ministry of Environment Water and Agriculture, and the Ministry of Energy Industry and Mineral Resources manage water supply and sanitation through regional directorates and branches, (i.e., the General Directorate of Water in Makkah al-Mukarramah Region).

Although the SEC and the SWCC are largely government-run agencies, Saudi Arabia is exploring restructuring options that will allow private sector participation.

Financing Health and Social Services

In accordance with the Saudi constitution, the government provides all citizens and expatriates working within the public sector with full and free access to all public healthcare services.³³ The Ministry of Health is the primary government provider of healthcare services in Saudi Arabia, with a total of 249 hospitals and 2,094 primary health care facilities. Government healthcare constitutes 60% of the all health services in Saudi Arabia.³⁴

The private sector also contributes to healthcare services, especially in more populated cities and towns. There are 125 private hospitals (11,833 beds), and 2,218 private dispensaries and clinics, comprising 21% of hospital services in the region.³⁵

The Ministry of Health supervises 20 regional directorates-generals of healthcare affairs in various parts of the country, (e.g., Taif Health Affairs).³⁶ The role of the directorates includes (1) implementing healthcare policies, plans, and programs, (2) managing and supporting the healthcare services of the Ministry of Health, (3) supervising and organising private sector health care services, (4) coordinating with other government agencies, and (5) coordinating with partner institutions. In Taif, there are 13 Ministry of Health hospitals (47 in Riyadh and 14 in Jeddah), and 2,240 beds.³⁷

To meet the increasing demand for healthcare services, the Ministry of Health has given more autonomy to regional directorates in terms of planning, recruitment, establishing agreements with healthcare service providers, and financial discretion in budgetary and expenditure matters. Nevertheless, for most activities, regional directorates must receive authorisation from the Ministry of Health and, therefore, they have limited autonomy.³⁸

3.4.5 Financial sustainability

Under the current centralised system, the central government funds the majority of municipal infrastructure and public services, while municipal governments play a minor role. Despite the concerted effort to improve fiscal health envisioned

in NTP, fiscal self-sustainability will remain a challenge in the context of rising urban populations and unplanned urban growth.

Land-Based Finance

Land is widely recognised as one of the most effective revenue generating instruments for subnational governments. Land-based finance provides both a stable revenue source and incentives to promote local economic and urban development. In the Taif Amanah, land may strongly contribute to an increase in municipal revenue.

The introduction of the White Land Tax (WLT) is further proof of the Kingdom's recognition of land-based finance as a powerful revenue source. In Taif, where approximately 48% of land in urban footprint is vacant, the WLT is expected to provide a significant source of revenue for Ministry of Housing, curb land speculation, and protect agricultural land.³⁹ It is also expected to promote the development of idle land within the urban boundary. However, neither of these is a silver bullet to own-source revenue diversification in KSA.

A wide spectrum of land-based financing instruments exists beyond its current focus on leasing and WLT. In the age of decreasing oil revenue, Taif will require greater revenue stability and self-sustainability to meet their ever-growing expenditure needs. To this end, Taif must explore a variety of financing instruments and build the capacity of their existing land management system.

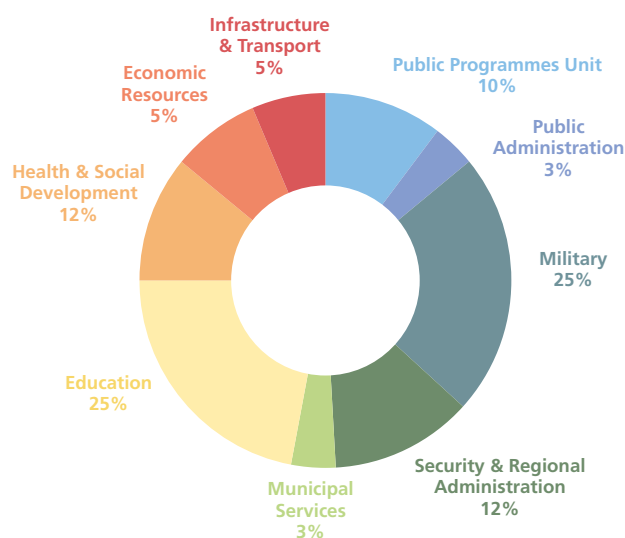
Urban Value Generation

Public finance and sound fiscal management support local development by establishing a solid financial base and strengthening the public sector's role. While these principles

are echoed in the National Development Plan guiding both national and sub-national public finance, in practice, Taif operates under a highly centralised system of public finance and continues to be heavily dependent on intergovernmental transfers to fund local development activities and projects. In 2017, the central government allocated 5% of the total budget to municipal services, which also covered projects and programs managed by the Ministry of Municipal and Rural Affairs (MoMRA).

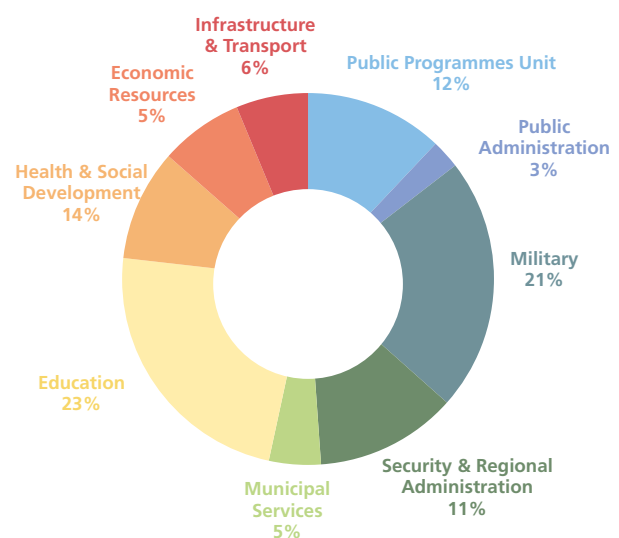
To reduce municipal dependence on intergovernmental transfers and increase the performance of municipal services and activities, the government is exploring alternative means of generating revenue.

Taif's economic growth and urban development trajectory are strongly correlated to planning and design, municipal finance, and governance. Land management and urban planning can support the transformation of municipal finance by improving local ability to generate revenue. For example, Taif could explore a number of revenue generating instruments, such as partnering with the private sector through Public-Private Partnerships (PPPs) in the operation and maintenance of public transportation infrastructure, tax administration and collection, waste management services, and municipal property management. In order for this to work, the foundational principles of sustainable urbanisation mentioned above must be either present or actively pursued by governments. Consequently, local governance structures that adopt a three-pronged comprehensive approach will be better positioned to maximise urban value.



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

Fig. 25. Saudi Arabia national expenditure by Sector, 2016

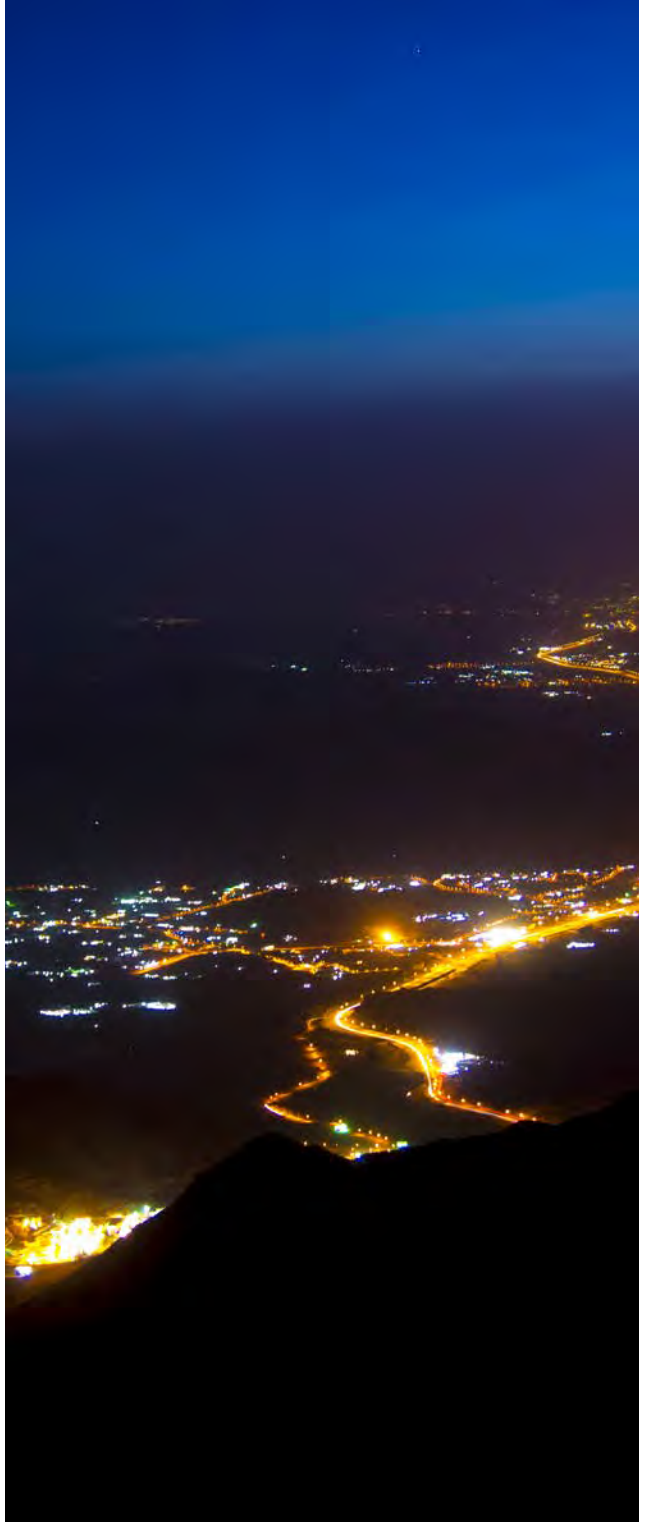


Source: Bhatia, R. (2017). Saudi Arabia Budget 2017. The Gulf International Bank.

Fig. 26. Saudi Arabia national expenditure by Sector, 2017

4

THE CURRENT CITY





4.1 Urbanisation Patterns

4.1.1 The city's development patterns

The City of Taif is part of the Jeddah - Makkah -Taif urban belt in the Makkah Region. The Makkah Region accounts for nearly 25% of the national KSA population and the Taif Governorate, within the Makkah Region, holds 14% of the region's population. Nestled on the slopes of the Sarawat Mountains, Taif is situated at an elevation of 1,879 metres above sea level. The mountain range runs parallel to the Western coast of the Arabian Peninsula and divides the municipal areas of Makkah and Taif.

Taif is located 100 kilometres Southeast of Makkah, the holy Islamic city, and 170 kilometres East of Jeddah, which has historically been the gateway for millions of pilgrims leading to Makkah. Taif was a religious centre housing the idol of the goddess Allat, known as "the lady of Taif." Taif grew as a resort of pilgrimage and as an agricultural centre growing wheat, vines, and fruit crops for the region.

Currently, Taif hosts a population of about 1.1 million people with a density of about 25 persons per hectare, on an area of 44,000 hectares. It has a large percentage of young people, with more than 50% under the age of 30 years. The population is expected to grow at a rate of 3% per annum, projecting a population of 1.5 million by the year 2030. However, the New Taif Development Plan aims to accommodate 750,000 people within its expansive area of 125,000 hectares. The expansion of the city limits is not proportionate to the population growth rate of the city.

Taif, when compared with other cities of a similar size and population, is more sprawled with a smaller population resulting in low densities. For example, Barcelona City has a population of 1.6 million people within an area of 40,000 hectares, resulting in a density of 40 persons per hectare. A low-density urban pattern is heavily resource intensive and thus less sustainable. Moving forward, Taif must overcome the challenge to concentrate development within its existing city extents rather than extending them further away from the centres.

The pre-Islamic town of Taif was a walled fortification. Throughout the Islamic period, the town was a garrison and an administrative centre for the Hijaz Region. Taif hosted the famous annual fairs of the Arabian Peninsula called the Souq Okaz, which brought trade and skilled artisans to the city. Since the 1920's and 1930's, following unification with the Kingdom of Saudi Arabia, an increase in population has meant that Taif has expanded in all directions encompassing several small villages, and particularly along the major roads leading out of the city. The expansion is towards the North following the Airport Road and the primary route to Riyadh; towards the East along Hassan Ibn Thabet; to the

POPULATION



POPULATION DENSITY on built-up area



AGE PROFILE

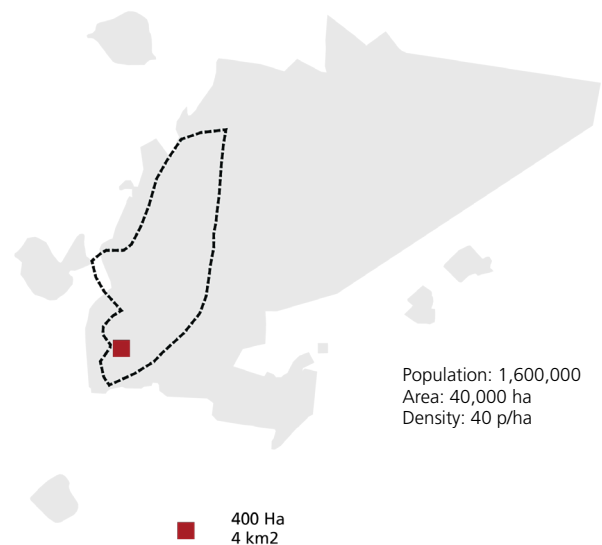


POPULATION GROWTH RATE



1.5 million Expected population by 2030

TAIF CITY COMPARED TO BARCELONA CITY



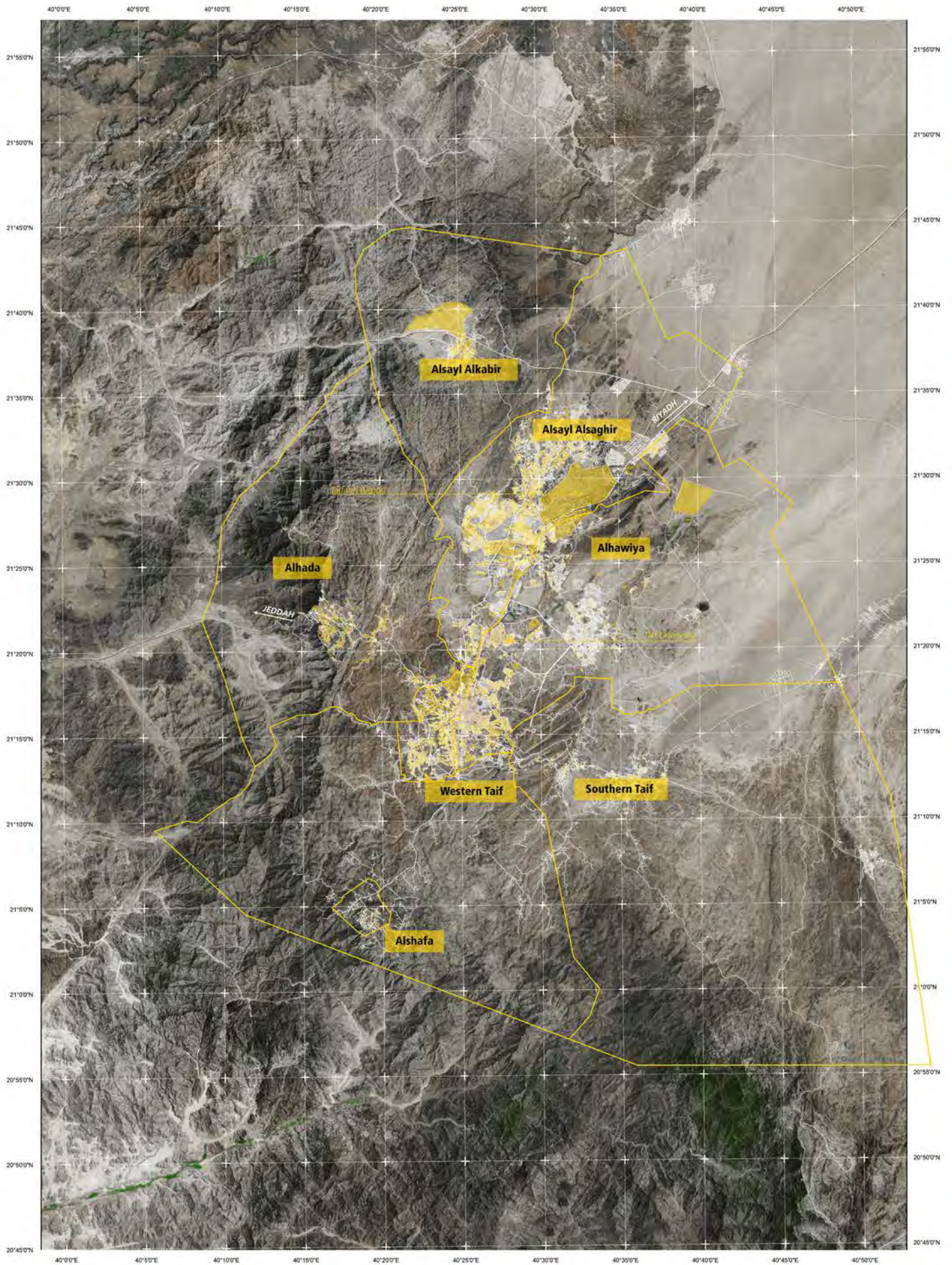
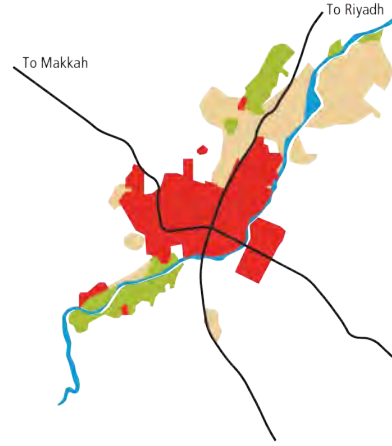


Fig. 27. Boundaries, neighbourhoods and key infrastructure



Before 1951

Area: 687 ha
Population: 30,000



1955

Area: 10,670 ha
Population: 45,000

Southwest along Ar Ruddaf; and to the West following the route to Makkah. The population of about 30,000 in the 1950's has continuously grown to about 400,000 in the 1990's, and to approximately 1 million in 2016.

Taif's geographical location has played a critical role in shaping its development pattern, with the topography acting as a natural barrier to the South and West, and thus limiting the physical growth of the city in these directions. Taif grew from 16,000 hectares, stretching from the Old City Centre (Al Balad), and grew radially along the East-West axis. The growth was largely contained along this axis for about two decades.

Around the 1970's and 1980's, Taif's extents expanded and the city began growing along the North-South axis connecting Taif to Makkah and Riyadh. Taif's urban development in the 21st century skipped past the military lands and the disputed tribal lands in the valley, and moved further North in the direction of the airport, resulting in a sprawled and fragmented city fabric.

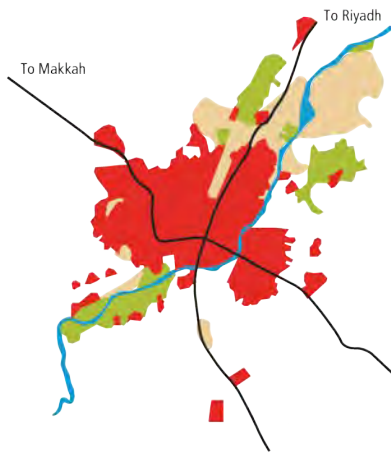
4.1.2 Administrative boundaries

Similar to other cities in the Kingdom, Taif has three established characteristic boundaries: the Development Protection Boundary, the 1435 Urban Growth Boundary (UGB), and the 1450 Urban Growth Boundary. The delineation of Urban Growth Boundaries was intended to control development, and protect agricultural lands by encouraging infill development; reduce the cost of provision of infrastructure for new development through better coordination; and ensure the conservation of

natural environment, particularly around the cities through preservation measures. However, the boundaries are far more generous than the city requirements leading to low density and sprawl. The current 1450 Urban Growth Boundary, which excludes the old Taif airport, and the proposed new Taif International Airport covers an area of 137,877 hectares, and based on the current growth projection rate, will take more than 35 years to reach the UN recommended density standards. The extensive nature of the current growth boundaries renders it ineffective as a growth management tool, and in many ways encourages urban sprawl and ineffective infrastructure distribution and investment.

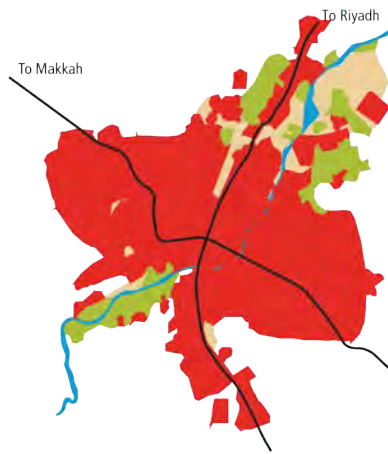
The Development Protection Boundary for the city of Taif encompasses an area of 382,638 hectares. The boundary covers a variety of landscapes including dunes, agricultural fields, mountains, wadis, heritage places, and the city's urban fabric. These landscapes are an integral part of the urban ecosystem and under threat of urban growth.

The delimitation of the Development Protection Boundaries for Saudi Arabian cities was established by MoMRA and the Amanahs. It is now a controversial issue that has been raised in several workshops by the local municipalities. The key issue is that they were established in an arbitrary manner without taking into account the specificity of each city, such as the environmental context, and the urban growth and development patterns. UN-Habitat proposes to maintain a phased urban expansion within the 1450 UGB and to preserve the rest of the Development Protection Boundary.



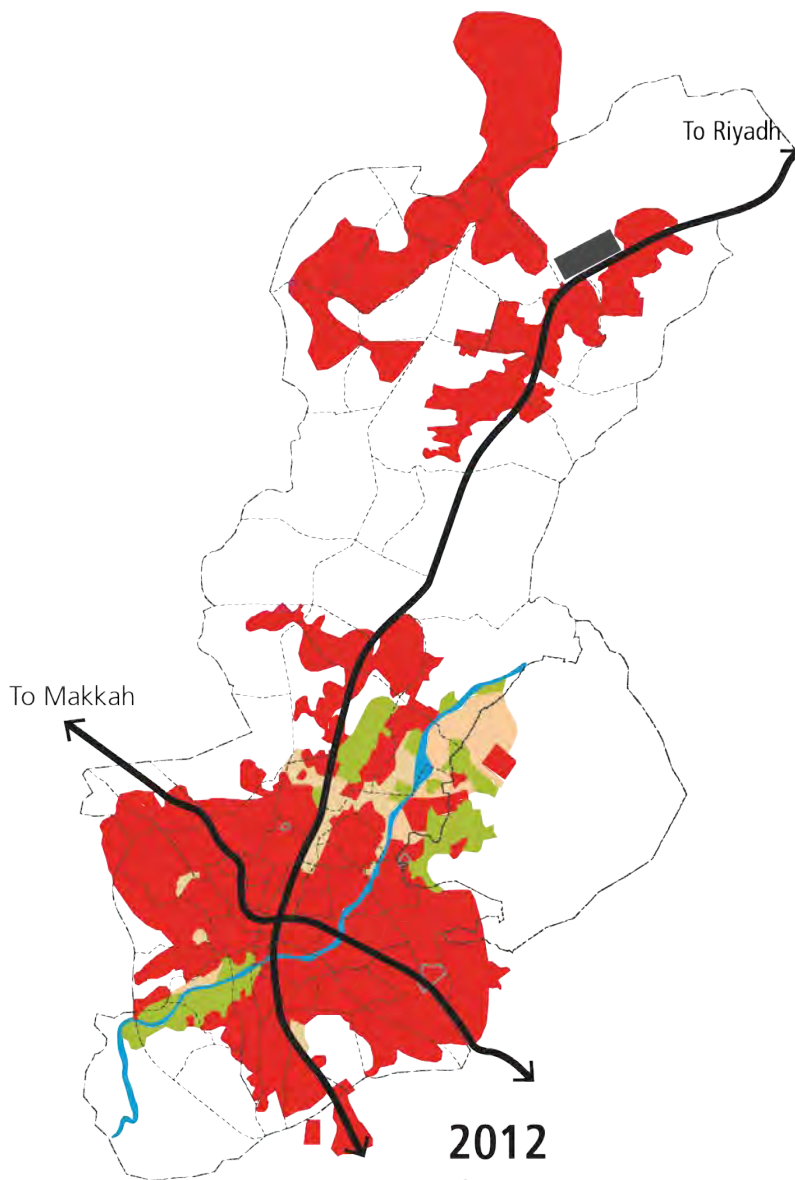
1964

Area: 19,310 ha
Population: 100,000



1977

Area: 44,770 ha
Population: 211,000



2012

Approx.
Population: 596,000

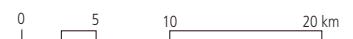


Fig. 28. Urban growth stages



4.1.3 Urban density

The measure of urban density is a good indicator of the spatial efficiency of city functions and often indicates the growth potential of different parts of the city. The UN-Habitat recommended density benchmark is 150 p/ha. This means that city resources are better accessed and equitably distributed when a city reaches an optimal number of residents that are served by the infrastructure systems laid out for them. The city of Taif hosts a population of approximately 1.1 million over 44,000 hectares area resulting in a population density of 25 p/ha.

According to the last Saudi Arabian census (2010), Taif is experiencing a population growth at a rate of 3% per annum, and its projected population by 2030 is 1.5 million, (excluding the population projected in the New Taif Plan). This growth rate is close to the national population growth rate projected for the Kingdom of Saudi Arabia (KSA).

Overall, Taif has experienced a growth in urban area of 743.7 square kilometres, which is approximately 110 times bigger than its area in 1951, while its population has grown by 20 times in the same period, at a rate of 3% per annum. In other words, more land is allocated per person than it was a few decades ago, as illustrated in the graph represented in figure 29. This trend is the inverse of a sustainable city growth model, pushing towards low density and more sprawling urban forms. The vast, sprawling development

plans put pressure on the infrastructure and environment to support a comparatively smaller population and becomes an issue if the city continues to expand in a similar way. The New Taif City Plan projects a population of 0.75 million and covers an area of 125,000 hectares, with a built-up area of 16,000 hectares. UN-Habitat density recommendations indicate that this same area could accommodate 12.5 million people at the UN-Habitat recommended density. Needless to say, there will be copious amounts of vacant land in the new proposal with low density and sprawling neighbourhoods that divide and segregate the city fabric in an unsustainable manner.

4.2 Structuring Elements

4.2.1 Natural and topographic elements

The natural setting of any city plays a key role in shaping its physical form and structure. Taif is located at an altitude of 1,450 metres above sea level, bound by the Sarawat Mountains on the West, that separate it from Makkah. This topography defines the natural boundary of Taif, encouraging growth in a linear North-South pattern. The terrain poses a challenge to the urban form of Taif, defining its physical extents and constraining development along the steep slopes towards the West.

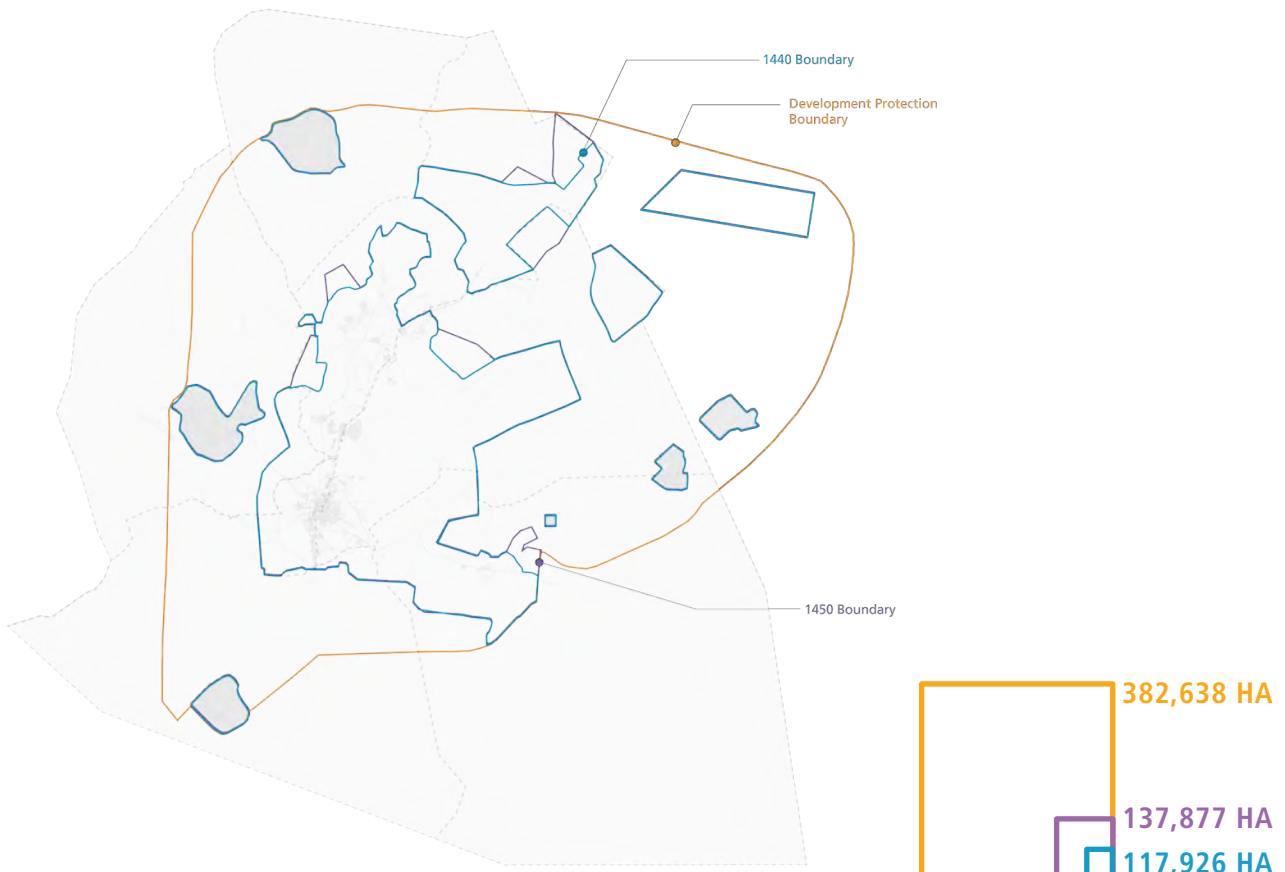


Fig. 29. Administrative boundaries

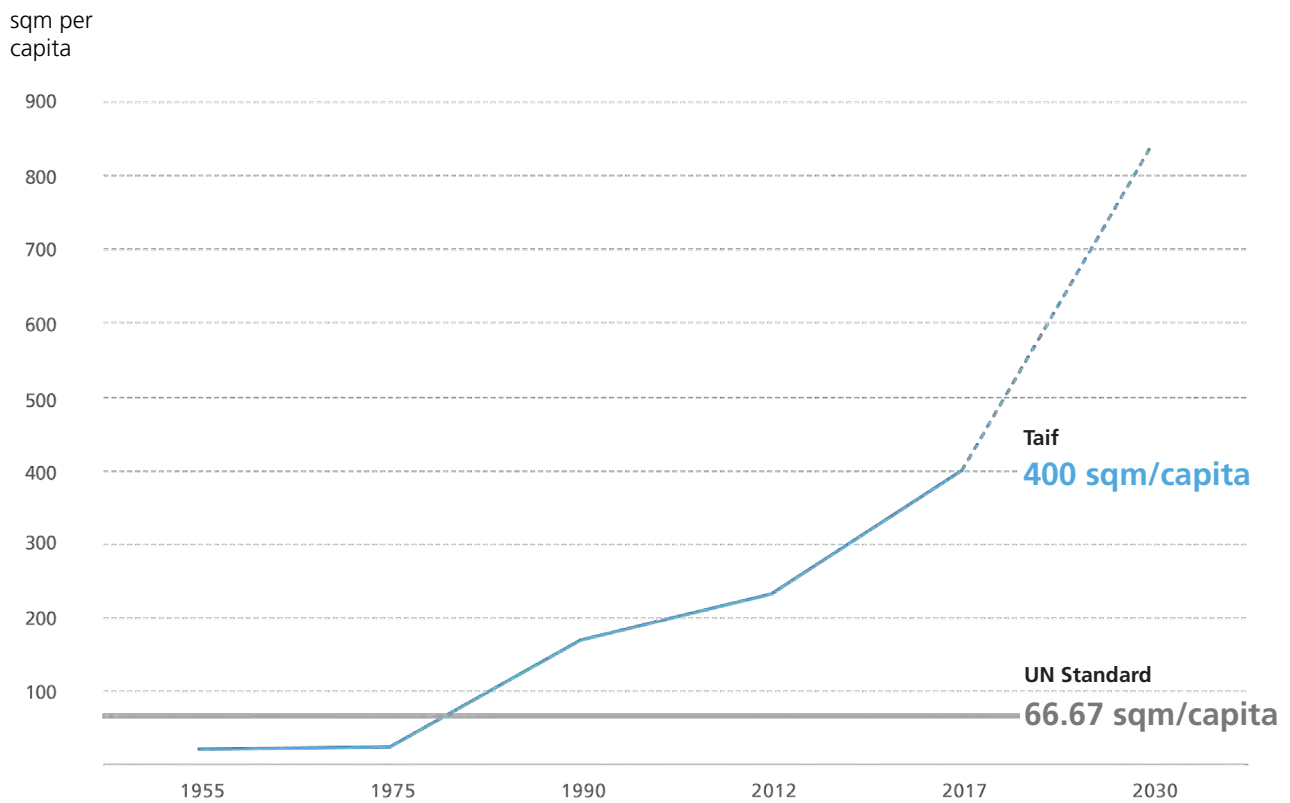


Fig. 30. Land allocated per capita

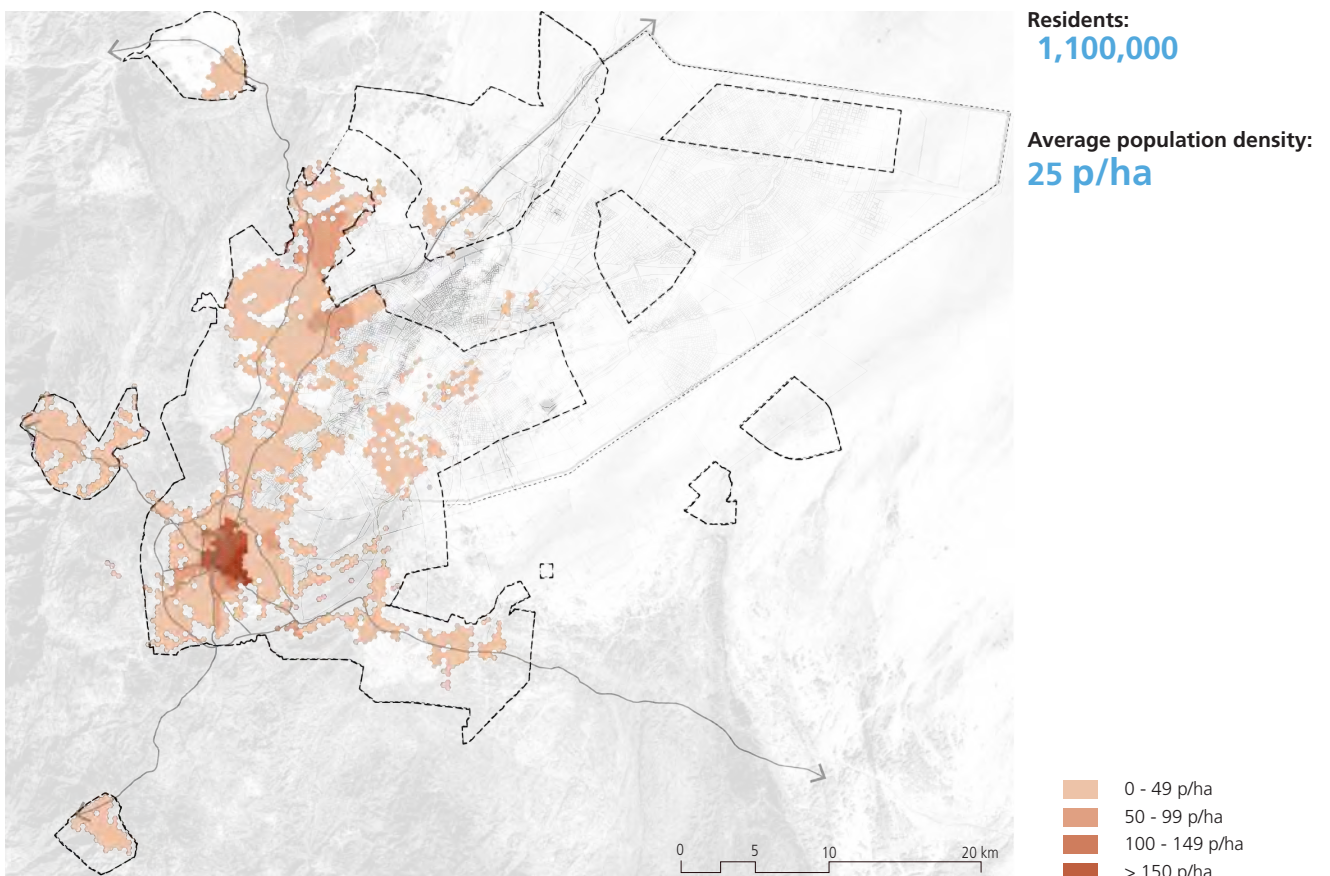


Fig. 31. Current distribution of population density



The natural water systems, soil types, climatic conditions, flora, and fauna are also decisive elements in the creation and sustenance of a settlement. A system of natural wadis runs through Taif and makes Taif suitable for agriculture. Taif serves as the agricultural bowl of the Makkah Region. The water serve the function of natural drainage by redirecting stormwater runoff and allowing rainwater to reach the underground aquifers. The city also has rich underground water reserves in the form of aquifers, accessed via multiple wells scattered across the urban area. The wadis are critical to the natural ecosystem; however, urban sprawl and encroachment on sensitive land pose a threat to this fragile ecosystem. These natural systems, though crucial in shaping the city form, are not integrated or incorporated into the urban structure and functions.

4.2.2 Major movement infrastructure

Taif is well connected by air within the KSA. The Taif Regional Airport is situated in the North and offers both domestic and international connections. A new Taif International Airport is proposed as part of the New Taif City Development Proposal to offset the influx of pilgrims going to Makkah, with a projected capacity of 13 million passengers. Taif has a well-established network of roads, which allows smooth movement of people and goods in and out of Taif, in all directions. The three main roads from Makkah, Riyadh, and Abha facilitate transportation of Taif's produce to the Kingdom's markets and allows incoming visitors into Taif from cities like Makkah.

In the early centuries, when Taif's urban form was concentrated along its historic centre, it had an organic street pattern. The city began to expand North to allocate land for development beyond the military lands. The main North-South arterial road was crucial to the city's movement pattern giving access to land in the North. This major linear road has led to widespread sprawl in the absence of comprehensive planning efforts. However, this linear axis also holds the potential to become a major structuring element by incentivising transit-oriented development along it in the future.

The sprawling form of development in Taif, housing a comparatively smaller population has been a challenge to the development of a public transportation system in the city. Providing public transportation to a low-density, sprawled, and a fragmented urban system is inefficient and financially unfeasible. Therefore, the city has prioritised private modes of transport by investing in a network of wide roads that further impair connectivity by acting as large, inaccessible infrastructure projects that discourage pedestrian mobility and safety. There is also a cultural proclivity towards private modes of transport in the Saudi society with the extremely low cost of fuel, making it an easy choice and contributing to this challenge. The City Prosperity Index (CPI) report on Taif (2016) ranks Urban Mobility as 'weak' and suggests addressing the issues of a public mass transport system, poor road safety, and low usage of the available transport system to improve this factor.



Natural topography around Taif



The Spatial Capital of Saudi Arabian Cities Report, (Street Connectivity Study for the City Prosperity Initiative, 2015) calculates street accessibility based on three variables:

- Proportion of land allocated to streets;
- Street density; and
- Intersection density.

A high accessibility assessment value translates to better connectivity, penetration, mobility, and coverage of the city. Taif has a high intersection density value of 94 points and a relatively medium value of 75 in land allocated to streets, but a poor street density at 43 points.

Intersection density is a fair indicator of compactness and walkability and is indicative of how conducive a city is to non-motorised means of transport. Overall, Saudi cities average 136 intersections per square kilometre, above the optimal level estimated by UN-Habitat of 100 intersections per square kilometre. Taif's organic street pattern in the city centre helps it achieve a higher number of intersections (187) compared to other Saudi cities, such as Najran and Madinah. While intersection density is one of the measures of accessibility, it does not take into account the pattern of the streets and if they optimise circulation for the uses surrounding them. Taif lies in the mid-range (between 60 and 80 points), with 75 points in land allocated to streets. Cities like Taif, Dammam, Jizan, and Makkah allocate around 27% of their land to streets, which is close to the average of 27.8% in Saudi Cities.

While the average street width for the cities of Saudi Arabia is 15.5m, Taif and Khamis-Mushait both have the narrowest streets in the Kingdom, at 12.5m. Narrower streets promote walkability by commanding more attention from the automobile drivers to keep speeds under check, thereby, creating a more pedestrian-friendly environment.

4.2.3 Existing and proposed land use patterns

Taif has primarily served as an agricultural centre in the Makkah Region. Based on the current plan, Taif's land use is mainly residential, interspersed with some mixed-use, commercial, and recreational lands. The historic parts of Taif, pre-1980, follow the principles of good urbanism; a compact and dense central core with a mix of multiple uses. The city extensions that followed post-1980 contribute towards the overall low density, sprawl, and mono-use clusters. Taif has an integrated network of amenities serving various industries like agriculture, tourism, and trade. Taif residents have access to quality education facilities with ample schools, and universities. The city also houses numerous hospitals and clinics providing quality healthcare to the residents.

Residential use makes up about 30% of the land and is scattered along Taif's entire length. The second highest dedication of land is to recreation or tourism focussed uses. Taif University and other public facilities contribute to 14% of the land use. Taif also has large parcels of land, (about 12%) dedicated to

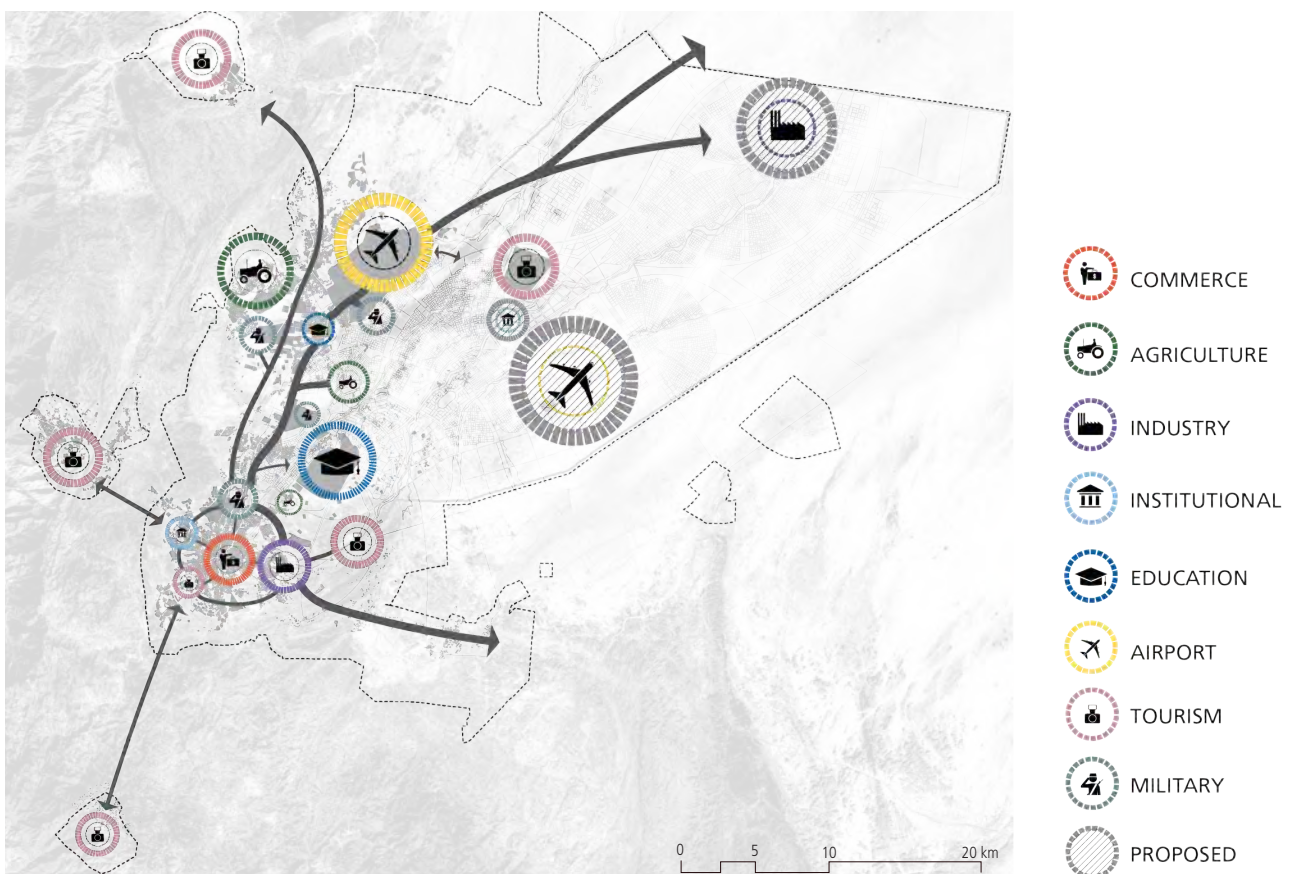


Fig. 32. Economic nodes and network



military use that breaks the continuity of the urban fabric. Taif has a relatively low percentage of commercial use in the current plan, which should proportionately increase as the city grows over time. Taif, in its present state, follows the traditional planning methods of spatially segregating uses by type and limiting planning to only the two-dimensions. There has been a paradigm shift among the planning community to look at mixed-use, horizontally and vertically, developing guidelines based on form-based codes, and using data-driven methodologies to inform future planning methods to create vibrant, diverse, and sustainable neighbourhoods.

The New Taif City Development Proposal puts forward six new projects, worth SAR 11 billion, to bolster the city's position in the region as a core pillar in the Vision 2030. It covers an area of 125,000 hectares (1,250 square kilometres), increasing the 1450 UGB by 711 square kilometres (from 1,378 square kilometres to 2,089 square kilometres). The projects span diverse uses that collectively aim to support the region's demand for accommodating pilgrims and as a consequence, create new economic opportunities.

The New Taif Development Proposal further aggravates the current issue of single land uses by proposing distinct clusters of singular land use developments. It proposes technology and industrial parks along the Northernmost extent of the Development Protection Boundary, approximately 80 kilometres from Taif's city centre. The proposal also recommends extensive suburban residential developments in

the form of single-use buildings and condominiums, located 30 kilometres away from the city centre. There is also a small percentage of commercial and mixed-use in the proposal. A large portion of the land is dedicated to a new airport, 40 kilometres from the city centre, to address the exponential rise in the number of pilgrims coming to visit Makkah every year.

The proposal will infuse Taif with new economic engines, driving both growth and job opportunities. However, there is no analysis of the interaction between the old city and the newly proposed expansion of the city in the form of complementary uses, road, or public transport connections, and a comprehensive vision for the whole city. Moving forward, for the proposal to be successful, it must resolve a few issues that may prove unsustainable in the long run and impose a burden onto the city. One such issue is the low-density mono-use clusters that the plan propagates which will, in turn, encourage dependence on private vehicles and the extension of wide roads. And the second is the disregard towards the natural system of wadis by a misalignment of the agricultural lands away from water resources. This weak integration with the natural infrastructure will pose an environmental burden on Taif.

An analysis of Taif's facility and commercial use distribution reveals certain patterns of the city structure, as seen in figures 35 and 36. There is a distinct centre in the Southern core of Taif, which is also its historic centre. The second, most



Existing urban form of Taif

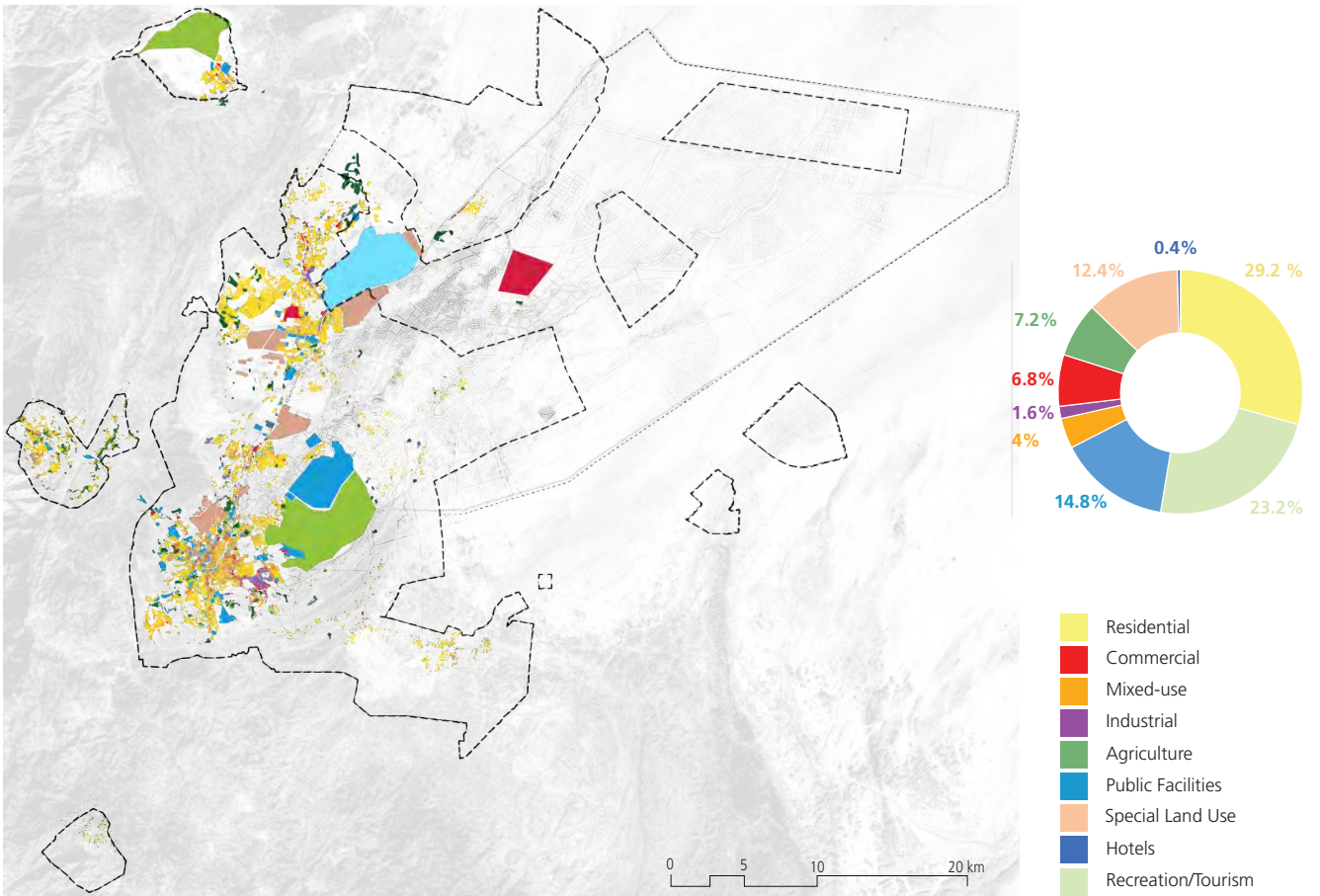


Fig. 33. Existing land use

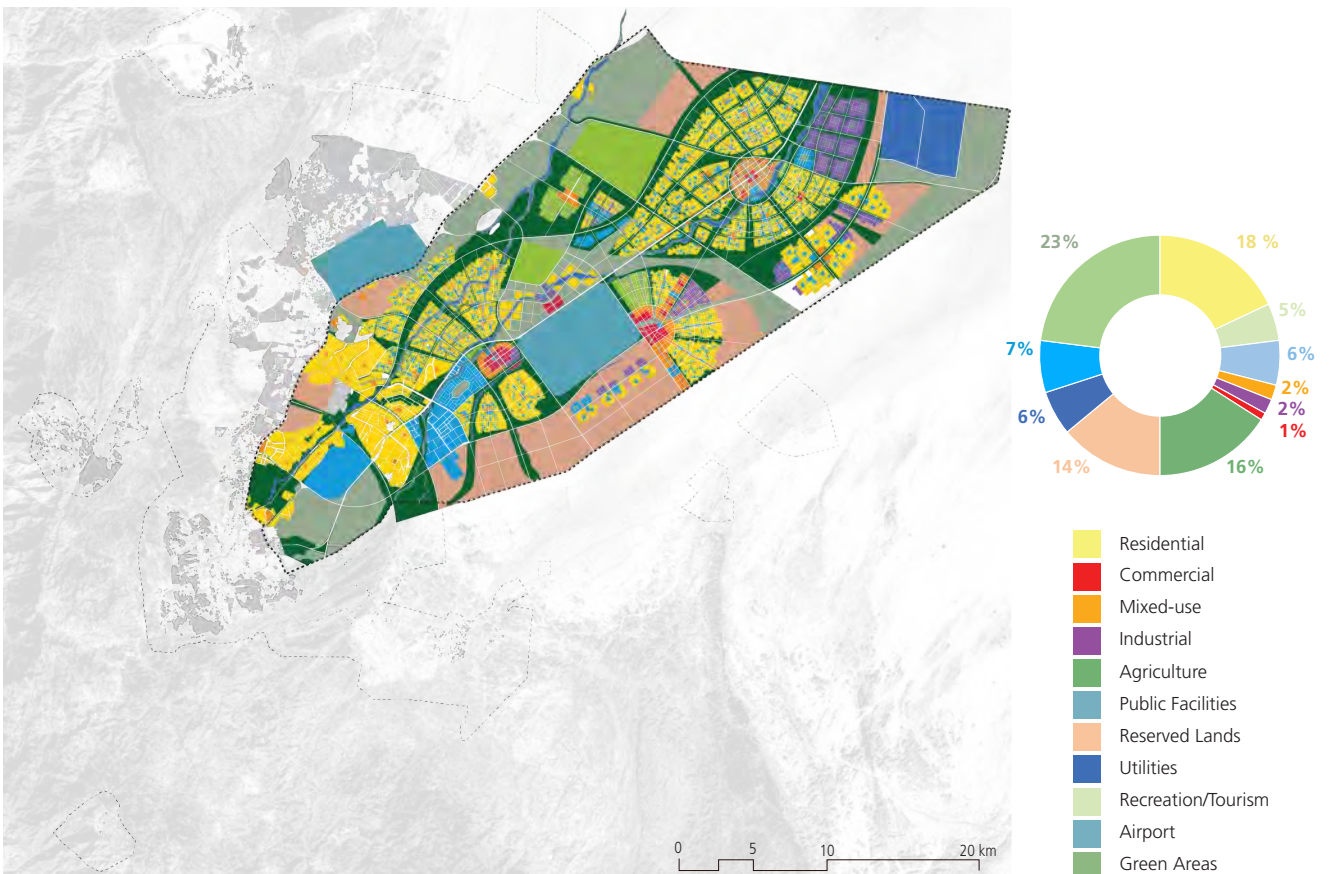
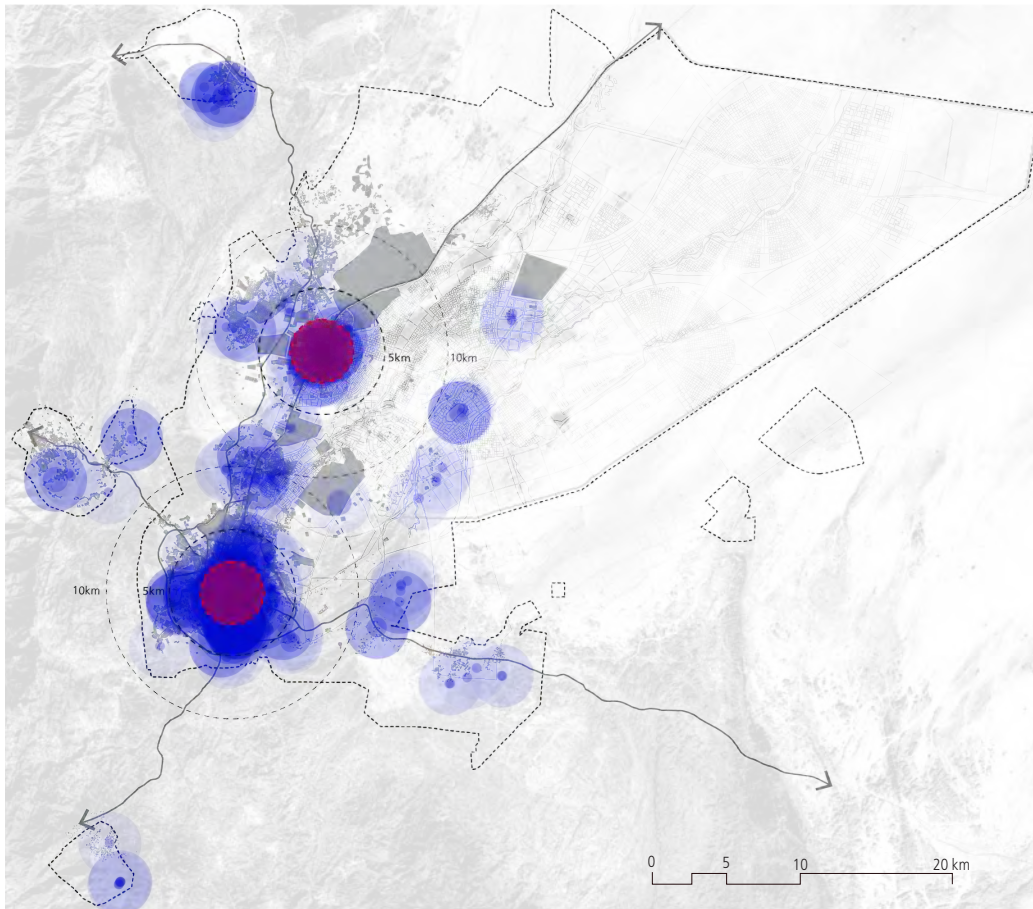


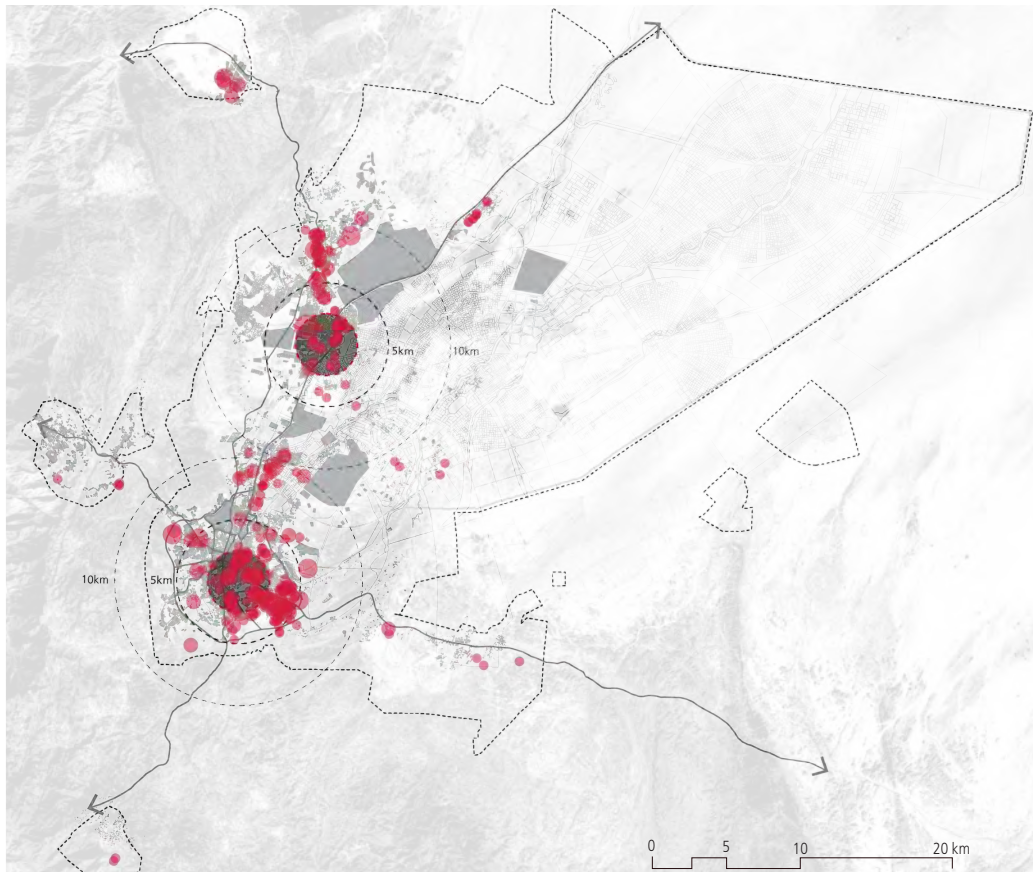
Fig. 34. Proposed land use by the New Taif Plan



TAIF RESIDENTS THAT LIVE MORE THAN 5KM FROM PUBLIC FACILITY ACCESS

 x **165,000**

Fig. 35. Polarised facility distribution



TAIF RESIDENTS WITHIN 5KM OF COMMERCIAL AREA

 x **835,000**

Fig. 36. Polarised commercial centres



evident core is in the North near the airport and the Taif University. This second core is not as well established as the Southern core is but has a variety of uses and facilities that can be leveraged to become a significant node, anchoring the city at the North. The facilities and commercial uses are scattered along the North-South routes and along the major corridors radiating outwards from the city. Carefully planned and even distribution along these major axes will create a contiguous urban fabric, increase access, and reduce travel time of residents. In addition, the lack of public spaces and recreational land use along the major axes sets clear priorities for the future vision of the city. An accurate assessment of vacant land in the city centre may possibly provide a solution to this issue.

4.2.4 Vacant land

Owing to the natural topography, special land uses, and planning efforts, Taif has large portions of vacant or undeveloped land within its 1450 Urban Growth Boundary. This results in an overall low density for the region and exacerbates the issue of a fragmented city structure. Taif University, which has large portions of land allocated to it, will take a long time to be entirely built out, resulting in vast open spaces in the city. Within the 1450 Urban Growth Boundary, almost 50% of the land is vacant, amounting to 195 square kilometres or 19,500 hectares. If one includes the New Taif Plan, the percentage of total vacant land increases to 66%, which is equivalent to approximately 1,000 square kilometres

or 100,000 hectares. For a scale perspective, one can compare this number with cities like Barcelona (10,200 hectares), Paris (10,500 hectares), and Manhattan (7,100 hectares). Ten cities, the size of Barcelona makes up the vacant land of the New Taif Development Proposal. It would also fit ten cities the size of Paris and fourteen cities the size of Manhattan, (these numbers refer to the urban footprint, without taking into consideration the Metropolitan Area of the mentioned cities).

The future development of vacant land is a potential resource for the city. The vacant lands within the current city footprint yield an opportunity to densify within the city extents without acquiring or disturbing the natural landscapes of the city. The vacant lands could provide the city with supporting uses, such as mixed-use and commercial facilities, or public infrastructure like parks and open spaces to improve the quality of life of the residents. If built to follow the UN density recommendations along the sustainable urban development guidelines, the city could accommodate the projected population growth within city limits, increasing the density to 150 p/ha.

Even if one assume that 50% of the vacant land within the 1450 UGB is developed, it can accommodate 1.5 million more people at the UN-Habitat recommended density of 150 p/ha, equal to the size of Taif's current population. An including the New Taif Development Plan, built at 50% land capacity, could accommodate at least 7 million more people within its proposed extents.

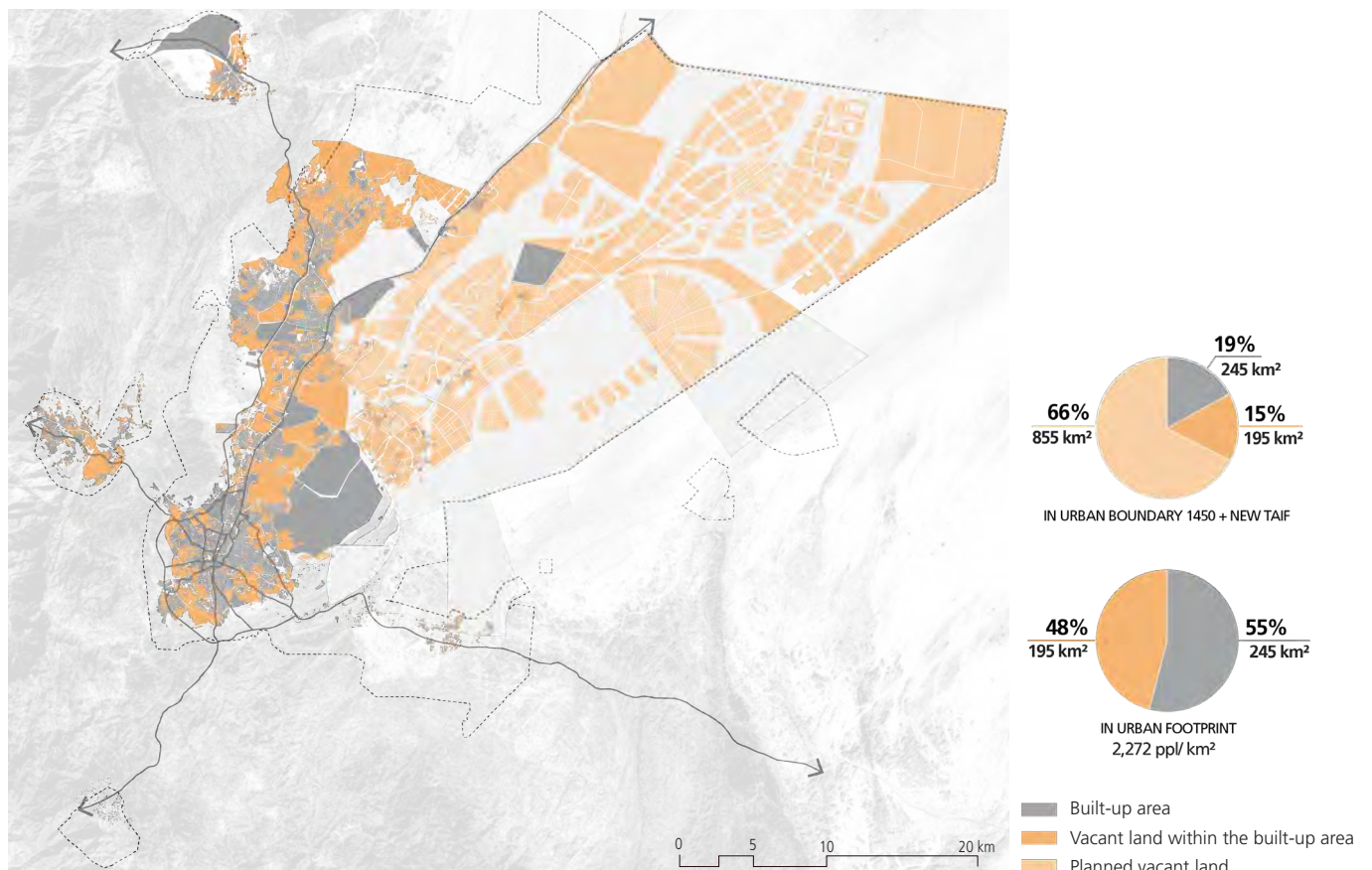


Fig. 37. Vacant land and undeveloped area



4.2.5 Walkability to urban cores and facilities

The structure of Taif city, with spatial discontinuity, single land use clusters, and sprawling development over large areas, impacts the connectivity and results in differential access to opportunities and services for various sections of the population.

The commercial centre for Taif is defined by a large concentration of commercial and mixed-uses, located close to the historic centre and have access from major arterial roads and public transportation lines. Taif has a well established urban core with a mix of land uses serving a higher population density.

This urban core can be traced back to Taif's historical spatial centre and has several historic mosques and the Shubra Palace, a former summer resort for King Abdul Aziz, which functions as a museum today. It has a high concentration of shops, restaurants, hospitals, schools, administrative buildings, and public spaces.

This is reflected today in its pedestrian friendly block sizes, and dense street network. The commercial centre is easily accessible by the Wadi Waj Road, Highway 15 and Khalid Bin Al Waleed Road.

In Taif, about 14% of the population lives within a 5-minute walking distance to the commercial city centre, and about 20% lives within a 10-minute walking distance to the commercial city centre. About 80% of the population has to travel longer distances to access the city centre, leading to inequitable and inconvenient distribution of urban facilities. To redress this condition, the city centre needs to be densified, and connected via multiple modes of transportation to the adjacent neighborhoods, or the amenities have to be redistributed in order to serve the scattered population.

The proposed transportation systems, discussed in detail in Section 4.3.2 will increase access to the centre and bring a greater number of residents closer to the centre. Increasing access to the city centres will strengthen the city centre, take advantage of the existing amenities and establish a city structure. However, the future development patterns should aim to create more secondary centres within the city of Taif, to create more opportunities, equalise access, and redistribute traffic.

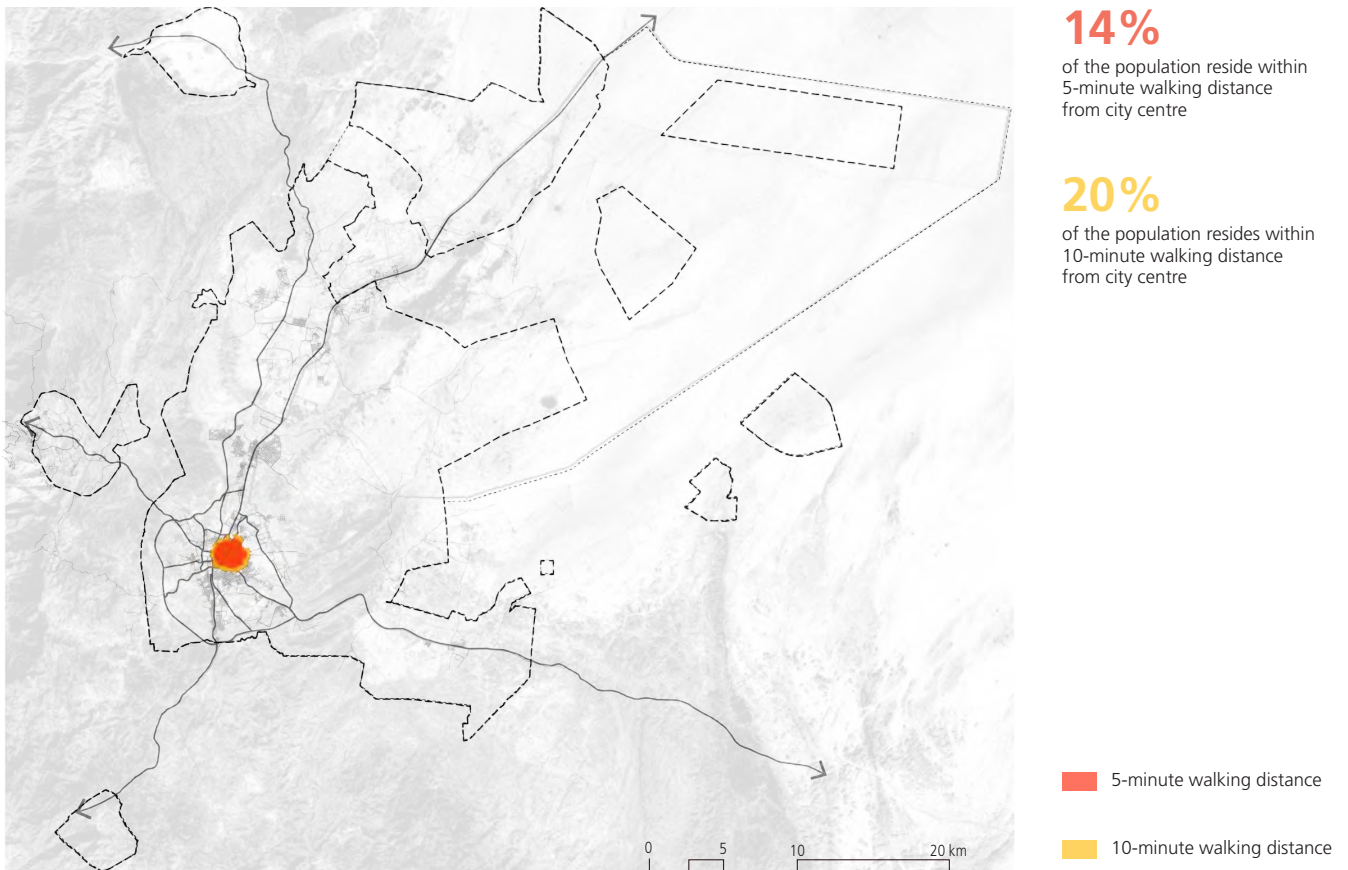


Fig. 38. Accessibility from commercial city centre



4.2.6 Unplanned settlements

The large exodus of migrants from rural to urban areas has put pressure on cities in Saudi Arabia to accommodate and provide housing for all the incoming migrants, at a higher rate than they could plan for. According to King Saud University in Riyadh, 74% of people who had been living in rural areas migrated to cities, looking for job opportunities and attractions, that they don't have access to due to the current regional distribution. In line with other main urban centres in Saudi, Taif is witnessing the appearance of many unplanned areas in the outskirts of the city and on the central mountainous zones. The definition and categorization of "unplanned settlements" is ambiguous as it can sometimes include the historic parts of the city that were excluded from the formal plans, which came much later and hence do not follow the established guidelines. Many times, these unplanned settlements are usually older settlements that were engulfed by the city, without officially incorporating them or planning for them.

Alternatively, the term can also be used to refer to settlements coming up in the interstitial pockets of the city fabric or along the periphery, as they lie outside the legal planning framework. This current approach has brought about heavy demolitions, making room for new developments in historical, and/or vernacular areas of the city, since these neighbourhoods are not technically inscribed in any conservation plans.

These unplanned settlements often accommodate the incoming migrants with housing opportunities, but they may be vulnerable and at risk of natural or man-made disasters, and legal consequences. Some of the typical characteristics of these unplanned areas may include:

- Lack of public services, such as schools and hospitals within easy reach, and lack of public spaces, and safe areas for children to play;
- Poor quality, and often unsafe, living conditions, and
- Lack of basic services and amenities such as water, sanitation, waste collection, storm drainage, street lighting, paved footpaths, and roads for emergency access.

In Taif, unplanned settlements are found within the core urban area and along main roads to Makkah, and the airport. There are approximately 14 unplanned settlements in the city, accommodating 11.5% of the population and occupying 6.5% of the built-up area. About 21% of the unplanned settlements are built on steep slopes and face some form of risk. These unplanned settlements require careful legal, financial, and policy interventions to be clearly defined and planned for in the future. Without formal legislations, the unplanned settlements will continue to prosper straining the city resources and jeopardizing the future of many residents.

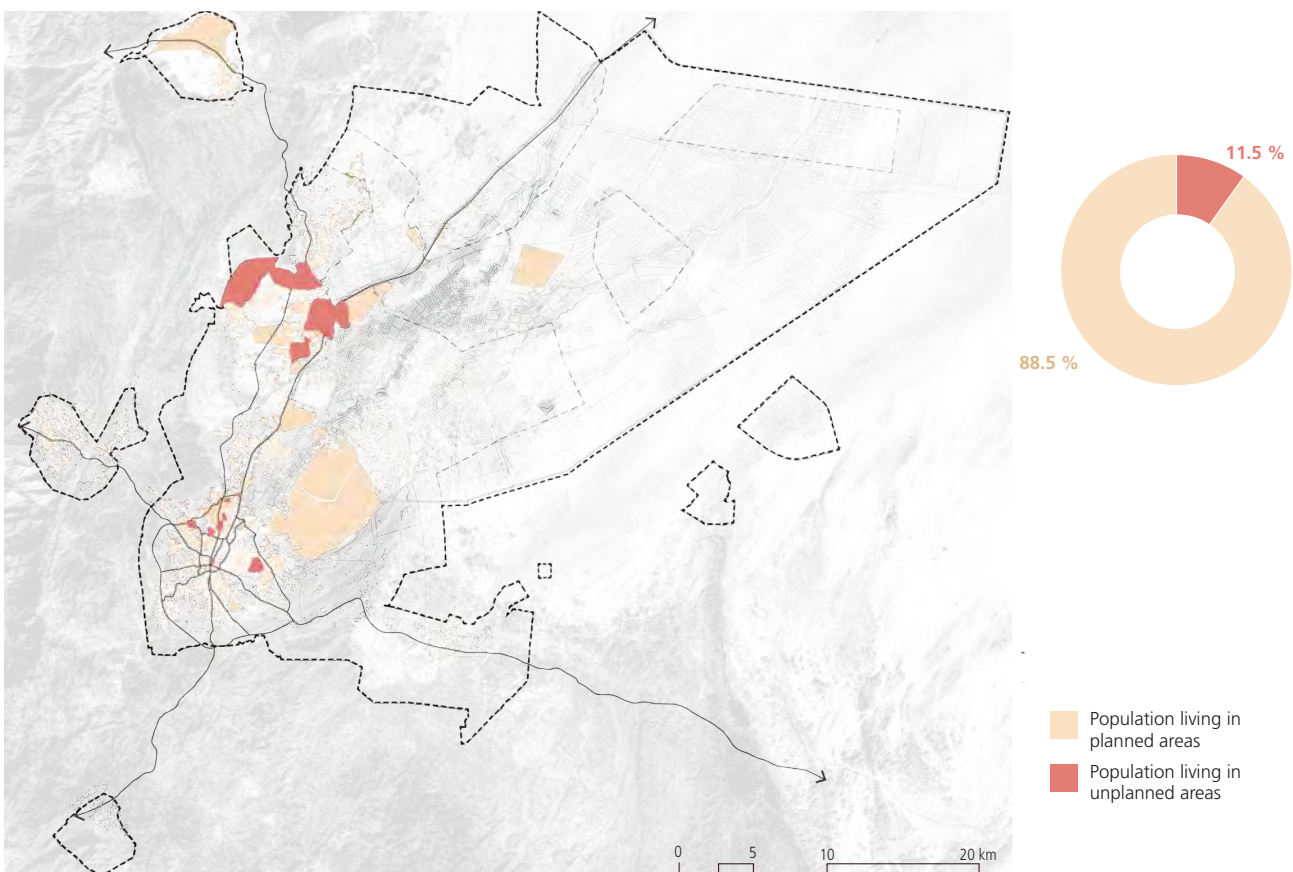


Fig. 39. Unplanned settlements



4.3 Assessment of Future Plans

4.3.1 New Taif Development Plan (Detailed Plan)

The New Taif City Development Plan, which is one of the detailed plans for Taif, puts forward six new projects, worth SAR 11 billion, to bolster the city's position in the region as a core pillar in the Vision 2030. It covers an area of 1,250 square kilometres, increasing the 1450 UGB by 711 square kilometres, (from 1,378 square kilometres to 2,089 square kilometres). The projects span diverse uses that collectively aim to support the region's demand for accommodating pilgrims and as a consequence, create new economic opportunities.

- The New Taif Airport is proposed to offload approximately 25% passenger load from Jeddah's King Abdulaziz International Airport. Located in the Northeast region, 40 kilometres from the city centre, and 120 kilometres from Makkah, the airport is being built on a total area of 5,700 hectares, larger than the average area of the biggest airports in the world, with an initial capacity of 5 million passengers;
- The National Transformation Programme 2020, through the Saudi Commission for Tourism and National Heritage (SCTH), has started to transform the Okaz Market into a tourism hub, with an estimated budget of SAR 815 million, and is expected to attract more than 266,000 tourists every year. The Souq Okaz City development is estimated to add 294 million to the Kingdom's GDP and provide 4,400 job opportunities. Its programme includes a 1,250 room hotel and 130 residential units;
- A Technology Park covering 35 million square metres is planned which includes four key components: a) A project to manufacture and assemble Antonov aircrafts, and an industrial airport with a 3.5-kilometre runway; b) A solar panel factory covering 25,000 square metres, to produce the capacity of 9.5 megawatts of renewable energy by 2030; c) A photovoltaic solar plant to generate clean electricity with a daily capacity of 1 megawatt, aiming to reach 30 megawatts in a few years; d) A fast-growing fodder project covering 50,000 square metres.
- A residential suburb is outlined, at a total cost of SAR 590 million, with more than 10,000 residential units, including 3919 houses and 6,670 plots of land;
- An Industrial City, a first of its kind in Taif, is proposed 55 kilometres from the city centre, and 29 kilometres from the airport. Built over 11 million square metres, it will include a complex for heavy, medium, and light industries, and a vocational training centre covering 1 million square meters, at a cost of SAR 120 million;
- A University City is being built in Saiysad National Park to serve the residents of Taif. Also under construction is the new main road, linking New Taif with the Taif Ring Road.



Souq Okaz Market



New Taif Airport



Residential suburbs

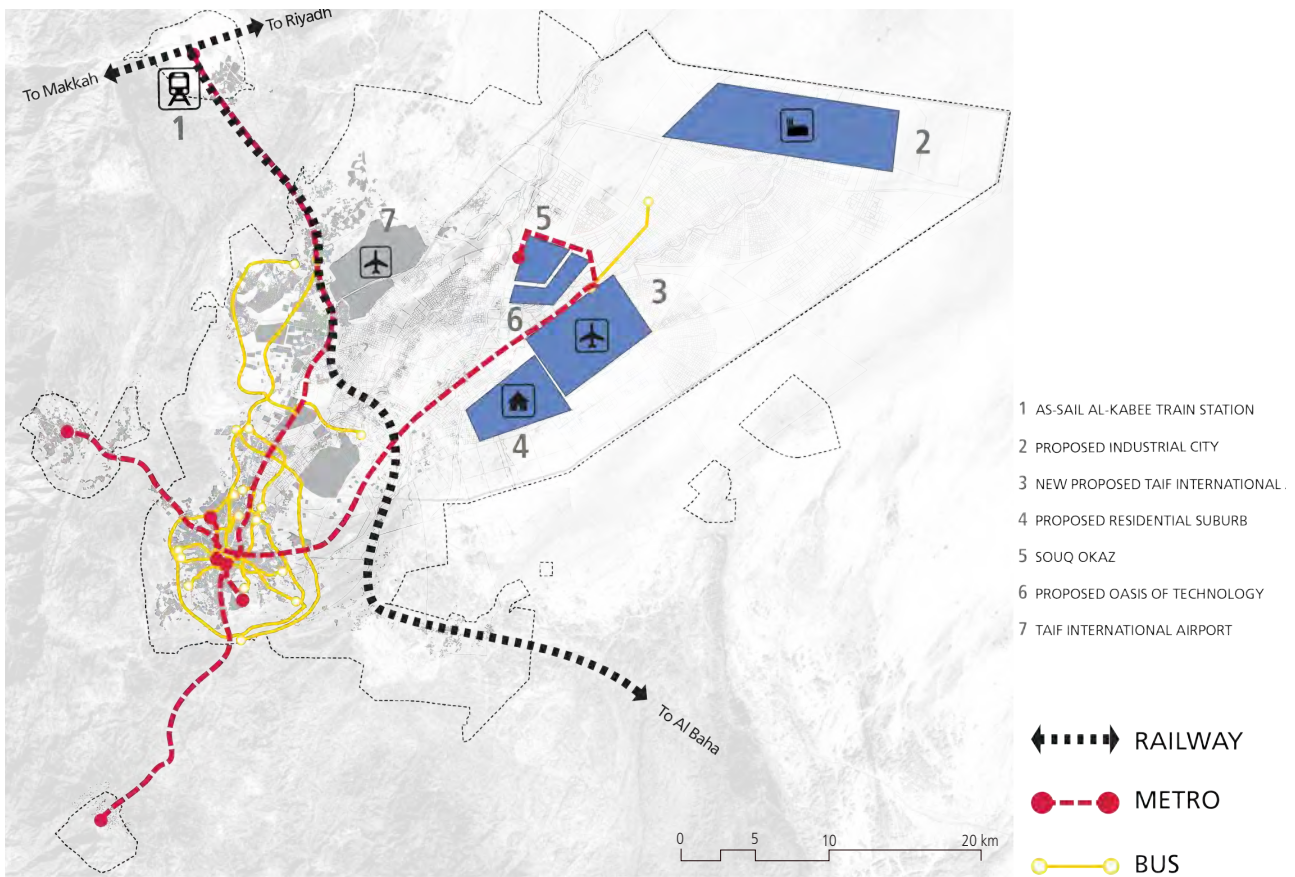


Fig. 40. New Taif Development proposal

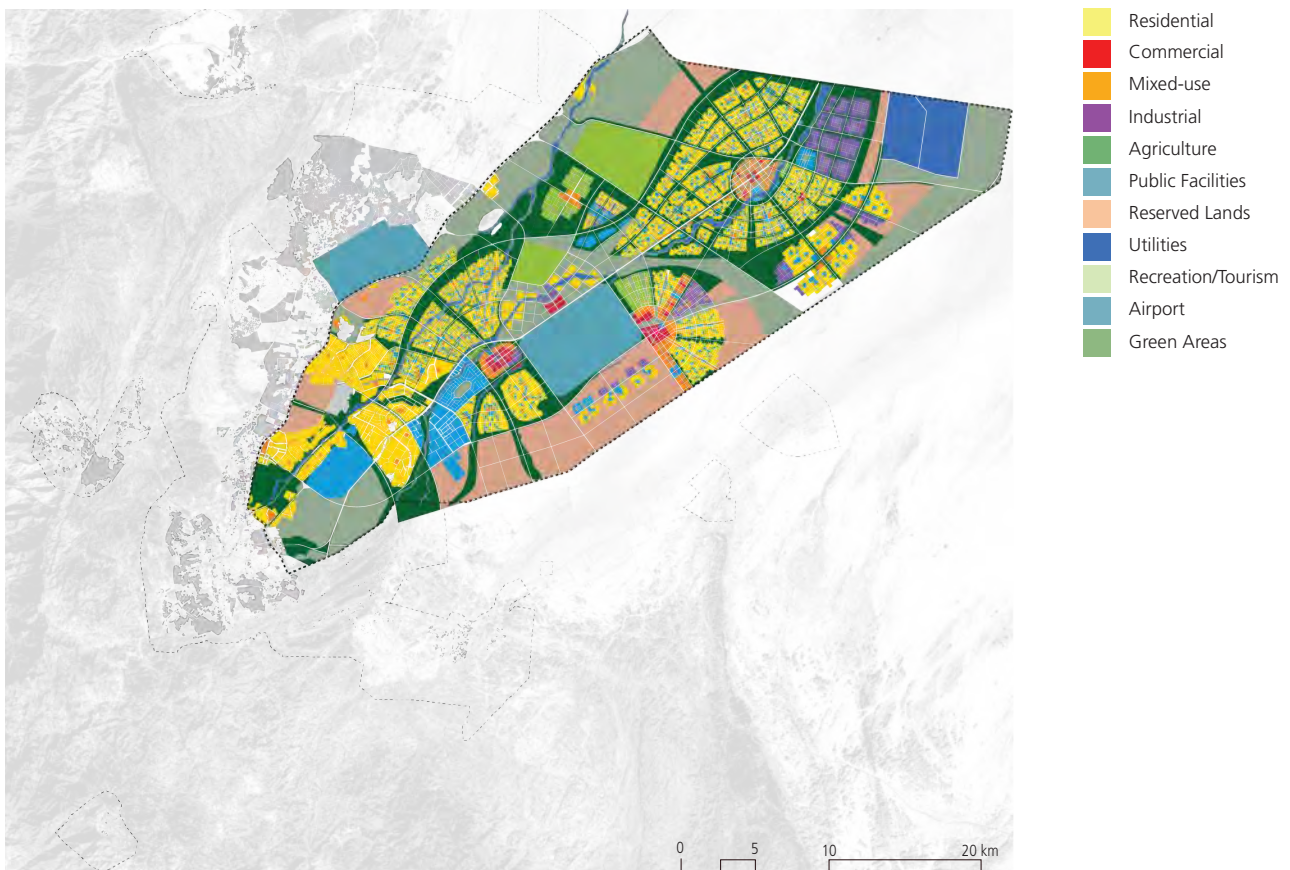


Fig. 41. New Taif Development Plan



The proposed projects overestimate the growth and infrastructure demand in the region, which will reach peak capacity after a couple of decades. Grandiose scale, intensive investments, and longer time periods are concurrent themes across these proposed projects.

None of the new projects focus on improving or investing in the current city, instead they push the city limits and infrastructure networks further out in an unsustainable pattern of development.

4.3.2 Public transport accessibility analysis

Presently, Taif is served by an extensive road network for personal automobiles with multi-lane highways. Streets in the historic city centre tend to be narrower, designed for non-motorised modes of transport.

There is an established public bus network in the city. A walkability analysis of the existing bus routes and the proposed metro routes indicate the efficiency of the public transportation network routes in the city and can be used to maximise the number of residents served, connecting them to jobs and amenities. However, without frequency and ridership data, the assessment remains speculative and imprecise. Currently 50% of the population resides within a 5-minute walk and about 65% of the population resides within a 10-minute walk to a bus station. While, not all residents who reside within

walking distance of a bus stop will choose to ride public transport, maximising the choices offered to residents can prompt lifestyle shifts towards more sustainable alternatives. Two new metro lines are proposed in Taif along the North-South corridor, and the East-West corridor extending into the New Taif Development proposal and linking the city to the new airport. About 20% of the current population in Taif will be within a 5-minute walk of the two proposed metro lines, and about 38% of the current population will be within a 10-minute walk of the two proposed metro lines.

Metro Line 1 accounts for 75% of the ridership of the two metro lines as it runs along the North-South axis through dense city centres. Metro Line 2, on the other hand, connects the city centre to the New Taif Plan serving merely 16% of the population within a 10-minute radius of the proposed metro stations. There is an opportunity to integrate the proposed infrastructure improvements and consolidate development at major nodes, along with the transit-served corridors. With the new airport and rail connection to Makkah, Taif will receive an accelerated footfall of pilgrims boosting its local economy and creating new employment opportunities.

The Metro Lines should be aligned along the densest corridors, and those poised for growth in the plans. Line 2 could be reconfigured to connect the denser parts of Taif and New Taif for enhanced access and connectivity, which is discussed in greater detail in Chapter 6 and Chapter 7.

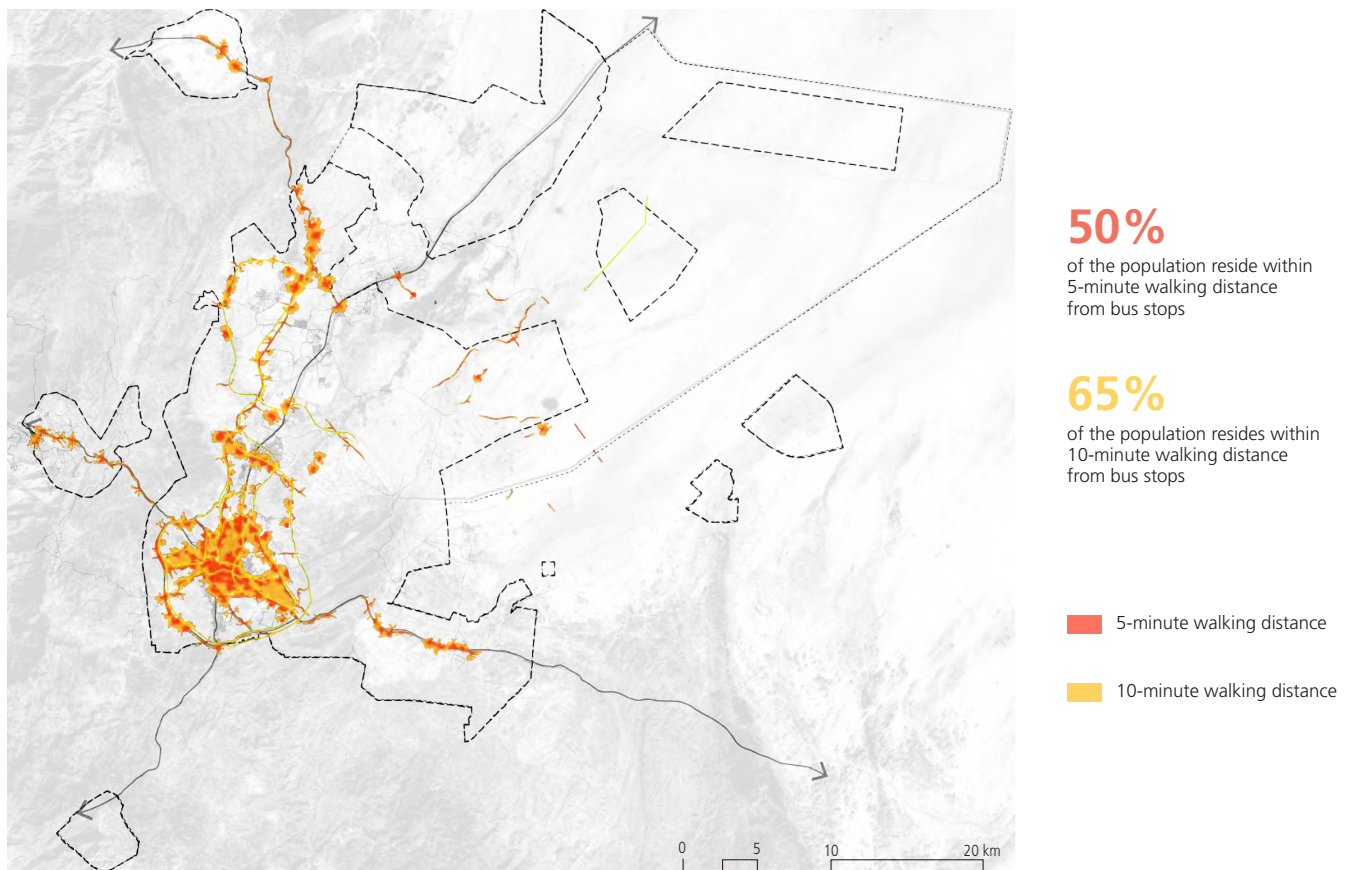
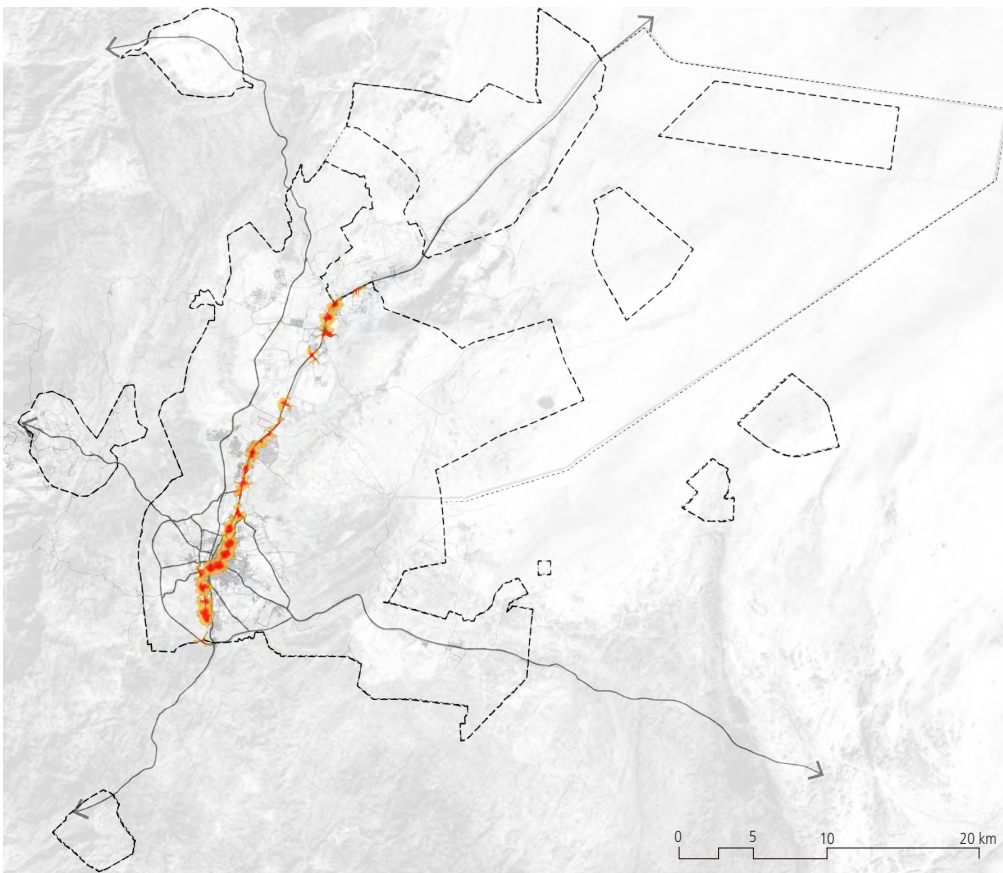


Fig. 42. Accessibility from bus stations

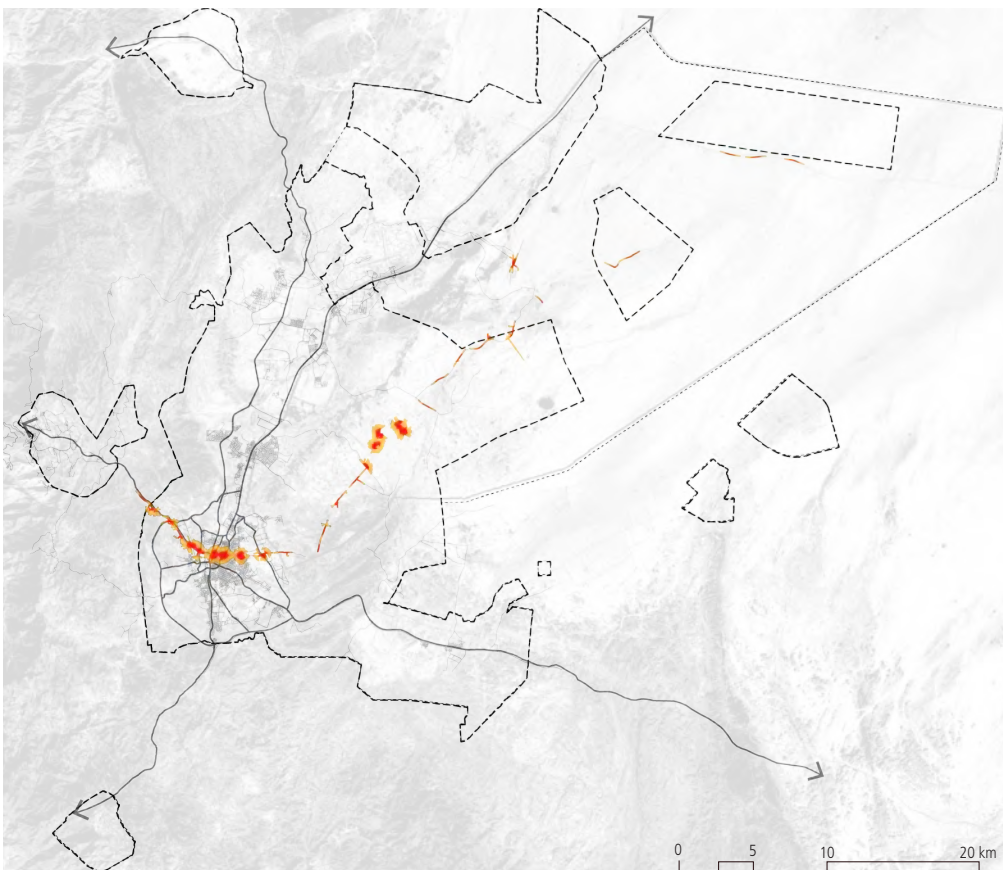


20%
of the population reside within
5-minute walking distance
from Metro Line 1

38%
of the population resides within
10-minute walking distance
from Metro Line 1

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

Fig. 43. Accessibility from proposed Metro Line 1



6.9%
of the population reside within
5-minute walking distance
from Metro Line 2

16%
of the population resides within
10-minute walking distance
from Metro Line 2

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

Fig. 44. Accessibility from proposed Metro Line 2



4.3.3 Density scenario analysis

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

- 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;
- High density: Average of 15,000 p/km², that is 150 p/ha or 61 p/acre;
- Mixed land use: At least 40% of floor space should be allocated for economic use in any neighbourhood;
- Social mix: The availability of houses in different price ranges and tenures in any given neighbourhood to accommodate different incomes; 20% to 50% of the residential floor area should be for low-cost housing, and each tenure type should be not more than 50% of the total;
- Limited land use specialisation: This is to limit single function blocks or neighbourhoods; single function blocks should cover less than 10% of any neighbourhood.

Current Condition

The current population in Taif amounts to 1.1 million people spread across a built-up area of 44,000 hectares. This generates a population density of 25 p/ha, which is one-sixth of the recommended UN-Habitat density of 150 p/ha.

Scenario 1: New Taif Development Plan

According to the New Taif Plan, the planned built-up area is supposed to increase to 169,000 hectares, hosting a total population of 2 million people. Even with the substantial increase in population, the density will decrease to 11.8 p/ha over the built-up area. The New Taif Plan proposes development outside the 1450 UGB, which will significantly increase the built-up area, housing a comparatively small population. The New Taif Plan is visionary and creates new economic opportunities for the future development of Taif. However, it overestimates the spatial extents of the development encouraging sprawl. The motives of the New Taif Plan can be achieved by concentrating the uses and planning for a compact form of settlement.


Scenario 2: UN-Habitat Recommendations


The UN-Habitat scenario supports sustainable neighbourhood planning for Taif, starting with promoting an increased density, in line with the average UN-Habitat recommended density of 150 p/ha. Based on the UN-Habitat recommendation, the city only requires an area of about 2,700 hectares to accommodate the annual growth and projected population of 1,500,000, which is less than 5% of the proposed future built-up area. By considering the 19,500 hectares of vacant land that exists in the current built-up area, this scenario shows that it is not necessary to grow outside the current urban footprint and suggests strategic interventions to support policies that will facilitate the densification of existing urban areas, thus provide the citizens with maximum benefits for an improved quality of life at an affordable cost.




CURRENT CONDITION




population  **1.1 million**


built-up area  **44,000 ha**


average density on built-up area  **25 p/ha**

SCENARIO 1: NEW TAIF DEVELOPMENT PLAN




population  **2 million**


planned built-up area  **169,000 ha**


average density on planned built-up area  **11.8 p/ha**


SCENARIO 2: UN-HABITAT RECOMMENDED SCENARIO



population  **1.5 million** (excluding New Taif)

built-up area needed according to UN-Habitat recommendations  **10,000 ha**

vacant land needed to accommodate population growth  **2,700 ha**

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



4.4 Environmental and Climate Change Risk Implications

Taif is facing the consequences of global climate change, and rapid urbanisation is making it vulnerable to various natural disasters. Since 1976, Taif has experienced an addition of 72 hot days and 13 hot nights. Overall, there is an increase in daily maximum temperatures by 1.9-degree celsius. Taif's geographical location also makes it susceptible to risks from sandstorms, seismic faults, mineral extraction activities, steep slopes, and depleting agricultural and water resources.

4.4.1 Physical constraints

Taif city is settled on a flat relief along the Sarawat Mountains that range in height from 2,650 metres in elevation in the South to 1,450 metres in elevation in the West. Taif is located between 1,750 to 1,250 metres above sea level on the Eastern slopes of the mountains. Thus, the dominant land cover in Taif is rocky and sandy. Tectonically, as part of the Makkah Region, the city is within the Arabian shield dominated by the Ad Damm fault zone, West of Taif. The faults around the city are called thrust faults, which have been the source of many minor earthquakes in the past. However, recent studies indicate that there is a possibility of seismic activity in the future that could cause potential damage to the city structures.

The physical setting of Taif along the slopes of the Sarawat Mountains poses challenges and constraints to the development and extension of the city. Currently, 8% of the city is built on steep slopes, (steep is defined as more than 30% slope), with unplanned settlements being the most vulnerable. 21% of all unplanned settlements are situated on steep slopes and are exposed to such risks. Unsafe building structures, inaccessible escape routes, and depleting state of infrastructure in these unplanned settlements further exacerbate the problem.

Taif is also vulnerable to sandstorms that originate in the North and travel towards the city, causing air pollution and reduced visibility, interrupting city functions. The sand is dispelled by the cool breeze coming from the mountains in the Northwest. The new development proposal which looks at the expansion of the city in the North, unprotected by the mountain range, will be at a higher risk of sandstorms. To mitigate the negative effects of these storms, natural features like green spaces, water bodies, and mineral-rich areas must be protected and integrated into the city.

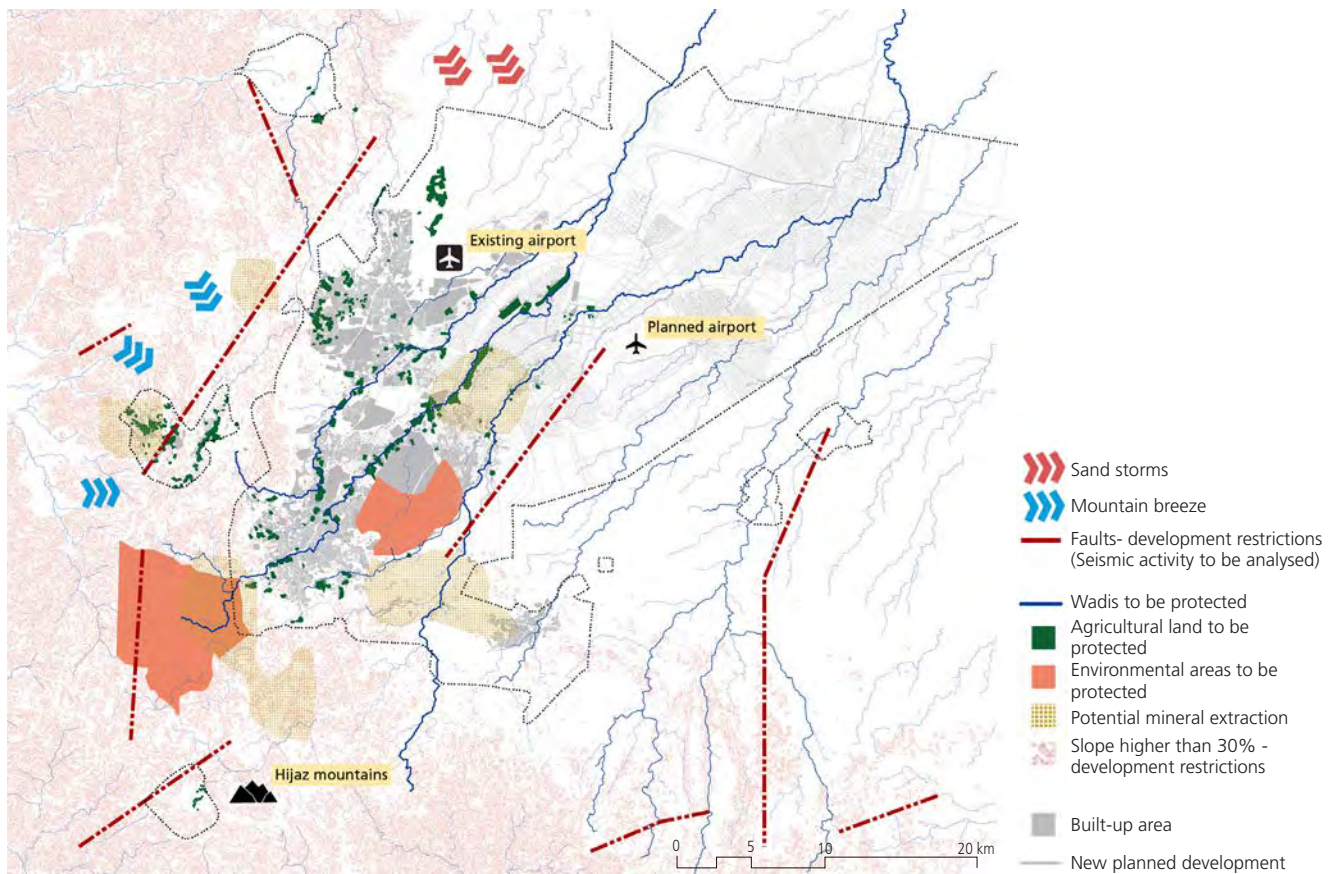


Fig. 45. Physical constraints



4.4.2 Blue and green networks

Taif serves as the agricultural bowl of the Makkah Region. This is attributed to its rich water resources. Taif receives an annual rainfall of about 250 mm, the highest in the Kingdom, and the wadis channel the rainwater through the city. The wadis are key natural features essential to the agricultural productivity. The city also has rich underground water reserves in the form of aquifers, accessed via multiple wells scattered across the urban area. However, due to the increasing population, the existing resources are unable to meet the growing demand. To meet the heightened demand, Taif is currently drawing additional water via a pipeline from the Al Shuaiba desalination plant on the Red Sea. This plant produces 40 million gallons of potable water each day, of which Taif's share is about 15 million gallons.

The water networks and the agricultural fields are interrelated and greatly dependent on each other. An imbalance in one sector will affect the other in multifold ways. The growth of the metropolitan region has led to the depletion of the underground water reserves. The urban areas are paved with impermeable surfaces, preventing percolation into the ground, and water is directed into channels away from the city, such as the Wadi Waj road. Unplanned and ad-hoc development patterns are unable to create a balanced and holistic city form that respects the natural elements. This requires a comprehensive vision with enforceable actions and strict adherence to the code.

Currently, Taif has extremely limited quality open spaces that connect the built-up form with natural features, and allow citizens to enjoy the open air and improved social life. Public space, not only acts as a place for social interaction, recreation, leisure, sports activities, etc., but can also act as an economic core, and as an ecological-environmental system that helps to regulate the sustainable dynamics and metabolic cycles in the city. According to the New Urban Agenda, one of the main elements that help to create equity in a city, and a better distribution of social activities is public space: a city with poor standards in green areas is, therefore, a city with poor social equity, as well.

Taif city has developed with little consideration for public open spaces, such as parks, squares, sports courts, green corridors, etc. Public spaces are not fully understood as structural elements for the city through which to provide services while enhancing social equity, and climate change resilience. Recognising and integrating the Wadis into the urban realm can reverse the current trend and replenish water back into the aquifers. Incorporating green infrastructure will also help mitigate sandstorms, tackle the urban heat island effect, reduce the overall temperature, and protect the resources. The wadis could be redeveloped into an interconnected network of green spaces for the residents, while also serving their natural function.

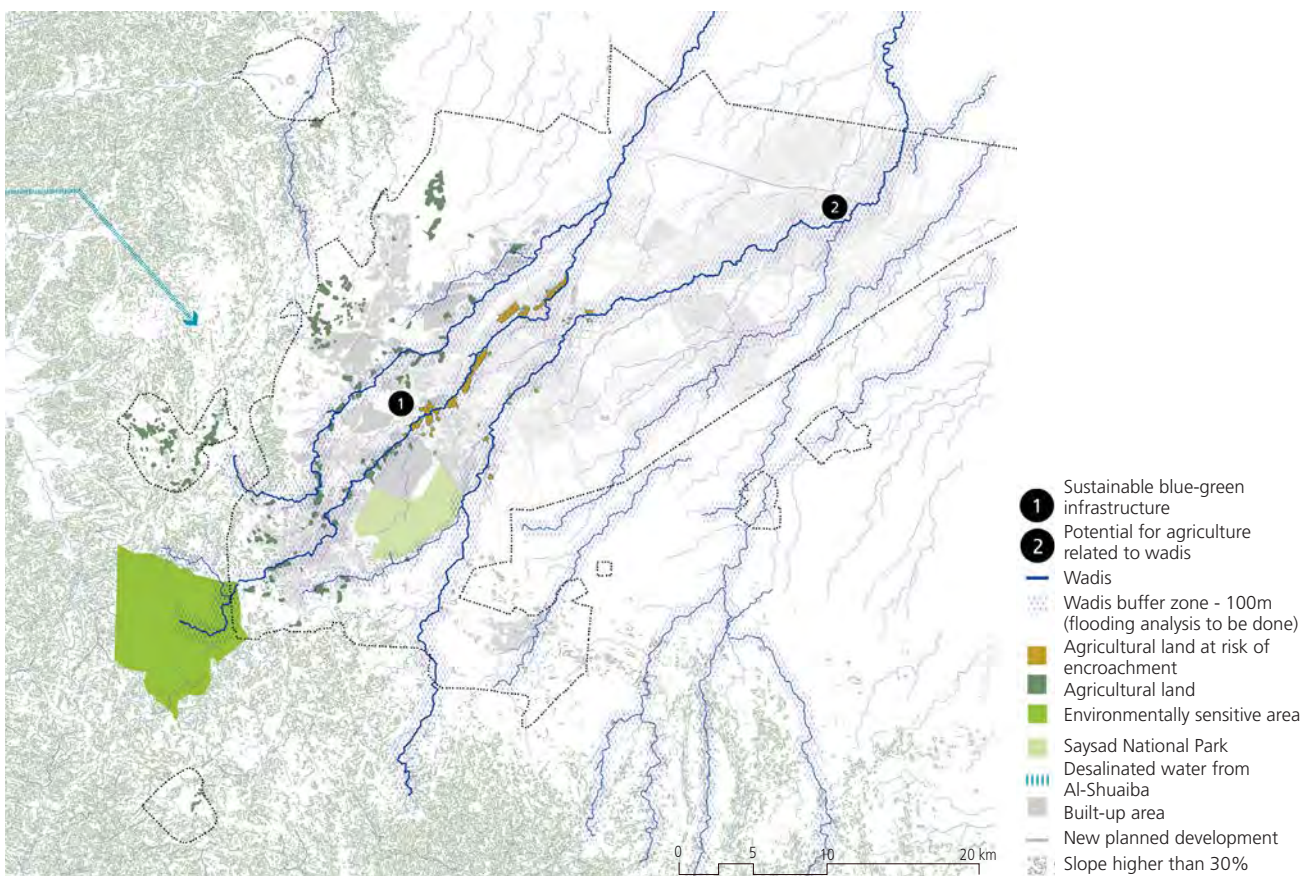


Fig. 46. Blue and green networks



4.4.3 Wadis degradation and flooding

Traditionally, agriculture was practised along the Wadis with plenty of water and suitable soil conditions creating corridors of productive landscapes. As Taif receives the highest rainfall in the region and is situated along mountainous slopes, the wadis served as the natural drainage system for rainwater runoff.

This natural system is under threat from rapid urbanisation. In the recent years, the unplanned development of land has disregarded the natural flow of the wadis and encroached upon sensitive areas, altering their ecosystem. Today, the wadis have been covered up to make way for urban development and the drainage network has been cut-off.

With their altered landscape, consisting of concrete and other building materials, the region has become more prone to floods. Approximately 32% of the infrastructure and 58% of built-up areas are at a potential risk of flooding risk during the monsoon seasons. These statistics will worsen with the recently approved New Taif Proposal, that proposes to potentially develop over agricultural land.

The green spaces in the city are not adequate nor are they designed to compliment the natural landscape and are not integrated to function as a system. As a result,

the wadis become a disintegrated and isolated entity, detached from the daily life of urban residents, with deteriorating value. Maintaining a critical balance of the natural and the built ecosystem is imperative in planning for a sustainable future for Taif.

Incorporation of green infrastructure along these natural wadis will help restore the natural flow of rainfall water, channel irrigation of agricultural fields, recharge aquifers, and create green public spaces along the wadis.

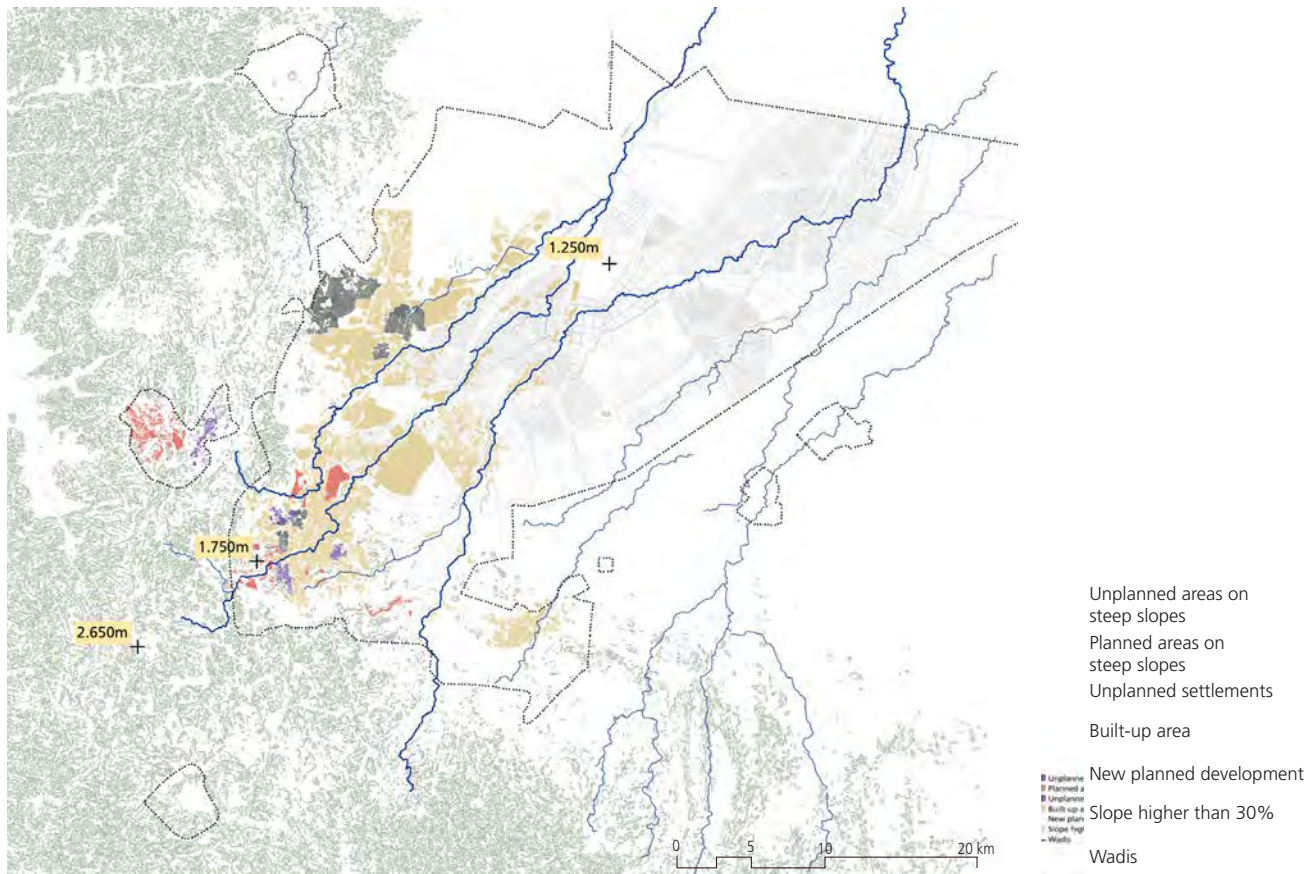


Fig. 47. Slope risk and informal settlements



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Agricultural farms in Taif

5

STRATEGIC DIAGNOSIS



5.1 Identifying and Defining Main Strategic Issues

The in-depth, evidence-based analysis brought to light four main strategic, interrelated issues highlighting Taif’s performance in relation to the principles of sustainable urban development. These issues represent the strategic framing of a complex diagnosis, synthesised through four conceptual lenses. The lenses, once defined in their conceptual nature, were then contextualised by examining how they manifest spatially in Taif at different scales. They are synthesised as follows:

5.1.1 Unbalanced growth and development patterns

Spatial patterns are defined by structural elements, fabric morphology, and density distribution, and are highly influenced by land use policy. Inherently, a coherent land use policy influences spatial patterns by determining the appropriate amount of land needed to accommodate future growth and by distributing urban functions and densities accordingly. The combination of these attributes can either generate urban quality or create and increase urban issues such as sprawl. This often happens when a city grows rapidly, presenting an extended sprawl phenomenon, and inharmoniously manifesting unbalanced developments across its territorial extension. Dysfunctionalities emerge in appropriate urban management and citizens experience. In this scenario, the city showcases low density and does not perform effectively, its services and facilities are not well balanced in distribution and accessibility, and therefore citizens do not equally benefit from the advantages of urban life. Additionally, it is costly and difficult for the municipality to provide and maintain basic services or efficient and sustainable infrastructure, such as public transport. This is an inherent issue in conditions of sprawl and low density as water, sewage, electricity and transport infrastructures require extension over longer distances to reach relatively fewer people. As such, the significant amounts of land per capita that urban sprawl tends to consume, requires larger capital investments for infrastructure installation and increasing maintenance costs.

The current development trends in Taif tend to reproduce disperse patterns of low-density and monofunctional land use, with scarce provisions for social activities and both empty interstitial spaces and large areas of vacant land between existing portions of the consolidated city. The tendency toward sprawl in requires urgent address in order to halt progression of the condition, which is heavily affecting the city’s functionality by reproducing unsustainable development patterns of unbalanced growth at low-densities.

5.1.2 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 far and widespread. Undeveloped land, over-dimensioned 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.

Fragmented cities tend to exhibit a presence of residential estates in the city outskirts, either as high income gated communities or as low-cost housing enclaves, built separately and far from shopping and commercial facilities, industrial, business, and directional centres, and recreational areas. This adds to fragmentation and unsustainable urban patterns, as large highways are often the only viable means of connectivity over such long distances, resulting in car-dependency and high mobility costs. As such, a city’s spatial patterns influence socio-spatial connectivity and increases travel times and congestion. People’s ability to move from their homes to their workplace, shops, school, and health centres is essential for a city’s performance, and needs to be considered both in terms of distance and comprehensive fabric connectivity. If there are many physical barriers to walk and traverse the city, the city becomes inaccessible to its inhabitants. A well connected urban fabric supports public transport and decreases congestion by increasing the overall accessibility. In well articulated, dense and cohesive urban areas, congestion is reduced, while social and economic vibrancy is increased.



1 UNBALANCE GROWTH AND DEVELOPMENT PATTERN [SPRAWL]



2 DIVISIONS AND LACK OF COHESION IN THE CITY STRUCTURE [FRAGMENTATION]

5.1.3 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 Taif, 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.

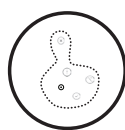
Monofunctional land use is a symptom of polarised development, which intrinsically induces socio-spatial inequality. This is demonstrated in reduced opportunities for lower income groups and limited possibilities of social interaction and integration. Monofunctional land use, particularly when coupled with low densities, encourages the use of individual mobility, increasing car dependency and eroding the viability of public transport networks. These conditions further reinforces the exclusion of less privileged social groups in the city. This kind of development hinders economic opportunities, as it precludes synergies and mutual stimulation amongst productive activities.

5.1.4 Socio-ecological & 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.

A socio-ecological and economic imbalance is also created when planning decisions for the city fail to consider preservation and management of existing natural resources, or the functional value of natural assets and their territorial continuity. Planning processes and spatial development practices that incorporate, for instance, integrated water-resource management, natural cycles, and more broadly, functional ecosystem services, are often undervalued by local municipalities all over the world. Socio-ecologically unbalanced urban systems result in a number of threats to the environment, to overall urban quality, and to the health of citizens. Unsustainable consumption patterns, pollution, loss of biodiversity and of agricultural soil, pressure on ecosystems, as well as increased subjection to natural and manmade disasters, are examples of these. All of these conditions additionally carries heavy effect on the economic performances of a city, that can become increasingly clear over long-term observation.

A good example in Taif, is the case of the wadis that are critical to the agricultural economy of the region but have been neglected and planned without any regard. This destroys natural resources and heavily impacts other socio-spatial aspects of the city and the citizens' health.



3 POLARISED DEVELOPMENT
[SPATIAL INEQUALITY]



4 SOCIO-ECOLOGICAL AND ECONOMIC IMBALANCE
[LACK OF RESILIENCE]



5.2 Analyzing Taif's Four Issues in Depth

5.2.1 *Taif's unbalanced growth and development patterns*

Taif's urban footprint was well contained for a few decades until the 1970's and 1980's when the city expanded to the North spreading over new land with low-density developments. As a result of urban migration and the inability of the infrastructure to cope with the increasing demand, and lack of prudent planning efforts, Taif city has embraced a sprawling pattern of development, leaving tracts of vacant and undeveloped land in strategic spots in the city. This ad-hoc development pattern leads to inefficiencies in land management, resource utilisation, and declining productivity among the residents. A sprawling settlement, in turn, further aggravates the pressure on infrastructure to reach further distances, while serving a limited population. Currently, Taif city extends 50 kilometres in the North from the historic city centre. Without sustainable planning measures like investment in a robust public transportation system, these communities tend to be heavily dependent on automobiles, making it their primary mode of transport. Wide roads and highways make the urban environment hostile to pedestrians, and single land uses tend to generate more trips. Car dependency has many negative repercussions, including traffic congestion, air pollution, road accidents, and deterioration of public health. The 1450 Urban Growth Boundary already overestimates the land required to sustain the population of Taif in the coming decades based

on the projected growth rate. The New Taif Development Proposal, which has been approved, pushes the city limits even further and is promoting the idea of sprawl and mono-use clusters into the Development Protection Boundary area, beyond the current city extents. With large swathes of land planned primarily as residential neighbourhoods and limited mixed-use, the new proposal will exponentially increase the pressure on infrastructure and also pose a financial burden to the city facilities.

Looking forward, this discontinuous and disconnected city fabric with low densities is unsustainable and all future planning efforts must try to concentrate development in an organised manner. The current densities in Taif average about 25 p/ha which is much lower than the UN-Habitat recommended density of 150 p/ha. While this recommended density may be too high for a city that has the size of Taif, the aim should be to inch closer to this number as the city grows in population and extent, rather than further away from it. The legal framework must streamline all new development in and around the city centres, encouraging in-fill development and maximising the potential of the vacant lands within city limits, rather than promoting new developments in the outskirts of the city.



Sprawling development along Taif's edges

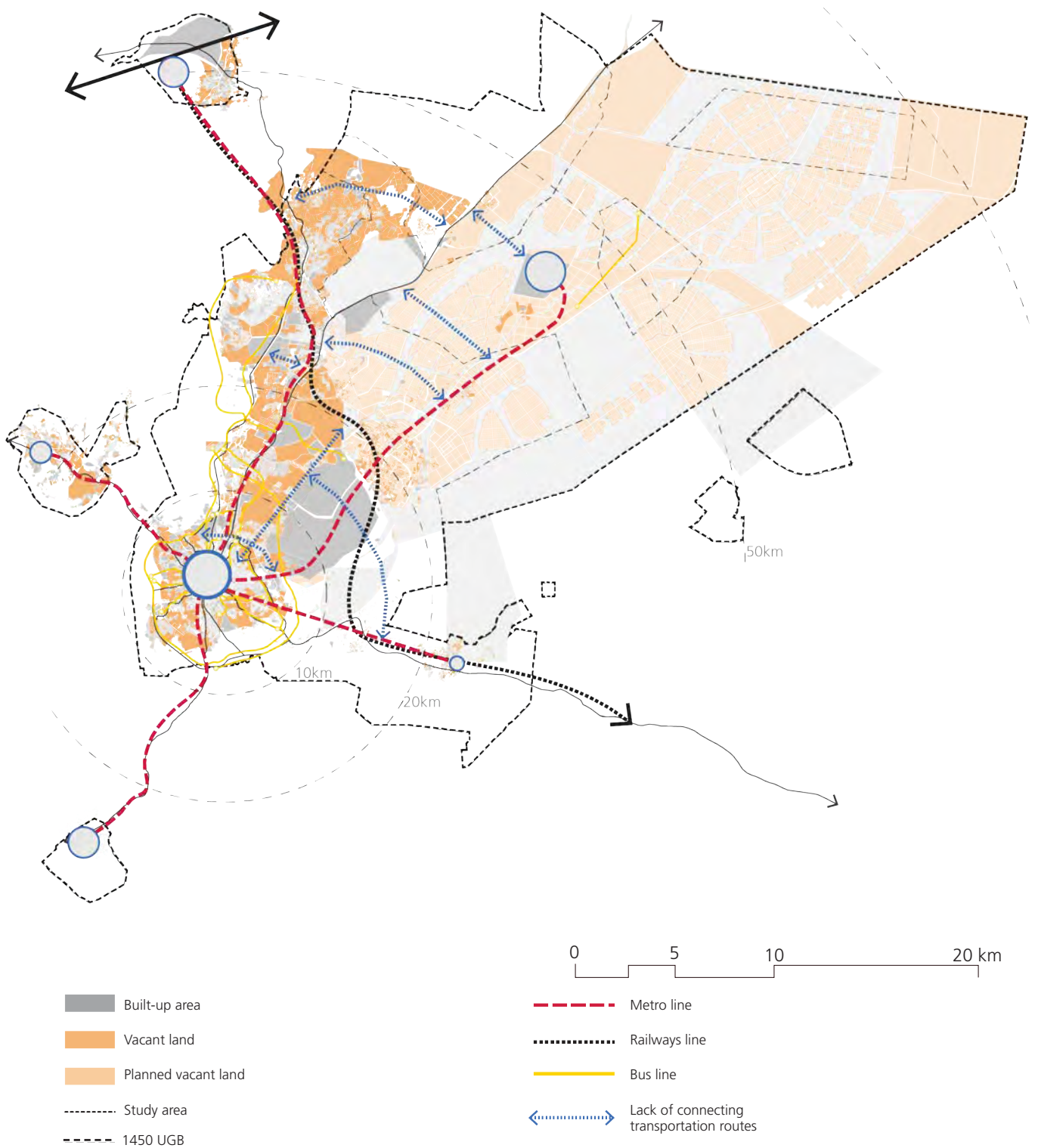


Fig. 48. Taipei's unbalanced growth and development patterns



5.2.2 Divisions and lack of cohesion in Taif's urban structure

A discontinuous city structure, stemming from the lack of comprehensive planning efforts, leads to crevices in the built environment, (where unplanned settlements mushroom and flourish). The interface and interactions between these unplanned and planned city elements become contentious and merit careful understanding of their interdependencies while planning for their combined future.

There are a number of factors resulting in the fragmented city — due to the natural topography, ad-hoc planning efforts, and partly due to special land uses such as military lands

- The urban fabric of the city of Taif faces geographic challenges with topographical constraints acting as impediments to its continuity. Building on steep slopes poses construction, safety, and accessibility challenges, and are prone to natural disasters.
- Large parcels of land dedicated to military uses cut through the city fabric breaking up the continuity.
- The city structure is also affected by the presence of tribal lands whose ownership is disputed.

The original Taif city was well structured and connected, with a compact urban form and as the city expanded, it has led to more divisions and a broken urban structure. The proposed developments in the New Taif Development Proposal are not

well integrated with the existing city fabric and push the city limits even further. The industrial city is located 80 kilometres away from the historic city centre, whereas the new residential development and the airport are located 40 kilometres away and therefore, exacerbate the issue of fragmented development and a fractured city structure. A sustainable proposal would be to locate the new developments in close proximity to the current city extents to take advantage of the existing infrastructure and services.

The physical disconnect without a public transportation system, relies heavily on large highways to bridge the gap, and to connect people to amenities that are scattered over larger areas. Some major roads like Wadi Waj Road, or King Faisal Road can be as wide as 70 metres with four lanes in each direction dissecting the urban space and rendering it unwalkable for pedestrians.

Large investments need to be made to ensure equal provision of services to all the parts of the city and to address the cost that is also borne by the residents with their increased travel time and dependence on private modes of transport. This division and lack of cohesion in the city structure is also experienced differently by different demographic groups competing for the same resources, often pushing the burden on to the less privileged.



Divisive forms of urban infrastructure in Taif

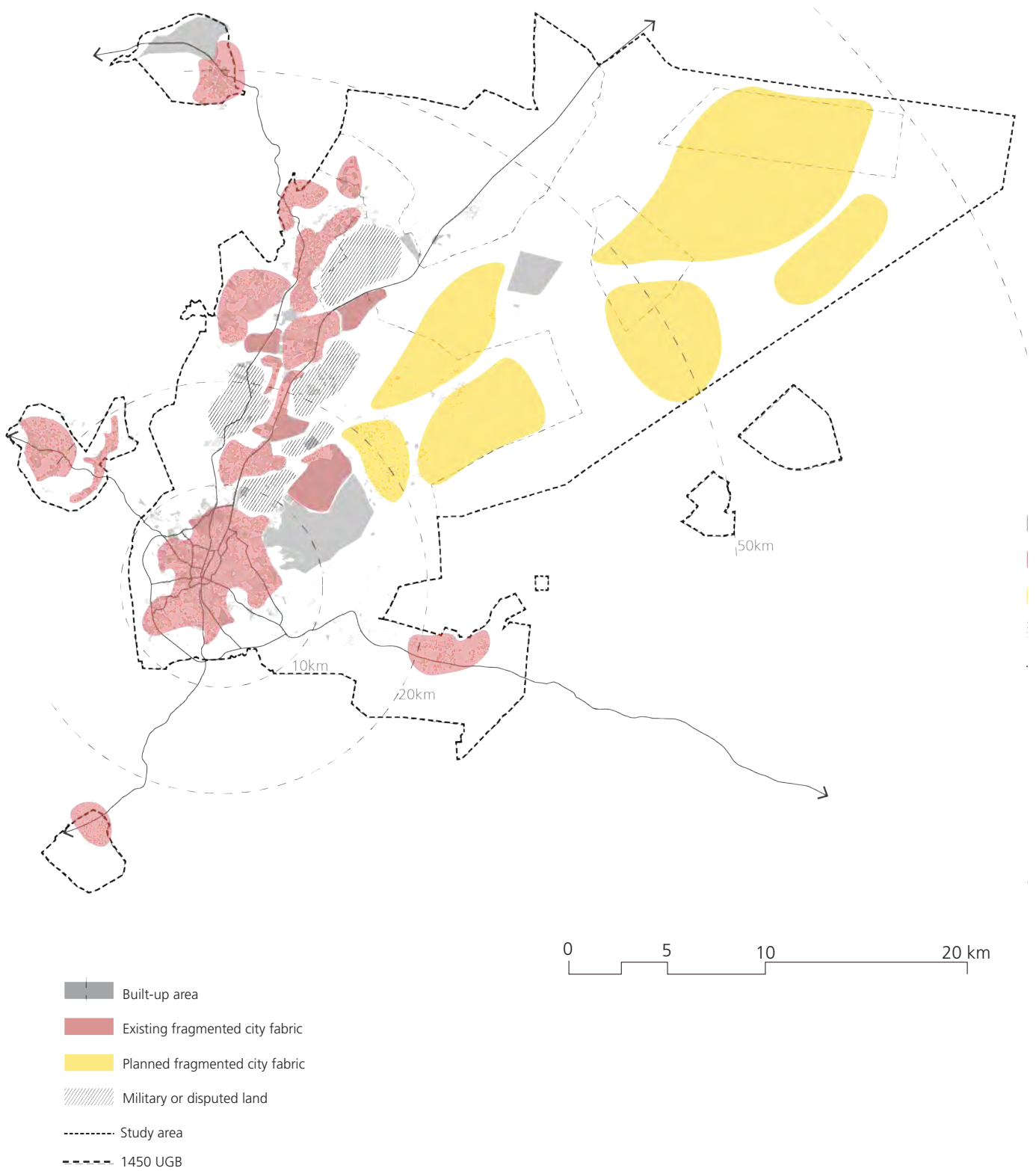
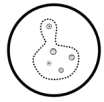


Fig. 49. Divisions and lack of cohesion in Taif's urban structure



5.2.3 Taif's monofunctional and polarised development

Taif in its current state is characterized by a series of specialised monofunctional clusters with segregated uses and limited access. This is directly linked to the above-mentioned division and creates an incoherent city structure.

Segregation, in its broadest sense, refers to a situation where the elements of a system are not well mixed and adequately balanced in distribution. Therefore, it tends to disintegrate and polarise the entire system structure with elements of one nature in one area, and elements with other features in another area. The older neighbourhoods presented high-density developments, linked to an efficient street hierarchy, and were supported by a well-balanced mixed-use, favouring high connectivity and equal access to services, and opportunities. Apart from the historic city, which has some semblance of a mixed-use city centre and used to perform well, most of Taif has grown isolated residential, commercial, military, and industrial land use clusters, connected by roads. This spatial disconnect leads to concentration of certain activities in certain parts of the city, manifesting itself in the inequitable access and proximity of resources by certain demographic segments of society.

With respect to populations, the concept is indicative of a specific group of people characterised by a certain

economic and/or social status living in one area with high levels of services and facilities, whilst people of another socio-economic group live in areas that are far and deprived of the same kind of services. Only 20% of the population resides within a 10-minute walking distance from amenities like shopping, jobs, and other services in the two centres of the city. The rest of Taif has to rely on automobiles to get around. With the proposed BRT lines, only 38% of the population will have access to the stations. Often, the lower income groups and the vulnerable populations get pushed out of the well-served neighbourhoods, tipping the burden unfavourably onto the disadvantaged groups.

At the neighbourhood scale, the effect of this polarisation is visible in the new peripheral neighbourhood developments. These peripheral neighbourhoods are characterised by fewer connections, scarce accessibility to the rest of the city, and very low-density developments. Although the plans for these neighbourhoods foresee the construction of services and facilities, often enough these structures do not get built because of their isolated location, and the low density of the neighbourhoods in question make the construction extremely expensive and inefficient. Notwithstanding the planning, the resulting implementation of these developments is poor and creates inequality across the various neighbourhoods, in regards to access to facilities, services, and infrastructure.



Disconnected and distinct land uses in Taif

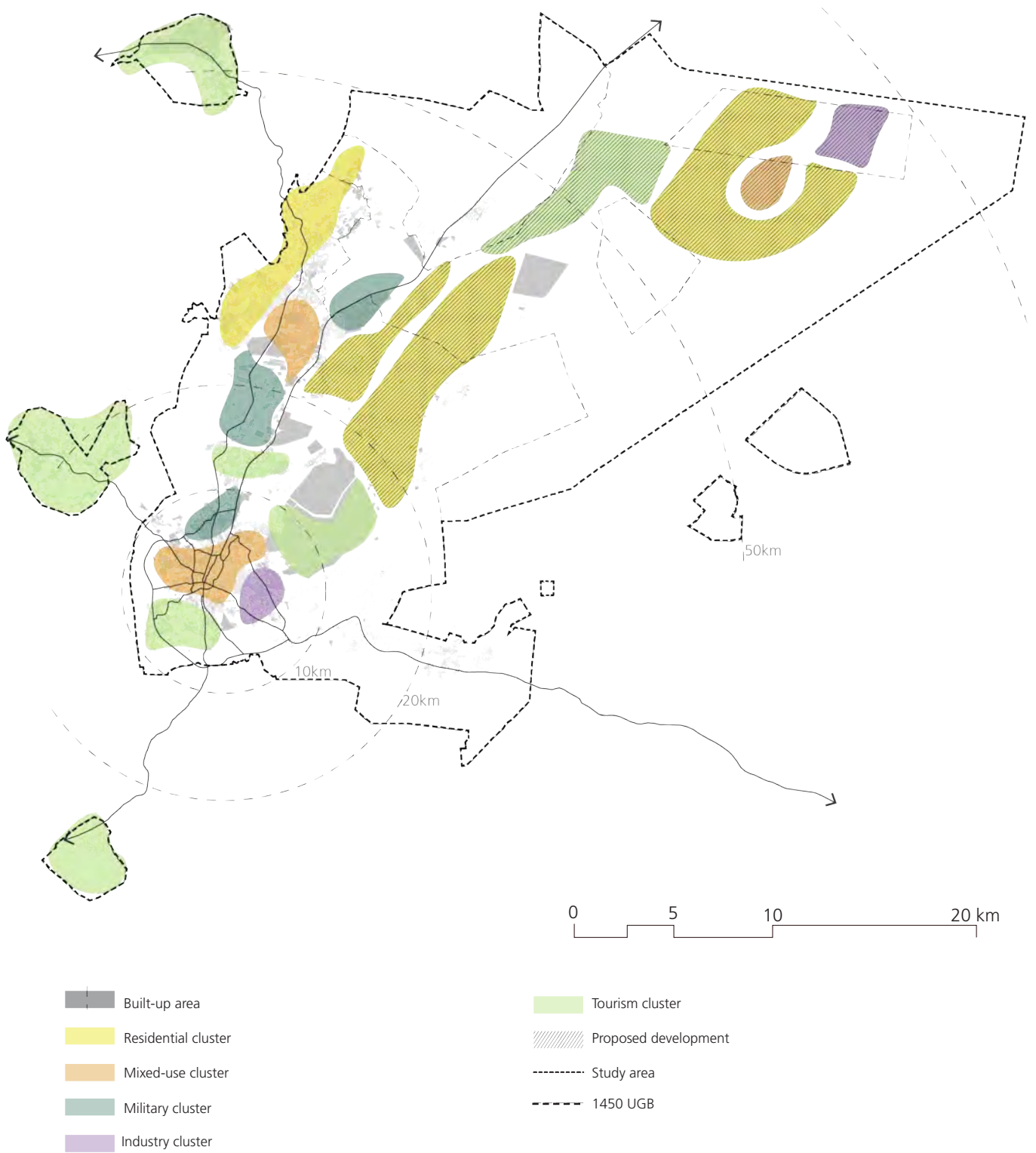
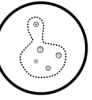


Fig. 50. Taif's monofunctional and polarised development



5.2.4 Socio-ecological and economic imbalance in Taif

Taif has been built with little consideration to the natural and geological features in the region. Historically, agriculture has been at the forefront of Taif's economy dependent largely on the favourable natural and climatic conditions of Taif. The agricultural land is at the risk of encroachment with rapid urbanisation and a degradation of the supportive natural resources.

The geographical setting makes the provision of physical infrastructure economically and technologically challenging on slopes. Steep, rugged slopes are often not appropriate for development, both in terms of increased cost of development and the difficulty to access. Unplanned settlements located on steep slopes are especially vulnerable to the risk of landslides because of sub-standard construction practices and instability. City regulation and management should be more prescriptive and proactive in preventing new developments, (both legally approved and informally built) over mountainous terrain and steep slopes.

Taif is prone to seismic activity and risks connected to the complex hydrological system underneath the city, which is increasingly under threat from unchecked development. Delicate ecosystems and natural features are disrupted or completely eradicated to make room for hotels, high rise

buildings, and other large-scale private or public facilities, impacting the natural flow of water and soil infiltration capacity. When these fragile ecosystems are tampered with, they pose a greater risk to the built environment. Over time, their recovery becomes challenging, cost-intensive and even more critical for a sustainable future.

Furthermore, Taif has a relatively high percentage of land dedicated to open or green spaces, according to the CPI report (2016), but aligning the open spaces along the natural wadis can be instrumental in channeling and remedying some of the damage caused by unbridled construction activity.

The overall lack of access to green spaces and the spatial misalignment between the green and blue networks of the city have led to a socio-ecological and economic imbalance that must be restored to create a resilient city. There is an opportunity in the New Taif Development Plan to integrate the wadis and natural systems into the built environment, which the plan in its current state overlooks.



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Current state of wadis in Taif

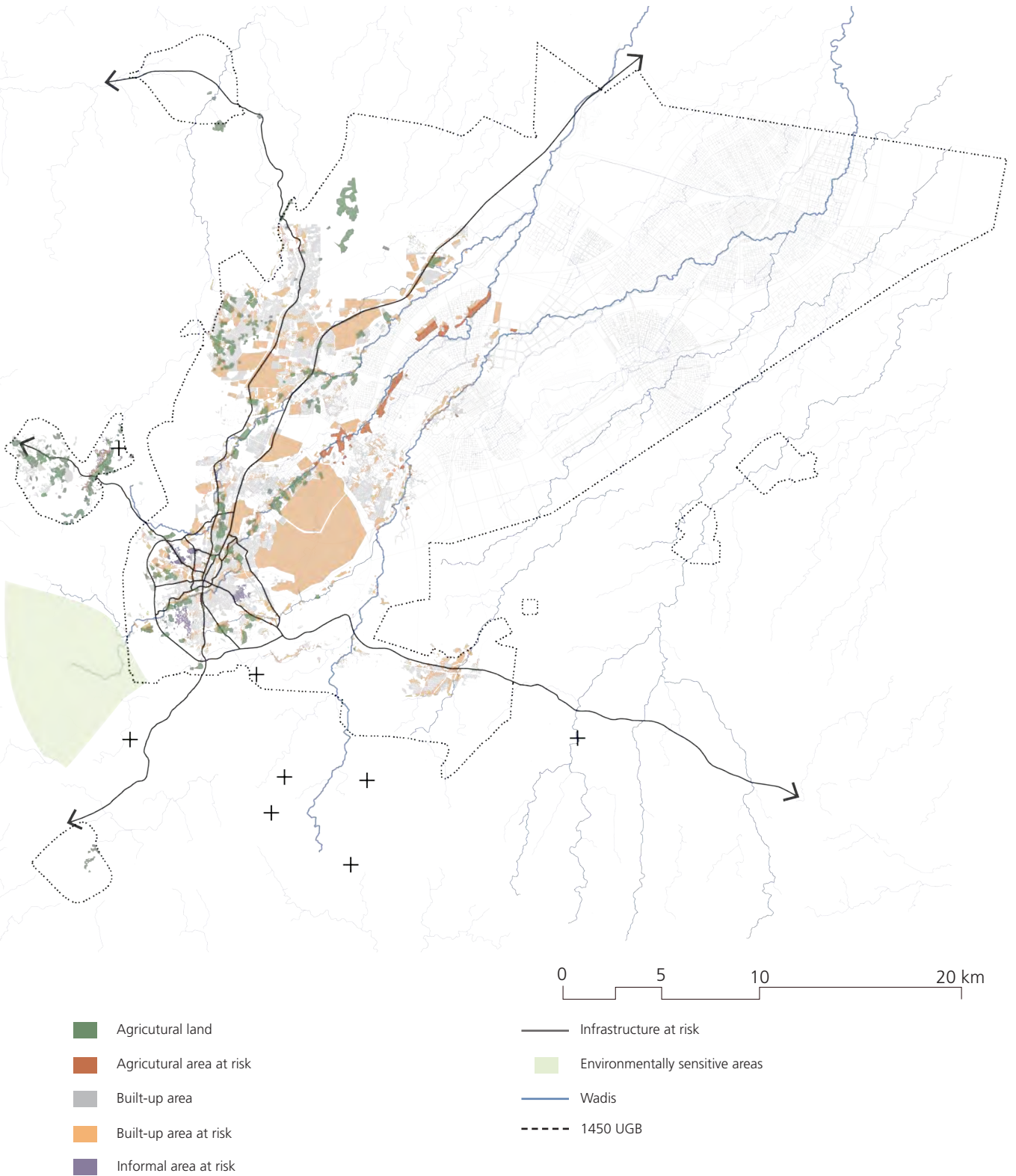
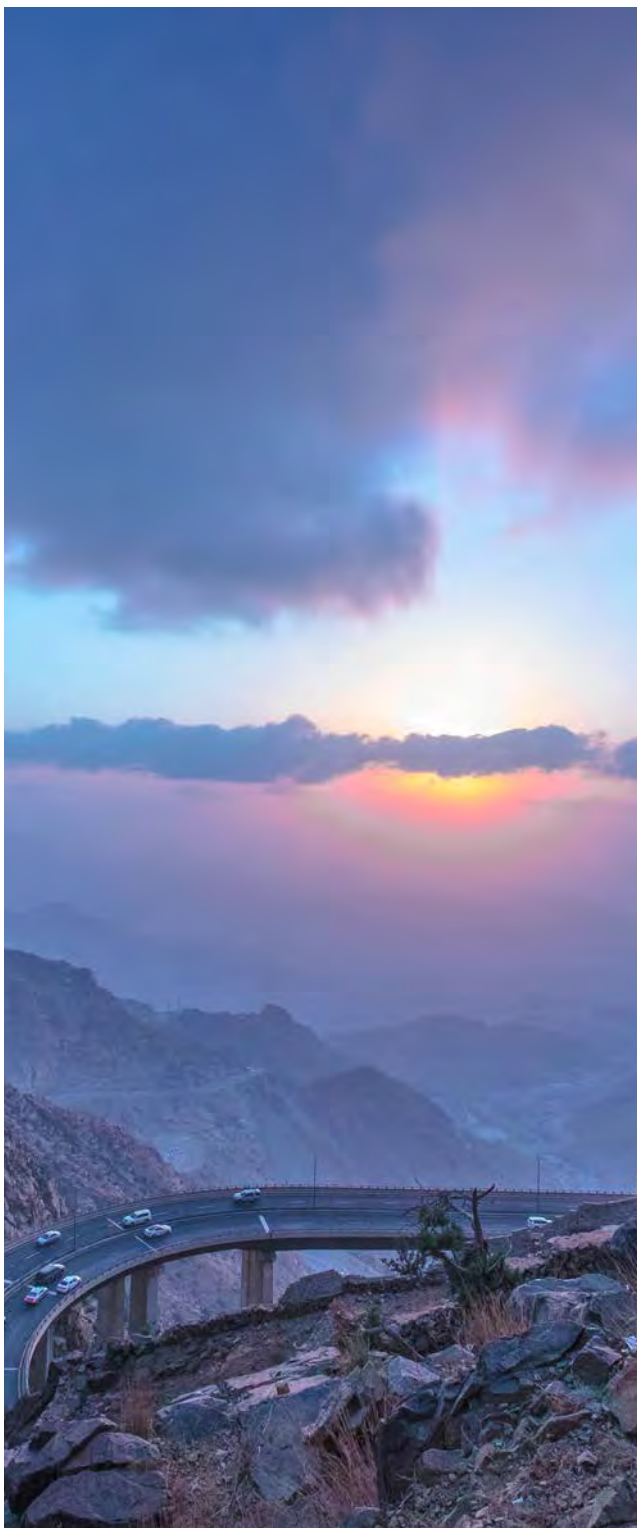


Fig. 51. Socio-ecological and economic imbalance in Taif

6

THE FUTURE CITY



6.1 Strategic Responses

After performing a strategic diagnosis, and identifying four main issues affecting the urban development of Taif, 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 Taif, at the various scales. This is followed by a roadmap to implementation, in the form of an articulated Action Plan.

6.1.1 The Compact City

According to the UN-Habitat principles, cities need to encourage spatial development strategies that take into account, as appropriate, the need to guide urban extension, prioritising renewal by planning for the provision of accessible and well-connected infrastructure and services, sustainable population densities, and compact design. They must consider integration of new neighbourhoods into the urban fabric, in order to prevent urban sprawl and marginalisation. UN-Habitat principles emphasise the relationship between urban form and sustainability, asserting that the shape and density of cities have implications for the sustainable use of resources into the future, and quality of life for citizens. Strong arguments have emerged to promote the Compact City as the most sustainable urban form. A Compact City is envisioned as a high-density urban settlement, characterised by mixed-use development, recognisable, dense, and revitalised central areas, with well-distributed services and facilities (hospitals, parks, schools, leisure, and entertainment). Establishing spatial and legal mechanisms, to consolidate a Compact City, should increase accessibility and walkability, therefore increasing use of public transport and public space, reducing congestion, boosting the local economy and increasing interactions across society. Policies to promote urban compaction involve the promotion of urban regeneration, the revitalisation of town centres, restraint on development in rural and peripheral areas, promotion of higher densities and mixed-use development, promotion of public transport, and the concentration of urban development at public transport nodes. In this scenario, a vibrant street life encourages people to walk or cycle more, and the high-density and mixed-land use developments will, in a sensible way, encourage a social mix who will enjoy close proximities to work, home, and services. Walkability helps to reduce automobile reliance, thus alleviating congestion, air pollution, and unnecessary use of available natural and financial resources. In addition, compact urban development aims to preserve land resources and natural assets, while increasing the efficiency of public infrastructure and transportation services. A compact built form, supported by an efficient public transport backbone, offers opportunities to increase densities, protect environmental resources, and enhance accessibility to the central area for all residents.

6.1.2 The Connected City

The New Urban Agenda asks cities to commit to creating access to public spaces, public transport, housing, education and health facilities, public information, and communication. The Connected City is envisaged as a continuous, well-connected, and well-balanced network of neighbourhoods, each with parks and public spaces, and accommodating a diversity of overlapping private and public activities, shaping a healthy and vital urban environment. The street network has a major role in shaping the urban structure which, in turn, sets the development patterns and scales for blocks, connective nodes, buildings, open spaces, and landscape. This involves development of a well-organised street hierarchy with arterial routes and local streets that is based on different modes of transport and traffic speeds, acting as connectors that should be considered both in terms of accessibility and of social interactions. In this scenario, public transport can provide fast cross-town connections linking public areas and functional cores of the city to the surrounding neighbourhoods. Most importantly, these neighbourhoods in turn, should provide opportunities and conveniently located facilities that are accessible locally by the community, which in turn reduces the dependency on 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 more pleasant. Moreover, congestion and pollution are drastically reduced, and a sense of security and conviviality in public space is increased.



1 THE COMPACT CITY [CONSOLIDATE]



2 THE CONNECTED CITY [RE-STITCH]

6.1.3 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. The concept of an Inclusive City helps to guide urban development towards a model in which people can reap the benefits of urbanisation by ensuring that the local institutions promote pluralism and peaceful coexistence, within increasingly heterogeneous and multicultural societies. The concept of an Inclusive City is structured around:

- a vibrant, sustainable, and inclusive urban economy;
- building on endogenous potentials, competitive advantages, cultural heritage, and local resources;
- resource-efficient and resilient infrastructure; promoting sustainable and inclusive industrial development,
- sustainable consumption and production patterns; fostering an enabling environment for businesses and innovation and livelihoods.

This means that for cities to provide opportunities and better living conditions for all, it is essential to understand that the concept of inclusive cities involves a complex web of multiple spatial, social, and economic factors:

- Spatial inclusion: urban inclusion requires access to affordable necessities such as housing, water, and sanitation. Lack of access to essential infrastructure and services is a daily struggle for many disadvantaged households;
- Social inclusion: an Inclusive City needs to guarantee equal rights and participation for all.
- Economic inclusion: creating jobs and providing urban residents with the opportunity to enjoy the benefits of economic growth is a critical component of urban inclusion.

The spatial, social, and economic dimensions of urban inclusion are tightly intertwined and tend to reinforce each other.

6.1.4 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. As such, a Resilient City can be defined as a sustainable network of physical systems and communities⁴⁰, in which physical systems consist of both the constructed and environmental components of the city. They include roads, buildings, physical infrastructure, communication 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 as explained by Godschalk (2003)⁴¹ are cities which are capable of withstanding severe shock and stress without either immediate chaos/damage or permanent deformation or rupture. These cities are designed in advance to anticipate and recover from the impacts of natural or technological hazards. According to the New Urban Agenda (NUA), cities need to ensure environmental sustainability by promoting clean energy and sustainable use of land and resources, protecting ecosystems and biodiversity, promoting sustainable consumption and production patterns, reducing disaster risks, as well as mitigating and adapting to climate change. These elements amount to resilience. The NUA states that cities need to invest in the generation and use of renewable and affordable energy, and sustainable and efficient transport infrastructure and services. This will provide benefits of connectivity and reduce the financial, environmental, and public health cost of inefficient mobility, congestion, air pollution, noise and urban heat island effects. Alongside this, a Resilient City also supports and is mutually supported by its territorial ecosystems, activating positive urban metabolism mechanisms, ensuring a reliable resource supply and balanced value chains.



3 THE INCLUSIVE CITY

[REBALANCE]



4 THE RESILIENT CITY

[PROTECT & IMPROVE]



6.2 Appropriate Models for Taif Urban Development

6.2.1 *The Compact City: Consolidating development in Taif*

The first strategy focuses on concentrating all new development in Taif in and around the existing city extents, thereby containing the city boundary to an optimum level. There are several perceived benefits of the Compact City over urban sprawl, which include:

- Less car dependency thus lower emissions;
- Reduced energy consumption;
- Better public transport services;
- Increased overall accessibility;
- The re-use of infrastructure and previously developed land;
- A regeneration of existing urban areas and urban vitality;
- A higher quality of life, the preservation of green space, and;
- The creation of a milieu for enhanced business and trading activities.

The pattern of planning observed in the historic centre of Taif is conducive to a more compact urban form. Policies to incentivise and prioritise development on vacant land first should be encouraged, and development on new greenfield land should be discouraged. This measure will encourage developers to build on existing vacant land, reducing the pressure on city municipalities to expand infrastructure networks further into white lands. It will lead to better management of resources, lower costs, and a higher quality of life among residents by ensuring access to amenities. Establishing spatial and legal mechanisms, to consolidate a compact city, could increase the accessibility and walkability, therefore increasing the number of people who would use public transport and public space, reducing congestion, boosting the local economy, and increasing interactions across society.

By developing on existing vacant parcels, there is an opportunity to convert underutilised land into productive landscapes, adding to the city's economy and health. There is potential to densify approximately 4,700 hectares of empty land in Taif, which is enough to accommodate 0.7 million people, and approximately 2,670 hectares of military land is enough to accommodate 0.4 million people, at the UN-Habitat density recommendation. It is therefore recommended to prioritise and plan for densification within the current urban footprint, by consolidating the existing mixed-use centres and creating new mixed-use nodes to anchor development. Once vacant land in the urban footprint has been developed, the future development can be extended up to the 1450 UGB and phased onto lands projected in the New Taif City proposal.



North City Centre

North centre needs to be consolidated and better defined



New Secondary Centre

New centre needs to be created as a multimodal transportation node



South City Centre

Historic centre needs to be preserved and better connected



Fig. 52. The Compact City: Consolidating development in Taif



6.2.2 *The Connected City: Linking Taif through public transport*

The second strategy addresses the need to revert the divided structure of Taif and reduce spatial fragmentation by infusing new infill development in the gaps and redistributing uses equally across the landscape.

A connected city is built-upon the principles that a compact urban area, with a robust transportation system and a pedestrian-friendly built environment, results in enhanced productivity, social, economic, and territorial cohesion, as well as safety and environmental sustainability. Proximity and access to different amenities and opportunities are critical for the social and economic prosperity of any city. Connections in the physical dimension also influence the flow of information, goods, and services and the social integration of cities. A continuous city fabric can streamline movement and optimise access for residents and goods.

The voids in the current city fabric showcase potential to provide public services, a new network of public spaces, and green infrastructure systems, relinking detached neighbourhoods and creating a connected built environment. There is also room for densification in many parts of the city, conforming to the UN-Habitat density recommendations.

The historic city centre is a well-established node with a balanced mix of uses. There is potential to develop and emphasise the node in the North as a consolidated centre with connections to the airport, institutional facilities, dispersed commercial uses, and residential neighbourhoods. By connecting these two nodes, the North-South city link can be emphasised and leveraged for densification and redevelopment through a public transportation system. This North-South link will connect the airport and other uses along the corridor to the historic city centre of Taif creating a contiguous urban form, well-connected and well-served by public transit.

Creating an East-West connection, towards the new proposed developments, will help create a secondary node in between the two major nodes, that will catalyse development and redistribute uses to establish a city structure. This new structure, with both the North-South and East-West axes, anchored by primary and secondary nodes, will help create a network of transverse routes that will better organise the city and streamline movement through a system of well laid out and distributed connections.



Transportation Lines

Define transportation lines along major axes



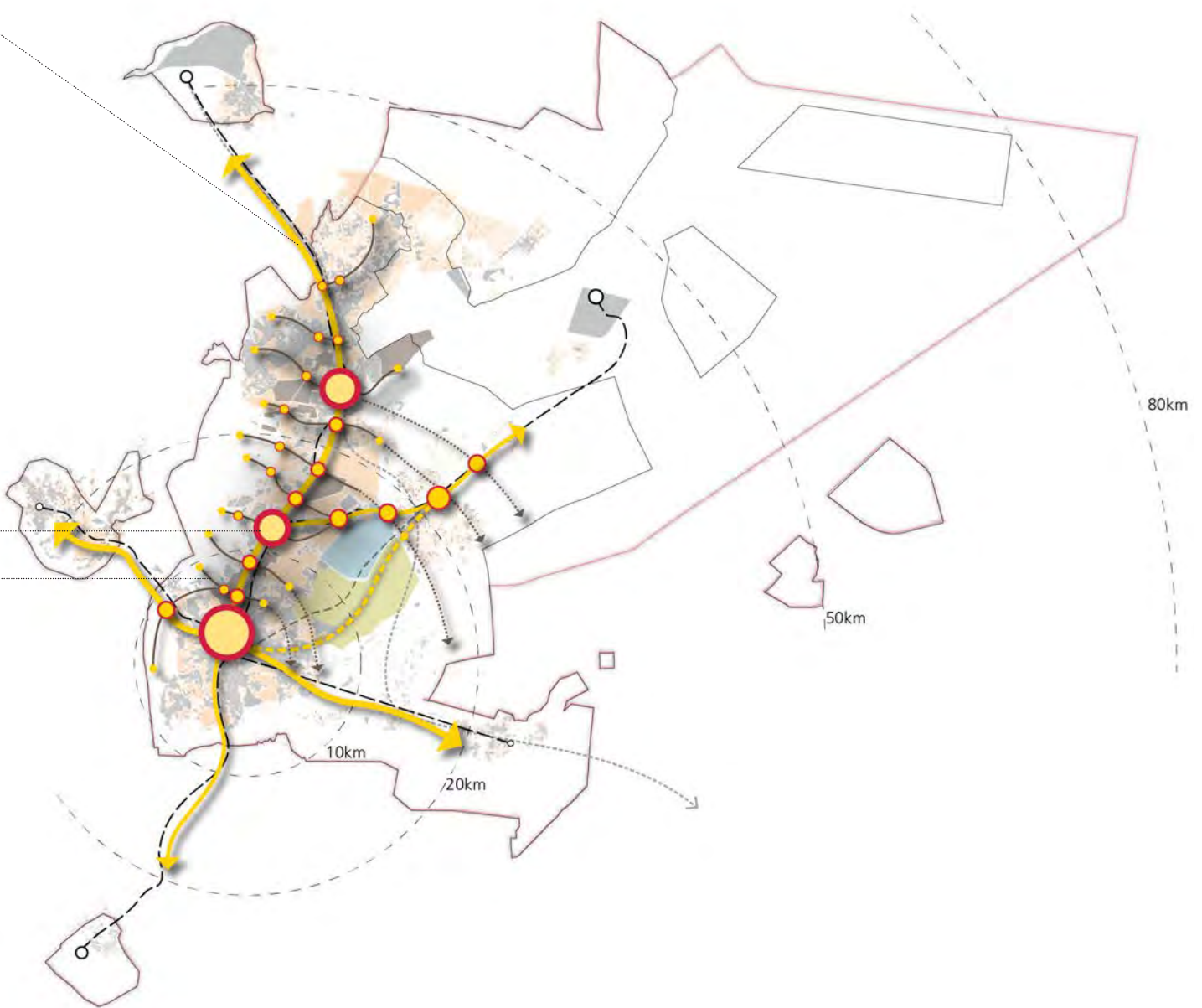
Nodes

Consolidate and densify land use along major nodes



Transversal Network

Create a secondary network for improved accessibility



- University
- Saiysad National Park
- Military land
- Built-up area
- Vacant land

- Primary nodes
- Secondary nodes
- Local nodes

Fig. 53. The Connected City: Linking Taif through public transport



6.2.3 *The Integrated City: Bridging Taif and bringing the residents together*

The third strategy aims to shape a more inclusive and equal city, increasing access to economic opportunities and social integration. The concept of an Inclusive City is structured around:

- A vibrant, sustainable, and inclusive urban economy;
- Building on endogenous potentials, competitive advantages, cultural heritage, and local resources;
- Resource-efficient and resilient infrastructure; promoting sustainable and inclusive industrial development, and;
- Sustainable consumption and production patterns; and fostering an enabling environment for businesses and innovation, as well as livelihoods.

Physical fragmentation often manifests itself in unequal distribution of resources and inequitable access to opportunities across different strata of society. Locating single land use clusters in select locations further aggravates this condition. The new city structure, served by the public transport system, with frequent nodes, would create opportunities for redistribution of services encouraging spatial, social, and economic inclusion.

Consolidating the fragmented node in the North into a mixed-use urban centre would help increase access to services and employment. It would create linkages between the residential neighbourhoods, to the commercial centres, Taif University, and the airport to the North. Creating a secondary node at the strategic centre point on the North-South spine would serve as a pivotal link to the New Taif development proposals, (that includes a university, the new airport, industrial, and residential uses).

It would also help to balance uses and amenities along the corridor and provide connections to any future developments. Instituting a hierarchy of nodes, ranging from local nodes, and neighbourhood level nodes to nodes of the city and regional level would significantly help create a decentralised, multimodal city structure.

Focusing the provision of public facilities and mixed-use activities around public transport networks and intermediate nodes can aid in redistributing and equalising access to public facilities and economic opportunities across Taif.



Spatial Inclusion

The historic Souq is a good example of an inclusive public space



Social Inclusion

Encourage equal participation of women in all sectors



Economic Inclusion

Increase economic opportunities through mix of uses in the city



Fig. 54. The Integrated City: Bridging Taif and bringing the residents together



6.2.4 The Resilient City: Rebalancing Taif's socio-ecological and economic systems

The fourth strategy aims to promote the development of urban spatial frameworks that support sustainable management of natural resources to build a resilient city. A green economy approach can provide a framework whereby decisions and actions can promote resource efficiency, effective environmental management, and a better standard of living for the residents. A framework that aims at balancing aggregated demand for the economic, the social, the institutional, and the economic spheres, also needs to incorporate the ecological dimension to provide a healthy and natural productive environment:

- The economic dimension should contribute to economic progress in the sense of prosperity;
- The social dimension should provide for prosperity and equitable social opportunities; and,
- The institutional dimension should contribute through participatory governance for conducting socio-ecological systems towards sustainability.⁴²

Human development is a direct consequence of ecological conservation. Many examples are using this approach, for instance integrating public transport with renewable energy generation, optimising both the ecological and economic benefits of investments. Also, ecological remediation can be used and promoted as an economic engine, by developing new opportunities and new markets, from environmental and cultural tourism to urban farming, etc. In Taif, natural and ecological systems play an integral part of the urban form and economic structure. The wadis, the agricultural network, and the public green space represent a potential source of economic growth and social development. The wadis served as an extensive irrigation network serving the agricultural functions of Taif. Restoration of the natural watersheds creates water reservoirs to collect stormwater runoff, utilising the wadis as new green public spaces and at the same time reframing vacant land as space for new socio-ecological infrastructure that aims at reconnecting green and blue networks. This could help redefine new socio-ecological infrastructure for the city, decreasing the water evaporation factors and increasing the amount of natural resources and open spaces to better connect the city. The New Taif Development Plan overestimates the growth of Taif, which will take decades to reach. And the Plan excludes the natural systems from the proposed urban patterns. The built form does not respect the natural topography and the uses proposed do not complement and align to the natural wadis. Future developments should be designed in harmony with the natural blue-green features so that the infrastructure and services can be in sync with the future visions. An alternative should be carefully studied as part of a larger sustainability plan for Taif to ensure ecological restoration and balance between the built and the unbuilt systems.



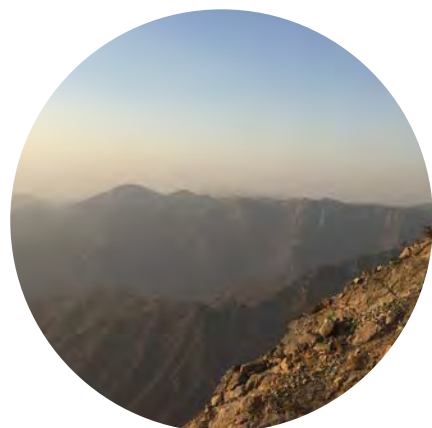
Agricultural Farmlands

Taif is the agricultural bowl of the Makkah Region



Wadis Buffer

The wadis should have a green buffer to protect from encroachment



Natural Features

The mountains are home to natural flora and fauna and also influence the climate of Taif

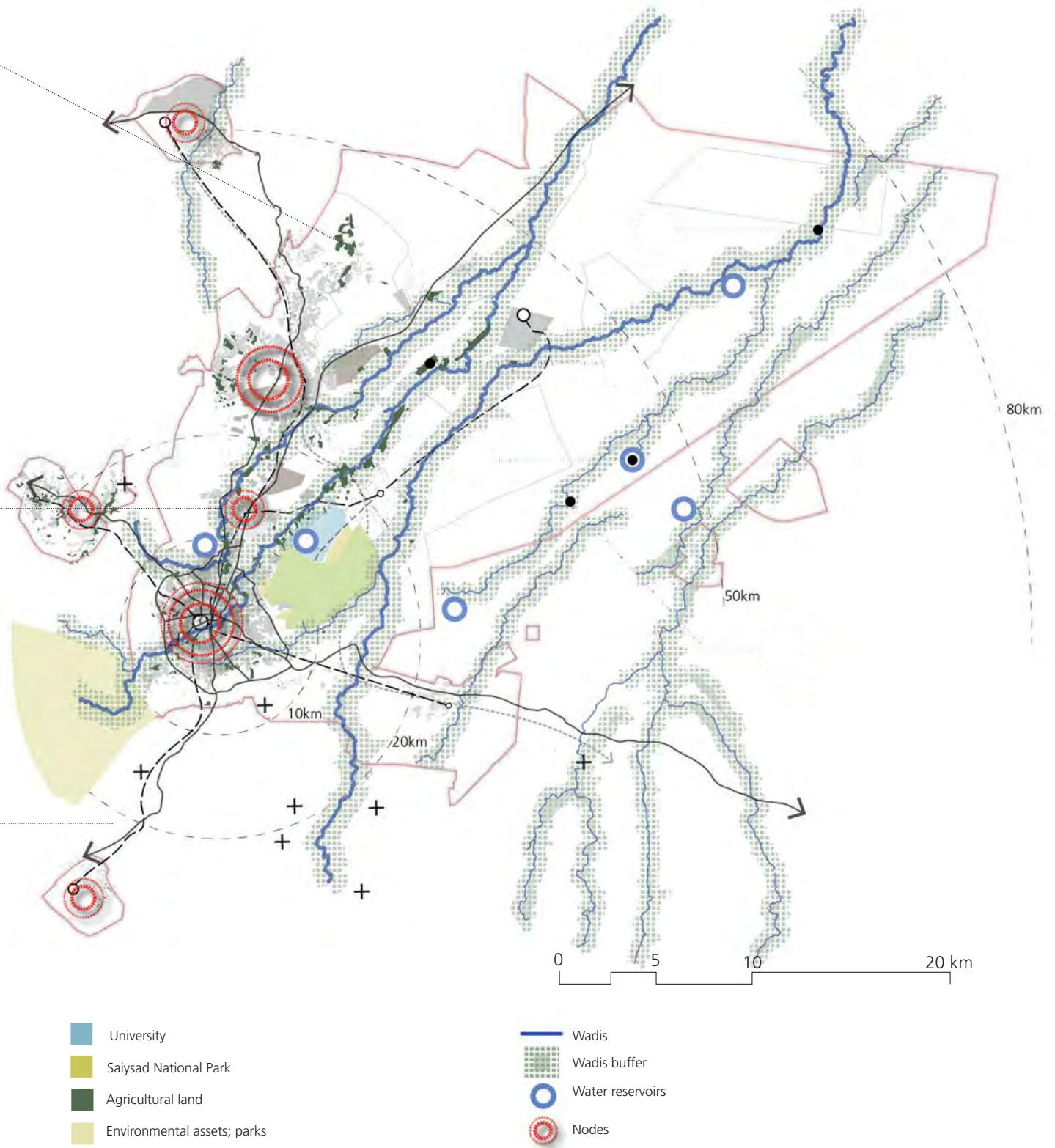


Fig. 55. The Resilient City: Rebalancing Taif's socio-ecological and economic systems

6.3 Vision for a Sustainable Taif

The four strategies proposed for Taif, as a Sustainable City, are aligned with the visions and goals of the New Urban Agenda, and based on the three dimensions of sustainability. As such, the sustainable urban form requires to achieve these three aspects by:

- Securing social equity in the distribution of wealth and social services, (social sustainability);
- Keeping a stable economic growth by restructuring the productive system in order to save resources and energy, (economic sustainability);
- Maintaining safe and comfortable living environments through lower emissions and opting for ecological restoration and complex socio-ecological infrastructure that can devise basic services innovatively, (environmental sustainability).

The time is opportune for Taif to move towards a more sustainable urban development model, as some of the current issues also present opportunities for solutions. This requires a strong political will, coupled with a pragmatic approach to its socio-economic and spatial restructuring.

To enact this vision, which aims to trigger an incremental but radical urban transformation process, it is necessary to translate the four conceptual recommendations into a logical and framed system of actions that sets clear

priorities and builds on endogenous potential and competitive advantages. It also capitalises on the strengths and opportunities present in Taif, to develop diverse and inclusive economies with job opportunities for all, vibrant and sustainable communities, and efficient and resilient infrastructure. These actions are discussed in detail in Chapter 7.



Potential developable land within the current footprint of Taif



Panoramic sunset over Taif

6.4 Strategic Impact of the Vision on Urban Patterns

The vision laid out for Taif in the preceding text has direct and tangible impacts on the spatial organization of the city. The outcome of the strategic recommendations based on transit-oriented development principles can be assessed using the same methodology that was used to analyse the current conditions. The text and maps discussed in the sections below illustrate the impact of this vision on the density, land use, productivity, and accessibility of Taif.

Land Use

As discussed earlier, Taif has a proposed public transportation system in place that includes a bus network, as well as two new metro lines. While the bus network is wide and extensive, the metro lines will

help structure the city by creating prominent and accessible North-South and an East-West axes. Densifying along these corridors by re-aligning land uses within a 10-minute walk from the metro stops, and the development parcels adjacent to the main street/ metro line can significantly transform the urban structure. As shown in figure 58, the new corridors should focus mainly on commercial and mixed land use along these transportation routes to maximise their use and increase accessibility. The two primary nodes, to the North and the South, along with the secondary node at the intersection of the two metro lines become the focal points of activity and multi-modal transport connections. Drawing from studies and guidelines on good urbanism, the breakdown of the land use assigned to this new, dense corridor is 60% mixed-use, 20% commercial, and 20% residential.

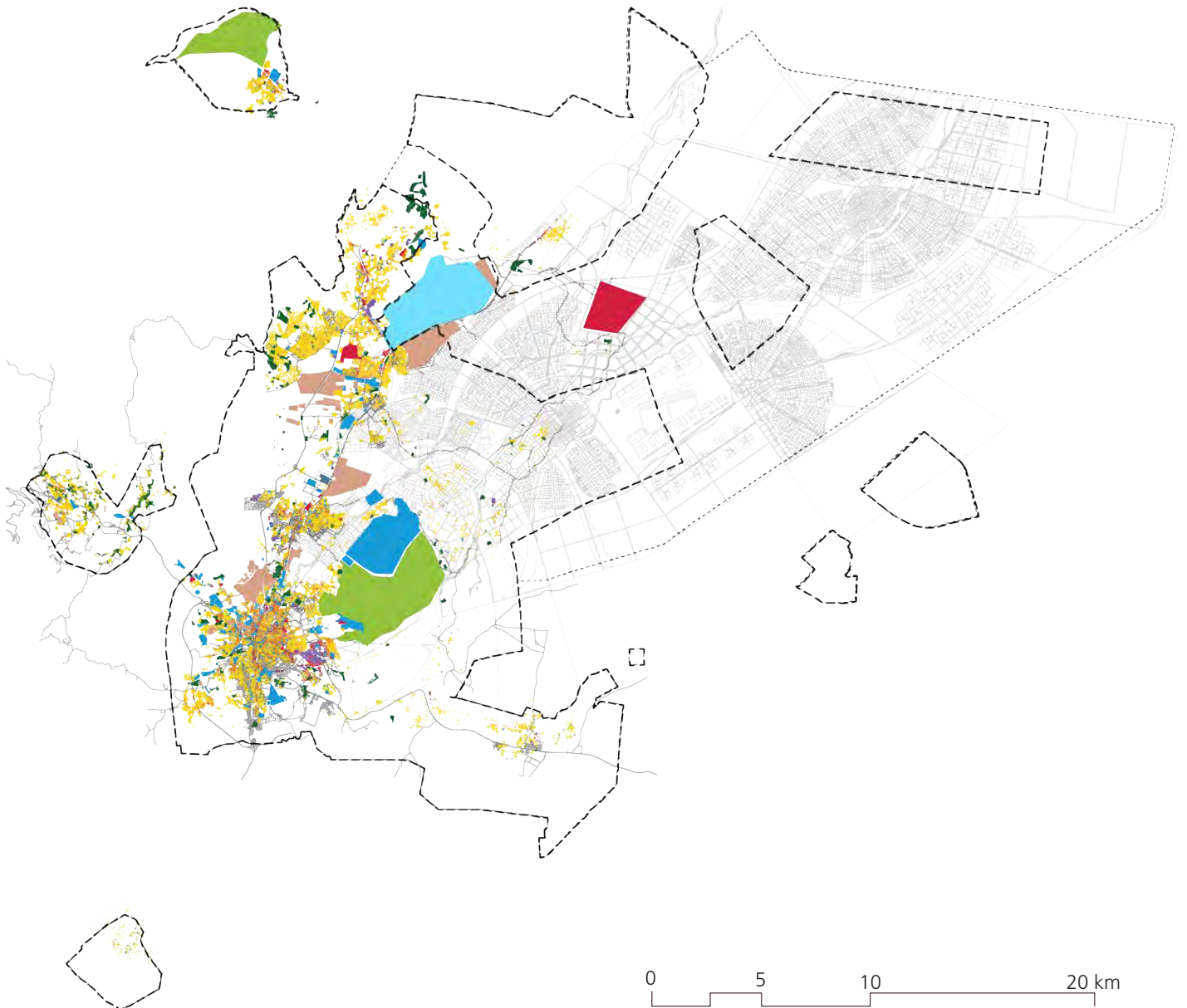


Fig. 56. Current land use

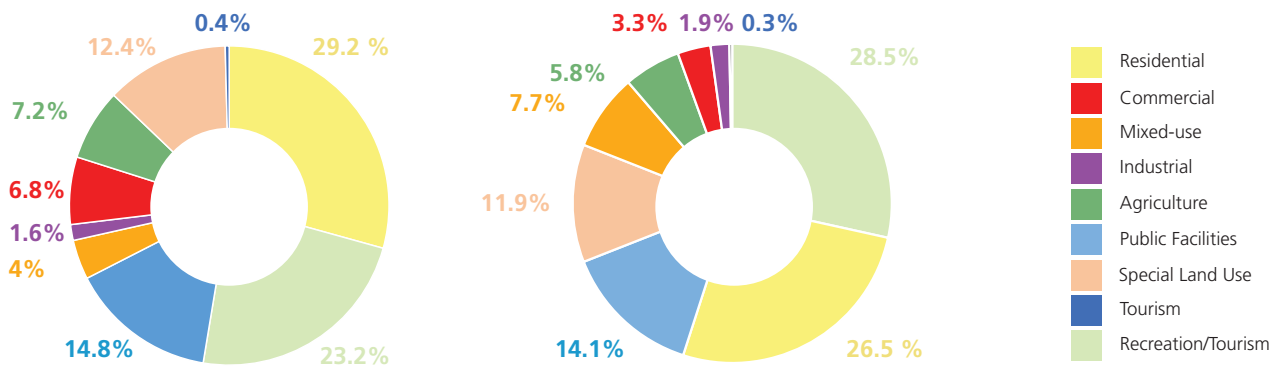


Fig. 57. Current land use and UN-Habitat proposal for new land use (%)

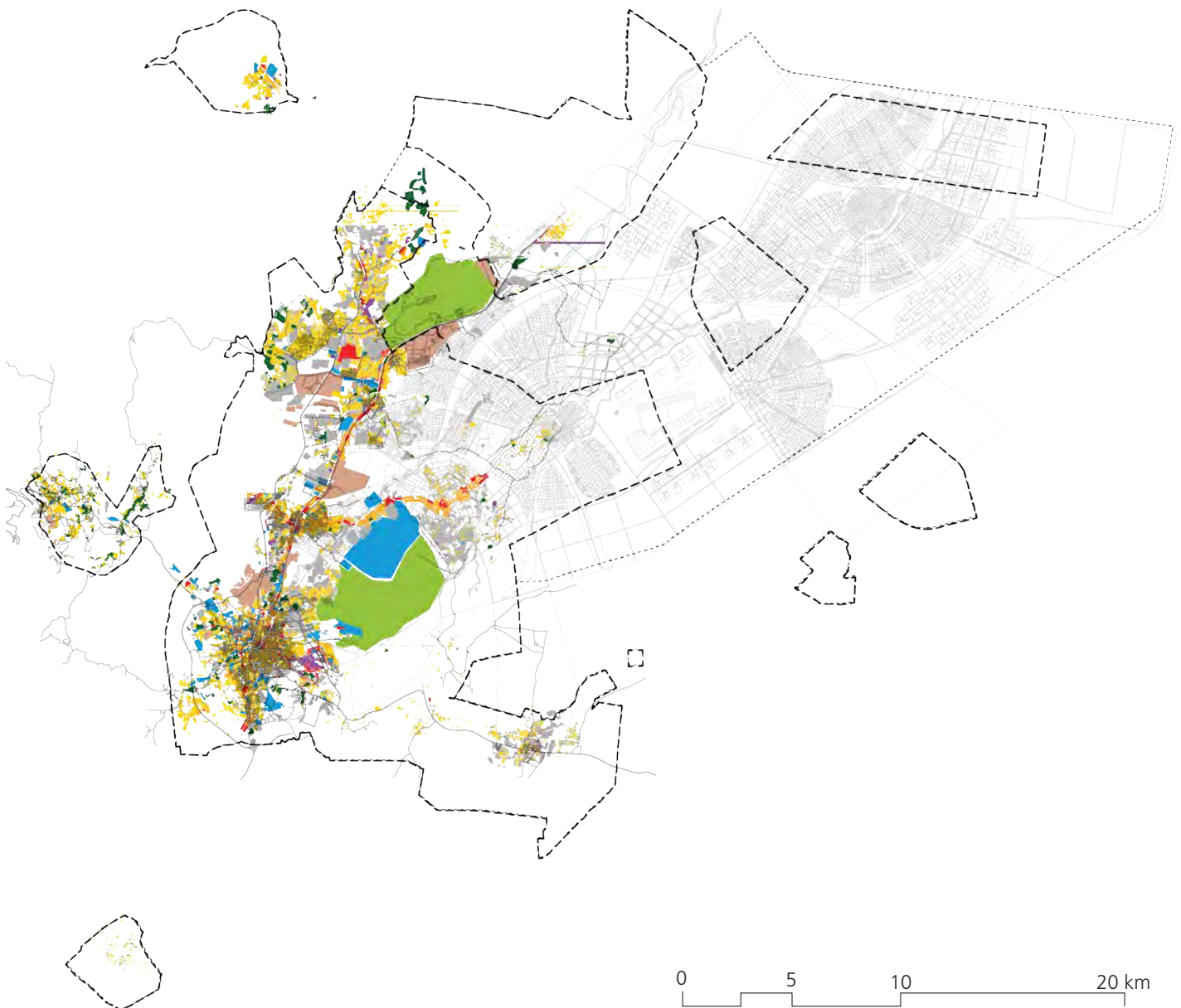


Fig. 58. UN-Habitat proposal for new land use

Density

The new land use designations all along the lines can accommodate a higher density of residents with walking access to the metro services. If built out to its maximum potential, as per the UN-Habitat recommended density of 150 p/ha, the corridors can accommodate up to 700,000 people within a 10-minute walk buffer, therefore eliminating the need to create new developments outside the current footprint that lead to sprawl. Even with more conservative estimations, the area, with new developments on the vacant land, and higher densities in other parts, can comfortably accommodate the population growth for the next few years. Figure 59 shows the current population density distribution that averages 25 p/ha while figure 60 shows the density distribution under the proposed scenario that averages 150 p/ha in the transit corridors.

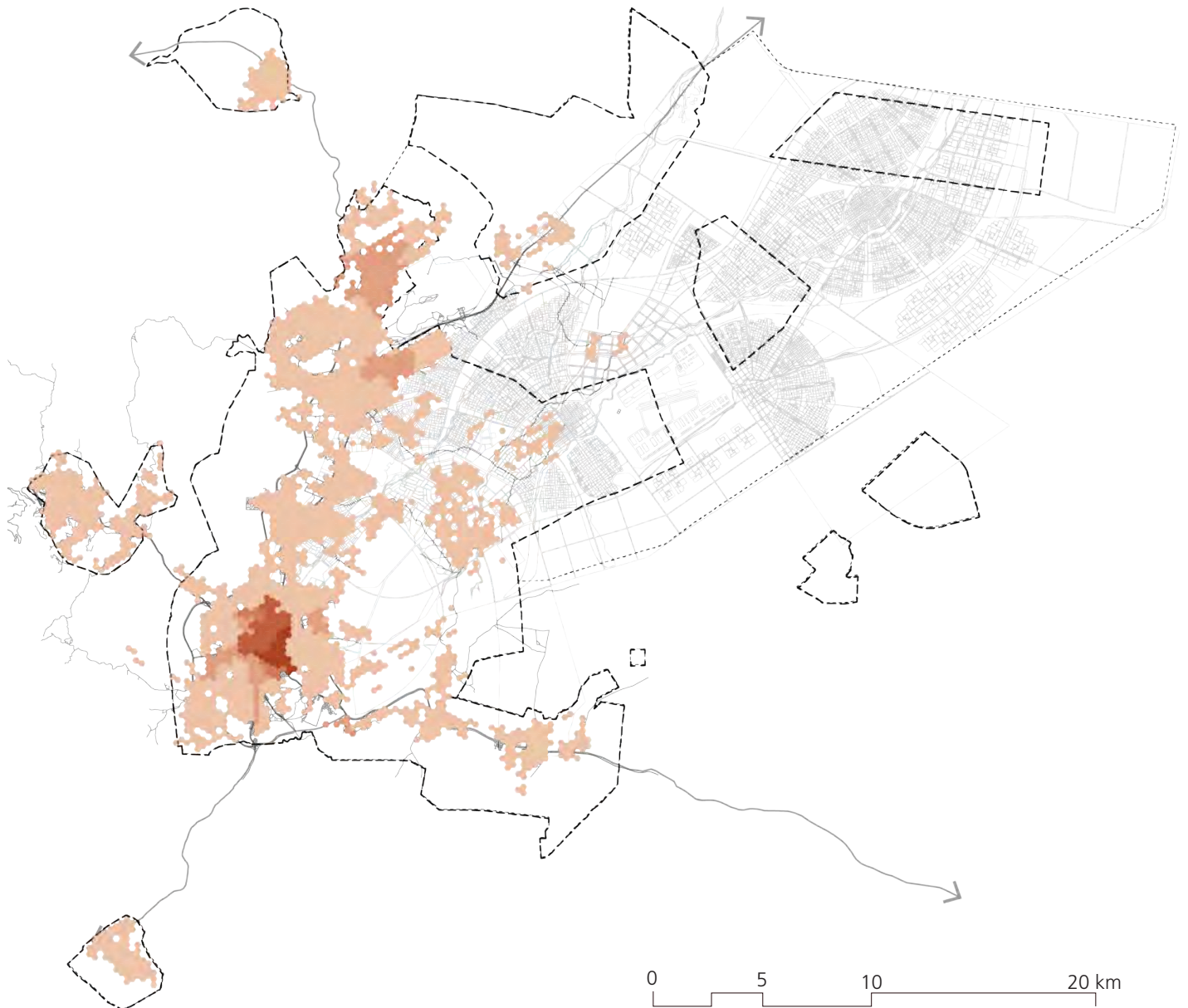


Fig. 59. Current population density

Average current **POPULATION DENSITY** in built-up area

 **25** p/ha

Average proposed **POPULATION DENSITY** in built-up area

 **35** p/ha

Average **POPULATION DENSITY** in transit corridor

 **150** p/ha

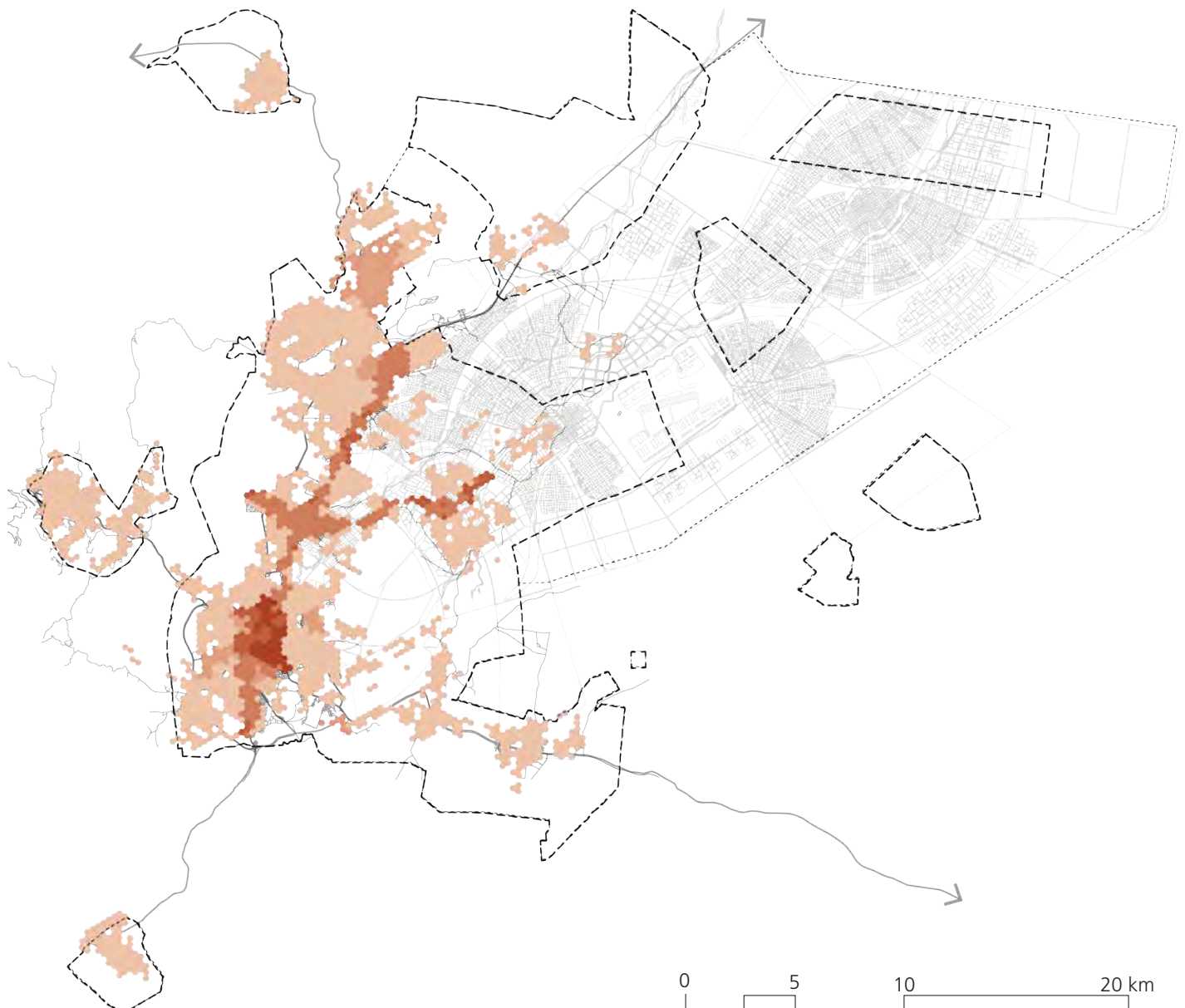
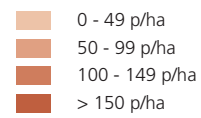


Fig. 60. Proposed population density

Productivity

Access to jobs is a pivotal factor in the future growth and economic development of a city. The current land use allotment and the population distribution across the city of Taif can help estimate the number of jobs which is a critical indicator of the spatial representation of economic opportunities. With greater access to jobs within close distances, the productivity of residents increases, who spend less time on daily commutes and more time in productive work. Economic opportunities are a major draw to businesses and talent contributing to the competitive advantage of the city.

The productivity analysis is based on a few assumptions which assign a certain number of jobs per square metre of built area for each land use. While this assumption is broad and an approximate, it helps to understand the trends of job distribution in the city and reveals the inequities and gaps in their spatial distribution and

access. The total jobs in the city at present is approximated at 35 jobs per 100 residents. This number increases to 49 jobs per 100 residents in the proposed scenario by only densifying land use and building heights within a 10-minute walking corridor along the two metro lines. Thus for 1.5 times increase in population, the estimated increase in jobs is 2 times.

Jobs accessed by walking

While the total number of jobs in the city increase at a rate higher than the population growth rate, the spatial distribution of these jobs is a critical factor in planning for future growth of the city. The map in figure 61 represents the number of jobs accessible within a 10-minute walk from different city-regions. More jobs are concentrated in certain parts of the city which reveals and corroborates a trend discussed in the land use section, with two

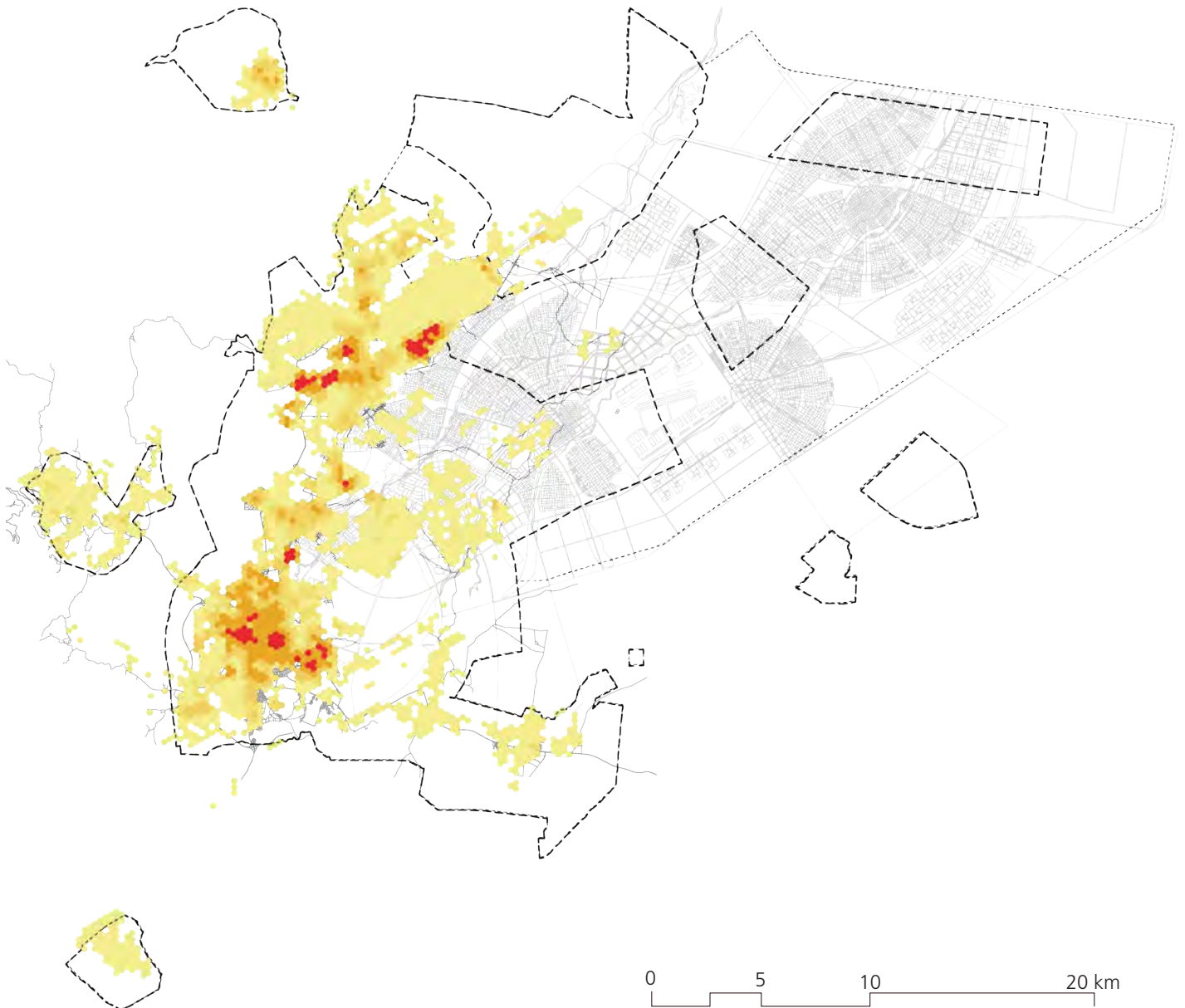


Fig. 61. Current job accessibility within a 10-minute walk

distinct cores in the North and South of the city that have higher percentages of mixed land uses, and a potential third node in the middle which show greater access to jobs. As expected, the farther extents of the city, which are majorly residential in nature, have a low job density and hence lower access to jobs.

The proposed land use scenario for Taif will increase the number of jobs accessed within a 10-minute walk from different city regions. In the new scenario, each person can access 3000 more jobs within a 10-minute walk anywhere in the city. Focussing on creating opportunities within the built footprint by filling in the gaps and densifying existing developments along the North-South and East-West axis will increase access to jobs by more than 300%, (see figure 62). Redistributing land uses by ensuring a balance of commercial, mixed and residential land use, will improve the spatial distribution and access to jobs across the city.

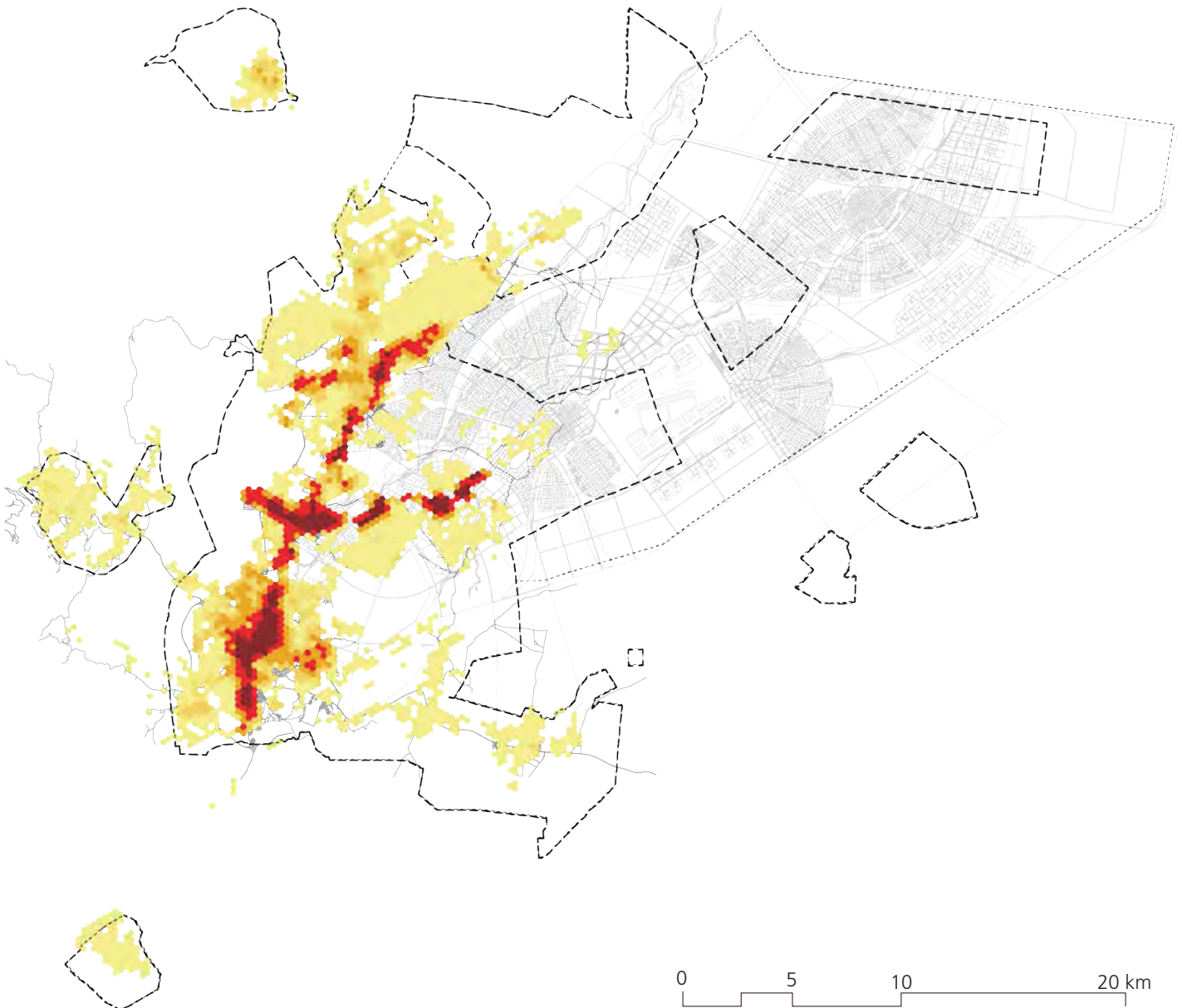
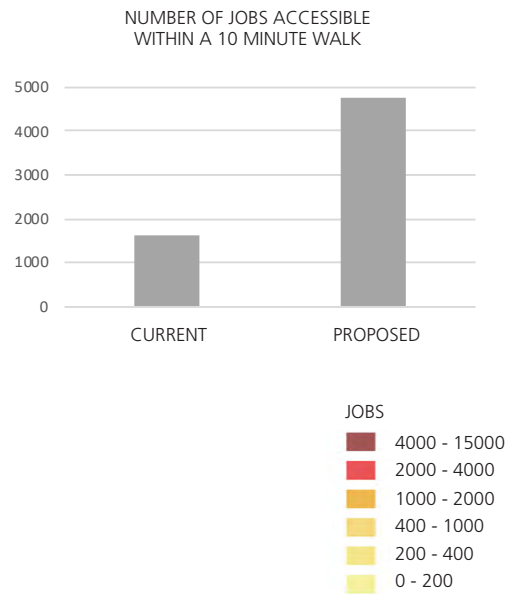


Fig. 62. Proposed job accessibility within a 10-minute walk

Jobs accessed by metro

The proposed metro lines, with the current land use pattern and distribution, give access to 27% of all jobs in the city to people residing and working within a 10-minute walk buffer, and assuming a 20-minute metro ride. With the current density and distribution of land uses, the public transportation system will not be successful as it would struggle to serve a large percentage of the population.

Densifying and changing land use along the 10-minute walk catchment area from the metro stations after re-aligning the second metro line along the new secondary node, doubles the number of jobs accessed, increasing access to 62% of all jobs within the city. The exact proportion of jobs added along these corridors will vary based on the density and distribution of

land uses during implementation. However, developing along the guidelines mentioned in this document will ensure that the city benefits from the economic advantages of bringing people together and connecting them via public transport.

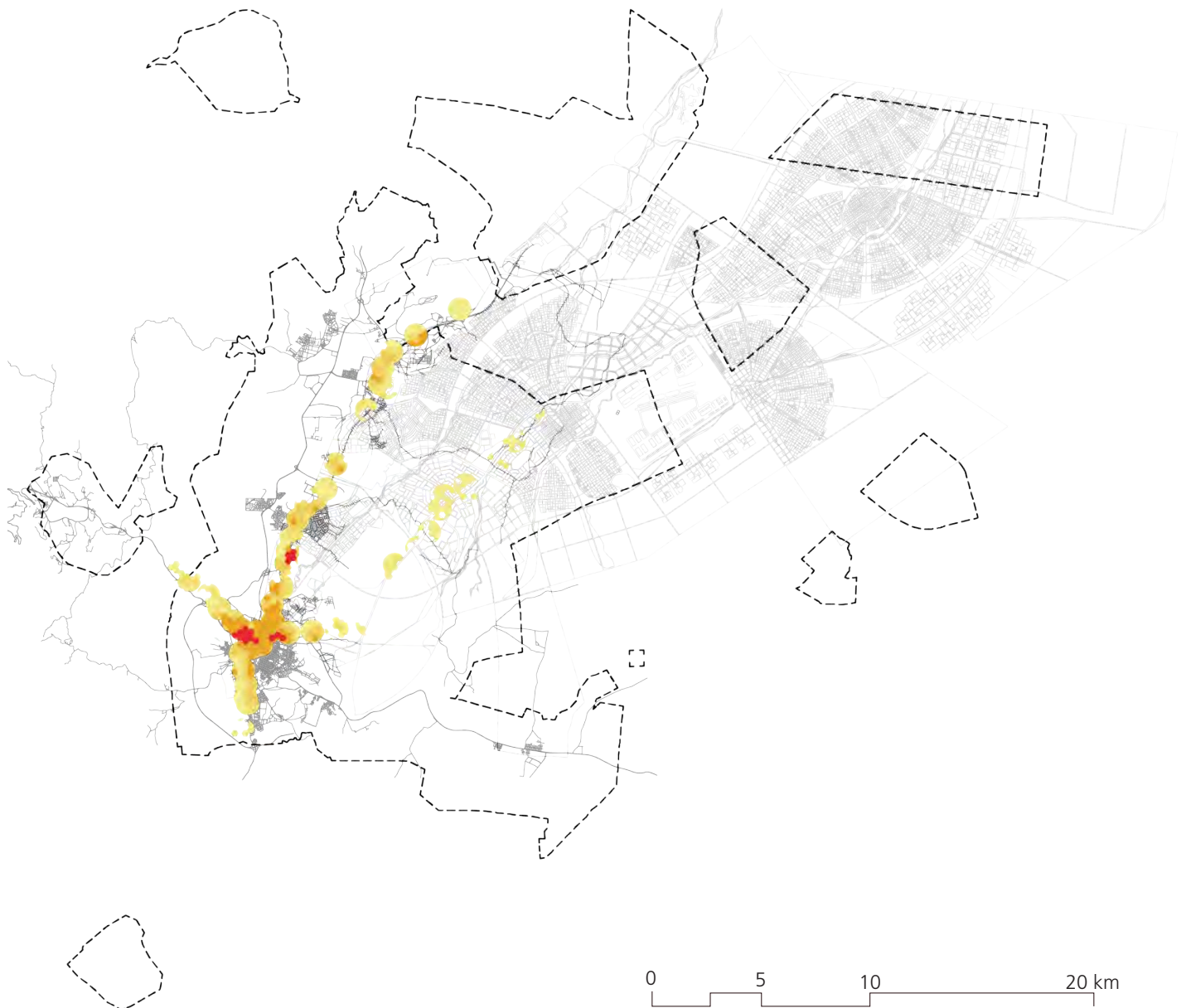


Fig. 63. Current job accessibility from metro stations

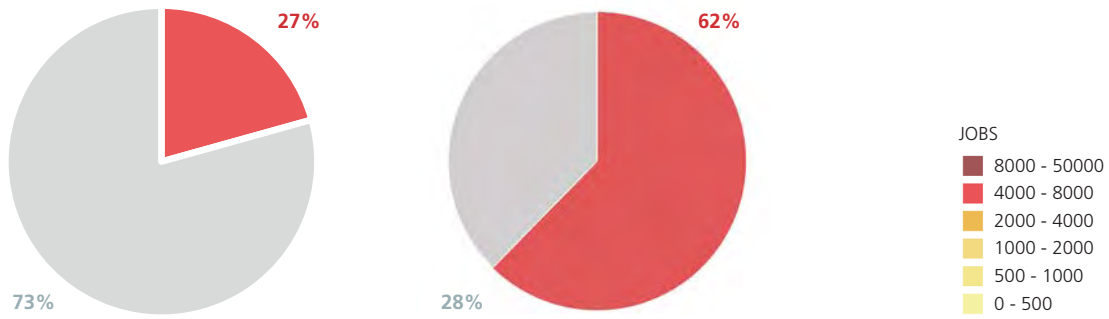


Fig. 64. Current and proposed job accessibility from metro stations (%)

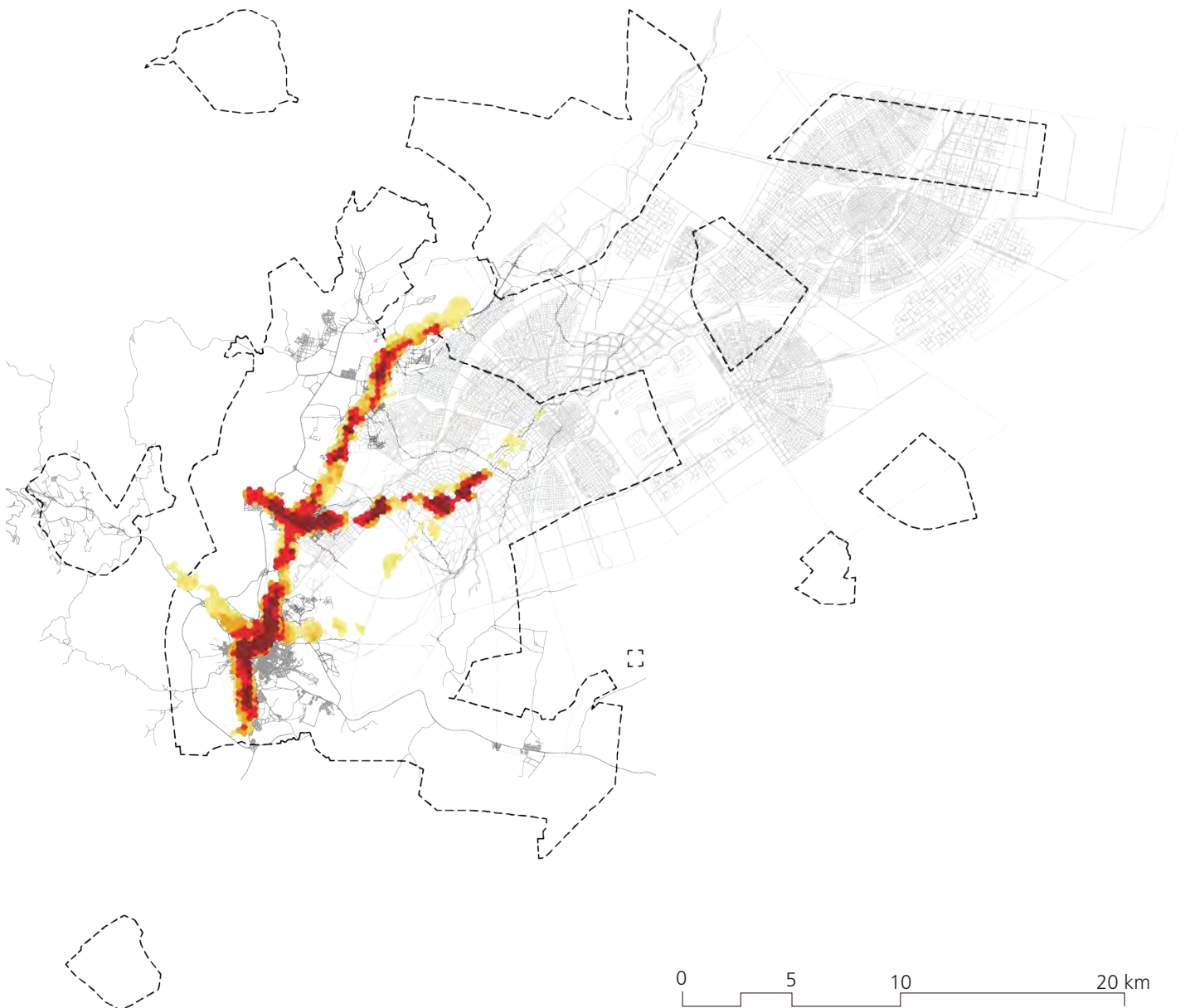


Fig. 65. Proposed job accessibility from metro stations

Jobs accessed by driving

Job distribution is calculated by estimating a certain number of jobs per square metre of built-up area for each land use. As shown in figure 66, about 42% of all current jobs in the city can be accessed within a 20-minute drive from anywhere in the city. This analysis is dependent on the even distribution of land uses and the road network itself. This means that the more central locations have a greater reach to jobs within the city.

As the population increases and with a denser distribution in the city centre, the access to jobs by road should increase. However, with an increase in the number of people on the current road network, the travel speeds would reduce due to congestion. This is a fair assumption, as trends everywhere

in the world indicate that growing cities witness increased congestion and an overall reduction in travel speeds. Hence, the number of jobs accessed by car within 20 minutes will reduce to 29% (figure 68). This statistic endorses the need to supplement this reduction in the number of jobs accessible by car by putting a public transportation system in place as the city grows. The public transportation system will increase the total number of jobs accessed when all modes of transport are considered together.

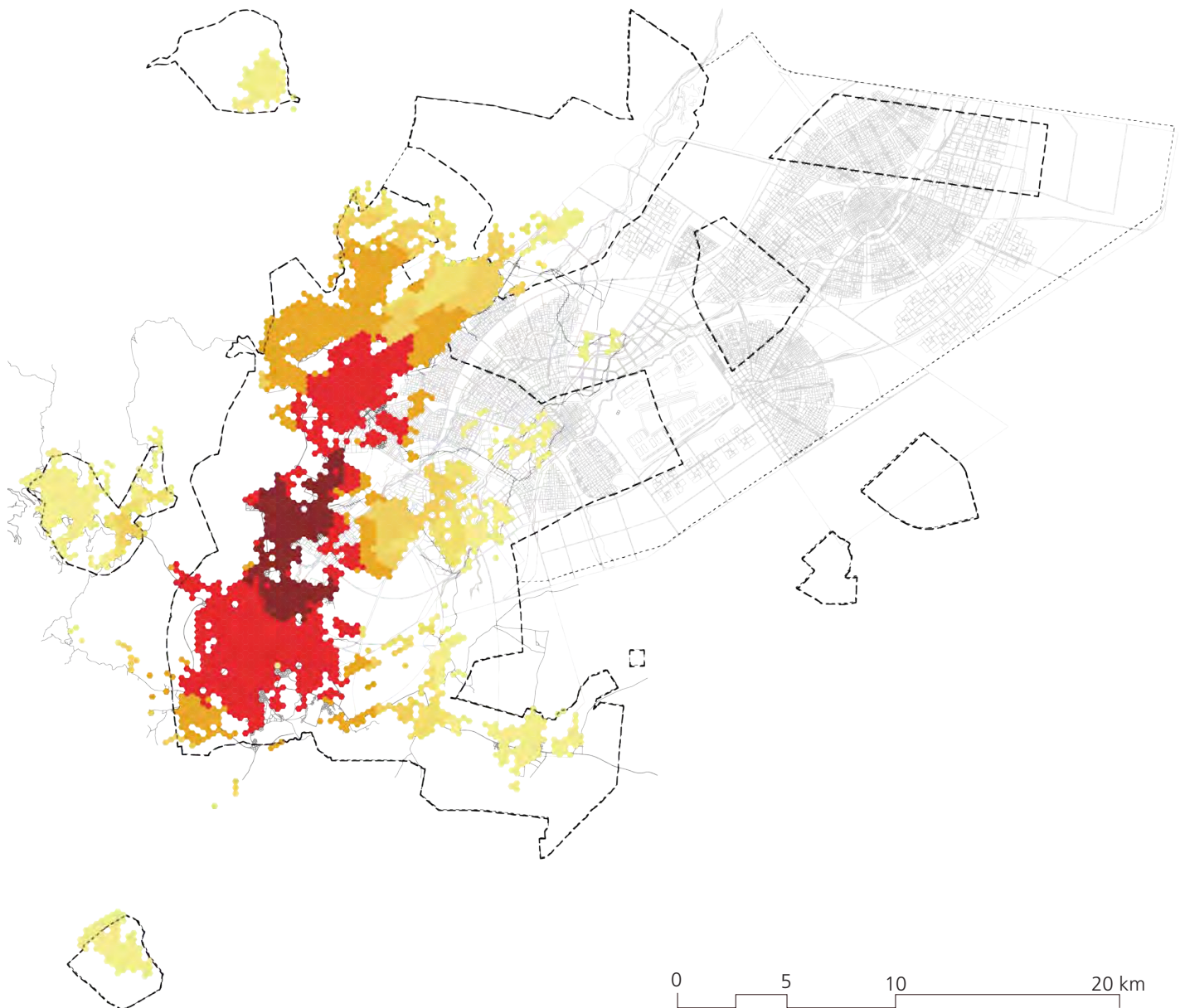


Fig. 66. Current job accessibility within a 20-minute drive

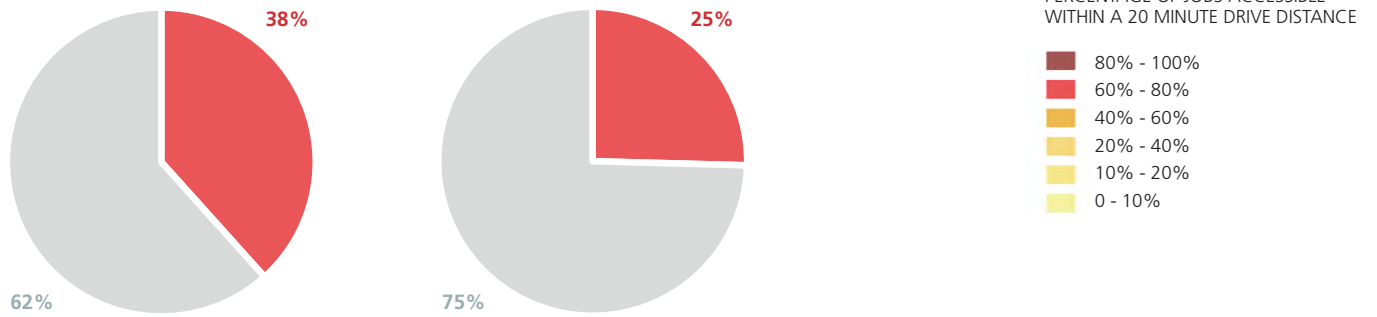


Fig. 67. Current and proposed job accessibility within a 20-minute drive (%)

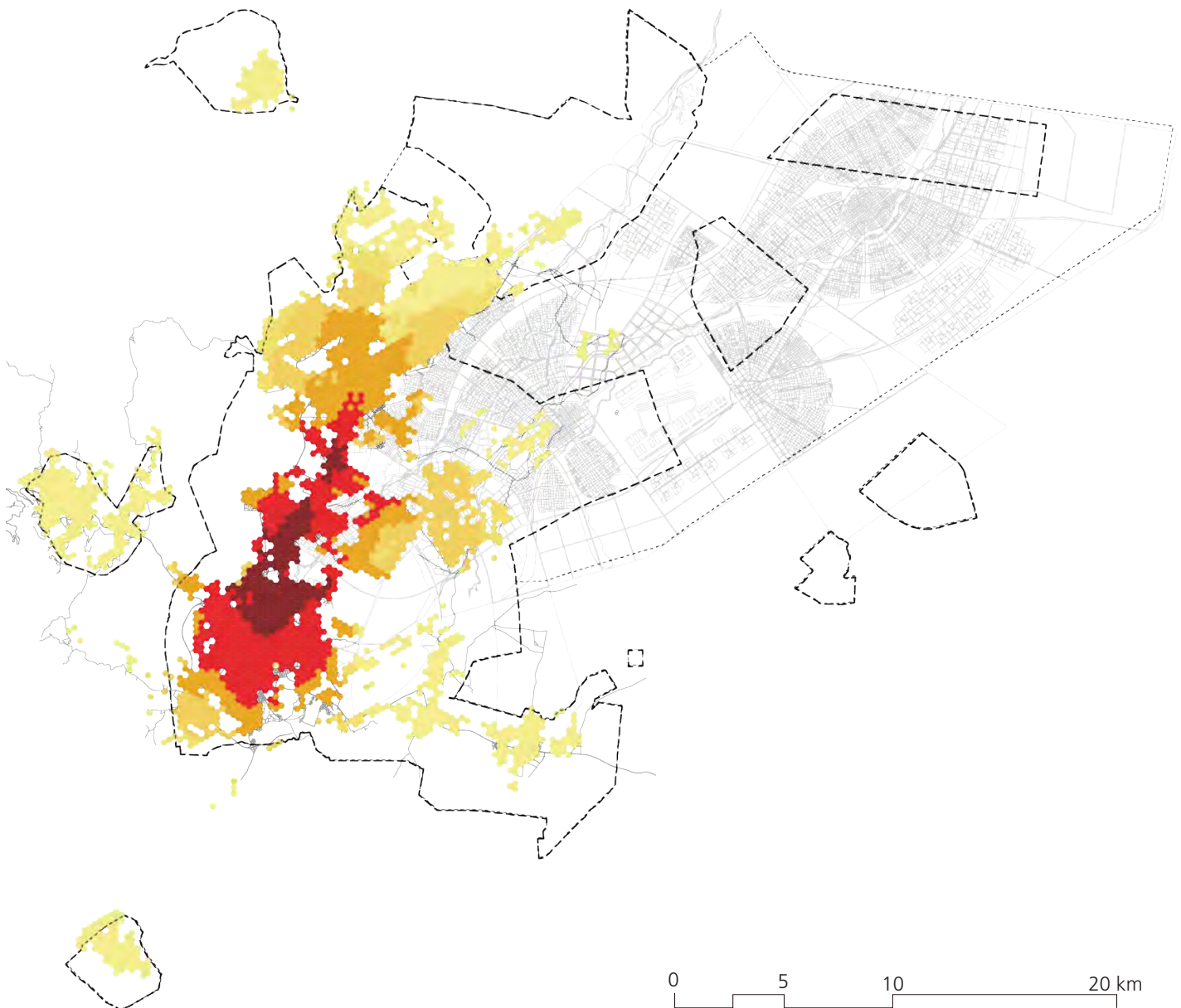


Fig. 68. Proposed job accessibility within a 20-minute drive

Accessibility

As a consequence of the new land use designations, and higher densities along the two metro lines in Taif, the access to transportation significantly improves to those developments within a 10-minute walking distance. The increase in density gives access to public transportation to a greater number of residents, giving them a choice to switch to more sustainable travel modes. The shift towards the North in the alignment for the East-West line helps to establish a secondary node and align itself to dense urban areas. The population captured within the 5-minute walk to the metro station shifts from 20% calculated over current density distribution, to 30% calculated over the new distribution of land uses and updated density levels. The population captured within the 10-minute walk shifts from 38% calculated over the current distribution to 53% in the proposed distribution. With more than 50% of the population

within a 10-minute walk to one of the metro lines, movement within the city can be efficiently managed.

Densifying along these corridors will not only improve accessibility and increase density for a more sustainable urban form, but it will also create a coherent and comprehensible structure for the city of Taif, that is currently plagued with fragmented pockets of sprawling developments. As illustrated in the sections above, the proposed scenario brings together spatial planning policies, urban mobility and economic development in Taif. By densifying and developing along mobility corridors, the total number of jobs in the city and the access to opportunities increases and the overall social and economic well being of the city benefits from agglomeration advantages.



Fig. 69. Current accessibility within a 10-minute walk from metro stations

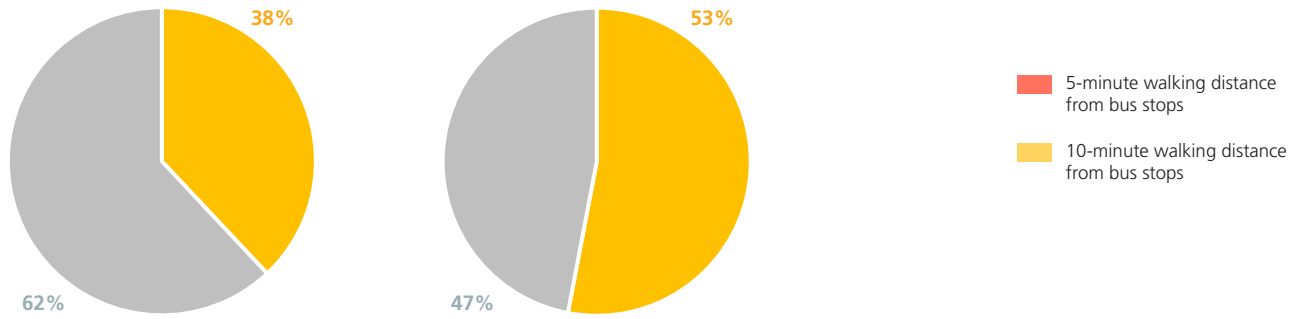


Fig. 70. Current and proposed accessibility within a 10-minute walk from metro stations (%)

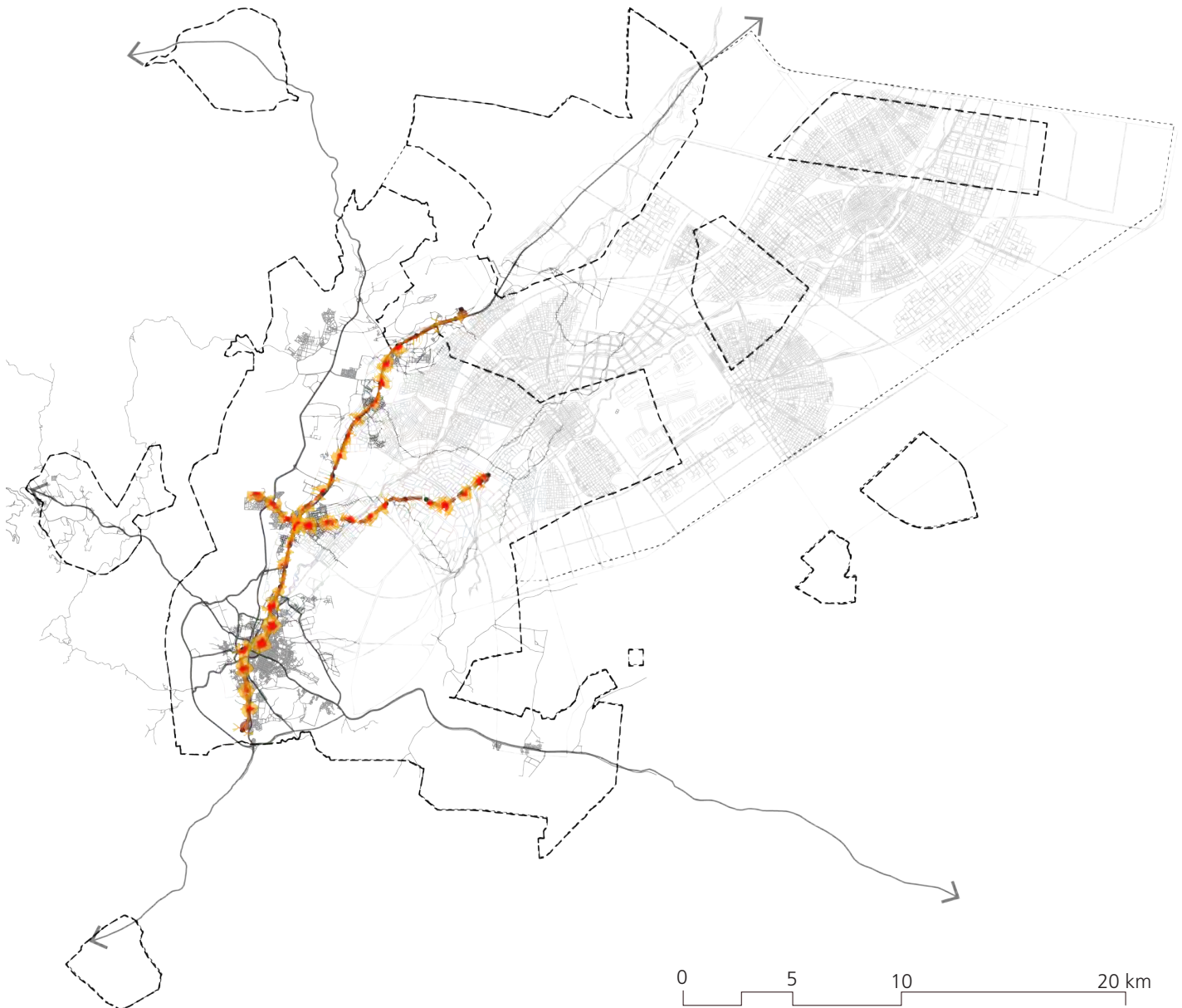
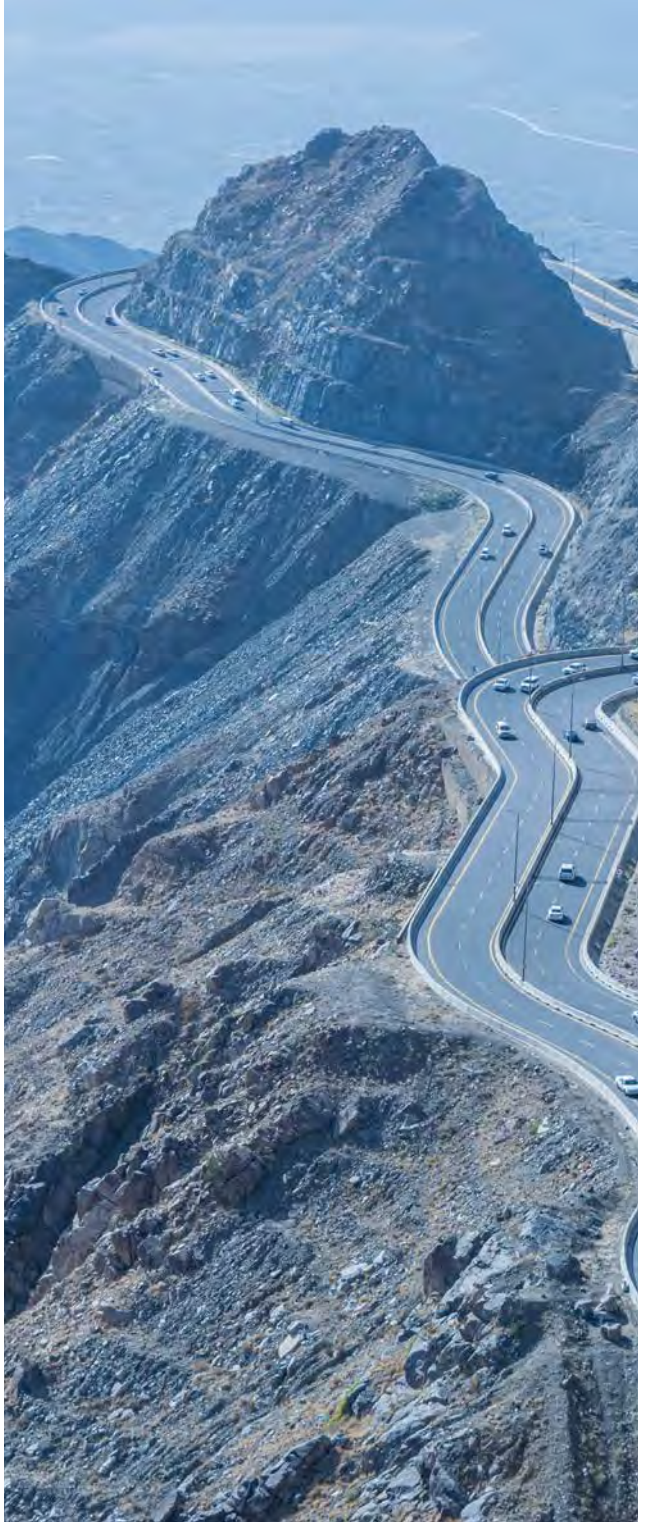


Fig. 71. Proposed accessibility within a 10-minute walk from metro stations

ACTION PLAN 7



7.1 From Strategy to Action

Translating conceptual recommendations into concrete and implementable actions requires a series of incremental solutions to achieve the envisaged spatial, economic, and social transformations.

The Action Plan is based on three strategic recommendations and serves to guide the future planning efforts to ensure a vibrant and prosperous city of Taif.

The Action Plan comprehensively addresses the needs of Taif, touching upon all elements of the city structure: physical, natural, and social. It supports the consolidation of development to create a denser and more compact settlement, investment in new infrastructure to improve connectivity, and lays out a blueprint for expansion in the future through legal and financial frameworks that support these transformations.

Although all four strategic actions target specific interventions, they work collectively towards the overarching vision for Taif:

- **ACTION 1:** Defining a main public mobility network and consolidating nodes;
- **ACTION 2:** Densifying along the transportation network;
- **ACTION 3:** Protecting from infringement; integrating and reconnecting the blue-green systems.

Overall, the Action Plan creates impact at two scales: the urban and the neighbourhood scale. It fosters connectivity and integration by improving transport networks, rebuilding the relationships between different city users, promoting strategic densification, and improving integration of the urban outskirts to the rest of the city.

It supports the retrofitting of natural infrastructure towards multiple purposes, and promotes economic diversification at the neighbourhood scale, suggesting heritage preservation programs for the vernacular and historical settlements.



Reconnecting the green and blue systems



Densification potential along transportation networks in Taif

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7.1.1 Action 1: Defining a main public mobility network and consolidating nodes

The first action addresses the need to restructure the city starting from its mobility patterns. Embracing the proposal for a new public transportation system, Action 1 guides priority settings for its phased implementation, starting with access in the existing city for its citizens. This integrated multi-modal transport network will be able to expand the reach of the public transit system and make the city structure more navigable. Furthermore, it sets the preconditions for promoting an incremental increase of urban density and the creation of new centralities around the emerging major transport nodes. Action 1 can be summarised in the following steps:

1.1. Defining a primary public transportation network

Based on the comprehensive analysis, it is fundamental to reinforce the North-South and East-West connections by implementing a public transport system along these two corridors. The city, over the last few decades, has expanded along this spine and along the road network. A public transportation system, (such as the Bus Rapid Transit, metro, light rail, etc..) with strengthen this axis and give incentives to develop and densify along the corridor.

Phase II of the public transportation system should expand the access towards the East into the New Taif Plan. Moving the proposed line North of the university and protected green recreational facility will also help to create a secondary node on the spine, capturing higher densities of population and creating a more efficient network.

1.2. Consolidating primary nodes

The city should emphasise the nodes in the city centres by focusing development around these centres of activity to maximise access and establish a legible city structure. The node in the historic city centre is well established and hosts a mix of uses. On the other hand, the node to the North needs to be consolidated and redeveloped in order to connect the diverse uses, like the airport, institutional facilities, residential neighbourhoods, and commercial spaces.

Creating a secondary node in between the two city centre nodes that connect to the East towards the New Taif Development will help to reduce the load on the primary centre nodes and create a new centre of activity for potential businesses.

1.3. Establishing a transversal network with a supporting network of nodes

A robust and well-connected system should create intermediate and transversal connections all along the public transportation axes that will increase and improve connectivity. Smaller block sizes with frequent public transit stops will ensure last mile connectivity and encourage a shift from private modes of transport to public ones. To create a more decentralised, multimodal city structure, the city should develop nodes all

along the network at key junctions and intersections to redistribute traffic and activity. Instituting a hierarchy of nodes, ranging from local nodes, neighbourhood level nodes to nodes of the city and regional level will significantly help to create an agglomeration of businesses at frequent and walkable intervals, and well-connected by transit.





Fig. 72. Action 1: Defining a main public mobility network and consolidating nodes

7.1.2 Action 2: *Densifying along the transportation network*

Following the implementation of a public transportation network, the city should start actively promoting transit-oriented development (TOD), incentivising residential densification in the areas with walkable access to public transport. Strategic densification should be applied to selected major nodes to define emerging new centralities by incentivising mixed-use development and concentrations of services and facilities around them. Action 2 can be summarised in the following steps:

2.1: **Densifying along the transportation network**

Activities should be concentrated in areas capitalising on the established transportation hubs/nodes, creating a dense mixed-use urban environment. The transportation corridor is most suitable to create a high-density urban typology attracting people/ residents within walking distance of public transport connections and amenities.

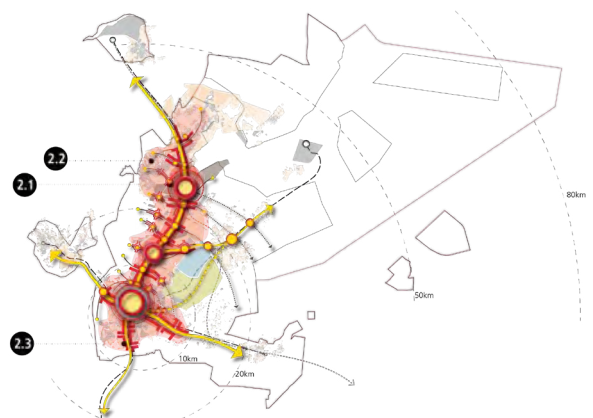
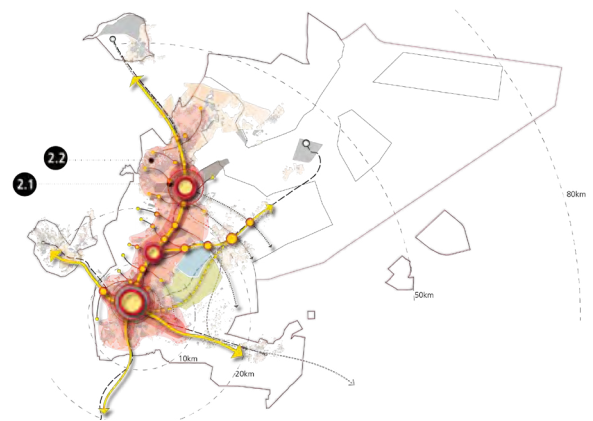
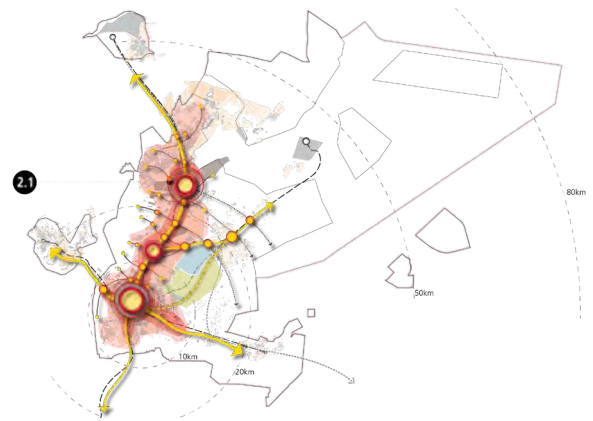
This will alleviate the dependence on automobiles for moving around, thereby reducing traffic, pollution, and improving the overall quality of life. Transit-oriented development will help to create vibrant, livable, and sustainable communities by focussing on housing, employment, and recreational activities within walking distance of public transport.

2.2: **Infilling the vacant developable land within the urban built form**

Vacant developable land and underdeveloped land in close proximity to the transportation infrastructure should be optimised, and new uses introduced, allowing for higher density development. By focusing new development in the interstitial spaces, a more connected and continuous urban fabric will be created. Dense environments within the established city structure should take advantage of the existing infrastructure without putting pressure on the systems to expand their network onto undeveloped land.

2.3: **Encourage mixed-use development along the backbone**

Transit-oriented development along the corridor should maximise the population served by the transit system by allowing intensification of mixed-use development along the city backbone. A diverse mix of uses along the transport backbone will encourage people to walk and bike to nearby amenities, thus infusing the spaces with renewed activity throughout the day. Establishing pedestrian-friendly environments will promote walkability and create a network of well-connected open spaces.



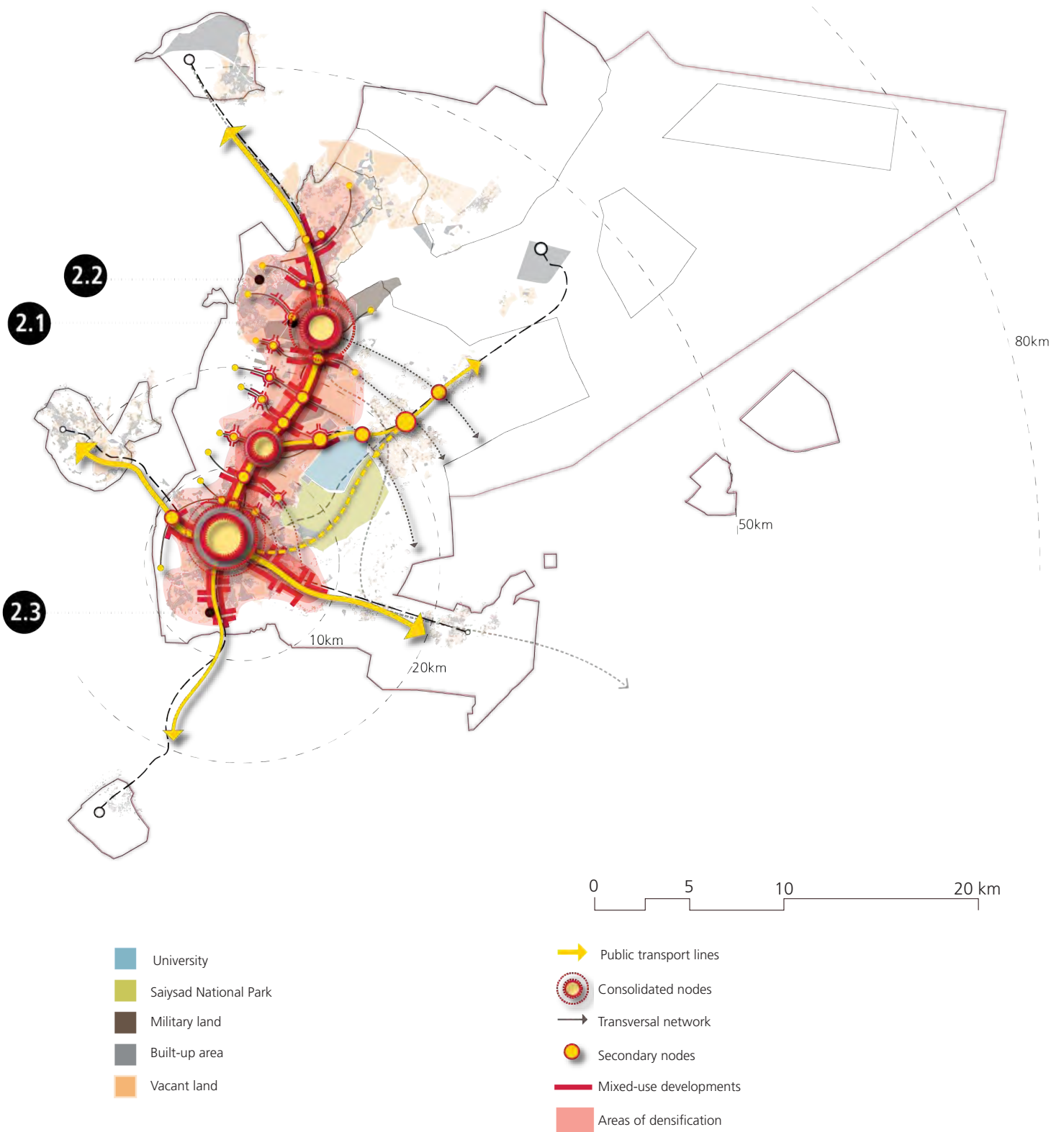


Fig. 73. Action 2: Densifying along the transportation network

7.1.3 Action 3: Protecting, integrating and reconnecting green and blue networks

Action 3 aims to make the city more resilient, more sustainable, and enjoyable for its residents. As such, and in parallel to the strategic densification process of Taif, vacant land will have to be selectively preserved for the creation of green public space, especially in areas subjected to densification.

The natural system of wadis, currently neglected as a structural element in the city's functioning, will have to be naturalised and strengthened, moving towards natural water management systems at the entire urban scale, so as to play a key role in the city's development.

In addition, promotion of urban and peri-urban agriculture along the wadis will gradually support the relinking of green and blue networks, while strengthening food security and resilience. Action 3 can be summarised in the following steps:

3.1: Preserving the blue and green network

The natural blue and green networks should be respected and preserved from the threat of the urban development plans that may engulf and disrupt the natural ecosystems. Plans should follow and allow the land capacities and environmental constraints to guide future development. The New Taif Development Proposal does not take into account the natural ecology of the region and treats the entire plan area as a blank slate, ready for development. The New Taif Development Proposal should prioritise, phase development by attempting to accommodate greater densities closest to the current city as a priority.

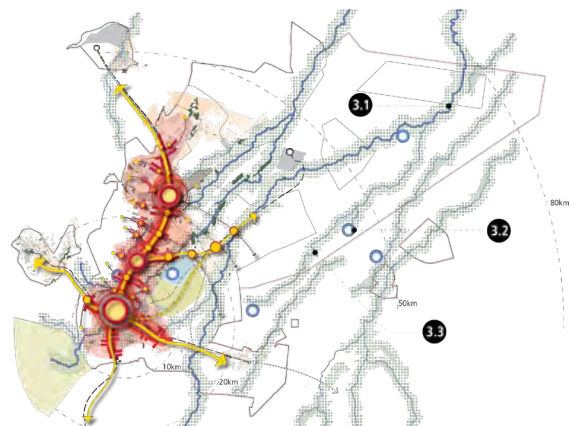
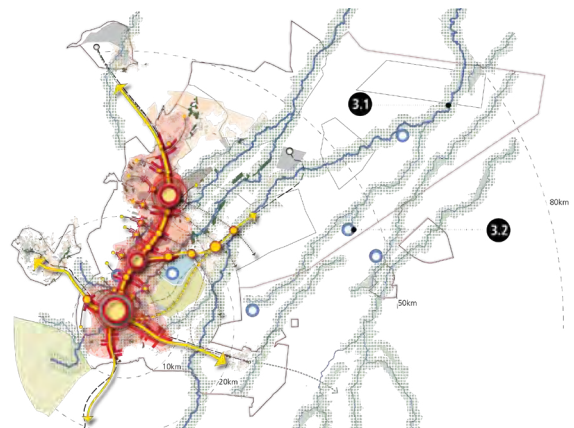
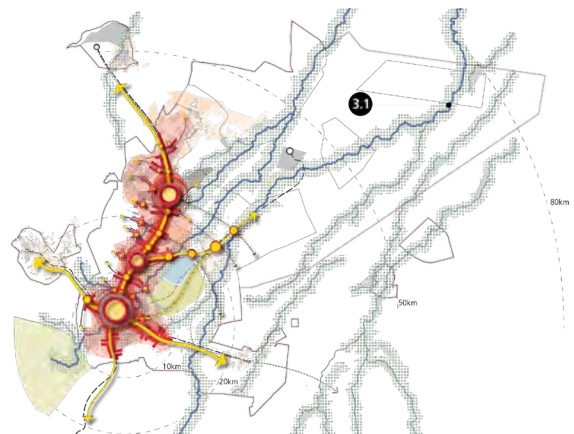
3.2: Re-linking the blue and green network along the wadis

The existing natural blue and green networks in Taif should be respected, rehabilitated, and integrated into the urban pattern. Geography plays a critical role in the economy and urban form of Taif. The natural wadis, if restored to their natural state to a reasonable extent, will boost the economy of Taif and also serve as open spaces for the residents, therefore, significantly improving their quality of life. The proposed New Taif Development should be adjusted to integrate the blue-green network with complementary uses.

3.3: Building water reservoirs and revitalising green assets as urban agricultural public spaces

Creating new water reservoirs to capture the stormwater and rainwater runoff from the slopes will help mitigate floods in the area. The reservoirs should be strategically located at multiple points in the city to disperse and channel the flow of water in monsoon months.

The natural green spaces are an asset and should be conserved and protected from being developed into urban uses. Green infrastructure practices like urban agriculture, community gardens, biodiversity parks, etc., should be encouraged along these belts and will create awareness as well as inculcate a sense of pride and oneness with nature among the residents.



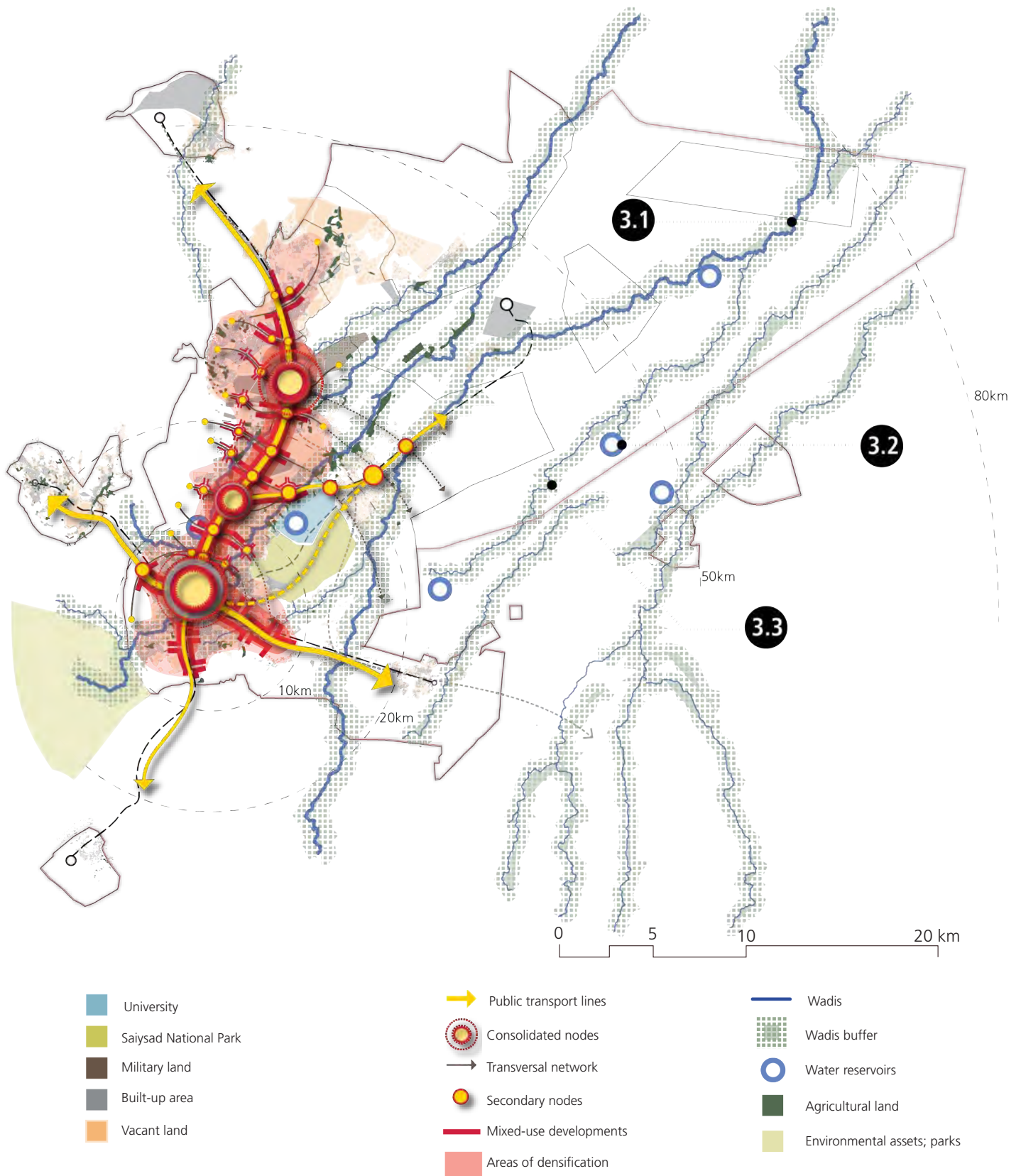


Fig. 74. Action 3: Protecting, integrating and reconnecting green and blue networks

7.2 Three Systemic Actions for Structural Change

The Action Plan presented hopes to incrementally trigger a structural change in Taif, moving away from an unsustainable model towards an integrated, ecological framework for urban development. A sustainable city brings together environmental, social, and economic factors, along with comprehensive urban planning and management efforts for a long-term sustainable society. This implies an integrated approach to sustainable urbanisation that should be based on a holistic view of social development, economic opportunities, environmental management, and governance frameworks.

This integrated approach should entail the coordination of objectives and programmes, among different city stakeholders (e.g., citizens, government, and the business sector), as well as the development of linkages between and within socio-economic sectors and activities. As such, the above-described framework of actions will drive an overall transformation on the spatial, social, and economic fabric of the city. If the steps illustrated in the Action Plan are followed, Taif will manifest the strategic vision into a reality, making the city:

- Compact;
- Connected;
- Inclusive; and
- Resilient.



Balancing mixed-use and open spaces in Taif



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Restoring ecological balance towards a resilient Taif

FINAL RECOMMENDATIONS: THE THREE-PRONGED APPROACH

8



8.1 Spatial Recommendations

8.1.1 A strategic view of the Makkah Region

Taif is poised to play a pivotal role in the future of the Makkah Region, owing to its strategic location in the region, as it is within close proximity to Makkah and the proposed new developments, like the Airport, Souq Okaz, and other centres of regional importance. A new airport and a rail connection to Makkah will bolster Taif's regional significance attracting a high number of tourists and an increase in resident population.

The Makkah Region is characterised by an unbalanced hierarchical system of cities, where Jeddah and Makkah overshadow the other urban centres. If rebalanced, this could create the basis for regional growth, like cities that are well serviced, well distributed, and of varying dimensions have the potential to act as drivers for gradually redistributing development from major to smaller urban centres.

Although giving priority to the scattered and marginalised smaller cities in the region is necessary to improve the geographical redistribution of economic activities, it should not take place at the expense of cities and major urban centres in the region, such as Jeddah, Makkah, and Taif, which are leading high growth rates in the region's economy, as a whole.

The three cities are currently being driven by recent development beyond their boundaries, and are economically interdependent, showing a tendency towards forming a larger conurbation, and possibly denoting an emerging mega-region.

While this expansion is a possible driver for economic growth, if not carefully planned for and managed, it might lead to more uncontrolled sprawl, further regional unbalance, and rising inequalities. This means that planning efforts for the three cities can no longer ignore these spatial and economic dynamics, but rather asking for appropriate consideration as a mega-region urban corridor.

One of the main ways to consider this is to enhance and strengthen the overall connectivity between the three cities. Implementing the suggested metro/train connection between Taif and Makkah can be a strong tool towards achieving that, especially once the planned airport in Taif opens, attracting pilgrims in high numbers on their travels to Makkah.

Diversify the economic base in the region

On the economic front, Jeddah is a key location for advanced economic activity in the region, while Makkah, as a global religious centre, is the main contributor to the regional and national economy for religious tourism. Taif, the only medium-sized city in the region, overshadowed by the two major cities and contributors to the national economy, remains untapped and has considerable growth potential. Taif city has excellent potential as a tourism and leisure centre, being the number one destination for domestic tourism, as it has a more pleasant climate all year round.

By highlighting its cultural and non-religious touristic function, its role within the system of cities in the Makkah Region can be strengthened. Systems of cities are considered to be one of the most important means by which development can be transferred, and there is no doubt that the Makkah Region, in its current condition, suffers from a highly disrupted system of cities. Moreover, over the next 20 years, the total population in the Makkah Region will increase to nearly 10 million people.

That means that it will be increasingly important to provide job opportunities to nearly 2.5 million people, an increase of 1 million from the current number. The real challenge for the Regional Development Plan will be focused on the creation of job opportunities in different economic sectors, that can absorb the expected workforce during this period. It is, therefore, necessary to diversify the economic base in the region, through the introduction of new economic activities and expanding existing activities in selective sectors and areas.

For example, agriculture, and fishing are currently contributing to a very low rate of job creation, as they do not exceed half the national rate of the total employment in these sectors of the region, (at 7.71%). There is no doubt that modernisation of the agricultural sector in areas with comparative advantage in agricultural and water resources, in the smaller cities, especially in the regions of Laith, Qundalfa, Jumoom, and Turba, will have a positive impact in providing new jobs in this sector, and will encourage urban development and settlement in these cities.

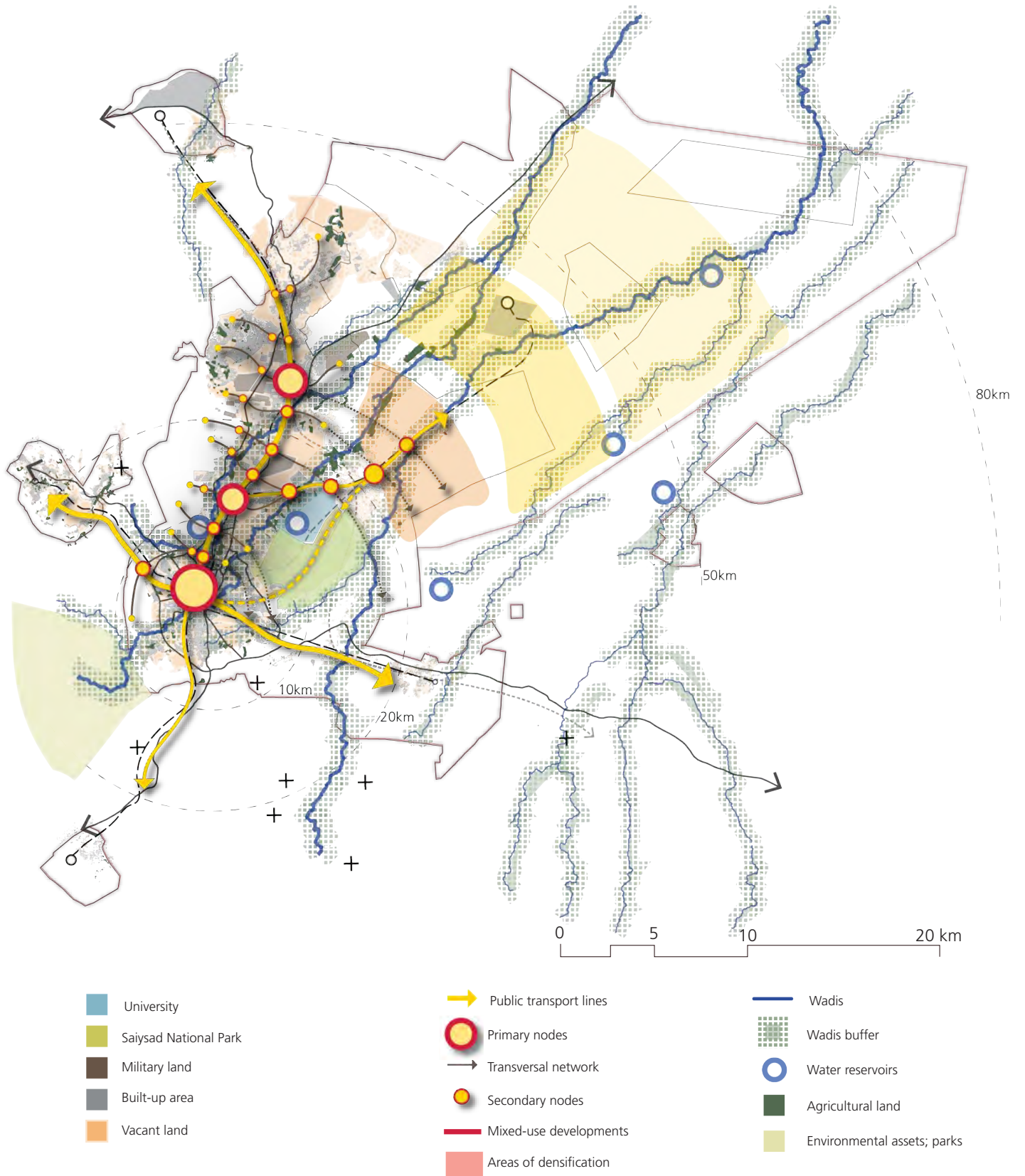


Fig. 75. Action Plan for Taif

8.1.2 Towards Taif, Eco-touristic Agro-City

The strategic vision for Taif, with the actions described in Chapter 7, aims to promote sustainable forms of development with conscientious planning efforts. Therefore, Taif's Action Plan illustrates three basic steps to trigger a structural change, activating an incremental system for spatial modifications to the fabric of the city, which will also modify its social, economic, and environmental structure. By enacting the systemic transformations depicted in the Action Plan, Taif will become more compact, connected, inclusive, and resilient.

Taif Compact City

A compact urban form, with mixed-use nodes, ample public spaces, and a well-connected public transportation network should create a healthy urban environment, and improve the quality of life of the residents. A dense urban form should help optimise resource allocation and equitable distribution of services, like public transportation among the residents of Taif. Infilling the vacant spaces with diverse uses would help reactivate and connect various city centres establishing continuity and infusing the city with vibrancy.

Taif Connected City

The Strategic Vision for Taif envisions a public transportation system that connects the main commercial centres in Taif. Concentrating new development and a mix of uses along this transportation spine should reduce travel times and dependence on personal modes. The public transportation

system combined with the supporting extensive road network, a pedestrian-friendly walking environment should encourage shifts in modal behaviour. The city should also focus on improving last mile connectivity and improving the bus system to extend reach, access, and connections across the city. Active street life, thriving public spaces, and well-connected public transportation systems are crucial elements in creating vibrant urban environments. Mixed-use neighbourhoods would create twenty-four districts that are safe and encourage pedestrian activity.

Taif Inclusive City

For a city to be inclusive, it is fundamental to ensure economic opportunities, equitable access, and distribution of resources, and a variety of uses for a socially diverse demographic. The principal objective of an inclusive city is to promote diversity that in turn enhances social welfare and economic productivity. A multi-faceted economic and spatial structure would support innovation and creativity in Taif. Diverse opportunities would attract talent and varied skill sets leading to socio-economic diversity, which is vital to a dynamic and inclusive city.

Taif Resilient City

Taif, with its dominant fertile lands, natural water features, and suitable climate has been the agricultural centre for the Makkah Region. Rapid urbanisation poses a threat to these ecological systems disrupting their natural capacities and



Women participants at the Taif Workshop

connections. Taif should pursue environmentally sustainable practices to restore and strengthen its natural assets. Protecting the wadis and agricultural lands with green buffers would also help combat climate change, mitigate flooding risks, and tackle the sandstorms. Responsible use and management of the natural resources while encouraging lifestyle shifts to sustainable alternatives would also help Taif transition to a resilient and thriving urban centre. Natural systems that are integrated and protected will inculcate a sense of ecological awareness and respect among the residents to co-exist and care for the environment as an extension of their city.

The strategic vision for Taif will help redefine its identity as an Eco-touristic Agro city by encouraging sustainable growth patterns that are compact, mixed in use, and well connected by transit, while ensuring ecological balance between the built and the man-made features of the city.

8.2 Institutional and Legal Recommendations

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

- The transfer of local planning power, authority and function from MoMRA to the Amanah, 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;
- Fiscal decentralisation, which gives autonomy to the Amanah 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 shortages, 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.



Brainstorming session at the Taif Workshop

Given the property rights pluralism in Taif, the in-force land laws need to be revised to support the development, recognition, and application of the Continuum of Land Rights. The By-Law of Unplanned Settlements of Makkah Region should be updated to incorporate innovative mechanisms that underpin participatory city-wide slum upgrading. Consolidation of the legal planning instruments would also support development intervention of Taif, along with the review, update, and modernisation of these laws to make them relevant 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 laws in the KSA 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. The consolidation of the urban legislation would also give legitimacy to the plans that Taif 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 to not only prevent haphazard development but to also avert private interests from taking advantage of the laxity in the legal text.

These initiatives will strengthen policy formulation designed to make the city more sustainable, compact, and dense. Primarily, post-legislative scrutiny of the UGB Law should be done to assess if it has met its policy objectives. This could, in turn, inform the legal reform process as well as the planning policy options.

8.3 Financial Recommendations

8.3.1 *Own-source revenue instruments*

Under the guidance of the Vision 2030, the KSA began implementing a series of reforms meant to strengthen public finance by diversifying public revenue, introducing new tax mechanisms, improving tax administration, and attracting private investment.⁴³ In addition to improving local finance and economic dynamism, the reforms were also meant to support the implementation of the New Urban Agenda (NUA) by fostering inclusive, sustainable, and equitable local financial and economic frameworks through progressive tax policies and own-source revenue generation⁴⁴.

One example of these reforms is the WLT, introduced in 2015, which requires owners of empty urban plots designated for residential or commercial use to pay an annual tax of 2.5% of the land value. The goal of the WLT is to:

- Promote real estate development that addresses supply shortages in the region;
- Increase the availability of land for affordable housing developments;
- Safeguard competitive markets and minimise monopolistic practices;
- Increase local revenue generation.

Thus far, the WLT has been adopted in the cities of Riyadh, Jeddah, and Dammam and applied to 10,000 m² of urban land. In addition to improving the own-source revenue base of these three cities, reforms such as the WLT support the framework for sustainable urbanisation introduced in the New Urban Agenda (NUA). In the case of Taif, a policy aimed at deepening and diversifying own-source revenue should consider socio-economic and demographic factors, such as the population growth rate, population density, and urban sprawl. Additionally, policies that foster the production of agricultural products should be part of Taif's own-source revenue enhancement strategy and may provide economic opportunities into agricultural value-added products and industries, such as the flower market.

Taking all of these factors into consideration, financing instruments that mobilise local financial resources and accommodate the long-run trajectory of municipal expenditures are crucial to supporting local public finance and sustainable urban growth. Hence, exploring own-source mechanisms through land-based taxation, among others, will be a crucial part of achieving the objectives put forth in the NTP.

Land-based taxation is supported by a large body of evidence from a diverse set of countries. In particular, capturing the value created by new infrastructure projects, zoning changes, and/or infrastructure upgrades, through land-value capture

THE IMPACT OF INFRASTRUCTURE DEVELOPMENT ON LAND VALUE

Case examples	Key findings
London, England	The Crossrail Property Impact Study (2012) estimated that capital values in the areas around central London Crossrail stations would rise by 35% for residential properties and 27.5% for office properties; outperforming the baseline projections.
Dubai, United Arab Emirates	The impact of public transportation on property values for dwellings and commercial properties is about 13% and 76%, respectively, within an area of 1.5 kilometres
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%
Bogotá, Colombia	Research suggests that for every additional 5 minutes of walking time to a public transportation station, rental prices fell by 6.8 - 9.3%

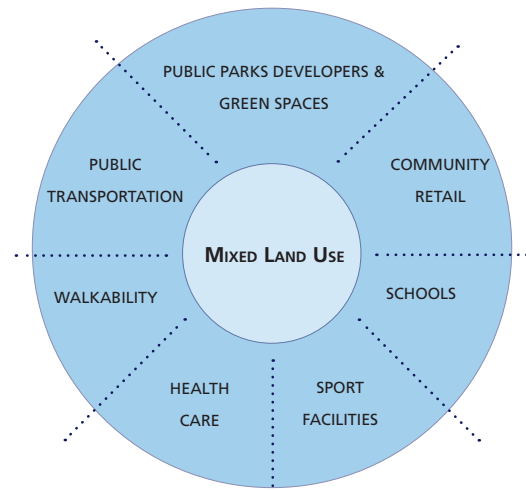
Source: GVA (2018); Mohammad et al. (2017); Colliers International (2017); Rodríguez and Targa (2004).

Fig. 76. Impact of infrastructure development on land value

has proven to be effective in mobilising local revenue. Land-value capture is based on the idea that individuals, businesses, and landowners in the adjacent areas that benefit from government and/or private investment in infrastructure (e.g., roads, railway, industrial infrastructure, schools, and hospitals) benefit from the land value increase resulting from these types of public infrastructure projects.

Land-based financial instruments are particularly well suited to Taif where the increasing demand for and on public infrastructure is creating opportunities to introduce land-based taxation tools. One land-based tax mechanism is betterment levies⁴⁵. Betterment levies is an effective financing instrument that enables the cost recovery of large capital investments. In addition, betterment levies are tailored to the type of infrastructure and mixed land use plans for Taif proposed by UN-Habitat. In practice, betterment levies would enable the municipal government of Taif to capture a percentage of the additional value created by public infrastructure development projects, and land use changes that accrue to landowners and other beneficiaries.

Adopting and enforcing betterment levies requires that municipalities remain transparent, accountable, and in communication with the public regarding the use and effectiveness of the betterment levy.



Source: United Nations Human Settlements Programme (2018).

Fig. 77. Mixed land use components

KEY FACTORS IN DESIGNING BETTERMENT LEVIES

Determining land value capture objectives

- Revenue targets based on either (a) a percent of infrastructure cost or (b) a percent of the increase in land value
- Betterment levies are a good option for scenarios involving public transportation and waterfront development
- Data on changes in land value and efficient tax administration are critical success factors

Timing and collection of payments

- Payments collected:
- Upfront, as with developer infrastructure is built
 - Annually, as with an increment to local government rates
 - At the time the property is sold
 - Consideration should be given to whether there are negative financial consequences for landowners who may not have the capacity to pay a levy or who are asset rich, but income poor.
 - The government might consider only requiring the levy to be paid when a property is sold or transferred.

Application of the Levy by Land Use Groups

- Real estate developers
- Commercial landowners
- Residential landowners
- Application of the levy should be determined using the beneficiary-pays principle.
- If it can be demonstrated that benefits will flow to specific types of property owners, then there is a strong case to include them in the land value mechanism design.

Application and Boundaries of Levy

- In Dammam, land value benefits are maximized for a 1.5 kilometres area with a walking catchment for public transportation.
- This benchmark is given supported by other cases (e.g. Dubai, London, Bogotá) and will require additional analysis focused on project specifics.

Setting the Rate

- The rate structure is variable and is determined on a case-by-case basis
- The choice of rate structure will need to reflect the choice of who to tax and the revenue base selected.
- In Dammam, the base is related to the percent of land value increase.

Governance structures for Land Value Capture

- Various existing legal instruments that could be used for the purpose of supporting value capture tools
- Regulation of new area-specific levies associated with infrastructure projects or urban planning
- Selecting the right legal instrument reduces the potential for unintended consequences
- KSA and, specifically, Dammam currently use land value capture mechanisms
- Lessons learned from current instruments (e.g. White Lands Tax) can inform the selection and implementation of appropriate legal instruments that support land value capture instruments.

Source: Youngman, J.M. (1996). Tax on land and buildings. In Thuronyi, V., (Eds.) Tax law design and drafting. International Monetary Fund. Washington, DC.

Fig. 78. Key factors in designing betterment levies

**COST-BENEFIT ANALYSIS FACTORS
IN LAND-BASED FINANCING**

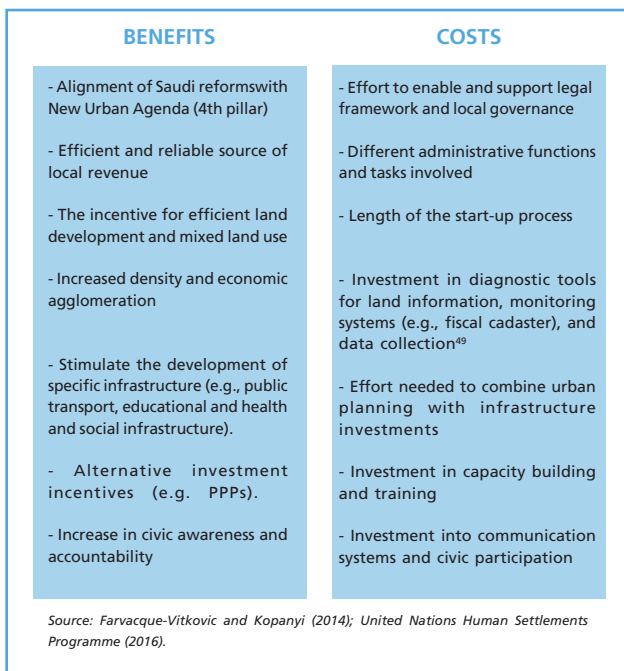


Fig. 79. Cost-benefit analysis factors in land-based financing

In addition, local governments should analyse the costs and the benefits of various types of land-based financing tools. Conducting a thorough cost-benefit analysis will enable public officials to develop proactive solutions, anticipate potential issues and bottlenecks, and seize opportunities. Figure 79 shows some of the factors that local governments should consider when conducting a cost-benefit analysis of various land-based financing instruments.

8.3.2 Leveraging urban productivity

Harnessing the economic and own-source revenue potential of Taif will foster development in a diverse set of agricultural, (e.g., cut flowers) and manufacturing industries. In addition, investment in public infrastructure opens the door to improving the accessibility, density, and mixed land use of cities. One way in which urban productivity can be enhanced is through the use of PPPs. PPPs are effective financing tools that facilitate public-private sector engagement. In PPPs, the private sector can provide the public sector with much-needed expertise in the provision of high-quality public goods and services.

In Taif, agriculture, tourism, and manufacturing sectors industries would benefit from collaboration with the private sector. Moreover, PPPs can help drive economic innovation and diversification into value-added industries, improve product marketing, and reduce coordination costs among trading partners. It is important to note here that a crucial input into supporting the development of the workforce, especially in specialised fields, is education. Sustainable urban development, therefore, must include policies that support public education.

Saudi Arabia has already taken steps to support PPPs. The KSA established a Public-Private Partnership body, the National Centre for Privatization, hosted in the Ministry of Economy and Planning. PPPs in Taif could be a powerful financing tool for transportation, tourism, and industry to (1) increase land values through development projects, (2) enhance own-source revenue, (3) efficiently operate and manage public services, (4) create opportunities for collaboration with the private sector on publicly funded projects and services, and (5) attract national and international investment.

Besides, private capital can support cities such as Taif in reaching a variety of development needs through the (1) development of vacant land, (2) increased population density, (3) enhanced local revenue, (4) reduction in municipal dependence on intergovernmental transfers.⁴⁶ Several tax instruments are available to local governments interested in expanding own-source revenue.

Municipal governments can maximise the benefits of these tax instruments, (especially PPPs) by:

- Coordinating and collaborating with different levels of government to connect national strategies with local priorities. For example, establishing a local liaison office, or a local PPP unit linked to the National Centre for Privatization in charge of proposing, implementing, and monitoring PPP projects;
- Investing in capacity building and improving tax administration. The success of PPP projects is strongly correlated with the ability of officers to manage three strategic phases: (1) feasibility, (2) procurement, and (3) delivery and monitoring;
- Using a comprehensive approach. PPPs should be focused on linking infrastructure investment and land development and, thus, maximising benefits that correspond with mixed land use;
- Generating a diverse portfolio of income streams tailored to local needs. Indeed, sprawling and urban mobility behaviour needs to be faced by the government for the sake of increasing density and reducing the massive vehicle dependency of Saudi citizens for mobility⁴⁷. In this instance, impact fees might be suitable instruments to constrain sprawling, and in generating additional revenues for local government⁴⁸. In parallel, new parking fees and congestion fees are highly recommended to increase the use of public transportation and, consequently, the profitability of investment for the private sector.

Lastly, coordinating planning, legislation/regulatory frameworks, and municipal finance is crucial to creating the conditions necessary for sustainable urbanisation and economic, development as outlined in the New Urban Agenda.

CASE STUDIES AND BEST PRACTICES

WASTE MANAGEMENT

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.

CONGESTION FEES

Congestion fees reduced traffic in central London by 26% from 2002 levels, generating £122 million net in 2006. Thanks to the introduction of the Ecopass as cordon-pricing scheme in Milan city centre, the traffic was reduced by 16.2% in 2011. The resulting annual revenue was of € 5.905 million. The implementation of the Area Licensing System (ALS) in Singapore reduced traffic volume from 12,400 vehicles to 7,300 vehicles. Revenues from the sale of area licenses amounted to USD 47 million.

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.

PUBLIC-PRIVATE PARTNERSHIPS

In Vancouver, greenhouse gases emitted from the city's landfill are managed and operated by a private company that transforms the gas emissions into useable energy for the city. The municipal government requested that the private company selected to be responsible for designing, building, operating, and financing the project. Heat generated from the city's waste is recovered and used by village farm greenhouses to produce vegetables and to heat the landfill's administrative and maintenance buildings.

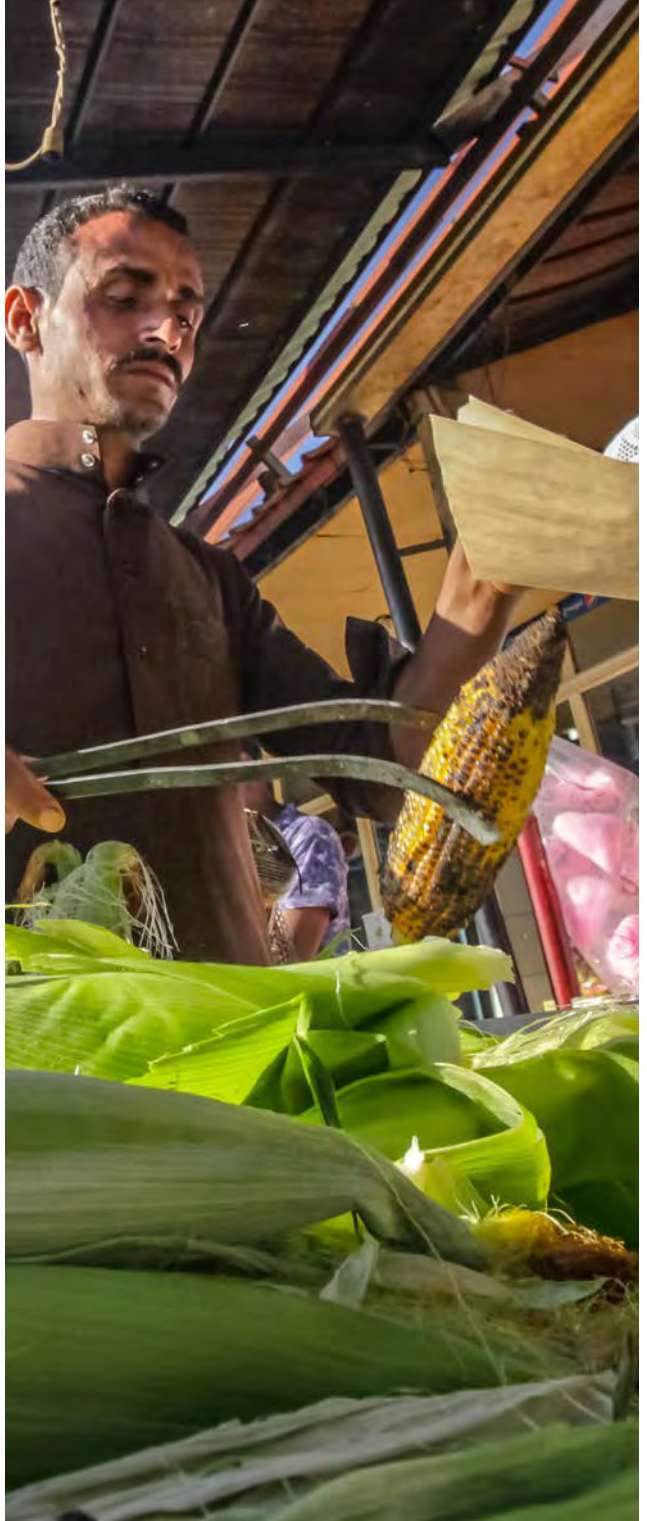
INDUSTRIAL DEVELOPMENT POLICY

In Ecuador, flower market is great contributor to the economy, making the country the third largest exporter of cut flowers, 73% of which are roses. US is the biggest market (88% of export). The business turnover of the market is around USD 837 million, employing more than 103,000 people. The factors that have been driving the success of Ecuadorian flower market are related to Government support and labour regulation, export oriented policy and innovation.

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. The Canadian Council for Public-Private Partnerships, & PPP Canada (2011). *Public private partnerships: a guide for municipalities*. The Canadian Council for Public-Private Partnerships. *Financial Times*. Retrieved from <https://www.ft.com>

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9.3 Notes and References

- 1 City Prosperity Index, 2016
- 2 Taif Development Plan final report - Prepared by AECOM for Taif Municipality and Consortia - Dec. 2012
- 3 It is the only regulation/bylaw in the Kingdom for the development of unplanned settlements. This law was submitted by the Regional Prince of Makkah for approval by the King. It was approved as a Royal Decree No. 9002 on 9/10/1428H (21/10/2007).
- 4 It is headed by the Regional Prince. Involved Ministries include Ministry of Finance, Ministry of Interior and MoMRA.
- 5 It has a more flexible composition as it is composed of the technical members working in the Finance, Interior and MoMRA Ministries.
- 6 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.
- 7 The continuum approach, as advocated for by UN-Habitat GLTN, works with what is already in place and incorporates it into a land information management system. It caters for the whole spectrum of formal, informal and customary land rights in a given country.
- 8 The planning system in Saudi is not formalized and therefore there is lack of consistency in the naming of plans across the cities. Normally, the strategic component is labelled as the Comprehensive Plan or Structure Plan but in the context of Taif, it is referred to as the Directive Plan or Indicative Plan. Similarly, what is commonly referred to as the Local Plan, is called the General Plan in Taif.
- 9 According to Article 7 and 8 of Regional Law, the Minister of Interior chairs the meeting with all regional Amirs to discuss issues affecting each region and the general services required.
- 10 UN-Habitat Workshop in Taif 2018
- 11 The areas with unplanned settlements are 38. Comprehensive studies and plans have been made for six areas. These documents are awaiting the certification of the Amanah to be operationalised.
- 12 Royal Decree No M/4 dated 24 November 2015 (the "Law") and Council of Ministers Decision No. 377 dated 13 June 2016 (the "Regulations").
- 13 Information sourced from the Makkah workshop, March 2018.
- 14 Royal Decree of 1975.
- 15 See Article 5 of the Law of Regions to Royal Order No. A/92 (1993).
- 16 UN-Habitat Workshop in Taif 2018
- 17 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.
- 18 See *ibid* n.15, Article 23.
- 19 This department is supported by the City Planning Department at MoMRA.
- 20 UN-Habitat workshop in Makkah 2017.
- 21 The National Urban Observatory is situated in the Department of Urban Studies, MoMRA.
- 22 UN-Habitat Workshop in Taif 2018.
- 23 It is acknowledged that there is a conflict of interest as the Development of Makkah Region Authority is a board member of the Al Balad al Al Ameen Company. This also explains the duplication of roles by these two institutions.
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