“Wise Cities” in the Mediterranean?

Challenges of Urban Sustainability

Eckart Woertz (ed.)

SciencesPo
KUWAIT PROGRAM

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CONTENTS

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INTRODUCTION: "WISE CITIES" IN THE MEDITERRANEAN"

Eckart Woertz

CIDOB and Kuwait Chair at Sciences Po (Paris)

"If mayors ruled the world" politics would be more pragmatic, solution-oriented and less polarised, the late Benjamin Barber argued in his famous book of the same title (Barber, 2013). Some of his assumptions were daring. Cities are hardly without issues such as lack of accountability or inequality, they depend on national decision-making in crucial policy areas such as migration, trade, and financing, and they have natural capacity limitations when it comes to foreign policy. Yet the days when international relations were the exclusive remit of high politics are over. Municipal and metropolitan actors play an increasing role, whether it is climate change mitigation, Track II diplomacy, educational initiatives, or the accommodation and integration of refugees and migrants.

Cities are home to over half the world's population, consume a majority of its resources and cause a large share of its waste. Cities are both a challenge for global sustainability and crucial for its solution. Their settlement density and networks of creativity provide the space and the ideas for improved resource management (Glaeser, 2011). Above all they epitomise the needs and aspirations of their citizens. They are spaces of longing and belonging with promises of social equitability, individual freedom, and political participation.

Over a dozen think tanks from around the world launched the Wise Cities research and action platform in 2016.[1] It builds on existing concepts of city planning and management such as "sustainable city", "green city", "eco-city", "ubiquitous city" and "smart city", but adds non-technocratic angles that are inspired by citizenship, such as socioeconomic development, political participation and cultural diversity (Coll, 2016).

Cities on the southern and northern shores of the Mediterranean are among the oldest in the world and can draw on rich traditions of architecture, urban development and municipal administration. Yet, there are fundamental differences between these cities. Mega-cities like Istanbul and Cairo grapple with different challenges than medium-sized cities along the Côte d'Azur that have higher per capita incomes and better infrastructure. Cities in the north of the Mediterranean also

1. For further information see http://www.wisecities.barcelona/. Partners in the think tank network are: Barcelona Centre for International Affairs (CIDOB, coordinator), Agencia de Cooperación e Inversión de Medellín y el Área Metropolitana (ACI), Centro Studi di Politica Internazionale (CESPI), EU-Asia Global Business Research Center, Ecologic Institute Berlin, Gateway House (Indian Council on Global Relations), Getulio Vargas Foundation (FGV), Gulf Research Center, Institute for Advanced Sustainability Studies, IASS Potsdam, Institute for Housing and Urban Development Studies, Erasmus University Rotterdam, Istanbul Policy Center (IPC), Lagos Business School (LBS), OCP Policy Center and Yonsei University. Collaborators include the Metropolitan Area of Barcelona, Barcelona City Council, Milan City Council, UNDP ART and UCLG - United Cities.

have stronger traditions of municipal self-governance and autonomy (Le Galès, 2002). In some cities of the southern Mediterranean mayors are more akin to appointed civil servants with limited fiscal space and decision-making power, while in many cities of the northern Mediterranean they are elected politicians with the freedom, funds and mandate to formulate municipal initiatives of their own.

The days when international relations were the exclusive remit of high politics are over. Municipal and metropolitan actors are playing an increasing role.

Some of these differences are embodied in architectural designs and urban morphologies. The medieval oriental city stresses privacy in ethnically segmented living areas with splendid courtyards, but sober and windowless facades. Meanwhile the public realm (e.g. mosque, souk) is controlled by autocratic rule. In contrast, the divide between public and private is not as clear-cut in cities in the north, which have more public spaces (e.g. forum, agora, town hall) as an expression of their traditions of constitutional government and municipal autonomy (see Wirth, 2000/2001, and the chapter by Anton Escher and Marie Karner in this volume). In the 19th century colonial cities with right-angled street grid patterns were added to the urban geography in the southern Mediterranean, housing new centres of administration, commerce and education (Lees, 2015). The post-war decades would see the sprawling expansion of suburbs and dormitory cities on both shores of the Mediterranean. This expansion has been often informal (not only in the south of the Mediterranean), sometimes followed by later legalization and connection with electricity grids and other public utilities.

In recent decades modern Dubai-style urbanisation has developed in the Gulf with vast car-centred traffic arteries, signature buildings, corporatised value chains and gated communities in bespoke real estate developments, inspiring copycat projects of luxury real estate in Mediterranean cities such as Beirut, Cairo and Tangier. The resource inefficiency of such agglomerations, limited public spaces that are commercialised and securitised, the spatial manifestations of social segregation and discontent and the neglect and non-integration of architectural heritage has led to soul-searching about the adequacy of such urbanisation models and their underlying motivations (Kanna, 2011; Al-Nakib, 2016; Menoret, 2014). Cities struggle to integrate their architectural heritage in sustainable adaptation processes, oscillating between preservation romanticism and bulldozer runaway modernisation. They are also facing the challenge of interacting more equitably and sustainably with their hinterlands, from where they receive migrant populations and on which they rely for the provision of vital services (see Max Ajl's chapter in this volume).

Housing and urban networks are at the heart of the urban fabric. Real estate is a means to protect and legalise the monetary flows that are created by the urban economy and the flow of rents (location rent, sinecure and monopoly rents) that are used by elites to foster political alliances in limited access systems (Lorraine, 2017). Cities in the southern Mediterranean have a large share of informal housing and struggle with the poor quality of urban services, such as electricity, water and waste disposal. Violence tends to be more prevalent than in rural settings. In limited access systems, the formal institutions serve people unequally and second-rank institutions play a crucial role in the development of large projects. Self-organised informal neighbourhood initiatives (e.g. for housing, waste disposal or cleaning) form a third pivot of urban governance in these cities.

It is a matter of debate whether the current urbanisation drive in developing countries and emerging markets can be interpreted as a positive developmental process or not. Doug Saunders argues that the Global South will become largely urbanised over the 21st century, undergoing processes that are similar to the urbanisation history of the West in the 19th century. Now as then rural migrants are drawn by the economic pull factors of the "arrival city" on whose outskirts they settle. They gradually acquire urban equity and maintain a mutually beneficial relationship with their rural origins by providing investments (e.g. second homes, tourism, agriculture) and helping newly arriving relatives to start out on their own (Saunders, 2010). In contrast, Mike Davies sees such sprawling agglomerations as symptoms of a "planet of slums": dumping grounds for the permanently redundant of the post-industrial age, without a real development perspective. Rather than pull factors he sees push factors as major causes of Third World urbanisation, such as violent conflict and the deterioration of state power in the rural peripheries in the wake of structural adjustment (Davis, 2006). Both arguments reverberate in some chapters in this volume. While Farida Naceur and Fatiha Belmessous' chapters examine the role of family networks in the administration of informal housing areas and the integration of new arrivals from the countryside in the city of Batna in Algeria, Julia Bello-Schünemann discusses the detachment of urbanisation in Sub-Saharan Africa from traditional development aspects such as industrialisation and improved service provision.

Mediterranean cities share some of today's most common urban challenges, such as environmental degradation, growing inequality, climate change, provision of services, mass urbanisation, migration...

For all their differences, Mediterranean cities share some of today's most common urban challenges, such as environmental degradation, gentrification and growing inequality, climate change, provision of services, mass urbanisation, migration and the fourth industrial revolution, just to name a few. Against this backdrop, the Kuwait Chair at Sciences Po, in cooperation with CIDOB, the Barcelona Centre for International Affairs, organised the conference "'Wise Cities' in the Mediterranean? Challenges of Environmental and Social Sustainability" in March 2018. With the generous support of the Kuwait Foundation for the Advancement of Science (KFAS) the policy-oriented conference brought together academics, city planners, policymakers and representatives of NGOs and international organisations. The discussion centred on alternative pathways for urbanisation, better engagement of citizens, and the localisation process of the UN Sustainable Development Goals (SDGs). Moving beyond the large metropolises, the discussion also examined the specific challenges of smaller towns and "second cities" that are not necessarily capitals of their respective countries, but have their distinct economic and cultural dynamics (e.g. Alexandria and Barcelona). Views from neighbouring regions such as the Gulf and Sub-Saharan Africa also formed part of the conference. The contributions to this volume reflect the diverse backgrounds, experiences and expertise of the conference participants. They are meant as a starting point for a necessary debate on the social and environmental sustainability of urban growth in the Mediterranean and beyond.

Conceptual issues

Josep M. Coll of EADA Business School and CIDOB in Barcelona starts out by making the theoretical case for "Wise Cities". Technocratic paradigms like the "Smart Cities" concept have their merit, he argues, but they need to be complemented by a socioeconomic and environmental component.

Technocratic paradigms like the "Smart Cities" concept need to be complemented by a socioeconomic and environmental component.

"The right to the city" of all its inhabitants can be compromised by social exclusion, lack of political participation and environmental pollution. The fourth industrial revolution with its new quality of automatisation and despatialisation offers opportunities, but also entails threats to the social fabric of the city if its potentials are not realised within new social policies. These will require pre-distributive, not just redistributive measures. Coll takes a closer look at three examples of how initiatives can make cities more liveable, equitable and "wiser", such as basic income provisions, the maker movement and child-friendly urban initiatives.

Anton Escher and Marie Karner of the Johannes Gutenberg University in Mainz give a historical overview of Mediterranean urban development and the evolving approaches to heritage preservation since the 1970s. By analysing the repurposing of historic medinas in Tunis, Fez, Marrakech and Byblos they argue against "romanticised ideas" of preservation of traditional quarters that risk creating historically accurate but sterile open-air museums. Instead, they plead for a "living heritage approach" that enables communities to maintain their original connection with the respective architectural sites in changing economic circumstances. This can include physical modification via conversion, touristification and adaptive reuse. Escher and Karner argue that "Instead of counteracting inevitable processes of gentrification, festivalisation, commodification, Disneyfication and digitalisation, authorities should acknowledge and control them as new dimensions of future-oriented planning".

Borja M. Iglesias, founder and CEO of the Network for Strengthening the Informal City (NSIC) and a consultant to the intercity network United Cities Local Governments (UCLG), uses geospatial data to highlight the key role of intermediary cities in developing Wise Cities agendas in the Middle East and North Africa (MENA). He differentiates three different kinds of urban systems: (1) coastal and inland regional corridors, such as the Gulf coast from Al Fujairah upwards to Kuwait, (2) metropolitan clusters such as Istanbul and Cairo, and (3) enclave economies that are integrated in international networks, such as Didim in Turkey, but also Mekelle in Ethiopia, which he includes in his analysis because urban systems in the Horn of Africa and Ethiopia play an increasing role in the maritime trade flows in the Gulf of Aden towards the Mediterranean. Intermediary cities have accounted for much of the urban growth in the wider region, especially the Turkish corridor of Çanakkale-Izmir-Antalya-Gaziantep, the port cities in the Red Sea that connect with the Mediterranean Basin through the Suez Canal, the Gulf coastal corridor, the enclave economies in the Gulf of Aden basin (which have opened landlocked rural economies such as Ethiopia to the sea) and the Maghreb coastal corridor between Sfax in Tunisia and Tétouan in Morocco. In contrast, population numbers in northern Mediterranean cities mostly trend sideways, but do not register demographic decline like cities in eastern Europe because of migration dynamics. Iglesias argues for improved rural-urban linkages and an upgrading of intermediary cities in urban planning agendas compared to overcrowded metropolitan areas.

Wolfgang Schuster, chairman of the Deutsche Telekom Foundation and the European Foundation for Education, and former mayor of Stuttgart, analyses the importance of education in employment generation and the integration of new migrants into the city. After outlining major contemporary challenges facing cities such as globalisation,

digitalisation, climate change, and demographic issues, he highlights the crucial role that cities have to play in the localisation and realisation of the Sustainable Development Goals of the UN Agenda 2030. Integrative urban societies that cope pro-actively and innovatively with the constant change of knowledge-based economies are at the heart of Schuster's argument. He makes the case for a "dual" education system that better links theory and practice and includes vocational training. He takes an in-depth look at the EDU-LAB project in the Danube Region, which could provide some suggestions for other regions such as the Mediterranean, and concludes with a set of policy recommendations for "Wise Cities" in the Mediterranean.

The current UN practice of "warehousing" refugees in camps is detrimental to their integration in receiving countries.

Environmental sustainability

James A. Russell of the Naval Postgraduate School in Monterey warns of environmental risks to cities in the Mediterranean. Climate change and sea-level rise could lead to flooding, declining agricultural productivity and diminished freshwater availability as saltwater seeps into coastal aquifers. Environmental refugees will likely exacerbate already existing migration pressures that are a result of war and political instability in countries such as Syria, Iraq, Yemen and Libya. Cities in the south and north of the Mediterranean will need to adapt existing infrastructure and build new ones to accommodate such migration flows, facilitate integration and manage security risks. Russell warns that the current UN practice of "warehousing" refugees in camps is detrimental to their integration in receiving countries. He points to examples of Smart Cities planning and participatory projects of urban design at the annual Burning Man festival in the desert of Nevada that could provide inspiration for more inclusive solutions. Ultimately, the organisation of city planners would need to move away from "principles of centralised authority, hierarchy and institutionalism" and see urban spaces "in holistic terms as complex social, physical and cultural ecosystems" that can facilitate "cultural assimilation, self-governance and relative economic independence".

Both the Paris Agreement of 2015 and the Quito New Urban Agenda have stressed the importance of cities in climate change mitigation. In this context Eric Verdeil of Sciences Po analyses energy transitions to renewable energies and their urban governance, using Beirut, Tunis, Sfax, Amman and the UAE as case studies. On a per capita basis, many cities in the MENA region belong to the largest emitters of greenhouse gases. Yet climate policies play a subdued role in politics and policy formation. Dubai, Cairo and Amman are the only MENA cities that are part of the C40 Cities Climate Leadership Group network. Revenues from oil and gas exports and domestic energy subsidies play a central role in the social contract of local rentier and semi-rentier states. Energy exporters in the region are worried about low hydrocarbon prices and skyrocketing domestic demand that could compromise export capacity. The fiscal effects of high energy prices that can drain public coffers via growing energy subsidies is another concern, even more so for the net-importing countries of the region. In both cases the main focus remains production of and tariffs on traditional hydrocarbons. States are reluctant to give up control over these issues while cities have no real autonomy and hardly figure in national energy debates. The main driving

forces for renewable energy transitions are not climate policies, but the improved economics of solar panels and their possible contribution to diversification of domestic energy consumption. Such diversification is a predominant concern, as rolling blackouts have become a common occurrence in many cities and domestic hydrocarbon subsidies weigh on public finances.

Both the Paris Agreement of 2015 and the Quito New Urban Agenda have stressed the importance of cities in climate change mitigation.

Olgu Okumus of the Union for the Mediterranean (UfM) in Barcelona shows how regional and international cooperation in the Mediterranean can support cities' efforts in renewable energy transitions. She analyses the relevant regulatory frameworks and subsidy systems and points to necessary areas of reform. Energy tariffs in the region differ hugely and are not necessarily correlated with GDP and other development indicators. Depending on the consumption bracket they are over three times higher in Morocco and Jordan than in Egypt and Algeria for example. Okumus concurs with Verdeil that renewable energy transitions in the region are "more considered an opportunity to attract investments than a paradigm change in resource management". Future success will depend on overcoming capacity challenges, especially the limited authority of municipalities in decision-making and their lack of technical and human resources.

Social sustainability

Max Ajl of Cornell University investigates how the overcrowded city of Tunis connects with its hinterland and what lessons can be drawn from this for urban development. Cities should not be treated as territorial boxes that are somewhat isolated from their surroundings – surroundings on which they depend and from where many of their recent inhabitants are arriving. Ajl cautions against a false dichotomy that juxtaposes a "natural" exterior (the rural countryside) with the "social" interior (the city), where trade-offs between the two would occur somewhat naturally in terms of environmental damage and developmental gains. He outlines consecutive waves of rural migration to Tunis that go back to the 1930s and links them to capital-intensive agricultural modernisation and the land tenure regime. A considerable part of this migration went abroad – to the Gulf countries and Europe – as limited industrialisation in Tunisia provided only a few decent formal sector employment opportunities. Yet enough people stayed in the city, which now grapples with increased congestion and environmental impact. Rather than taking rural migration flows as given, Ajl suggests making the countryside more attractive and decentralising urban settlements. To this end he suggests policy steps such as land reform, the creation of a larger internal market via industrial policies, changing terms of trade in favour of agricultural producers and providing small farmers with preferential loans.

The FAO estimates that food supplies need to increase by 70% by 2050 to meet increased demand from population growth and dietary change in emerging markets towards more meat and dairy products. Much of this demand will be in cities, resulting in considerable pressures on extended, often global supply chains. Cities do not have the large areas necessary for the cultivation of cereals, but high-value crops like fruit, vegetables and leafy greens can be efficiently cultivated in an urban

environment and with low food miles at that, as Joel L. Cuello of the University of Arizona points out. Urban farming can take the form of community gardens on vacant lots, rooftop greenhouses or hydroponic vertical farming in bespoke structures. Ample solar radiation in hot regions like the Mediterranean offers an efficient and environmentally friendly opportunity to satisfy the energy needs of such farming. Cuello presents a project on vertical farming that he has conducted that utilises prefabricated modular structures, such as recycled shipping containers. He argues that urban farming systems can contribute sustainably to food supplies in cities and help to foster a neighbourhood esprit de corps in participating urban communities.

Farida Naceur of the University of Batna in Algeria and Fatiha Belmessous of CNRS Rives and ENTPE Lyon analyse how Batna has changed over the decades as a result of rural migration flows. Rather than taking informality as a cipher for underdevelopment and backwardness, they stress local agency and ingenious contributions to improved living conditions. Established as a colonial town for the control of the hinterland, Batna witnessed successive migration flows after Algerian independence in 1962. Initially, the government did not pay much attention to housing, as lots had been left vacant by European pieds noirs who had fled the country. By the 1980s informal settlements and slums had expanded. Public housing programmes did not keep pace with this growth and were allotted to clients of the government instead of the people who needed them most. New arrivals dwelled in informal settlements, segmented according to their tribal affiliations and kinship ties. Such settlements have become a permanent feature in Batna. The civil war in the 1990s and rural insecurity added to migration pressures in the city. Relying on semi-structured interviews with dwellers of informal settlements and community leaders, Naceur and Belmessous show how local initiatives are deeply imbued with a moral economy of mutual solidarity (touiza) and play an important role in finding jobs and shelter, building homes, fighting evictions and getting access to electricity.

Rather than taking informality as a cipher for underdevelopment and backwardness, Naceur and Belmessous stress local agency and ingenious contributions to improved living conditions.

Azza Sirry works at the Housing and Building National Research Centre (HBRC) in Cairo and is an associate of the inter-city association Metropolis, which promotes urban economic development. She directs our attention to Alexandria and its peculiar situation as a "second city". Asserting influence and maintaining access to funds and projects can be difficult in the shadow of a dominant capital like Cairo. Sirry outlines the history of the city from the 19th century and highlights some of its architectural features, such as the linear grid of a few streets that run in parallel to the seashore and the Corniche with its signature buildings from the colonial era. They now face the threat of demolition to make way for Dubai-style projects of luxury real estate and hotels that have led to the privatisation of large areas of the beach. Like in Batna there has been an expansion of informal settlements on the outskirts of the city since the 1970s. Sirry discusses the major challenges for Alexandria, such as growing inequality, pollution and congestion and introduces plans for its future, such as the Strategic Urban Plan for Alexandria City, which has 2032 as its time horizon. She argues that the city needs to find a better balance between preservation and development and that Alexandria should be given more rights of municipal self-government, as currently many of the large projects are planned and administered by central agencies out of Cairo.

Economic issues

Tourism planners need to "empower community-oriented place-making" if they want to succeed in integrating tourism in urban development in a sustainable and equitable fashion.

Waleed Hazbun of the American University of Beirut outlines the promises and pitfalls of tourism in post-industrial urban development, using Barcelona and Beirut as comparative case studies. Barcelona chose an inclusive approach to tourism development in preparation for the Olympic Games held in the city in 1992. They marked a starting point for a steep rise in tourism. The initial focus was on the generation of shared urban experiences for tourists and locals alike, rather than the creation of isolated "tourism bubbles". However, as tourist numbers rose from 1.7 million in 1990 to 7.5 million in 2013 the local population grew increasingly apprehensive of stretched infrastructure, rising rents and the occasional misbehaviour of tourists. Commercial interests loomed larger over time. Most newly created jobs in the tourism industry had low wages and economic benefits were unevenly distributed. Grassroots counter-movements and the newly elected mayor Ada Colau have sought to push back against negative side effects of tourism. In contrast, the urban redevelopment of Beirut was characterised by a top-down approach after the end of the civil war in 1991. It was led by the real estate company Solidere headed by Rafiq Hariri, who was also Lebanon's prime minister from 1992 to 1998 and from 2000 to 2004. The initial plan to make Beirut again a regional financial and business hub failed. So Solidere changed tack. The downtown area was transformed into a playground of wealthy expat Lebanese and Gulf tourists, while the native population was pushed out. Like in Barcelona there have been counter movements. The citizen platform Beirut Madinati (Beirut is My City) competed in the municipal elections and there have been initiatives for more shared urban spaces in the southern suburbs that are mainly inhabited by Shiites. Hazbun argues that tourism planners need to "empower community-oriented place-making" if they want to succeed in integrating tourism in urban development in a sustainable and equitable fashion.

Miquel Rodríguez Planas of IESE Business School of the University of Navarra presents a study of the new Cairo wastewater treatment plant as an example of a public-private partnership (PPP) in an urban context. His chapter once again draws our attention to the importance of the provision of basic services to a city, such as water, food, electricity and fuel. He describes the public agencies and private firms that have been involved in the complex contract process and how the launch and administration of the PPP managed to escape the political turbulence in Egypt at that time. Finally, he provides some guidelines on how PPPs can be implemented in countries with similar social and economic characteristics to Egypt.

Daniele Fattibene of the Istituto Affari Internazionali (IAI) in Rome gives a critical assessment of the management of food waste in his city. He passionately argues against the neglect of urban environments by food security players. As much of the global food waste occurs in cities, urban food policy governance can play a crucial role in creating more sustainable agri-food systems. Such measures include separate collection of waste and its recycling, and farmers' markets that connect the city to its immediate hinterland and allow farmers to collect a larger share of revenues along the value chain by cutting out middlemen. Other examples comprise urban farming, green procurement and reduction of

packaging in public programmes such as school meals, and avoidance of food waste by using digitisation to make unsold food available for charity programmes before its expiry. Fattibene cautions that successful implementation of such measures and avoidance of setbacks requires broad-based participation and education of citizens. He also suggests that "international cities networks can be important to protect these policies from sudden political changes as these alliances can help develop mechanisms which protect food policies from electoral cycles".

There is a real threat of slums becoming poverty traps with environmental impacts that are difficult to manage.

Beyond the Mediterranean: The Gulf and Sub-Saharan Africa

Pascal Menoret of Brandeis University shows how urban sprawl and politics interact in cities in Saudi Arabia, most notably in its capital, Riyadh. State repression and the disenfranchisement of the large non-national workforce have perpetuated social rifts "between haves and have-nots, citizens and non-citizens, men and women, urbanites and rural migrants". Such rifts have their spatial expressions. Large suburbs were created in the 1960s to better control the population that often had a nomadic Bedouin background and had started to form shantytowns after moving to the city. A fragmented metropolis emerged, only connected by car-centered lanes and with few public spaces. The suburbs depoliticised and disempowered the new city dwellers, but they also became the locus of increased Islamist activism from the 1980s onwards. Menoret interprets such activism as a response to the spatial dislocation and its underlying social rifts in an environment where classic forms of participation such as political parties, independent associations and trade unions have been suppressed for decades.

Elena Maestri of the Università Cattolica del Sacro Cuore (UCSC) in Milano analyses recent efforts to preserve traditional architecture in the city of Jeddah. She situates such efforts at the crossroads between local identity-making and economic interests that are tied to the expansion of modern urban agglomerations beyond the borders of the old city. Shopping centres as the only semi-public spaces, luxury real estate developments, gated communities, and prestige projects such as the Jeddah Tower that would be the world's tallest skyscraper after completion, are characteristic of this urban design. The destruction of the walls of the old district in 1947 opened the way for the rapid urbanisation that has taken place since then. Maestri points to initiatives by local architects and intellectuals who seek to avoid the worst excesses of Mecca, where traditional architectural features have been largely razed. Preservation efforts can contribute to greater sustainability of the city if they manage to pay attention to the new patterns of behaviour and changing identities of local communities, she concludes.

Sharifa Alshalfan, a visiting fellow at the LSE Kuwait programme and consultant with the World Bank, analyses the effects of the Kuwait Masterplan in the development of the city in the oil era, which started in 1946 when the first shipment of crude oil left Kuwait. The last expansion of the city wall was torn down in 1921 to make way for sprawling urban settlements. The British firm Minporio, Spencely and Macfarlane was commissioned in 1951 to create the first masterplan, which became the blueprint for later plan expansions. It envisaged self-

sufficient residential neighbourhoods that were separated by ring roads and detached from the business district in the city centre with a green belt. Like Menoret she is critical of the planned suburbanism. "The plan […] sanitised public life and decontextualised the city from its locality and inhabitants", Alshalfan argues. From newer plans climate change adaptation, energy-use reduction and social inclusion are missing. Home ownership programmes focused on villas, not on affordable housing and contributed to real estate speculation. The creation of shared public spaces was neglected. Instead of focusing on mere numbers and grand designs, Alshalfan calls for "incremental growth at a humanistic scale" and citizens' participation in urban planning in order to create more liveable and shared urban spaces.

Julia Bello-Schünemann of the Institute for Security Studies in Pretoria, who lives in Lagos, gives an outlook on urbanisation in Sub-Saharan Africa towards 2035. Urbanisation in cities such as Lagos, Luanda, Kinshasa, Johannesburg and Dar es Salam is increasing more rapidly than the already strong population growth. Burundi, Uganda and Malawi belong to the most rural countries on the continent, but even they witness breakneck urbanisation. The urbanisation dynamic in Sub-Saharan Africa is more pronounced than in New York or London during their most rapid expansion in the 1920s and 1890s, respectively, yet urbanisation does not coincide with development and industrialisation. There is a real threat of slums becoming poverty traps with environmental impacts that are difficult to manage. African cities have also developed into hotbeds of violent crime, although terrorism remains a largely rural phenomenon on the continent. Rising inequalities find their spatial manifestation in luxury real estate development and gated communities. A better development impetus of urbanisation would require more employment generation in higher productivity sectors of the economy. Inequalities would need to be tackled and more urban public spaces created. This poses major challenges for urban governance in Sub-Saharan Africa, which struggles with lack of funds, democratic procedures, legitimacy and corruption.

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CONCEPTUAL ISSUES

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1. Introduction

We live in a world of cities. Since 2008, the majority of the population has been concentrated in large metropolitan areas. Urbanisation is often mentioned as one of the main drivers of economic, social, political and environmental transformation. As this trend continues to rise, challenges and opportunities that will define our future are likely to arise in cities. Cities are like a living organism, with the ability to organically absorb thousands of inhabitants day by day. They are able to create massive amounts of economic abundance: urban affluence is responsible for more than 75% of global wealth and yet inequality in cities is larger than at the national level and that in small towns. And it continues to grow. New innovations that help to tackle environmental degradation are born in urban hubs and knowledge clusters, yet large metropolises account for most of the global environmental footprint.

This paradoxical nature of cities is unveiling itself in the most vibrant times for them: the era of Smart Cities, paradiplomacy and the crisis of the nation-state. Cities have always attracted the interest of economists, sociologists, architects, urban planners, artists and policymakers. Recently the concept of Smart Cities has been an example of a private-led movement that puts cities at the core of technological and urban development. As a platform for fostering urban development, it has emerged at the same time as cities face inequality, job precariousness and economic abundance that is unprecedented in modern history.

The Smart Cities concept is driven by technology optimism, the idea that IT-based innovations will provide all the solutions to the challenges cities face. Notwithstanding this, we are seeing other paradoxical evidence. Not every citizen is benefiting from technological and economic development; indeed, many are left behind. Against this backdrop, Wise Cities emerge as a new conceptual framework that emphasises not only the construction of tech-based economies of knowledge that are more productive, but also the need to ensure that wealth is *pre*-distributed by the design of inclusive policies that foster social cohesion and equal access to opportunities. A Wise City works at the intersection of knowledge and distribution. Indeed,

knowledge is a means to build a resourceful economy with an innovative and entrepreneurial ecosystem, whereas distribution is the mechanism for consciously building more equal and free societies.

2. Why Wise Cities? Towards a holistic and human-centric science of cities

One of the big challenges for this century's urban planners and managers will be to design an urban model that is human-centred and takes into account each city's idiosyncrasy and cultural trajectory in order to avoid a "one-size fits all" approach.

Therefore, we ask a fundamental question: what is the highest aspiration for a city? Amidst an uncertain and rapidly changing world, urban development policies and initiatives require a holistic vision and approach that conceives of cities as open ecosystems of actors and policy areas that are interrelated and interdependent, but which have a shared aspiration: maximising citizens' well-being. Often given as the supreme objective in nation-states' constitutions, in practice national, regional and local governments often dismiss the nature of such statements in the current political system, which is still dominated by the axioms of infinite economic growth and paternalistic international development approaches.

In this new paradigm, local governments have the advantage of being closer to their citizens. Thus, they are better aware of their dreams and worries than national governments. This means their capacity to respond to their problems and foster their goals should be higher. Such a comprehensive, integral view is reflected in the concept of Wise Cities. Wisdom is the ability to think and act using knowledge, experience, understanding, common sense and insight. This involves an understanding of citizens, contexts, events, situations, and the willingness and ability to apply judgement and action in keeping with the understanding of the optimal course of action. Thus, wisdom involves doing good (the right policies and actions for citizens' well-being) by doing it well (the most efficient mechanism to achieve it). Wise Cities incorporate Aristotle's view on the importance of ethical virtue, that is, an attempt to offer a rational response to the question of how humans should best live. The highest aspiration is living well, *eudaimonia*, or the way to well-being, happiness and human flourishing. Aristotle emphasised that virtue is practical and that the purpose of practical wisdom is to become good, not merely to know.

Against this backdrop, the guiding principles of a Wise City are the universal values (or virtues) relating to justice, democracy, care of the natural environment, kindness, compassion, inclusiveness and excellence. Indeed, one of the big challenges for this century's urban planners and managers will be to design an urban model that is human-centred and takes into account each city's idiosyncrasy and cultural trajectory in order to avoid a "one-size fits all" approach. The ultimate goal of this model should be the improvement of citizens' quality of life, including the fulfilment of basic needs, the creation of a safe environment, access to opportunities and the pursuit of happiness.

This conceptualisation does not disregard the Smart City concept, but it includes and transcends it. Indeed, it resolves the tensions present in the tech-based Smart City concept and framework. Sustainability and ecological, green or technology-smartness are features that are also present in a Wise City, but they are not final objectives per se: they are a means of improving citizens' quality of life. The Wise City concept can help us align all interdisciplinary areas of study that take place in the

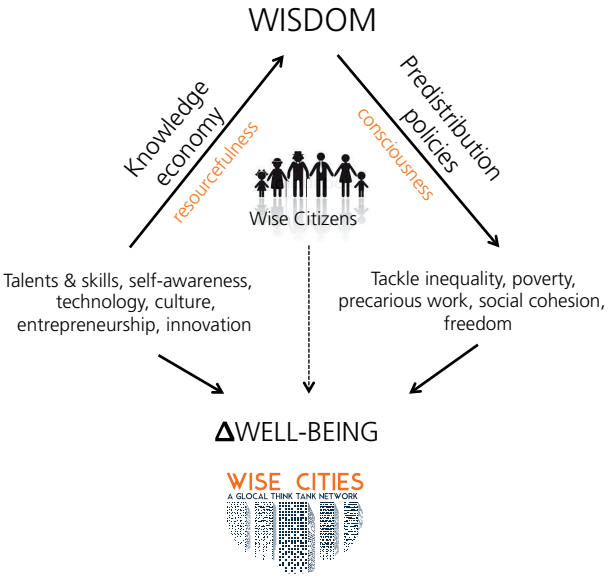
complex ecosystem of cities, organising a science of cities into a common direction or framework. There are no more purposeful approaches to development than practical wisdom.

3. Conceptual framework

Wise Cities have emerged as a new human-centred development paradigm in which cities foster interdependently creative and knowledge-based economies along with pre-distribution policies, which are two sides of the same coin (see figure below). The creation of knowledge-based economies through clustering of innovation ecosystems that generate smart technologies is the main focus of Smart Cities. This approach has enabled cities to technify service delivery in multiple areas such as transportation, energy, the environment, healthcare, housing and governance. Technology providers have developed new business models and cities are increasingly adopting public and private partnerships that enable the creation of a Smart City without jeopardising the public mandate. Still, Smart Cities' main assumption is that the increasing tech-driven smartness of a city is directly correlated with higher standards of living. But cities lack rigorous monitoring and evaluation systems that can validate this hypothesis. Indeed, sometimes smartness is a source of inequality, especially for cities that were hit by the Great Recession. In times of economic turmoil, the classic trickle-down effect of economic growth has lost credibility as a conducive mechanism to social progress for all citizens. Notwithstanding this, increasing levels of inequality have dampened the capacity of cities to address their dark side – poverty and deprivation.

Wise Cities have emerged as a new human-centred development paradigm in which cities foster interdependently creative and knowledge-based economies along with pre-distribution policies.

Wise Cities: conceptual framework



Source: Coll, 2016

By contrast, Wise Cities explicitly manage the design and implementation of pre-distribution policies as well. They are aimed at creating shared prosperity following the principles of inclusivity, resilience

and sustainability. The purpose of such a model is the maximisation of citizens' quality of life, including the fulfilment of basic needs, the creation of a safe and healthy environment, and access to opportunities, decent work and the pursuit of happiness. Instead of trying to bring equality by balancing unfair market outcomes through tax-and-transfer schemes (redistribution policies), pre-distribution focuses on designing policies that more directly intervene in the capital and labour market to reduce income inequality as opposed to polices that redistribute incomes after taxes are levied (Bunker, 2015).

4. Guiding principles and criteria

The Wise City is characterised by seven principles, which can be followed as the criteria that policymakers and other urban stakeholders (private sector, academia, citizens) can use in order to align and foster urban development planning under the Wise City paradigm:

- Human-centric approach: citizens' well-being stands at the heart of policy setting. Urban policies, programmes and projects must ensure citizens' well-being through participatory policy-design, comprehensive impact assessments, policy piloting and testing, and results-based monitoring and evaluation methodologies.
- Resilience: adapted to each city's cultural idiosyncrasy, socioeconomic context, environmental setting and overall sustainability. Urban development is context-specific. Resilience is a relative concept, very much embedded in and dependent on a city's environmental, historical, cultural, economic, social and political context. Learning mechanisms from benchmarking other cities' best practices needs adaptation and replicability to local contexts.
- Techno-culture: technology as a means to improve citizens' well-being. In light of fast technological change and the ethical and economic challenges new technologies such as digitisation, artificial intelligence, synthetic biology and nanotechnology pose for the future of humanity – technological inequality, technological enhancement of human capacities and skills, citizen's data protection and privacy, to name a few – technological embeddedness should be preceded by ex-ante evaluations of how technological behaviour affects citizens' quality of well-being at all levels of culture (values, beliefs, underlying assumptions and social norms). Ethical dilemmas in policymaking should be systematically addressed in the design phase by means of incorporating analytical assessments in all SWOT dimensions (strengths, weaknesses, opportunities and threats). This would enforce the rule of ethics and values in policy-driven decision-making with relevant implications for citizens' well-being and quality of life, while ensuring the social capitalisation on technological progress and development.
- Quadruple helix: integration, alignment and engagement of stakeholders through public and private partnerships. Citizens, governments, the private sector and academia (the so-called quadruple helix) are the key actors and agents of change in the complex urban ecosystem. As each one of them can, separately, pursue different – and sometimes conflicting – interests, it is of capital importance to develop platforms and institutions of cooperation where they can align interests and co-create urban solutions and resolve conflicts in a participatory and proactive way.

- Trust-building: as a result of stakeholder collaboration, building and consolidation of social capital. Trust is the enabling force driving socioeconomic development, social cohesion and cultural integration through credible institutions that safeguard the correct functioning of a city. Facilitating open multi-stakeholder platforms where diverse stakeholders align interests, share information, build synergies and co-create solutions is an effective approach towards building social capital.
- Experiential learning: benchmarking best and worst practices, monitoring and evaluating policies and sharing knowledge gained by experience (intra- and inter-city cooperation). Progress and development is highly correlated with the learning capacity of cities. Well-connected urban ecosystems learn from networks of cities that share knowledge and implement solutions based on others' experiences. Piloting, testing and adapting is increasingly becoming a must-use approach for scaling up grounded solutions that are based on empirical evidence.
- City branding, identity and reputation: adopting solutions that suit citizens' culture, building a brand that inspires and fits multicultural diversity. Integrating segmentation in policy design is a way to enforce the mainstreaming of citizen-centric approaches. Human-centric policy design is not only a way to ensure policies are tailored to diverse citizens' needs, but is effective leverage towards building an attractive global brand for both local and non-local citizens, investors and cultural agents.

Digitalisation, artificial intelligence and machine learning are exponentially creating a new techno-economy that produces value without distributing it.

5. Leveraging change dynamics: the 4th industrial revolution

The 20th century income distribution system has broken down irretrievably. The fourth industrial revolution is disrupting the labour market in an unprecedented way: creating more economic value while cutting jobs due to automation. Even though disruptive technologies have always provoked changing conditions in the way we work by eliminating low value added jobs and creating new and more qualified jobs, this time is different. Digitalisation, artificial intelligence and machine learning are exponentially creating a new techno-economy that produces value without distributing it. The zero marginal cost economy replaces the trickle-down economic effects of job creation and wage and tax-based redistribution policies. The effects are already visible. Inequality is rampant in an increasingly abundant economy. Half the world's wealth belongs to the top 1% of the population and 85% of the wealth to the top 10%. The remaining 90% only own 15% of global assets. The middle classes are shrinking.

Increasingly, production and growth are an intrinsic problem to be addressed by technology, science and engineering. Machines will soon manage production and economic value creation activities more efficiently than humans. For the first time, it may be not necessary to work for a living. That will completely change the rules of the game. Salaries won't be needed, ergo taxation will move from jobs to technology (Shiller, 2017). This shapes a new socioeconomic paradigm where work will no longer be the pillar of the social organisation of life. This vision of the future in a post-work society transcends

partisan ideologies and stereotypes. In this era, the real problem will be how to distribute economic value driven by a tech-economy. Ultra-affluent incomes and wealth inequality, rising poverty and mass unemployment may become the norm if pre-distribution policies are not in place. If this is not addressed in time, the system may collapse, and this is becoming an urgent political imperative.

For the first time, it may be not necessary to work for a living. That will completely change the rules of the game. This shapes a new socioeconomic paradigm where work will no longer be the pillar of the social organisation of life.

6. From redistribution to pre-distribution: rethinking policymaking

Cities have become not just the place where the majority of the world's population live, but also the nest for scalable innovations and experimental policies. As exponential technologies threaten the foundations of the capitalist system itself – job creation, wealth generation, redistribution through salaries and tax-based welfare systems – cities have started to test policies that are pre-distributive in nature. They aim at increasing citizens' well-being by addressing inequality through the design of inclusive policies. The universal basic income, the Fab Lab "maker movement" and child-friendly cities are three examples of pre-distributive policies that align within the conceptual framework of a Wise City. These examples are chosen to provide grounded evidence of how the Wise Cities framework can contribute to rethinking and systematising a new approach to urban policymaking.

Universal basic income

Some cities are deploying pilots for testing the feasibility of a universal basic income (UBI), a fixed monthly income that all citizens would receive, unconditionally, regardless of their social status and economic income level. They argue that this scheme would guarantee social cohesion by safeguarding access to basic services, eliminate transaction costs around bureaucracies and foster entrepreneurship, innovation and consumption.

The UBI is a classic example of a pre-distribution policy. This old idea, originally thought up to fight crime and end poverty, was first proposed by Thomas More in the 16th century and later popularised by Thomas Paine in the 18th century. Traditionally, leftish politicians found in the UBI a way to address poverty, safeguard access to basic services and secure a safer environment. However, right-wing politicians usually reacted against it, arguing that such a scheme would disincentivise the ethics of work, break the meritocracy of the system and foster a lazy society. And in most cases it was said to be impossible to finance, and was thus named a utopian enterprise.

Today, many decades later, the UBI emerges as a solution to increasing levels of inequality, job precariousness and social exclusion. An old idea for a new time. The UBI owes its current popularity to the sickness of capitalism. The Great Recession revealed the flaws of a capitalist system that is no longer able to create shared prosperity and social progress by following the tenets of neoclassical economics. Smart Cities have worked to increase the brand attractiveness of cities in terms of foreign direct investment and tourism. This translates into greater economic dynamism,

high quality employment and a new wave of immigration. But it often provokes a draining effect as rising housing prices push local citizens and local retailers out of the city. Wealthy neighbourhoods get wealthier and poor areas become poorer.

In the Mediterranean, cities like Barcelona and Livorno have recently launched some trials for testing a basic income by giving monthly cash transfers to randomly selected poor households. Other cities in France and Greece are discussing its feasibility in the policy agenda. The debate over introducing a UBI is far more advanced in northern Mediterranean cities than in the south. Algeria, Egypt and Israel are discussing and examining the idea of launching trials to test the policy, but no city has yet dared to be the first. The main reason behind this fact is financial. Who will pay for the unconditional cash transfers given directly to the citizens? A critical point for considering the feasibility of a UBI project is its financial sustainability. And this is indeed more relevant in developing cities. Its financial ambition is a cause for opponents to call it utopian, and it seems obvious that a UBI programme needs to be implemented in affluent societies that have strong knowledge-based economies that generate growth and foster continuous innovation. As a matter of fact, current financial proposals hinge basically upon (i) a more progressive taxation of the rich and (ii) the introduction of new taxation schemes linked to technology and productivity.

As with ancient metropolises, the maker cities of the future will see new artisans on the rise, but this time with the goal of reducing environmental footprints and empowering freelancing and access to opportunities in the rising gig economy.

Nonetheless, in emerging economies real basic income schemes can be tested in new forms of development aid delivery mechanisms. These mechanisms overcome the classic bureaucracies and high transaction costs associated with traditional development cooperation programmes. In Muslim cities the social awareness and existence of *zakat*[1] could be used as a new approach to socially advocate for a UBI. In fact, some advocates interpret *zakat* as a basic income system that in modern times can provide security against the increasing automation of work and the threat of unemployment (Hawramani, 2018). Approaching a UBI as a sort of *zakat* delivery mechanism could contribute to raising awareness and fostering political and scholarly debate in Muslim countries.

Fab Labs or the "maker movement"

Fab Labs (short for fabrication laboratories) are conceptually the combination of a workshop and a laboratory as a maker space, equipped with the latest 3D printing technologies and the like. Since this movement started in 2000 at MIT, the global community of Fab Labs has been exponentially growing to more than 1000 labs spread in cities across the world. This network gives teams and individuals access to digital high-tech fabrication facilities and tools. The Fab Lab movement is founded on the groundbreaking idea of reducing social and environmental inequalities by enabling almost everybody to make almost everything, everywhere (Menichinelli, M. and Bosqué, C., 2017).

The foundations of the maker movement are grounded in the principles of inclusiveness, human-centricity and techno-culture. High tech is a means of enabling vulnerable populations to create their own opportunities by training and facilitating needs-based entrepreneurs to design, develop and test their own prototypes in an affordable way. With proximity and freedom as core values, the maker revolution

1. *Zakat* is a tax of 2.5% (or 1/40th) of a Muslim's total savings and wealth above a minimum amount known as *nisab*.

intends to bring back the concept of the fabrication city. As with ancient metropolises, the maker cities of the future will see new artisans on the rise, but this time with the goal of reducing environmental footprints and empowering freelancing and access to opportunities in the rising gig economy (Mulcahy, 2016). According to Tomas Diez, director of Fab Lab Barcelona and global coordinator of the Fab Academy, a Fab City sets a long-term vision by establishing a role within the city's space that contributes to the transformation of the current urban model that is based on industrial production, in which cities depend on the supply chains that come from very distant outsourcing locations. In a different way, the Fab City focuses on the transformation of supply chains and resources that allow the functioning of cities. As such, they are conceptually founded on the idea that a city can progressively produce everything that is needed in terms of products and energy consumption (i.e. food, consumer goods, energy, infrastructure, mobility, medical equipment or housing). Although still in its inception, furniture, clothing, organs, houses and even bridges are already being produced in cities with 3D printing. The great challenge of this movement in the short term is to be able to consolidate not only as a technological model, but as a cultural approach that is fostering a new way of producing and consuming in cities; a way to learn; a way to generate alternative economies or help the economy to be more inclusive, more just and be committed both to society and the planet.

The great challenge of this movement in the short term is to be able to consolidate not only as a technological model, but as a cultural approach that is fostering a new way of producing and consuming in cities; a way to learn; a way to generate alternative economies…

The maker movement has grown exponentially all over the world, but especially in western Europe. Barcelona and other Mediterranean cities have been opening new Fab Labs since 2006, while in eastern and southern cities this movement is currently kicking off. Launching new Fab Labs requires a certain innovation ecosystem that can allow the adoption of new technologies and knowledge that spur the maker philosophy and practice. Whereas the nature of a Fab Lab involves multi-actor partnerships between the private sector, local government, academia and citizens, it needs an initial seed investment to set up the business model and facilities. Notwithstanding this, it is an inclusive infrastructure since it is thought to decentralise economic power by endowing entrepreneurs' with the soft and hard skills required to benefit from a Fab Lab. It is an example of a pre-distributive policy aimed at fostering creativity and technology to generate positive social and environmental impact.

Child-friendly cities

Tirana, the capital city of formerly communist Albania, is undergoing a major transformation but not for its tech smartness. Instead, it has adopted a child-friendly approach to spur urban development. Visionary mayor Erion Veliaj took strong leadership in supporting the construction of 15 children's playgrounds all over the city, including the largest children's playground in Europe, despite strong opposition. This policy is a result of rethinking the role policymaking should have in practice. It is a response of putting values first. The hypothesis behind it was to create public infrastructure to support the most important value for Tirana's citizens: their children. A city that cares for its children is a city that cares for its citizens. Values-driven policymaking is a human-centric approach that spurs life and increases the city's liveability.

Adopting human-centric urban policies involves three important management tweaks. The first is the introduction of long-term design thinking policies. This is an important social innovation in times when the political incentive is concentrated in short-term periods of partisan rule. Ensuring intergenerational solidarity is the principle for embedding sustainability in long-term oriented planning. Second, it creates the conditions for creating cost-efficient programmes that are likely to increase the social and environmental impact without the need to spend a large amount of investment on expensive technologies. It suits the principle of doing more with less. This conceptualisation is not only relevant for developing cities but also for wealthier cities in the West. Third, the habitability of public spaces for kids and their families is fostering communisation of social life and therefore the reduction of vandalism in otherwise isolated areas. Thus, children's playgrounds have been converted into a sort of social security monitoring system.

A child-friendly city provides a tangible framework for increasing the city's value proposal or attractiveness as it clearly focuses on raising the quality of life. A physical social network formed by kids and families is also a means to reconcile citizenship with public policymaking.

At a time when exponential technologies are dominating almost all aspects of our life, human-centric urban design arises as an alternative to not only safeguard citizens' fundamental rights, but to create a future of shared prosperity, sustainability and wellbeing for all.

7. Conclusion

The profound transformations spurred by the size and speed of the fourth industrial revolution are revolutionising the way people work, live, learn and socialise. Cities are the protagonists of this journey, as they reflect a more decentralised, horizontal and organic approach to social, economic and political organising. At a time when exponential technologies are dominating almost all aspects of our life, human-centric urban design arises as an alternative to not only safeguard citizens' fundamental rights, but to create a future of shared prosperity, sustainability and wellbeing for all. Technology is not the one and only response to the pressuring challenges of today. Rather, citizens and cities need conceptual frameworks of thought and action that can resolve the tensions and rising aversion over Smart Cities, which originated as enablers of a single-minded and tech-driven approach to urban development. Wise Cities provide such a comprehensive and integral framework. Indeed, this conceptualisation enforces a model that supports the creation of urban policies that are first and foremost thought out to put citizens at the core of policymaking. The challenge is now how to develop wise networks, policies and programmes amongst diverse Mediterranean cities that share the common goal of serving citizens for a better quality of life.

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OBSOLETE ROMANTICISM AND THE POSTMODERN TRANSFORMATION OF URBAN CULTURES AND TRADITIONS IN MEDITERRANEAN MEDINAS

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Cities are subject to constant transformation, because every society forms its own urbanity according to its value system, approach to life and principles of social organisation. Based on the conviction that the spatial identity of a community is manifested in its urban cultures and traditions, several normative guidelines and preservation principles have evolved to conserve the urban heritage and character of historic towns. Nevertheless, more recent urban transformations in North African and Middle Eastern old cities (medinas) often clash with romanticised preservation ideals and follow a strong desire for consumption, hedonistic pleasure, and an orientalised atmosphere. Since attempts to protect the urban fabric, restore buildings true to their original form and preserve former functions tend to neglect contemporary societal needs and contradict a future-oriented development of cities, they have to be reconsidered with respect to ecological, economic and social sustainability. The chapter argues that historic urban quarters should be reinvented by using advanced materials and by managing processes of gentrification, festivalisation, commodification, Disneyfication and digitalisation as new dimensions of participatory and integrated urban planning.

1. The history of urbanisation in the Mediterranean – every society, every epoch forms its own urbanity

Continuous waves of urbanisation, integration and economic prosperity – interrupted by abandonment, regional disintegration, economic decline and social instability – have characterised the development of the Mediterranean region and its large city networks. The conquests of Alexander the Great in the 4th century BC were driven by the ideal of establishing a "vast, expanding, pluralistic political and cultural system, bound together and lubricated by the active exchanges and linkages of a network of large trading cities" (Gottmann, 1986: 7). Overall, we can distinguish between two types of evolving urban nodes in relation to their major function: market-cities (e.g. Athens) and sanctuary cities (e.g. Rome) (Myres, 1943: 15–17).

Since the mid-1970s, North African and Middle Eastern medinas have been designed, modified and fundamentally transformed under neoliberal conditions to serve societies' increasing demand for leisure and hedonistic lifestyles, which demonstrates that cities are subject to constant change.

Cities are subject to constant transformation, because "every society, every epoch forms its own urbanity" (translated from Siebel, 1994: 15). Civilisations have shaped the materiality and composition of cities according to their value systems, approach to life and ways to manage society. Hence, urban sociology considers urbanity and its materiality as an expression of urban lifestyles (Simmel, 1903). Prominent examples are Greek and Roman cities where the exercise of power was under constitutional law, with public functions and buildings surrounding the *agora* and *forum* in the city centre. In contrast, the dominance of seclusion and privacy reflects the principles of social organisation within Arab-Islamic medinas. The layout of old towns focuses inwards, characterised by dead-ends and houses with inner courtyards and no windows onto the street (Wirth, 2000/2001). To this day, we find spatially concentrated ethnic groups in many Arab-Islamic cities living side by side in urban quarters. The bazaar (souk) with its covered alleys was located in the centre. Its complex operating principles, with an ordered variety of different branches related to certain handicraft, services, retail and wholesale (Wirth, 1974: 237–250), constitute a unique achievement of Islamic medieval times and best reflect the cultural independence of Arab-Islamic cities (Wirth, 1975: 39). With the Islamic conquests that began in the mid-6th century, Islamic culture took root in the cities of the central and southern Iberian Peninsula and southern Italy (Lombard, 1992: 129–153).

From one era to another, organisational structures, materiality and street patterns were only preserved if they were suitable for repurposing. The constitutional organisation of the *polis*, for example, shaped western urban development and its city rights significantly. It influenced the provincial centralisation of the Roman Empire (Kolb, 1997: 170) and its military and juridical structure with standardised institutions. The expanding urban network and superimposed organisational structure allowed Christianity to spread throughout the Empire (Gottmann, 1986: 8). Likewise, the right-angled grid plan introduced by the architect Hippodamus (after 479 BC) was applied in Roman as well as Renaissance cities, in line with the principle of openness (Wagner, 2011: 31). In contrast, the irregular street patterns of dense historic centres go back to radical urbanisation during the Middle Ages. In the case of Arab-Islamic old cities, these were caused not only by population growth, but also by the less restrictive control of building activities (Escher and Wirth, 1992: 30).

In the past century, historic urban quarters have been transformed to serve societies' increasing demand for places that counter the functionalist spaces that dominate our living environments. Historic urban quarters represent the other, archaic, natural and slow life of previous epochs: "The progress of modernity ("modernization") depends on its very sense of instability and inauthenticity. For moderns, reality and authenticity are thought to be elsewhere: in other historical periods and other cultures, in purer, simpler lifestyles" (MacCannell, 1976: 3). Moreover, tourists and residents want to have a choice between traditional and modern, active and passive, high culture and popular culture and Western and exotic cultural experiences (Krösbacher, 2006: 102), which leads to the often-encountered potpourri of cultural elements.

In view of the history of urbanisation, the preservation of urban cultures and traditions is the subject of heated debates. To challenge contemporary approaches, the chapter recapitulates why preservation guidelines emerged, in what ways they have evolved and how they are justified today. Based on empirical studies of both authors, the last section elaborates on recent urban transformations in North African and Middle Eastern medinas. These examples show that romanticised ideas of preservation constitute obsolete attempts at safeguarding historic quarters.

2. The preservation of urban heritage over time – from material protection to functional restructuring

According to the International Council on Monuments and Sites (ICOMOS), the conservation of the built vernacular heritage is important, as "it is the fundamental expression of the culture of a community, of its relationship with its territory and, at the same time, the expression of the world's cultural diversity" (ICOMOS 1999: 1). Since the early 20th century, several normative guidelines and preservation principles have evolved. The assessment of what constitutes heritage is constantly changing and represents every generation's view of what is worthy of preservation. These changes are reflected in many international documents and declarations and constitute the backbone of different approaches to heritage conservation. The approaches presented below are all employed to date, often intertwine and depend on the responsible authorities, conditions and demands of heritage places.

The "material-based" or conventional approach focuses on the protection of the urban fabric and its monuments and individual buildings (Poulios, 2014: 17, 30). The main tool to promote urban preservation has been the World Heritage List, the most significant feature of the United Nations Educational, Scientific and Cultural Organization's (UNESCO) World Heritage Convention of 1972 (UNESCO, 1972). A common strategy for the transformation of inner-city areas consisted of "museumisation". Urban objects were disconnected from current dynamics and took on the character of museum-like objects, leading to a disconnect between urban structures and spaces and the ways in which they were used and understood.

A significant shift in heritage preservation started in the mid-1970s. It was argued that the built environment is a living record of a society's progress. The broader term "conservation" became popular, because it allowed for adaptive reuse to revitalise urban quarters. Based on the understanding that "conservation is the control of the rate of change" (Ward, 1968: 15), buildings, structures and spaces should be carefully adapted to present lifestyles: "New functions and activities should be compatible with the character of the historic town or urban area" to secure its authenticity (ICOMOS, 1987).[1] As a result, preservation principles and objectives were largely focused on the material and spiritual elements that account for the historic character of a town or urban area (e.g. urban patterns, appearance of buildings, functions of the town, traffic flows). In addition, the "Charter on the Built Vernacular Heritage" (ICOMOS, 1999) underlines the need to ensure the endurance of traditional building

In contrast, material protection, the restauration of buildings true to the original building style and the preservation of former functions are cost-intensive, romanticised and obsolete attempts at preservation that contradict a future-oriented development of cities.

1. It was only in 1994 that ICOMOS recognised, for the first time, that the determination of authenticity cannot be based on fixed criteria but has to be considered within the cultural context to which it belongs, since it is a socially constructed category (ICOMOS, 1994: 47).

systems through the inter-generational transmission of knowledge. Its practical guidelines encompass the need to conduct a complete analysis of the vernacular architecture prior to physical work and to respect the integrity[2] of the siting and landscape. The charter also appreciates changes over time to avoid conformity of the various parts of a building, but a consistency when replacing material, and safeguarding integrity in case of adaption and reuse, should be ensured (ICOMOS 1999: 1–3).

In contrast to these romanticising approaches, the "living heritage approach" concentrates on maintaining the community's original connection with its heritage in order to achieve continuity. The aim is to safeguard heritage within this connection, even if on certain occasions the fabric might be harmed. Heritage protection should be based on the empowerment of core communities, with conservation professionals in guiding instead of leading roles (Poulios, 2014: 17–28): "[A] living heritage approach marks the shift in heritage conservation from monuments to people, from the tangible fabric to intangible connections with heritage, and from discontinuity to continuity" (Poulios, 2014: 28).[3] This is also recommended by UNESCO (2011) through the "Historic Urban Landscape" approach, a holistic, integrative and inter-disciplinary "soft law". Participatory and integrated planning based on the inclusion of multi-faceted values (cultural, natural, intangible, social, physical and economic), local communities and stakeholders, as well as a balance between development and conservation through mixed uses, ensure urban resilience (Turner, 2013: 85; van Oers and Pereira Roders, 2014: 127). The six-point action plan also recommends the mapping of resources, assessments, the development of an integrated urban development and conservation strategy, and action plans, as well as the establishment of appropriate partnerships and local management frameworks (UNESCO, 2011).

Within this new heritage paradigm, heritage values have expanded from the urban fabric towards intangible assets that are constantly changing according to the needs of society over time: "[A]n important cultural value of the historic city rests precisely upon its ability to be in a constant evolution, where forms, space and uses are always adapting to replace obsolescence with functionality" (Araoz, 2011: 58).

The success of urban revitalisation depends on determining the most appropriate strategic approach. "Functional regeneration" includes changes in occupation, with the retention of existing uses that operate more efficiently. "Functional diversification" brings in new uses but keeps the existing ones, whereas "functional restructuring" involves new uses or activities replacing the former ones (Tiesdell et al., 1996: 41–42). At the analytical stage, this requires a correct diagnosis of the level and type of obsolescence (physical, functional and locational) as well as of development dynamics (high, static and declining). Measures to promote economic recovery in serious cases include conversion, adaptive reuse, image reconstruction, public subsidies and the occupation of buildings by public agencies. Although displacement and gentrification is likely to occur simultaneously, that might be an unavoidable side effect of reversing the deterioration process (Doratli, 2005: 753–771).

2. In the operational guidelines for the implementation of the World Heritage Convention, integrity is defined as "a measure of the wholeness and intactness of the natural and/or cultural heritage and its attributes" (UNESCO, 2008: 23).
3. "The "intangible cultural heritage" means the practices, representations, expressions, knowledge, skills – as well as the instruments, objects, artefacts and cultural spaces associated therewith – that communities, groups and, in some cases, individuals recognize as part of their cultural heritage" (UNESCO, 2003).

3. A glance at postmodern transformations of North African and Middle Eastern medinas

In the middle of the 20th century, Arab-Islamic medinas experienced an economic and social decline in the course of decolonisation (Escher, 2001: 23). Since the 1950s, modernisation and westernisation have led to destruction and fundamental structural changes in the souks, and to the realignment of their goods (Wirth, 1974: 208, 225). Furthermore, modern new cities *(villes nouvelles)* that were constructed during the French colonial era based on European models triggered the devaluation of the traditional business life in the souk. The souk experienced a decline in building structure and offered affordable housing for socioeconomically disadvantaged groups (Escher, 2001: 23).

The rehabilitation of historic cities in North Africa and the Middle East began towards the end of the 1960s (Balbo, 2012: 3). Since the presentation of goods in the souk is diametrically opposed to Western standards, heritage values were ascribed especially to that area, in order to attract international tourists. Western visitors, for example, perceive an atmosphere of "existential tension, which increases because they cannot relate to the many signs and sensory stimuli that they register (…), but classify them speculatively or imaginatively" (translated from Escher, 2008: 172). However, it must be noted that every individual perceives the atmosphere of historic quarters differently (Escher, 2008: 167–173).

In the following section, we will introduce current transformations of medinas based on empirical studies conducted by the authors. Four examples illustrate how historic centres and the area of the souk have been designed, modified and fundamentally transformed under neoliberal conditions. Due to space restrictions, we will highlight the most dominant processes for each example, although they take place in almost every historic quarter to different extents. As common denominator, all case studies follow the trend of touristification. As a result of this process, the medinas are only partially inhabited by their original residents and increasingly frequented by visitors and temporary new residents. This trend has intensified due to digitisation and online marketing (e.g. Airbnb, Instagram).

In the 1990s, the government of Tunisia passed laws and founded institutions to protect and conserve the country's cultural heritage. These initiatives were driven by three objectives. They tried not only to counter the threat of cultural globalisation and international gentrification, but focused on national identity formation and myth-making. Third, the projects aimed at generating higher revenues from tourism (Hazbun, 2007/2008: 26–27). One example is the revitalisation of the medina of Tunis, a UNESCO World Heritage Site since 1979, as a symbol of national identity. The medina should not become a dead museum or an exaggerated tourist attraction, but represent an ideal place for Tunisians. To preserve the urban fabric and social life, the state initiated and supported several revitalisation projects. The material revitalisation concentrated on certain areas like the government district and the former Jewish quarter. Numerous representative buildings have been placed or newly built in and near the former *kasbah* to emphasise the pre-colonial traditions of a longtime ruling class (Escher and Schepers, 2008).

Urban resilience can be achieved by placing individual and collective human preferences at the centre of participatory and integrated urban planning, by taking ecological, economic and social aspects into consideration and by managing processes of gentrification, festivalisation, commodification, Disneyfication and digitalisation.

The souk retained its importance in spite of many structural and functional changes. Some traditional crafts (e.g. the weaving of fabrics) have resisted the rising competition, while others have adapted to Western trends. The products of shoemakers, for example, reflect the latest fashion trends (Wagner, 1996). In contrast, many owners in the non-refurbished side of the medina neglected their houses and never rehabilitated them. Many became boarding houses, inhabited by low-income Tunisians who lack resources to renovate them. In the post-revolution era, the preservation of the medina of Tunis is not a priority for the Ministry of Culture (Ltifi, 2013).

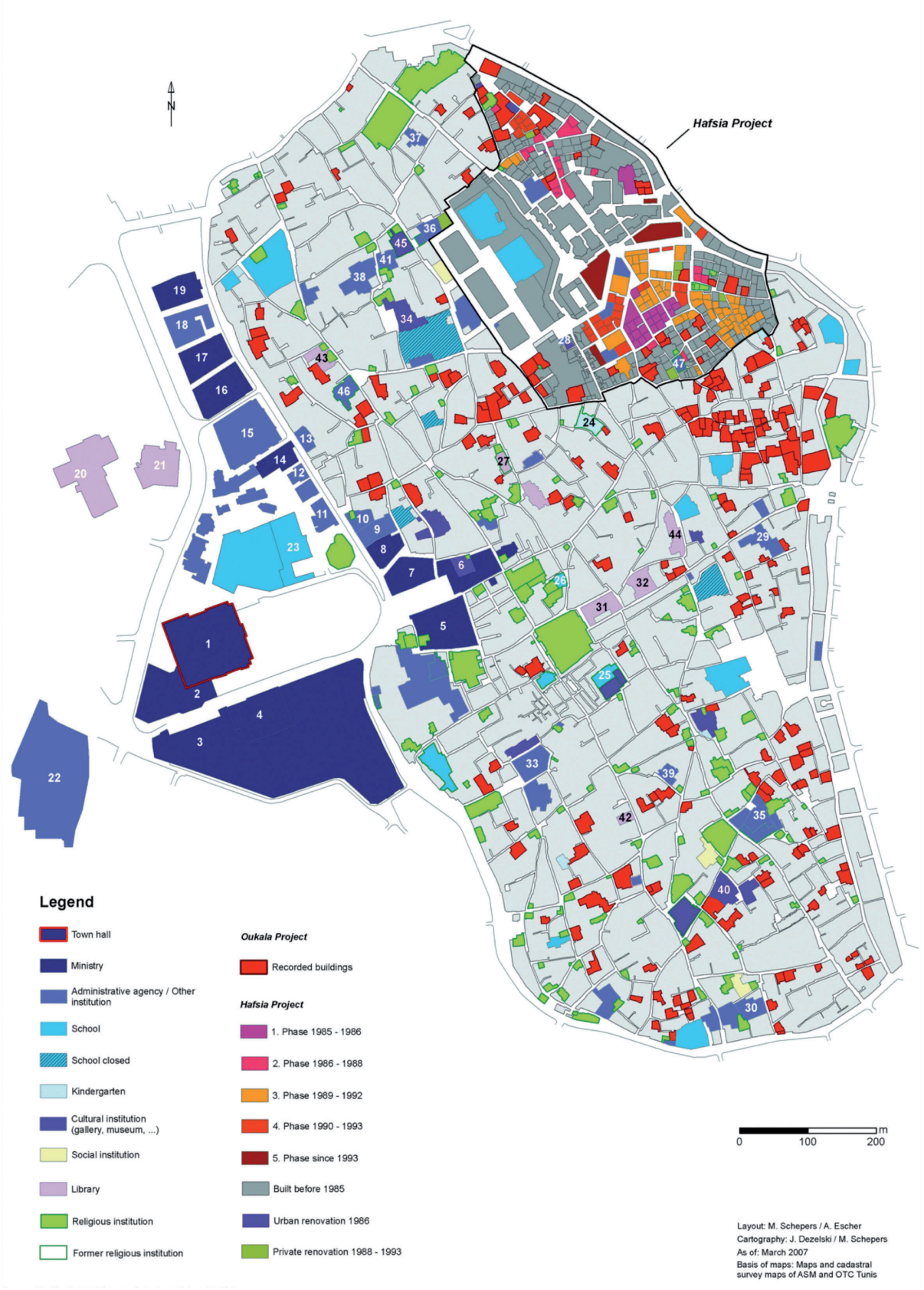
The historic centre of Fez, the spiritual, cultural and scientific capital of Morocco, has a highly differentiated economy and combines several functions. Marginalised groups have refused Western culture and tried to uphold traditional institutions and crafts, for fear of losing their cultural identity and due to their lack of resources (Escher and Wirth, 1992: 272). Despite the degradation process, UNESCO's decision committee stated in 1981 that "Fez is at once an astonishing city-museum and one of the largest Islamic Metropoli" (Organization of World Heritage Sites, 2018).

In 1989, a new institutional framework was set up to oversee the extensive restoration of Fez's 8th century medina. The government's "Agency for the Reduction of Density and the Safeguard of the Old Medina of Fez" (ADER-Fès) promoted the redesign and reconstruction of historic sites, artisan production and cultural events. To guide and inform foreign visitors about its heritage, extensive signage has been installed in the medina. The current director of ADER-Fès highlights the need for change as follows: "Our mission is to create new opportunities for the medina. We don't want it to be a relic of the past; we want it to be a living city of the future" (cited in Gilbert, 2017).

The "Fez Medina Rehabilitation Project", which ran from the 1990s up to 2005, was funded by the World Bank and supported by international donors and national foundations. Initiatives, which were based on comprehensive strategic studies, focused on the conservation of key historic buildings, on improving vehicular circulation around the medina and on the rehabilitation of public squares. Furthermore, pedestrian streets, residential buildings and workshops were rehabilitated. Within the framework of participatory planning, local stakeholders and community organisations that engaged residents were involved (Bigio and Licciardi, 2010: 6–28).

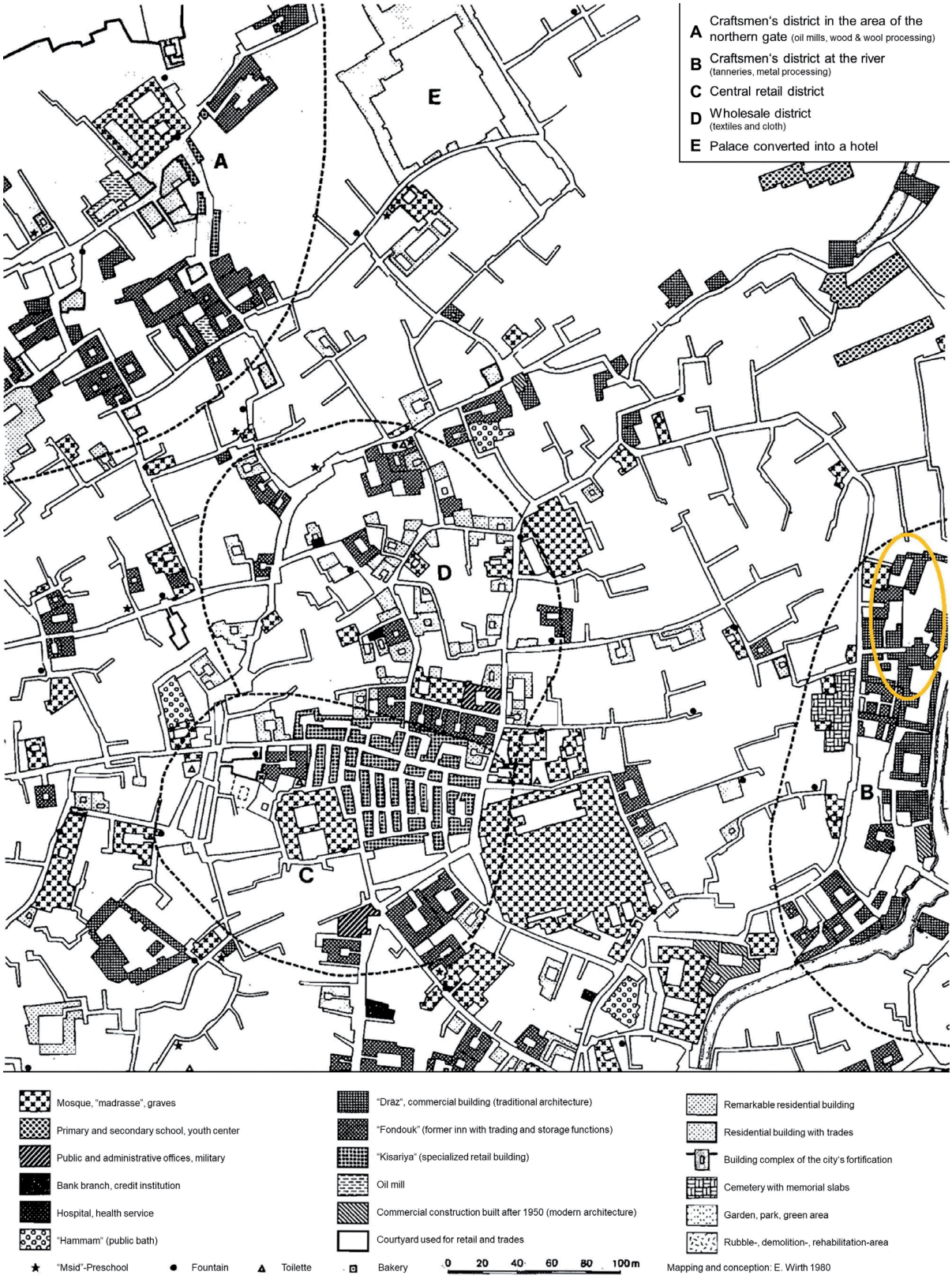
More recent projects in Fez encompass the restoration of the Seffarine Hammam (Istasse, 2013: 39) and the project "Artisan and Fez Medina", funded by the American "Millennium Challenge Corporation". The project includes an international design competition for the reconstruction of Place Lalla Ydouna, the design and rehabilitation of three 14th and 15th-century *fondouks* (former inns with trading and storage functions) and the development of a production zone at Ain Nokbi to resettle those copperware workers affected by the rehabilitation (Millennium Challenge Corporation, 2016). The Chouara Tanneries are one of three tanneries reconstructed in 2015 and 2016, and Fez's biggest tourist attraction. Despite all the measures to renew the workspaces of tanners, their low socioeconomic status remains unchanged today.

Figure 1. Public, social and cultural institutions and projects in the medina of Tunis in 2007



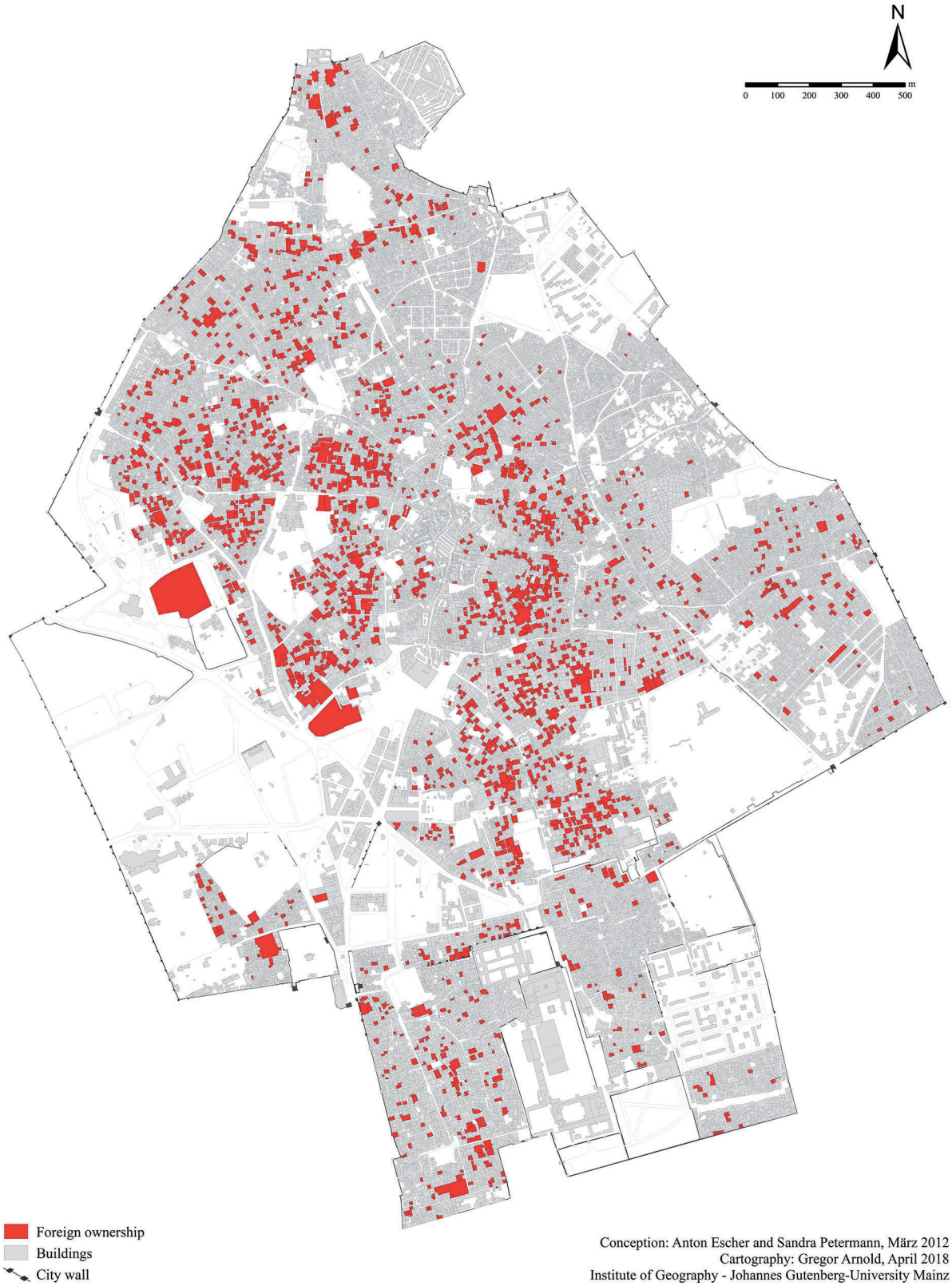
Source: Escher and Schepers (2008: 142).

Figure 2. The Central Business Area of Fez in the 1980s and the Chouara Tanneries (circled in yellow)



Source: translated from Escher and Wirth (1992: 9).

Figure 3. Property ownership by foreigners in Marrakesh in 2012



Source: Escher and Petermann (unpublished).

Buildings need to be modernised using new technologies and local materials alongside advanced ones if they do not suit the current standards of living whilst valuable elements should be preserved to ensure identification of the local population with the man-made environment.

The Moroccan old town of Marrakesh is a place of religious tradition for the local population. Historic buildings such as the Koutoubia Mosque, the Islamic urban planning by the Almoravids, and the old centre's role as a model "oriental city" contributed to the designation of the medina and its Menara Gardens as a UNESCO World Heritage site in 1985 (UNESCO, 2009).

Simultaneously, Marrakesh became the destination for lifestyle migration par excellence. Since the beginning of digital globalisation in the 1990s, the city has become a global marketplace and hotspot for national and global investors. As a precondition, official entries in the land registry guaranteed their legal security. These investors renovated and transformed abandoned courtyard houses (*dars* and *riads*) and converted them into guesthouses, backpacker hotels, restaurants, art galleries, wellness centres and bathing complexes (*hammams*) with orientalising designs, as well as into drugstores to sell traditional medicine to tourists (Escher and Petermann, 2009). Europeans constitute by far the largest group among the foreign investors. They have bought more than 2,500 properties and contributed greatly to the gentrification of the medina. Migrants use the old city as a stage for personally satisfying their needs, and perceive the "better life" in four spheres: the "colonial sphere", the "Arabian nights sphere", the "comfortable sphere of life" and the "local social sphere" (Escher and Petermann, 2014: 29, 35).

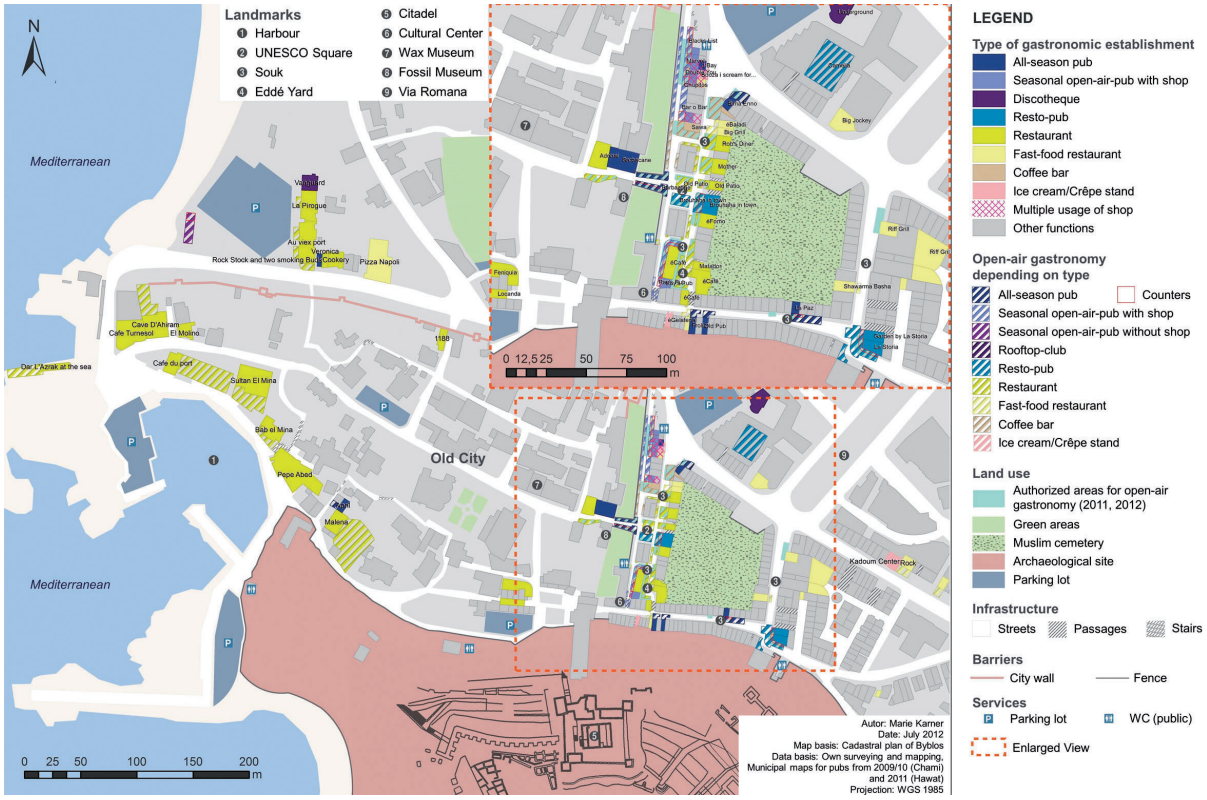
Since 1922, the Jemaa el-Fna in Marrakesh has been protected as part of Morocco's artistic heritage (UNESCO, 2013). Descriptions from that period indicate the scope of its physical deterioration: "To tell the truth, the relevance of this place is rather constituted by the enormous crowd which meets there on a daily basis than by its surrounding composed almost exclusively of buildings in ruins without any architectural quality" (translated from Prost, 1932: 76 cited in Escher and Petermann, 2009: 230). Due to global influences and social changes in Morocco, the use and appearance of this cultural space was subject to constant change. The square can thus be interpreted as "an inauthentic tourist spectacle, as a Disneyfication[4] of itself, as a representation of the Orient that is no longer authentic and no longer in keeping with the times" (Schmitt, 2005: 187). However, the Jemaa el-Fna was described as a "Masterpiece of the Oral and Intangible Heritage of Humanity" by UNESCO in 2008 (UNESCO, 2013).

The Lebanese old town of Byblos is often referred to as the oldest continuously inhabited city in the world, populated since Neolithic times (5,000 BC). These days its souk transforms into an open-air club during the summer months. Numerous restaurants and bars with outdoor seating areas and open-air events like the Byblos International Festival attract a diverse audience. Among them are locals, guests from Lebanon and the diaspora as well as international Western and Gulf tourists who refer to the city as the "Lebanese Saint-Tropez" (Karner, 2016: 109).

The first heritage protection interventions date back to the middle of the 19th century, when French excavators exposed pre-Ottoman structures and created a large archaeological site in Byblos (Dunand, 1972). In the 1970s and 1980s, the Lebanese state expropriated homeowners and refurbished the appearance of the souk to create a museum city in Byblos (Council for Development and Reconstruction, 2001: 192). The

4. The term "appears to be a globally understood metaphor for an *inauthentic*, commodified, and banalized modernization or reproduction of cultural forms that are removed from their original context and meanings" (Schmitt, 2005: 188).

Figure 4. Nightscape of Byblos with pubs (blue) and restaurants (yellow) in 2012



Source: translated from Karner (2016: 321).

old town was added to the UNESCO's World Heritage List in 1984 to protect it against rapid urbanisation and to revive cultural tourism after the end of the civil war (UNESCO, 2010). From 2003 until 2016, the "Cultural Heritage and Urban Development Project" (CHUD) focused on stimulating local economic development and enhancing the quality of life in Byblos (World Bank, 2016).

The recent transformation began in 2004, thanks to high vacancy rates in the souk despite the sound building structure (Weinitschke, 2002: 41). A local businessperson opened "Eddé Yard", which consists of a conglomerate of gastronomic establishments and boutiques spread over more than 20 former stores and workshops. Since 2008, the local government has permitted the operation of open-air bars during the summer months in the public area of the souk and promotes events like "Dance in the old city" (Karner, 2016: 177–213).

Byblos represents a postmodern hedonistic "urban nightscape" (Chatterton and Hollands, 2003) where one can socialise, stroll, proudly flaunt, dance, flirt, observe others and simultaneously consume food and (alcoholic) drinks in a privatised public historic setting. The atmosphere is perceived as a journey back in time, where existing norms and values can be bypassed. Passing time in the old town of Byblos has calming effects on visitors: "I come here to have fun, to refresh, to feel hope, to meet people and to communicate: I love people. (…) The whole night I am jumping from one bar to another" (cited in Karner, 2016: 173).

International newspapers such as the *New York Times* reported on the "rebirth" of Byblos and the return of tourists (Beehner, 2009), because the old town has a history as a tourist attraction. Apart from being an early cultural tourism destination, the fishing harbour used to be a destination for the international jet set during the 1960s, with its famous Byblos Fishing Club. The recent emergence of Byblos' nightscape is also linked to the long history of nightlife in Lebanon and to Beirut's leading position as party capital of the Middle East (Karner, 2016: 153–160).

To sum up, cities are a reflection of societal norms, cultural peculiarities, religious beliefs and economic activities influenced by geopolitical and neoliberal policies. Postmodern transformations of North African and Middle Eastern medinas follow the strong demand for leisure and hedonistic lifestyles. The aestheticisations and transformations and their side effects often contradict the outlined preservation guidelines. However, they do justice to the feelings and needs of contemporary society. Visitors are in search of authentic hedonistic places and do not question the scientific or historic originality. Historic towns function as "escape spaces" to cope with the exigencies of modern life and everyday problems of today's society. Thus, the outlined transformations support the introduced theoretical understanding of urbanity as a mirror for urban lifestyles.

4. Stop preservation and be WISE: Reinvent historic urban quarters!

For many centuries, urbanisation was characterised by new construction, and only those elements and structures that had proven to be beneficial endured. In contrast, holding on to traditional structures is a phenomenon of the past century, which is widely criticised: "[It] represents nothing other than the universalization of the recasting of tumultuous historical reorderings into the ossified ruins of theatrically staged places: time frozen as place, a mere moment of space" (Swyngedouw, 2005: 132). Moreover, the preservation of buildings, structures and spaces is only possible through definition, formalisation and institutionalisation. This contradicts the specific and complex dynamics of places throughout history. It is not only questionable whether squares like the Jemaa el-Fna can be preserved (Schepers, 2008: 115), but we should also wonder why preservation strategies are applied if the issuing of decrees might lead to their destruction: "But Jamaa 'el-Fna, one can destroy him by decree, but one cannot create him by decree" (translated from Goytisolo, 1995 cited in Schepers, 2008: 115).

Furthermore, conservation measures are linked to the paradox that there is no material preservation that does not cause economic change. This relationship counteracts traditional uses and activities, whose revival is often a simultaneous goal to promote tourism. Moreover, the vast majority of residents and tourists lack the expertise to distinguish original historical elements from replicas. In addition, they do not attribute the same values to expensively preserved urban heritage as conservation experts. On the contrary, today's visitors identify with urban landscapes that exhibit a mixture of both built heritage and innovative design of space (Gospodini, 2006), and ask for authentic experiences.

With that in mind, the efforts towards conducting scientific-based impact assessments should be redirected. Instead of measuring the degree of damage to material structures that traditional and new uses cause, historical remains' suitability for contemporary uses has to be assessed. If buildings do not suit the current standards of living, they need to be modernised using new technologies and local materials alongside advanced ones like glass, concrete and eco-friendly resources. Taking ecological, economic and social aspects into consideration, the demolition and rebuilding of structures should be encouraged if it is the most sustainable solution. Architects can create an atmosphere reminiscent of history, with newly constructed but ancient-looking structures that satisfy visitors' longing for the past. To ensure identification of the local population with the structures, valuable elements should be preserved during processes of deconstruction. They can either be integrated into the urban fabric (e.g. facades) or digitally documented and (virtually) displayed in subsidised museums. In addition, new usages should be promoted. In doing so, today's generations will create resilient urban quarters with innovative materials and functions, as we know from previous epochs.

This reinvention of historic urban quarters will provide us with sustainable integrated spaces that people can identify with for living, recreation, leisure and the satisfaction of other needs in the 21st century.

Overall, material protection and cosmetic restoration works true to the original building style are cost-intensive, romanticised and obsolete attempts at preservation that neglect the diverse needs of our societies and contradict advanced urban developments. "[B]uilt heritage represents formal fragments of the city's history that are rich in meaning, and that allow themselves to be interpreted again and again in different contexts" (Gospodini, 2006: 326). For that reason, it is necessary to place individual and collective human preferences at the centre of participatory and integrated urban planning. By considering everyday and touristic practices, the economic, social, cultural and religious needs of society can be addressed.

Instead of counteracting inevitable processes of gentrification, festivalisation, commodification, Disneyfication and digitalisation, authorities should acknowledge and control them as new dimensions of future-oriented planning. These processes have to be recognised and managed in order to create competitive urban quarters. Modern-day tools and proven concepts can provide guidelines for strategic urban planning, but should be questioned and further developed to tackle current problems. Needless to say, the overall spatial planning regulations have to secure good physical-atmospheric conditions like fresh air, clean water, daylight and green areas. As a result, this reinvention of historic urban quarters will provide us with sustainable integrated spaces that people can identify with for living, recreation, leisure and the satisfaction of other needs in the 21st century.

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LOCALISING THE NEXT WISE CITIES IN THE MEDITERRANEAN: THE MULTILEVEL CHALLENGES OF MENA'S EMERGING URBAN REGION

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1. Context

The implementation process of the UN 2030 Agenda[1] is being driven by two key principles: 1) the recognition of the endogenous needs and expectations of each territory; and 2) the capacity-building of local and sub-national governments to integrate the global agendas that have been approved since 2015 into their territorial development policies.[2] Similarly, the concept of "Wise City" formulated by CIDOB places citizenship, local governments and models of *glocal* development at the centre of global geopolitics as they can achieve greater impact on territorial sustainability (urban, rural and environmental).[3]

At a time when demographic projections show that six out of every ten people in the world will live in urban areas by 2030, the economies of agglomeration assume a dual role in global governance: the cities are the main engine of a nation's wealth and, at the same time, one of its most worrisome vulnerabilities. The Mediterranean Basin defines, in this sense, a scenario of maximum complexity: it integrates advanced, emerging and middle-income economies with urban polarities linked to international financial markets; but also contains low-income, failed and war-torn countries, with cities concentrating the highest rates of devastation and misery in the world. In this multifaceted scenario, cities face different challenges that involve rethinking and *territorialising* the inclusive meaning of "Wise City".

This chapter aims to *localise* "Wise Cities" in a specific area of the Mediterranean Basin: The Middle East and North Africa (MENA), including its neighbouring region in Eastern Africa. The MENA region can be defined in several ways,[4] but this chapter maintains the sub-regional structure provided by the MENARA Project.[5] These sub-regions are: the Maghreb/North Africa (integrated by Morocco, Algeria, Tunisia and Libya), the Mashreq/Levant (Jordan, Lebanon, Palestinian Territories Occupied, Israel, Syria, Iraq and Turkey), the Gulf (Oman, Yemen, Saudi Arabia, United Arab Emirates, Qatar, Bahrain and Kuwait) and the Egypt-Sudan sub-region. Iran, despite being part of western Asia is analysed in the Gulf economies context (McKee et

1. "Localizing the SDGs" is an initiative supported by UCLG, UN-Habitat and UNDP. More information on this process: http://localizingthesdgs.org/
2. The main agendas are: the Addis Ababa Action Agenda on Financing for Development; the Paris Agreement on Climate Change (UNFCC); the Sendai Framework for Disaster Risk Reduction 2015–2030; the Vienna Program of Action for Landlocked Developing Countries 2014–2024; Accelerated Modalities of Action for Small Island Developing States (SAMOA Pathway); the Istanbul Declaration and Program of Action for the Least Developed Countries 2011–2020 and the New Urban Agenda approved at HABITAT III (UN-Habitat).
3. More information about the "Wise Cities" initiative: https://www.cidob.org/en/projects/wise_cities
4. More information on the different definitions used for the MENA region: http://www.menaraproject.eu/infographics/
5. More information on the MENARA Project -The Middle East and North Africa Regional Architecture: Mapping geopolitical shifts, regional order and domestic transformations: http://www.menaraproject.eu/menara-project/

al., 2017:4). This chapter also considers it necessary to broaden the territorial analysis towards Eastern Africa, incorporating the urban system in the Horn of Africa (Eritrea, Djibouti, Somaliland region) and Ethiopia, given their emerging role in the maritime trade flow in the Gulf of Aden and in the development of one of the most vulnerable regions in the world.

In a far-reaching process of global urban transition, metropolitan areas, intermediary cities, small cities and rural areas cooperate and compete with each other, generating polycentric urban systems that stimulate the emergence of decentralised multilevel governance frameworks (local, sub-national, central).

On the other hand, it has not been considered appropriate to incorporate Mauritania (Maghreb, North Africa) into the analysis, as this country articulates its relations on the West African Atlantic coast. At the time of making a more detailed approach to MENA's urbanisation process, this article leaves out of the analysis cities located in armed conflict contexts such as Iraq and Syria. Limiting the inclusion of the cities of the State of Israel has also been considered due to the fact that its policies and expansive urban growth dynamics must be explained in a context of political land occupation.

Beyond the paradigm of the European city – identified by its financial strength and the quality of its socio-environmental governance – the chapter highlights the recent experience of many cities in the Maghreb/ North Africa, Mashreq /Levant, the Gulf (plus Iran) and Egypt-Sudan sub-regions that have made significant progress in their economic, social, economic and environmental governance. This task has not been easy: qualitative and quantitative information on many of these cities is limited and the length of the chapter has not facilitated a deeper analysis.[6]

This chapter is structured in two parts: the first analyses the Mediterranean urban system, identifying the 60 cities that have experienced the highest urban growth since 2000, showing, *a priori*, the existence of a vibrant and attractive local economy. The second part focuses on the nine cities that have led the urbanisation process in MENA, analysing some key aspects of their multilevel governance. In the conclusion of the chapter the identification of these cities as "Wise Cities" is evaluated. The chapter uses figures and graphs to reinforce the narrative.

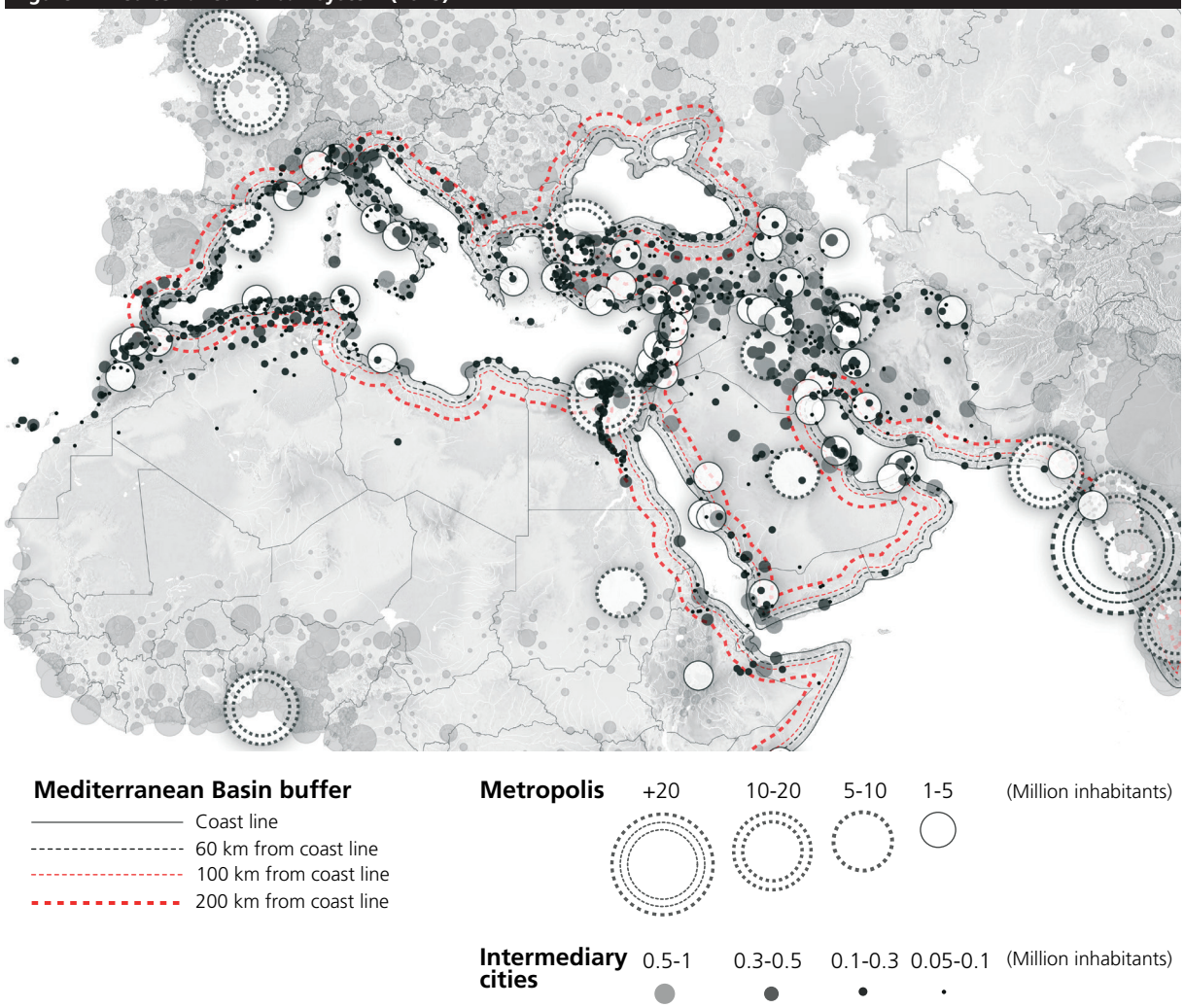
2. Wise urban systems in MENA

A "Wise City" generates competitive advantages by its physical integration in a territory and is able to redistribute – over time – a significant part of its captured wealth towards its population's welfare. Most of the cities in the world have evolved into complex urban systems, driving progress on a regional scale. In a far-reaching process of global urban transition, metropolitan areas, intermediary cities, small cities and rural areas cooperate and compete with each other, generating polycentric urban systems that stimulate the emergence of decentralised multilevel governance frameworks (local, sub-national, central).[7] To localise a Wise City it is first necessary to analyse its relevance in a regional framework.

In the Mediterranean Basin, three urban systems can be observed:[8] 1) coastal and inland regional corridors; 2) metropolitan clusters; and 3) enclave economies integrated in international networks (see Figure 1).

6. Data used comes from geospatial database built by the author of this paper for the Fourth Global Report on Decentralization and Local Democracy (GOLD IV) (UCLG, 2017).
7. Author's note: A metropolitan area or metropolis is considered an urban agglomeration of more than 1 million inhabitants; an intermediary city, an agglomeration of between 50,000 and 1 million inhabitants; and small city is considered to be one with fewer than 50,000 inhabitants. For a more detailed analysis see GOLD IV (UCLG, 2017).
8. For an approach to the different categories of urban systems, see: UCLG, 2017, pp. 138–140. Also, for Africa, Europe and MEWA (Middle East and west Asia) regions see: *Ibid*: pp. 167–173, pp. 186–192, pp. 199–203.

Figure 1. Mediterranean urban system (2015)



Source: UCLG and UNESCO-CIMES. Author: Borja M. Iglesias.

As for regional corridors, southern European, North African and Levantine economies concentrate most of their cities in a 200-kilometre-wide strip along the coast, limited by mountain range systems to the north and drylands to the south and east. On the other hand, the larger inland urban corridors are visible in a significant proportion of the *Fertile Crescent* – in the rural regions of the Nile Valle (EGY) and Tigris and Euphrates river basins (IRQ) – or in the Zagros Mountains (IRN) have been fostering trade relations between intermediary and small cities for centuries. As for metropolitan clusters, mega-cities such as Istanbul (TUR) and Cairo (EGY) stand out, together with small metropolises, such as Tangier (MAR) or Sfax (TUN) that have emerged in recent decades as important international logistics hubs. Finally, intermediary cities appear as enclave economies, geographically isolated, but with expansive strategic infrastructures (especially ports and airports in the Gulf of Aden and the Red Sea) that allow them to distribute commodities to international markets quickly.

The Mediterranean Basin is a geographical area with a high urban population rate, led by the Mashreq/Levant (73.2%), the Gulf plus Iran (70.6%), southern Europe (70%) and the Maghreb/North Africa (66.7%). By contrast, in Egypt-Sudan (40.7%) and the Eastern African economies included in this analysis (23.3%) the rural population predominates. In the case of Ethiopia – the second most populous economy in Africa after Nigeria – the urbanisation process is expected to increase its urban population to 50 million inhabitants by 2050, a moment in which people living in cities will reach 37. 6% of a total country population estimated at 187 million inhabitants (UN-DESA, 2015).

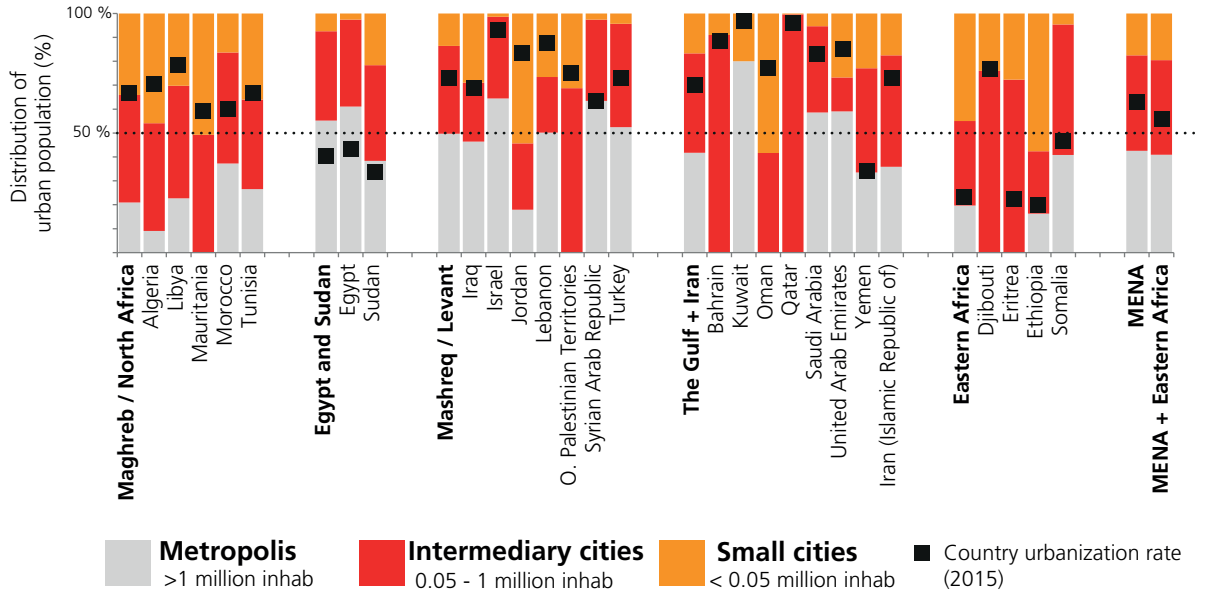
The MENA region has an approximate population of 540 million inhabitants (343 million living in cities), 658 million if the Eastern African countries of the Horn of Africa are added. Focusing the analysis on the MENA region, the urban population lives in 49 metropolitan areas (146 million inhabitants and 42.5% of the urban population), 833 intermediary cities (137 million inhabitants and 40% of the urban population) and an undetermined number of small cities and towns (60 million inhabitants and 17.5% of the urban population). This data illustrates the relevance of the cities of fewer than 1 million inhabitants in which 60% of MENA's urban population lives (see Graph 1).

Taking Europe as a reference – as a model of a region shaped by the territorial cohesion of its polycentric system of intermediary cities – 60.4% of Europe's urban population lives in cities of fewer than 300,000 inhabitants. This polycentric structure is also present in some of MENA's emerging economies. In the Maghreb, Morocco concentrates 46.4% of its urban population in 62 intermediary cities and in Algeria 45.1% of its urban population lives in 100 intermediary cities (90% if cities with fewer than 50,000 inhabitants are added). In the Mashreq/Levant, Turkey stands out as an economy that forms part of the MINTs,[9] and which concentrates 43.3% of its urban population in 155 intermediary cities uniformly distributed by geography. In Iran (in the Gulf hinterland) 46.6% of the urban population lives in 169 intermediary cities and 35.6% lives in the eight larger provincial capitals, most of them located on the Iraq-Turkey border and in the Caspian Sea basin. By contrast, the urban system of many Gulf economies is determined by the size of their population, climatic conditions and the small number of cities. Countries with a high rural population such as Yemen have a strong macrocephaly in their metropolitan areas: 33.5% of Yemen's urban population is concentrated in Sana'a. Something similar occurs in the small states in the Gulf, where the entire urban population lives in the capital cities – Kuwait City (KWT), Doha (QAT), Dubai, Sharjah and Abu Dhabi (UAE).

A Wise City exercises strong territorial attraction through its ability to generate expectations of economic, social and cultural progress among people. The dynamism and competitiveness of a city's economy are key indicators for understanding the urbanisation process throughout the 19th century (in Europe), the 20th century (in Latin America), and the beginning of the 21st century (in Asia and China). A reading of the sample of 60 cities that experienced the highest demographic growth in the Mediterranean Basin from 2000 to 2015 (see Graph 2) reveals two significant issues: 1) the 60 cities contained in the sample are located in the MENA region and the neighbouring Horn of Africa region, and 2) 90% of them are intermediary cities.

9. Author's note: MINT is an acronym for Mexico, Indonesia, Nigeria and Turkey, a second generation of emerging markets – after the BRICS – which are expected to have a key role in Global South development.

Graph 1. Distribution of the urban population by city size (%) and urbanisation rate by country and sub-regions (%) in MENA plus Eastern Africa (2015)



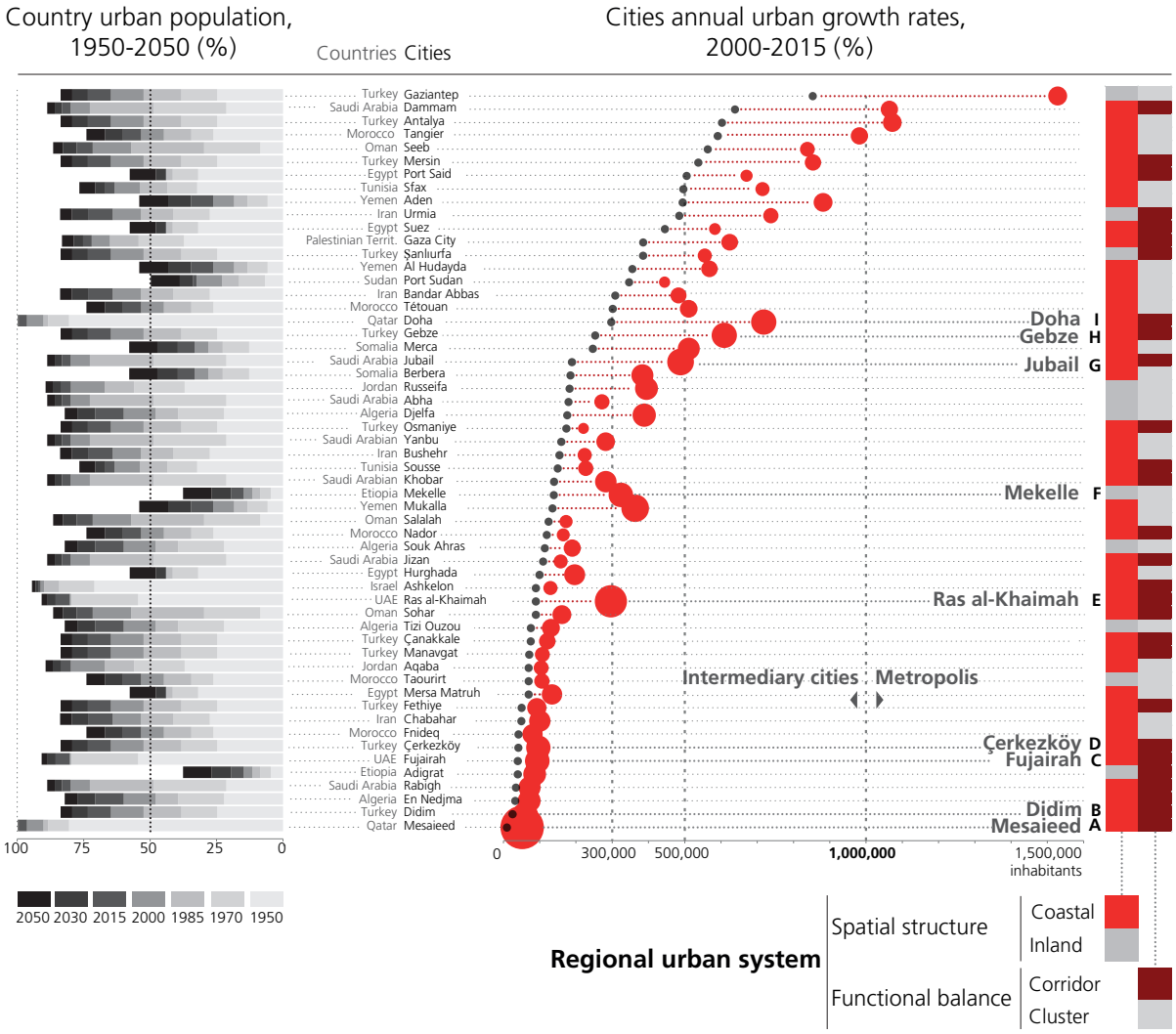
Source: UCLG and UNESCO-CIMES. Author: Borja M. Iglesias.

In this geography the following urban systems can be distinguished (see Figure 2): 1) the *Turkish corridor* of Çanakkale-Izmir-Antalya-Gaziantep, which links cities that have thrived as logistics and tourist hubs; 2) the *port cities* located in the Red Sea connected with the Mediterranean Basin through the Suez-Port Said Canal; 3) the *Gulf coastal corridor* that concentrates the cities with the highest GDP per capita in the world; 4) the enclave economies located in the Gulf of Aden basin, which open landlocked rural economies, such as Ethiopia, to the sea; and 5) the *Maghreb coastal corridor* delimited by Sfax (TUN) and Tétouan (MAR), as the main industrial and logistics area linked to southern Europe.

This classification explains the high urban population growth in Mediterranean cities in the 2000–2015 period. In this sense, it should be noted that some regions of the analysed southern European countries have growth rates below 1% for the same period, and in many cases negative rates; this is a common phenomenon in Greece, Italy and Spain, explained, among other reasons, by the low birth rate and strong demographic aging. But this threat remains a long way from eastern Europe's *shrinking cities*.

From this regional approach, this chapter focuses its analysis on the nine cities with the highest urban growth rates (see Figure 3 on the right). Eight of these cities are located in the MENA region: **Didim**, Çerkezköy and **Gebze** in Turkey; **Ras al-Khaimah** and **Fujairah** in the United Arab Emirates; **Mesaieed** and **Doha** in Qatar; and **Jubail** in Saudi Arabia. Although **Mekelle** (Ethiopia) is not part of the MENA region, the chapter considers its analysis necessary due to its geographical and economic linkages to the Red Sea, and its key role in the development of a rural economy such as Ethiopia, which is called to be an emerging actor in the stabilisation of one of the most vulnerable regions in the world as is the Horn of Africa.

Graph 2. 60 cities with the highest urban population growth rates in the Mediterranean Basin, 2000–2015



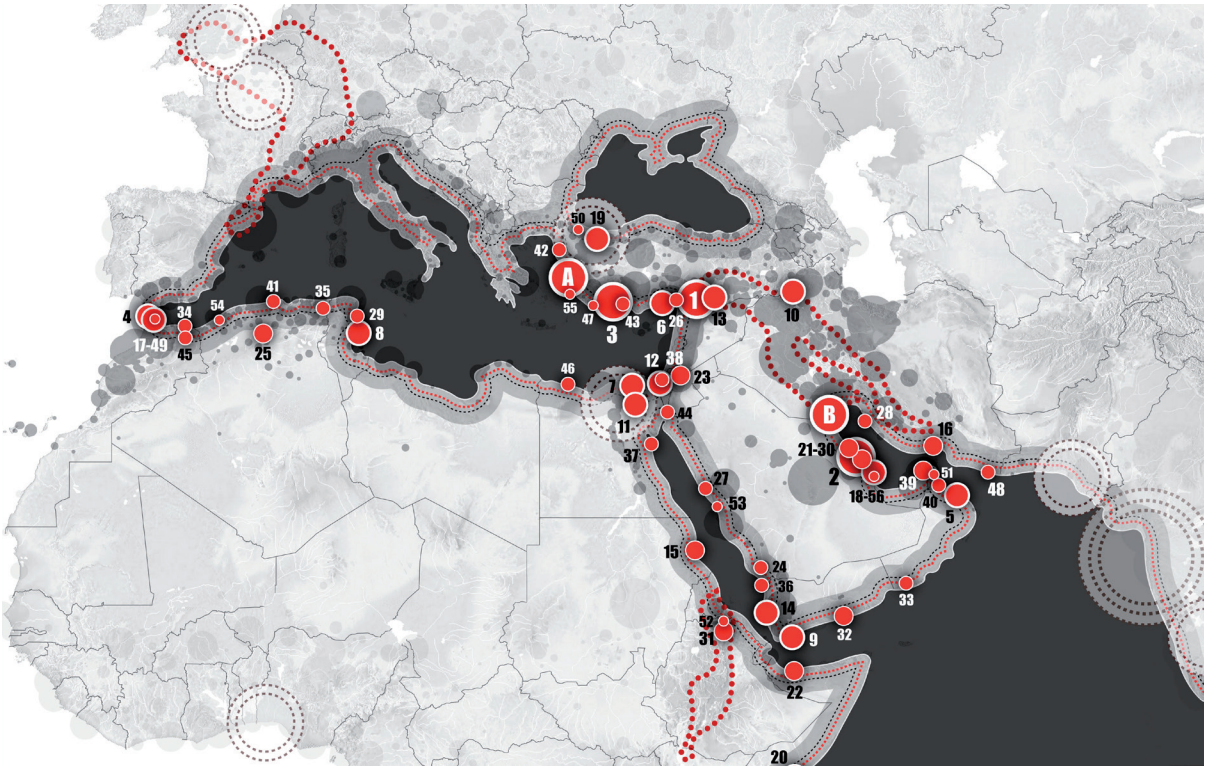
Source: UCLG and UNESCO-CIMES. Author: Borja M. Iglesias.

The objective of this research is to assess the categorisation of these cities as Wise Cities. To this end, the interactions between urban and demographic growth in the 2000–2015 period will be analysed below (see Figure 5), suggesting an approach to the environmental, social, economic or institutional policies that have been boosted by their multilevel governments in the past years.

3. Localising the *next* Wise Cities in MENA

A Wise City can boost the competitiveness of its local economy and, at the same time, guarantee the "Right to the City" for its entire population, leaving no one behind; it is a resilient and solidary city that emerges reinforced after the impact of crisis and integrates citizenship into decision-making (Coll, 2016).

Figure 2. Map of the 60 cities with the highest urban population growth rates in the Mediterranean Basin, 2000–2015

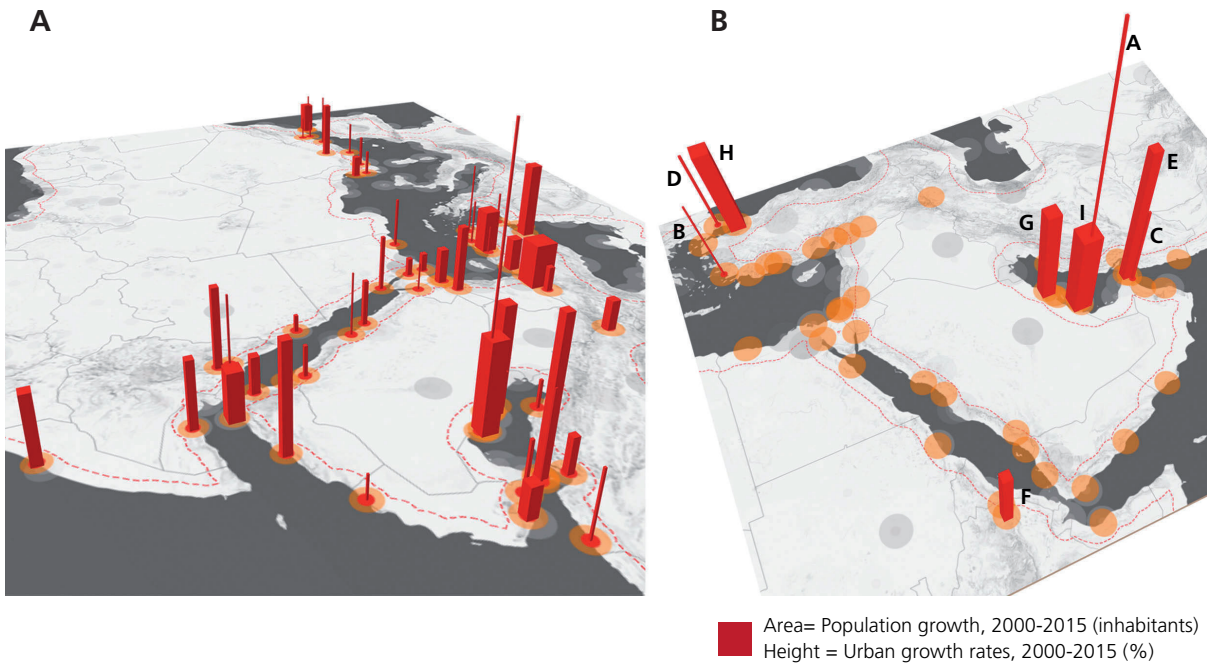


[metropolis in 2000-2015] A_Izmir (TUR); **B**_Ḥawalli -Governorate inside Kuwait metropolitan area (KWT) **[intermediary cities in 2000, metropolis in 2015] 1**_Gaziantep (TUR); **2**_Dammam (SAU); **3**_Antalya (TUR); **[intermediary cities in 2000-2015] 4**_Tangier (MAR); **5**_Seeb (OMN); **6**_Mersin (TUR); **7**_Port Said (EGY); **8**_Sfax (TUN); **9**_Aden (YEM); **10**_Urmia (IRN); **11**_Suez (EGY); **12**_Gaza City (PSE); **13**_Şanlıurfa (TUR); **14**_Al Hudayda (YEM); **15**_Port Sudan (SDN); **16**_Bandar Abbas (IRN); **17**_Tétouan (MAR); **18**_Doha (QAT); **19**_Gebze (TUR); **20**_Merca (SOM); **21**_Jubail (SAU); **22**_Berbera (SOM); **23**_Russeifa (JOR); **24**_Abha (SAU); **25**_Djelfa (DZA); **26**_Osmaniye (TUR); **27**_Yanbu (SAU); **28**_Bushehr (IRN); **29**_Sousse (TUN); **30**_Khobar (SAU); **31**_Mekelle (ETH); **32**_Mukalla (YEM); **33**_Salalah (OMN); **34**_Nador -incl. Touima (MAR); **35**_Souk Ahras (DZA); **36**_Jizan (SAU); **37**_Hurghada (EGY); **38**_Ashkelon (ISR); **39**_Ras al-Khaimah (ARE); **40**_Sohar (OMN); **41**_Tizi Ouzou (DZA); **42**_Çanakkale (TUR); **43**_Manavgat (TUR); **44**_Aqaba (JOR); **45**_Taourirt (MAR); **46**_Mersa Matruh (EGY); **47**_Fethiye (TUR); **48**_Chabahar (IRN); **49**_Fnideq (MAR); **50**_Çerkezköy (TUR); **51**_Fujairah (ARE); **52**_Adigrat (ETH); **53**_Rabigh (SAU); **54**_En Nedjma (DZA); **55**_Didim (TUR); **56**_Mesaieed (QAT).

Source: UCLG and UNESCO-CIMES. Author: Borja M. Iglesias.

The concept of a Wise City implies thinking about the urban and demographic scale of the city and about its social, economic and environmental interactions with its hinterland. A Wise City promotes the *human scale* of the urban fabric and adds value to the local economy through its compactness, density and mixed land use, avoiding the urban sprawl and mono-functional segregation of space. A *compact city* consumes less economic and energy resources than sprawling cities and does not pose a threat to the maintenance of the productive activity of the rural hinterland. In addition, the proximity between local government and citizenship facilitates the design and implementation of effective policies of sustainable mobility and social cohesion. With fewer resources, a Wise City can, on a human scale, have a greater impact on the welfare of its citizenship than a metropolitan area.

Figure 3. A) 60 cities with the highest urban population growth in the Mediterranean Basin, 2000–2015; B) Nine cities with the highest urban population growth in the Mediterranean Basin, 2000–2015



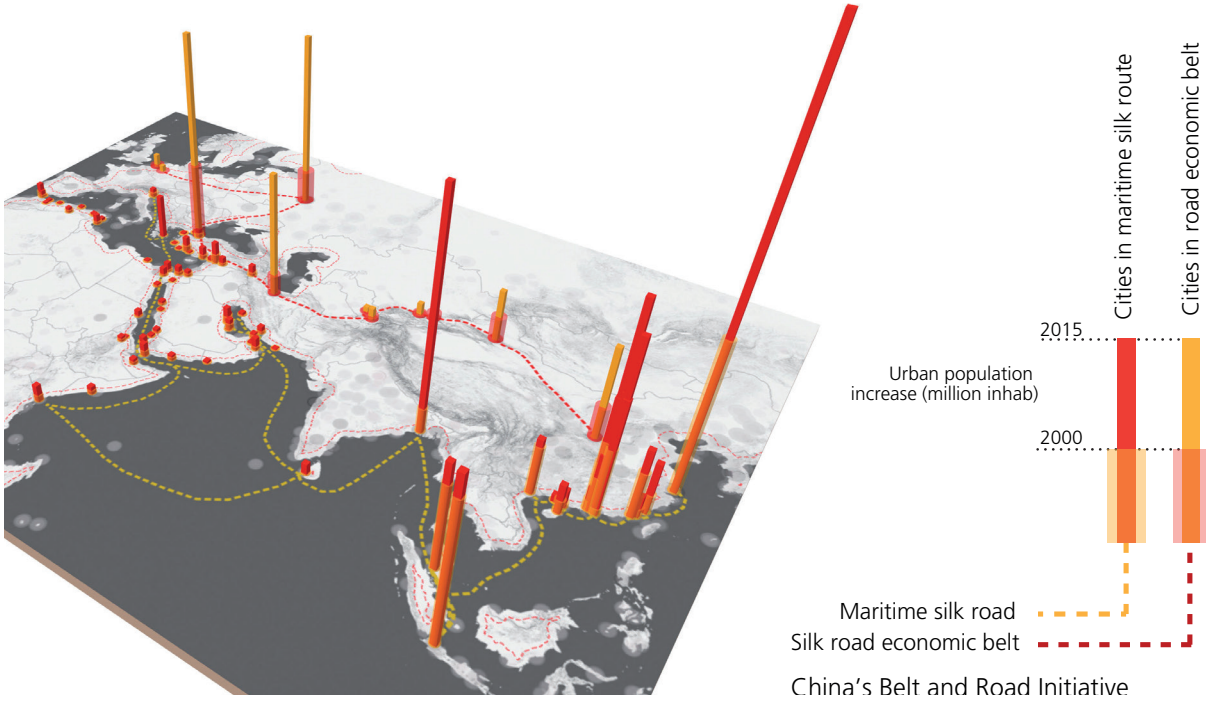
Source: UCLG and UNESCO-CIMES. Author: Borja M. Iglesias.

These issues are becoming increasingly relevant, especially when taking the world urbanisation process into account: there is a similar-sized population living in 503 metropolitan areas (41.2% of the total urban population) as in 8,923 intermediary cities (36% of the total urban population). This last figure is even higher if cities of fewer than 50,000 inhabitants (22.7% of the urban population) are added. The MENA is an important part of the Global South, which faces big challenges: The heterogeneous region contains emerging, medium and low-income economies. Many of its countries still have sizable shares of rural population, yet the Global South already concentrates 83% of the metropolitan areas in the world - eight of them with a population of over 20 million inhabitants - with significant multilevel deficits in their peri-urban boundaries. These urban agglomerations can also constitute the main threat to the sustainability of rural-urban linkages on which depend, for example, the water and food sovereignty of many of these nations.

The first approach to the territorial analysis of the nine cities that have led the urbanisation process in MENA (see Figure 3, right-hand image) reveals two important urban systems: 1) the Gulf regional corridor, which is integrated in the main trade route with Asia (Ras al-Khaimah and Fujairah in the United Arab Emirates, Mesaieed and Doha in Qatar, Jubail in Saudi Arabia); and 2) the Marmara region, in the hinterland of Greater Istanbul (Çerkezköy and Gebze), a megacity consolidated as an *emerging gateway* between Asia and Europe.[10] The other two remaining cities – Didim in Turkey and Mekelle in Ethiopia – are also integrated into urban corridors, although in the analysis they assume greater relevance as enclave economies. Their urbanisation process will be analysed in detail for the 2000–2015 period (see Figure 5).

10. See: https://www.brookings.edu/research/redefining-global-cities/

Figure 4. Urban population growth in the network of cities integrated in the B&R Initiative, 2000–2015



Source: PWC, UCLG and UNESCO-CIMES. Author: Borja M. Iglesias.

3.1. The Gulf regional corridor

The high-income economies of the Gulf (Saudi Arabia, Qatar and the United Arab Emirates) concentrate some of the cities with the highest GDP per capita in the world. Many of them have diversified the benefits of their hydrocarbon industries towards sectors related to logistics, the knowledge economy, finance, sports and tourism. However, in all of them, large-scale urban development (real estate and infrastructure) is used as a strategy to position their main metropolitan areas – Doha, Abu Dhabi and Dubai – as the most attractive global cities for foreign investment. In many cases, these land transformations have had a devastating impact on the environment and have contributed to the widening inequality between the local population and expatriates from neighbouring regions.

In the case of cities such as Mesaieed (QAT), Fujairah (UAE) and Jubail (SAU), the urbanisation process has focused on the expansion of industrial land and port infrastructure. In this context, the "Belt and Road Initiative" (B&R or BRI) (PwC, 2016) promoted by China since 2013 to strengthen its presence in the European market (see Figure 4), takes advantage of the strategic position of many MENA's coastal cities as potential trading hubs between Asia and Europe (Rudolf, 2017), but also, to strengthen China's role as key actor in the *diplomatic labyrinth* of the Middle East region. Can these cities be considered Wise Cities?

The industrial city of **Mesaieed** (QAT), located 40 kilometres south of Doha, tripled the extension of Hamad Port (from 9 km^2 in 2000 to 43 km^2 in 2015) within the framework of the "Qatar National Vision 2030".

A Wise City promotes the *human scale* of the urban fabric and adds value to the local economy through its compactness, density and mixed land use, avoiding the urban sprawl and mono-functional segregation of space.

This critical infrastructure has two goals: removing the petrochemical industry from Doha and developing the most important aluminium cluster in the world: Qatalum. Once the construction of this new port infrastructure is completed, Qatar will be able to control 35% of regional trade (*The Peninsula*, 2017) in a context of *buoyant* trade relations with China and, on the other hand, of a drastic reduction in the dependency on the port infrastructures of its Saudi neighbours, amid growing hostility since 2017. This port will also host the new Qatar Emiri Naval Forces and the Qatar Economic Zone 3 (QEZ3). In this city the residential land use area represents a third of the industrial area, and assumes the function of a dormitory town for the expatriates working close to Qatar Petrochemical Company, Qatar Steel, and Qatalum among others.

The industrial city of **Jubail** (SAU) – located at the heart of oil deposits and close to the Gulf's deep waters (Al-But'hie and Eben , 2002) – occupies a central position on the Kuwait City-Doha axis. The construction of the industrial cities of Jubail in the Gulf and Yanbu in the Red Sea in the 1970s was framed within the Saudi strategy of diversification of its industrial economy and reduction of dependence on oil revenues. At present, Jubail is one of the largest and most polluted industrial cities in the world: in 2016, it ranked 8th in the world, with the highest concentration of heavy particles in the air (WHO, 2016). In the 2000 to 2015 period the city doubled its population (from 189,000 to 488,000 inhabitants), and increased its industrial area by 100 km^2 to a total of 160 $km.^2$ This area is equivalent to the urban area of cities such as Montpellier (FRA), Belfast (IRL), or Sheffield (GBR). Among the most necessary infrastructure are the desalination plants.

Fujairah (UAE), capital of the only emirate located in the Gulf of Oman, is one of the least industrialised cities in the Gulf. In the 2000 to 2015 period the city promoted the development of the Port of Fujairah, multiplying its industrial area by ten (from 2.11 km^2 to 23.94 km^2). This infrastructure is part of a regional strategy aimed at complementing the neighbouring ports of Khalifa and Zayed (Abu Dhabi), and strengthening the logistical capacity of Port Jebel Ali (Dubai), the 9th most important port in the world. The secondary role of Fujairah in the industrial economy of the emirates allowed the government to foster tourism, cultural and environmental policies. In contrast to the ambitious "Dubai Plan 2021" and the "Abu Dhabi 2030 Plan", the "Fujairah 2040 Plan" is much more limited: the primary feature of the plan is the construction of 8,800 new housing units and 1,500 hotel rooms. The city is positioned as a tourist destination and is one of the few cities in the Gulf that still preserves its traditional heritage and a human scale in its urban fabric.

In the cities of Ras al-Khaimah (UAE) and Doha (QAT), by contrast, the urbanisation process has been concentrated mainly in residential land use. The city of **Ras al-Khaimah** (UAE), located 100 km north of Dubai in the hinterland of the Strait of Hormuz, is the capital of a minor oil-producing emirate whose main sources of income come from agriculture, mining and the *tiny* RAK Economic Zone. Its status as the capital of a *poor* and subsidised emirate (in relation to neighbouring Dubai and Abu Dhabi) is evidenced by the relative insignificance of its industrial areas (1.91 km^2 in 2016) and the limited opulence of its real estate developments. In the 2000 to 2015 period, the city experienced

significant growth: it tripled its population (from 90,000 to 296,000 inhabitants) and its urban footprint (from 37km^2 to 97 km^2). Unlike other Gulf cities, Ras al-Khaimah has a high rate of informal urbanisation in its peri-urban boundaries. These areas concentrate a significant part of the immigrant population employed in the construction and domestic work sectors in the neighbouring emirates. The city faces the challenge of correcting the informal urban sprawl.

The city of **Doha** (QAT), the capital of Qatar, is undoubtedly the most well-known city analysed in this chapter. With a population of 717,000 inhabitants, it reaches 1.6 million in the whole of its metropolitan area (including Ar Rayan and the industrial district of Doha). In the 2000 to 2015 period, the city increased its population by 355,000 inhabitants and expanded its residential urban area by 100 km^2. Positioned as a global tourist centre, the city has tried to make the diversification of its economy towards knowledge, finance and events compatible with the boosting of its hydrocarbon industry. For this reason, industrial activity has shifted out of the city: toward the port of Hamad in Mesaieed in the south and to the metropolitan boundary. The only logistics infrastructure that remains in the city is the Hamad International Airport. With an area of 33 km^2 – equivalent to a fifth of the city's surface area – it occupies 11th position among airports with the highest international cargo capacity and is the only airport, alongside Singapore, whose position has risen in recent years in this airport category. The Doha development pattern is part of a process of land liberalisation initiated in the 1990s aimed at leading the urbanisation process in the Gulf. Once this goal has been achieved, the development strategy, albeit aligned with the pragmatic "Qatar National Vision 2030", continues to bet on the construction sector. Educational infrastructure such as Qatar University, the Aspire Zone and the Education City – boosted by the Qatar Foundation – share a narrative with opulent real estate operations such as The Pearl and Lusail Smart City and the sports infrastructure that will host the 2022 FIFA World Cup.

3.2. The Greater Istanbul cluster

The Greater Istanbul metropolitan area defines a logistics and industrial cluster that covers the Marmara region, shaping one of the most important regional-scale urban systems in the Mediterranean Basin. As a transcontinental gateway between Europe and Asia, Istanbul is a megacity with a population of over14 million inhabitants, which has contributed to positioning Turkey as an emerging economy within the MINTs. This chapter analyses two intermediary cities – Çerkezköy and Gebze – that have taken advantage of their strategic positions in the industrial belt of Greater Istanbul to strengthen their urban governance.

The city of Çerkezköy (TUR) – located 100 km east of Istanbul – is one of the most representative examples of an intermediary city integrated into a metropolitan cluster. The construction of the Bosphorus Bridge in the 1970s favoured population displacements and industrial decentralisations from the Istanbul urban area, and in 1975 it acquired the status of industrial region (Çerkezköy Organized Industrial Region). Çerkezköy, together with the neighbouring cities of Veliköy and Kapaklı, is one of the largest industrial areas in Turkey and employs more than 80,000 people in the textile, pharmaceutical and plastic sectors. Linked

to Istanbul and southern Europe through the Trans-European Motorway (TEM), the city has progressed at the same rate as the national economy. In the 2000 to 2015 period the city doubled its population (from 41,000 to 96,000 inhabitants). It experienced a similar growth in the extension of the residential land use (from 6 km^2 to 15 km^2) and industrial land use (from 5 km^2 to 12 km^2). Despite this, the city maintains the compactness of its residential urban area and, as in many of Turkey's intermediary cities, public housing policies are addressed to implement high-density models. It contrasts with the permissiveness in the land occupation for industrial activity that tends to extend it along the trade routes, threatening the rich peri-urban environmental ecosystems.

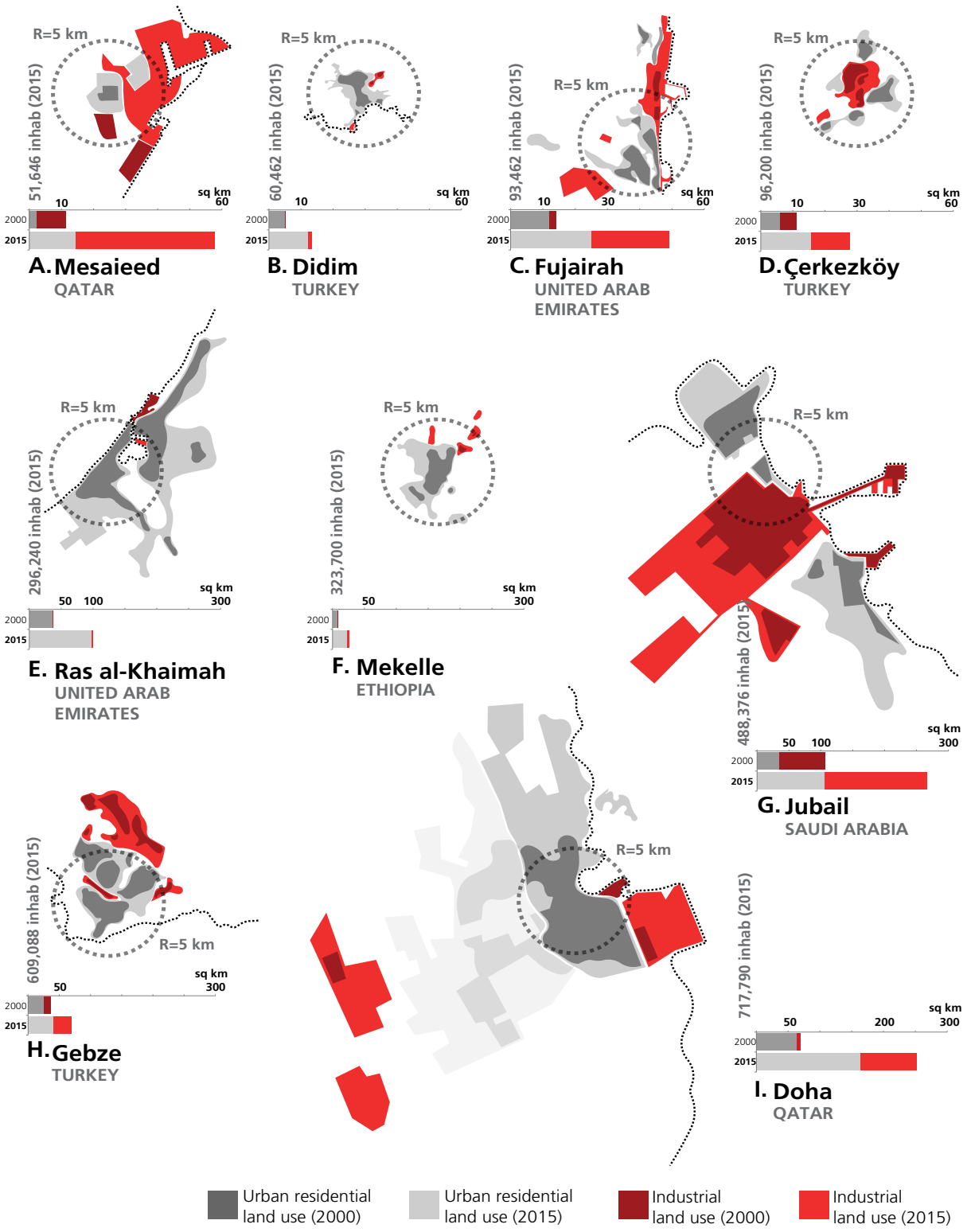
The city of **Gebze** – located at the western end of Greater Istanbul – is a good example of an intermediary city absorbed by metropolitan expansion. As in the case of Çerkezköy, Gebze developed its own industrial area in the mid-1980s (Gebze Organized Industrial Zone, GOIZ), and now concentrates most of the industry in the province of Kocaeli and represents 15% of total Turkish industry. In the 2000 to 2015 period the city doubled its population (from 253,000 to 609,000 inhabitants), with the greatest urban growth in residential land use (from 25 km^2 to 40km^2), despite being limited by the lack of space for industrial extension (10 km^2 to 28 km^2). The GOIZ hosts more than 820 firms in nine areas of industrial activity, employs 69,000 people and contributes 6.8% of Turkey's exports and 7.8% of its imports. Gebze is a highly dense and compact intermediary city. Delimited to the north by the TEM and to the south by the Sea of Marmara, it faces one of the highest annual urban growth rates in Turkey (3.74% between 2011 and 2017). The recent inauguration of the Gebze-Izmir Motorway will help to reduce the pressure on Gebze and open land expansion to other areas of the province, although it will also contribute to the extension of the Greater Istanbul urban footprint.

3.3. Enclave economies

This analysis of the nine most dynamic cities of the Mediterranean concludes with two cities that work as enclave economies and provide services to a large territorial area: the city of Didim (on the Turkish Aegean coast) and the city of Mekelle (in the main Ethiopian inland urban corridor).

As noted previously in the chapter, Mekelle is the only city analysed not integrated in the MENA region. The chapter considers justified the extension of the territorial analysis of the MENA urban systems in both margins of the Red Sea, Mandeb Strait and the Gulf of Aden beyond *geopolitical boundaries* to incorporate an approach to the Horn of Africa. The inclusion of Mekelle (a city closer to the coast than to Addis Ababa) highlights the potential geostrategic role of many similar cities located along the Horn of Africa's coast such as Djibouti (DJI), Assad and Massaua (ERI) or Berbera (in the Somaliland region, SOM) for the coming years. The city of Port Said (SDN), although integrated into the MENA region, shares with these cities the fact of being the unique urban areas in its country with the minimum logistical infrastructure to channel imports and exports to international markets, but also – as in the case of Sudan and Ethiopia – to structure the internal development of vast and low-income economies.

Figure 5. Urban footprint of the nine cities with the highest urban population growth in the Mediterranean Basin, 2000–2015



Source: Geodata built from Google Earth Pro. Author: Borja M. Iglesias.

The intermediary city of **Didim** (TUR) – located on the Turkish coast of the Aegean, in the Izmir-Antalya corridor – is one of the main tourist attractions in the country. Previously a small city (25,000 inhabitants in 2000), its population increased to 60,000 inhabitants by 2015, tripled the extension of residential land use (from 4.8 km^2 to 12 km^2), a significant part of which was for the holiday residences of British pensioners (Nudrali, 2007). Beyond hotel facilities, the city hosts one of the largest marinas for superyachts in the eastern Mediterranean, with a capacity for 500 large vessels. The city is a good example of an intermediary city despite its sprawl: it serves a large and lightly populated region and generates strong linkages with the natural environment on which its tourism economy depends. The city has improved its competitiveness, helped by regional road infrastructure and its proximity to the international airports of Izmir and Antalya. The city faces the challenge of losing its human scale due to projected annual urban growth of close to 6%.

Mekelle (ETH) is the only city of a low-income country analysed in this chapter. Located in the urban corridor Addis Ababa-Asmara near the Eritrean border, it is the capital of Tigray, one of the most dynamic industrial regions in East Africa. The city has been the subject of several studies conducted by the United Nations Industrial Development Organization (UNIDO), most of which focused on the wood and metal clusters. Mekelle has become the second largest cluster in Ethiopia after Addis Ababa, and contains between 6% and 8% of the country's active population (UNIDO, 2010; 2016). In the 2000 to 2015 period the city increased its population from 139,000 to 323,000 inhabitants in a general context of national migratory displacements from rural areas. In this period, the residential urban area tripled (from 8 km^2 to 23 km^2) and the first industrial areas in the north of the city were developed. In 2016, Mekelle-based Mesfin Industrial Engineering (MIE), together with Peugeot, inaugurated the most important automotive plant in the country in Addis Ababa, in a strategy to position the region as one of the main automotive clusters in Africa. In 2017, the Mekelle Industrial Park opened with the objective of employing more than 20,000 people and playing a key role in the technological transformation of the city and the region. Like many Sub-Saharan cities conditioned by low-income urbanisation, the city presents an incipient informal peri-urbanisation process.

4. Remarks

This chapter has been developed as an exercise aimed at *localising the next Wise Cities* in a context in which qualitative, quantitative and historical urban data is scarcely available: intermediary cities in the Global South, in particular in the MENA region. Some issues that have been highlighted in this research:

Think about Wise Cities integrated into wise urban systems. Cities are not autonomous territorial units. Their progress, as has been seen in the Mediterranean and MENA sub-regions, depends on their strategic relevance within urban corridors, metropolitan clusters and international city networks. This is a key issue that allows understanding, for example, of the increasing tensions between the state and the city, between

central and local governments: The Global South is generating low-income *meta-cities* (potential *city-states*) that are far more populated than many high-income countries. The concept of a wise urban system also highlights the relevance of rural-urban linkages on which the sustainability of nations depends.

Associate the intermediary city as a Wise City. Intermediary cities play a key role in regional integration and cohesion; they link the population living in rural areas and small towns to the larger networks of primary and metropolitan areas. Despite their limited resources when compared to metropolises, most intermediary cities have welfare scenarios in which the human scale of the city allows sustainable and inclusive policies to be promoted using fewer resources and generating greater impact among citizens than in a metropolitan area.

Despite their limited resources when compared to metropolises, most intermediary cities have welfare scenarios in which the human scale of the city allows sustainable and inclusive policies to be promoted using fewer resources and generating greater impact among citizens than in a metropolitan area.

Territorialise and *localise* the multilevel challenges faced by cities. The brief analysis of nine MENA cities shows some issues in making urban growth, economic development, sustainability and inclusion compatible. Since the end of the 19th century, industry has been the engine in the urbanisation process, transforming cities into regional employment poles. While post-industrial and aging European cities are facing challenges related to the consumption and maintenance of the welfare state, the cities analysed face environmental degradation as a minor effect in their progress. In this regard, the concept of the Wise City must be shaped to the local context.

Fight against the lack of qualitative, quantitative and historical data about governance in intermediary and small cities in the Global South. This research has itself experienced the difficulty in analysing the urbanisation process, urban policies and initiatives boosted by MENA municipalities in recent years. This is an important issue that limits the assessment of progress in many lesser-known cities, some of which may be the **next Wise Cities.**

Are there Wise Cities in the Mediterranean, particularly in the MENA region?

Beyond the brief analysis provided by this chapter the answer must be affirmative. Some of the cities analysed have aroused some interest in the way they have managed their progress. Mekelle, Didim and Çerkezköy are cities that we could find in many regions in Europe. By contrast, most cities in the Gulf – despite wanting to be wise – show social, economic and environmental vulnerabilities that are difficult to manage in a context of geopolitical uncertainty. In the essence of the concept of Wise City lie the ideas of *good living* and quality of life, welfare, social progress and innovation. All of these sustained over time and experiences that allow the city to strengthen its economic, social and environmental governance.

Finally, the chapter leaves many cities unanalysed. The research has driven the analysis on the recent urbanisation process in the Mediterranean Basin, specifically in the cities that had the highest population growth; but the list could have been longer. Maghreb coastal cities such as En Nedjma, in the Oran hinterland (DZA), the clusters in Tétouan-Tanger (MAR) and Sfax (TUN) have experienced important demographic growth

in parallel to the attraction of investments for logistics infrastructure linked to southern European countries (for example: TangerMed, the Trans-Maghreb motorway inside the Trans-Mediterranean Transport Network, etc.) or have generated innovation clusters such as the *Pôle de compétitivité Monastir-El Fejja* (Mfcpole) in the textile industry. The chapter has not analysed southern European cities due to the low relevance of their population growth, despite their economic role and the quality of their governance and influence in the Mediterranean and global geopolitics. All of these cities deserve a detailed analysis of their urban reality and their aspirations and expectations on a local, regional and international scale. Wisdom is an attribute linked to experience, to the ability to learn from the environment and to return more than what has been learned, and in this sense, there are many cities in the region that may be identified as Wise Cities.

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"WISE CITIES" IN THE MEDITERRANEAN? CHALLENGES FOR EDUCATION AND INTEGRATION

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The Mediterranean was always an area of exchange of people, goods and ideas. Its cities were important centres in the history of mankind and for European civilisation. The Library of Alexandria was a centre of science, Athens the cradle of new democratic ways of political decision-making and Rome the capital of the Roman Empire. City-states like Venice commanded global economic networks and enjoyed an incredible cultural richness. The Mediterranean has also been a centre of religious learning: Rome and Constantinople/ Istanbul were home to the Roman Catholic Church and the Eastern Orthodox Church respectively. Cairo, Kairouan, Damascus and Baghdad were centres of Islamic learning. Advancements in philosophy and medicine in Arab Al-Andalus gave critical impetus to the later European enlightenment. Like Istanbul and Sicily, the Iberian Peninsula was a true cultural and intellectual bridge between Orient and Occident.

The history of the Mediterranean was at the same time a history of conflicts between religious and political powers that had to be balanced through the centuries. The northern European countries started their own cultural and economic transition during the enlightenment, when people like Immanuel Kant and René Descartes opened the door to rationalism and individual freedom. Freedom of thinking and movement was key for the development of Western societies and the rise of their cities. The autonomy and freedom in the cities created a climate in which innovation in arts, culture, science, technologies, business and industry could develop. The power of educated citizens formed new democratic structures, local governance systems with the strong participation of citizens and new forms of networks of cooperation between different stakeholders in cities. As a result, cities were able to become communities that integrated different social classes and people from different ethnical, religious and national backgrounds. This integrative process and the way of creating cities will be challenged by the global megatrends that all cities are facing in the 21st century.

1. Challenges for the cities of the 21st century

Cities are hot spots of change, opportunities and problems in a globalised world. They all face similar global megatrends: globalisation, digitalisation, climate change, demographic change, social change and urbanisation.

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Globalisation

"The world is flat" as Thomas L. Friedman argued in his famous book (Friedman, 2005): the high transparency and comparability of markets, services and living conditions combined with open markets for goods and services and the free flow of information intensify global economic competition. At the same time borders for people are partly open; the populations of our cities are becoming more and more international. The global exchange of ideas in business and science opens up new forms of competition for the best brains. Education systems face the challenge of attracting and developing talents and offer them opportunities to stay.

Digitalisation

Digitalisation is an important driving force for innovation and change in our societies, economies, labour markets and education systems. At the same time, it is an instrument for new ways of global economic competition. Cities are facing important changes in the labour market: new working conditions, new methods of work and new jobs are emerging, while existing employment is often at risk. New added value chains will change our tax revenues. At the same time, big data has become the new gold. Combined with data analytics and artificial intelligence it will create new economic value.

The new competitive environment is one where "The winner takes it all", as the same software can be used and replicated on a global scale with no marginal cost. New ways of personal, social and political communication will change the local process of political decision-making and of citizens' participation. This can contribute to much higher transparency in public administrations and local politics.

With the omnipresence of information on every smartphone, the traditional settings and methods of learning are globally challenged. The availability of global knowledge and the continuing growth of new knowledge have driven the growing significance of lifelong learning for personal and professional development.

Climate change

Millions of citizens dream of copying the lifestyle of Western societies. But this lifestyle is linked to an economic growth system that produces high emissions and consumes natural resources in an abusive way. Our Western lifestyle is not sustainable. It causes climate change and is threatened by it at the same time. Unstable weather conditions are causing flooding, dry periods and heavy storms. Cities play a crucial

role in climate change mitigation and renewable energy transitions, but they also have to adapt to climate change. Cities have to be prepared to become resilient and they have to adapt public infrastructures, buildings and houses to ensure better protection for citizens. The exchange of expertise between cities and joint lobbying for technical and financial support from federal and regional governments and international organisations are necessary.

Demographic change

In the northern part of the Mediterranean Sea the population is getting older and becoming more heterogeneous through low birth rates and migration. In the southern part of the Mediterranean Sea the population is much younger, with higher birth rates and fast-growing cities. This growth might slow over time as North African countries are now well ahead in a demographic transition, with birth rates close to the replacement level of 2.1 children per woman or even below it, for example in Tunisia. However, this is not the case in Sub-Saharan Africa. Today, the population of Africa is over 1.2 billion and will reach over 2.4 billion in 30 years. Seeing the economic, political and administrative situation today, it will be a serious challenge for the cities in the southern part of the Mediterranean Sea to cope with this fast-growing population and integrate it into their cities. Therefore it will be very important to support African cities in a sustainable way to limit and regulate the future flow of migrants inside Africa and towards Europe.

Social change

Attractive cities attract people from all over the world. The more international they become, the more they gain in allure for future migrants. Attractive cities will become more and more global villages with increasing heterogeneity and cultural diversity, with many nationalities, languages and ethnical and religious backgrounds. As a result, international exchanges of business people, scientists and experts will grow as well as the brain drain towards attractive cities.

In all cities we are facing increasing inequalities between rich and poor, which is quite often linked to the educational and digital divide. The key to overcoming this divide and being able to integrate migrants, refugees and asylum seekers is an active education and integration policy from cities.

Urbanisation

Today over 50% of the world's population is living in an urban environment. In 30 years over 70% will live in cities. Every year 100 million people more will inhabit our cities, which corresponds to eight times the Région Parisienne every year. The fast growth of cities in Africa and the southern Mediterranean countries has two drivers: the growing population and migration from rural areas. The cities are facing problems of affordable housing, new settlements, adequate public infrastructure in terms of mobility, health, water and energy supply, jobs for young people and education provision.

Facing all the transformation processes caused by the global megatrends, cities have to conceive strategies on which direction they want to develop in and what the goals for their long-term sustainable development could be.

All the 17 SDGs with 169 sub-goals are related more or less to the economic, social and ecological development of cities.

2. "Wise Cities" as sustainable cities

For the realisation of the sustainable goals of the UN Agenda 2030 (SDGs), cities can be and should be a driving force in the spirit of "think global, act local" (see Figure 1). All the 17 SDGs with 169 sub-goals are related more or less to the economic, social and ecological development of cities. Goal 11 explicitly states the intention to "Make cities and human settlements inclusive, safe, resilient and sustainable". Every city has to undertake steps for sustainable city development as a responsibility for the next generations in their social, ecological and economical aspects.

Figure 1. United Nations Sustainable Development Goals

Source: UNDP (2018).

At the same time, cities are affected by climate change with varying intensity. Therefore the Paris agreement on climate action is not only an ecological obligation but also a complex challenge to achieve the climate goals and to become resilient against climate change.

What are the long-term goals for living together in our city, in our country, in our global village? What are the long-term tasks for linking global and local strategies to achieve sustainable city development? A top-down as well as a bottom-up approach is needed: the legal frameworks on the international and national levels combined with the necessary financial and administrative support are at the basis of concrete implementation. The bottom-up approach needs the local support of citizens, the private sector, science and education.

Living and governing a city in a sustainable way has many interconnectivities and interdependences as Figure 2 shows.

Figure 2. 21 Fields for urban sustainable development

Source: Schuster (2013).

In the centre of the joint efforts is an integrative urban society. It is here that the various policy fields are conceived, planned, discussed and executed.

In the centre of the joint efforts is an integrative urban society. It is here that the various policy fields are conceived, planned, discussed and executed, ranging from energy issues and mobility to natural protection, housing and cultural activities. These integration processes will be successful if they are linked to an open society which gives everybody fair chances with the help of an education system that promotes the personal and professional talents of all. Education is and will be the key for a knowledge-based society and therefore the base for economic success and general welfare in the 21st century.

3. "Wise Cities" for a knowledge-based society

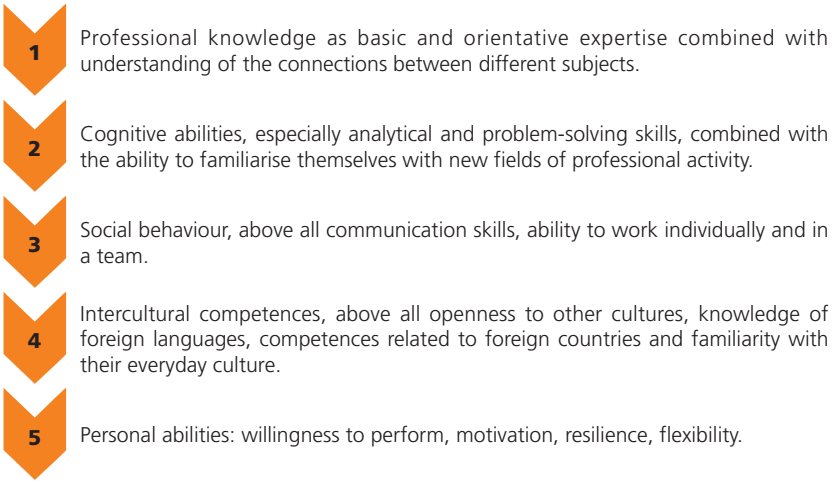
How can we develop ways to achieve a sustainable education system for a knowledge-based society? How can we achieve the three goals that are crucial to guaranteeing education for everybody?

- Everybody should get a fair chance to develop his or her talents, to acquire and use skills for professional development and to live in a self-responsible way;
- Everybody should get an education in order to learn how to learn and to be able to adapt to new situations;
- Everybody should be able and willing to take responsibility in our community, for our society and our environment.

What kind of knowledge, abilities and skills do we need in the 21st century? How can we offer the necessary qualifications to provide better opportunities, especially for young people who strive to create their personal and professional futures? Five skill sets are important in this regard (see Figure 3):

Regarding these continuous transformation processes, cities need educational opportunities for lifelong learning for all in our heterogeneous societies.

Figure 3. Necessary educational skill sets for the 21st century



Source: By author

To achieve the necessary competences for a successful personal and professional life, the educational offers in our cities have to change. Teaching and learning processes should become "dual" through linking systematically:

• Basic Knowledge	with	problem-solving skills
• Expertise	with	understanding of the system
• Theory	with	practice
• Analogue	with	digital forms of learning
• Individual	with	cooperative learning
• Independent	with	team-based work
• Personal cultural identity	with	intercultural understanding
• Self-reflection	with	social interaction

In consequence, education should be linked to real life and applied solutions. To this end the educational system needs to integrate the following aspects:

- Didactic methods for individual and cooperative learning like deep learning and design thinking;
- Active roles for pupils/students to solve problems individually or in a team in a co-constructive way;
- Explaining and exploring the connectivity of different subjects from known to unknown;
- Combining theory with practice – learning by doing;
- New ways of learning, for example: E-learning by interactive individual and group learning activities, having no constraints in terms of space and time, a growing variety of formal and informal learning spaces;
- The continuous necessity to integrate new insights and findings pedagogically and transform them for personal and professional qualifications.

Regarding these continuous transformation processes, cities need educational opportunities for lifelong learning for all in our

heterogeneous societies. Early childhood education in the kindergarten and differentiated school forms are of particular importance, but so are multiple vocational training opportunities at schools and at university level with the strong and binding commitment of companies. Informal learning opportunities such as libraries, community colleges and youth centres complete these cornerstones of education.

The integration of digital media into education is more and more needed for lifelong learning in diverse ways. The monopoly of classical educational institutes has been eroded as information and learning apps are available online and formal training certificates have become less important because of the ever-decreasing half-life of knowledge.

The analyses of the European Commission from their "Education and Training Monitor 2017" show that all countries with dual professional education systems that link theory and practice on all levels have significantly fewer unemployed young people, less brain drain, better economic development and higher competitiveness of companies (European Commission, 2017).

As a result, cities have to play an active role in the transformation of the education system so citizens can become a part of the globalised knowledge-based society. This transformation requires learning skills and knowledge for the 21st century that combine theory with practice. This combination has to be based on a new culture of responsible cooperation and long-term commitment of companies in learning partnerships. Finally, a political decision of the government and the parliament is needed to place a share of the responsibility for practically oriented education in the hands of companies and their organisations, particularly the Chambers of Commerce, Craft and Industry. Cities as laboratories of the future should be the conveners and driving forces of this reform process.

4. "Wise Cities" strategies for the 21st century

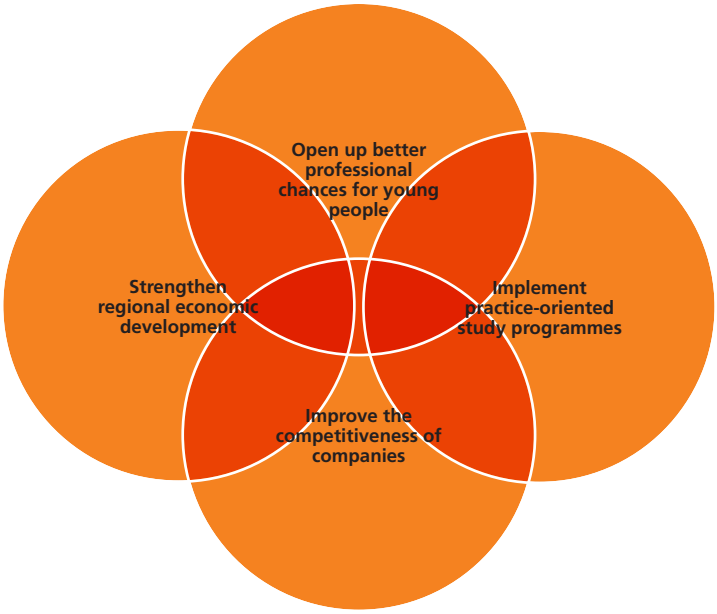
In a globalised world, cities cannot be isolated islands. They need strategies of cooperation inside the city with all stakeholders, with other cities and further partner organisations like national city unions and international organisations like UN-Habitat. An example of such a strategy is the EDU-LAB project. It is part of the EU Strategy for the Danube Region, which encompasses nine EU countries and five non-EU countries along the Danube River, stretching from Ukraine, via Serbia and Hungary to Austria and Germany (INTERREG-Danube Transnational Programme, 2018 a and b).

The EDU-LAB project breaks new grounds in professional education, regional development and policies for the improvement of competitiveness (see Figure 3). It entails a great degree of cooperation between cities of the region, whose economic structures and development differ considerably. Although it is difficult to generalise, the experience of the EDU-LAB project and its network approach might entail some useful lessons that could be emulated by cities in the Mediterranean, particularly those in the southern Mediterranean that face challenging labour markets.

The EDU-LAB project and its network approach might entail some useful lessons that could be emulated by cities in the Mediterranean.

In a joint effort with the Danubian Charter for Young Talents the EDU-LAB project will create a new culture of cooperation between educational institutions, the business sector, public authorities, civil society and the participating cities. To have an instrument for this binding cooperation the partners will create national academies for professional education with five activities that will be combined in a synergetic way: (1) Universities will be supported in implementing dual study programmes, (2) Qualification programmes will be developed for mentors in companies who are responsible for the apprenticeships and practical parts of dual studies, (3) Teachers in professional schools will be provided with qualification programmes, (4) Know-how transfers between universities and companies will be organised via study programmes and in science and research, and (5) Further training programmes will be offered, such as training for start-up companies, entrepreneurship and design thinking.

Figure 4. The four goals of the EDU-LAB project



Source: By author

The Danubian Council of Academies for Professional Education will support the activities via the exchange of experiences and practices, by developing study programmes and blended learning systems and via strong partnership with national governments and the European institutions. Such a network structure could be useful for the Mediterranean region too, and could provide an impetus for vocational training. The European Foundation for Education tries to convince companies and wealthy people to get involved in the dual education system and donate financial resources to it (European Foundation for Education, 2018). In Egypt for example, the Sawiris Foundation for Social Development is willing to build new schools and teachers' academies based on new pedagogical concepts that have been briefly described in this chapter (Sawiris Foundation for Social Development, 2018).

In consideration of the demanding challenges cities are facing, civil society should play a more prominent role in the future in the administration of municipal affairs. The principle of subsidiarity, which is part of the legal framework of the European Union, provides some important guidelines in this regard. It has a double function: On the one hand all public tasks which could be fulfilled on the local or regional level should be done on the level which is the closest to the citizens. On the other hand cities can commission non-profit organisations to fulfil municipal tasks in the areas where they are in charge.

In Stuttgart, for example, where I used to be mayor, 50% of the kindergartens, 50% of the hospitals and 10% of the schools are managed by NGOs and financially supported by the city. Through this system – which can also be found in other German cities – we have a strong civil society and a strong commitment of volunteers who help to fulfil public tasks. In Stuttgart 20% of the citizens are engaged in volunteer work. As 60% of the children in the city have a migration background (i.e. at least one of their parents was born abroad), our education system plays a key role in integrating the children from 170 different nations in our urban society, starting with early childhood and kindergarten education. The Stuttgart Partnership for Education is a network of many stakeholders, such as NGOs for pre-school education, sport and culture associations, while companies get linked with schools to enrich the curricula. It has the goal of ensuring that no child gets lost. The Stuttgart Pact for Integration is a comprehensive approach to using many instruments to integrate socially all generations of migrants while respecting their cultural backgrounds in an international urban society.

Cities should be more than streets, buildings, public infrastructure and public services. Cities should become "communities" in which the citizens have to play an active role.

5. Suggestions for "Wise Cities" in the Mediterranean

1. Fast-growing cities, particularly those in the southern part of the Mediterranean Sea, are hot spots for social tensions, economic growth and future perspectives. To enable cities to fulfil their task, a strong local self-governance system is helpful. The European Charter of Local Self-Government of the Council of Europe outlines basic principles in this regard (Council of Europe, 2018). Countries with a strong tradition of local self-governance, such as Germany, Austria, Switzerland, Sweden and Denmark tend to have better social and economic development than more centralised countries.
2. Cities should be more than streets, buildings, public infrastructure and public services. Cities should become "communities" in which the citizens have to play an active role via local initiatives and the involvement of companies for the sustainable development of cities.
3. Our citizens should become active partners in a global knowledge-based society. Therefore the cities should become the promoters, conveners and providers of educational offers. These educational offers should be "dual", combining theoretical education with vocational training in companies to get the right qualifications that help in finding a job and improving the competitiveness of companies.
4. The "Union of the Mediterranean" could be strengthened by cities, universities and civil society focusing on new ways of sustainable education to help realise the UN Agenda 2030.

5. A joint effort for a lifelong learning system for everybody could become a common goal for a knowledge-based society. It could be supported by the European Commission and the World Bank and could encompass the creation of networks of educational institutions, the utilisation of digital media for educational goals, cooperation with the private sector in dual education and the promotion of projects for sustainable economic growth.

In sum, "Wise Cities" in the Mediterranean should attempt to fulfil the sustainable development goals by a long-term strategy that links their important history with sustainable goals in the future.

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ENVIRONMENTAL SUSTAINABILITY

ENVIRONMENTAL AND URBAN SECURITY RISKS: THE LOOMING SYMBIOTIC CRISES OF THE MEDITERRANEAN RIM CITIES

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1. Introduction

This chapter argues that systemic environmental changes in the Mediterranean and the Middle East have the potential to combine with persistent political instability to create challenges for urban environments bordering the Mediterranean over the rest of the 21st century. These combined pressures could manifest themselves as unrest against city and state governance around the rim of the Mediterranean as these cities cope with the strains of population movements that will only gather momentum as the environmental pressures of higher temperatures, sea level rise and fresh water scarcity collide with inadequate urban infrastructures. Another central point of this chapter is that these challenges will fall mainly on city governments and their administrations. Mediterranean cities should neither expect nor count on relief from the states in which they exist.

This chapter argues that environmental refugees driven by climate and environmentally driven factors will inexorably shape the landscapes of urban Mediterranean cities over the rest of the century (Brauch, 2003). These environmental refugees are related to but also distinct from the political refugees now attempting to emigrate to Europe as a result of the collapse of several Middle Eastern states such as Syria, Libya and Iraq. While environmental and political refugees fall into different legal and political categories, both phenomena can occur discretely or in tandem. In other words, environmental stresses can challenge the ability of governments to function effectively, which in turn can encourage migration flows. This chapter argues that these phenomena are linked in the Mediterranean area, since populations seeking to migrate are mostly coming from weak and/or failing states and are simultaneously affected by both political and environmental factors. After detailing some of these macro trends, the chapter will suggest some steps that could help cities successfully prepare for the crisis and reduce the prospects of unrest.

As noted in the title of this chapter, the fates of the cities on the northern and southern rims are linked in the impending crisis. Suggesting such a relationship is nothing new. Mediterranean rim cities

1. The views in this article are those of the author.

have always existed in a kind of symbiotic relationship. The cities of the southern shores – Oran, Algiers, Tripoli, Benghazi, Tunis, Cairo, Tel Aviv, Alexandria and Beirut – have always been interconnected with the cities of the northern shores – Athens, Venice, Genoa, Naples, Barcelona, Palermo, Nice, Istanbul and Marseille to name but a few. As far back as Roman times, these cities served as vital nodes of the interconnected Mediterranean economic and political world (Rice, 2008).

As early as 2001, researchers at the Intergovernmental Panel on Climate Change (IPCC) identified the region as particularly susceptible to the effects of climate change due to the concentration of populations in coastal regions, persistent fresh water shortages, and climate-sensitive crop production.

Today, these cities exist as parts of broader social, political and economic systems that border the Mediterranean and its 46,000 km of shorelines from three continents, 22 states and an estimated 480 million people. Over half of the Mediterranean region's population lives in coastal zones; 65 percent of the population of the southern zone (120 million people) currently lives in coastal zones. The populations along the northern coastline are mostly urbanised, while populations in North Africa are in the process of concentrating in urban areas. While the population in southern Europe is projected to decline into 2050, populations in North Africa are expected to increase from 139 million to 240 million over the same period (European Environment Agency, 2017).

Mirroring global trends, Mediterranean populations are urbanising. Between 1970 and 2010, the populations bordering the Mediterranean increased by 190 million – 163 million of whom live in towns with more than 10,000 inhabitants. Urbanisation of these populations increased from 54%–66% over the same period. The south and east of the Mediterranean are urbanising at a faster pace, moving from 44% urbanised population in 1970 to a projected 66% by 2025.

2. Environmental pressures

Like the rest of the planet, the Mediterranean will see inexorable environmental changes that flow from the increase of greenhouse gases in the earth's atmosphere. As early as 2001, researchers at the Intergovernmental Panel on Climate Change, or IPCC, identified the region as particularly susceptible to the effects of climate change due to the concentration of populations in coastal regions, persistent fresh water shortages, and climate-sensitive crop production. Regrettably, the world keeps breaking records for carbon in the atmosphere. For the first time in recorded history, carbon levels reached 410 parts per million in 2017. Reflecting these persistent increases, the world keeps setting records for the hottest year on record: 2017 was the second hottest year on record, trailing only 2016 for this dubious distinction.

If states keep pumping carbon into the atmosphere at current rates, by the middle of the century, some researchers suggest that the atmosphere will come to resemble one that existed 50 million years ago when the temperature was 10 degrees Celsius higher than it is today – a world with no polar ice caps. Other researchers are somewhat more conservative. The IPCC predicts temperatures will increase by between 2°C and 3°C in the Mediterranean region by 2050, and by between 3°C to 5°C by 2100. Predictably, the southern region will see even higher temperatures. The 2007 IPCC projections for the ENPSouth region (which includes ten non-EU Mediterranean countries) predict an increase in temperature of up to 2°C in the next

15 to 20 years and of 4°C to 6.5°C by the end of the 21st century. This increase in temperature is likely to be accompanied by a further decrease in the level of precipitation. In the IPCC 2013 projections, summer rainfalls could decrease by the end of the century by 35% on the southern rim, and by 25% on the northern rim. Other impacts of climate change include sea level rise (SLR). Drawing upon IPCC projections, researchers predict that the Mediterranean Sea could rise by as much as two feet by the end of the century. If the polar ice caps continue melting at current rates, sea level rises will be much more dramatic than the IPCC forecasts (IPCC, 2014).

3. Regional migration trends

These environmental and climate trends are an additional pressure on population migrations – migrations that, to be sure, are nothing new in the Mediterranean (Dragastovina, 2015). Between 2001 and 2010, Spain, Italy and France were the largest recipients of Arab emigration in the OECD countries, numbering 5 million people into all of Europe (Fargues and Fandrich, 2012). Indeed there has been an inexorable trend of population migrations from the southern states to the northern European-based states. Europe's aging population has created opportunities for the more youthful populations of the southern states. Over the last five years that population shift has been fuelled by the political instability of the Middle East due to the wars in Syria, Iraq, Libya and Yemen. The Middle East is today home to approximately 12 million displaced people and another 6 million refugees, with millions stuffed into overcrowded, underfunded refugee camps in Turkey, Lebanon and Jordan. There are now 1.2 million outstanding applications for political asylum in Europe. These civil wars show no sign of abating in part due to the involvement of outside powers that are attempting to manipulate the armed struggle for political power in each of the wars.

While the displaced and refugee populations of the Middle East provide a built-in migration demand push, it is important to note that they constitute only one source of migrants. The pressures for additional migration continue to build. For example, Libya alone is estimated to harbour as many as 1 million refugees from sub-Saharan Africa and South Asia trying to get across the Mediterranean to Europe. Statistics compiled by the UN Migration Agency document the sustained flow of tens of thousands of refugees crossing the Mediterranean annually from countries such as Syria, Iraq, Afghanistan, Nigeria, Eritrea, Guinea, Ivory Coast and other states in Sub-Saharan Africa.

Today, there is no question that the overwhelming number of refugees in the Middle East and Africa are related to political violence. In 2016, Sub-Saharan Africa and the Sahel overtook the Middle East as the region of the world most affected by displaced populations due to political violence. In 2016 alone, nearly 1,000,000 residents of the Democratic Republic of Congo were displaced due to political violence in that country (Norwegian Refugee Council, 2017). The trends for displaced populations in the Middle East and Africa are an opposite mirror image of those figures in Asia – where climate and environmental factors figure much more prominently in causing displaced populations.

The argument in this chapter is that the asymmetry between climate and politically driven refugees will even out between Asia and the Middle East/Africa. Stated differently, quite simply, the populations of the Sahel and Sub-Saharan Africa will be under increasing migration pressures as temperatures get hotter and the environment drier, with accompanying weather-related unpredictability. There can be no question that the states of the Middle East and Africa face a dangerous combination of climate and society fragility risk factors that could drive new waves of climate refugees (G7, 2015). Moreover, the states of the Sahel and Sub-Saharan Africa lack the climate adaptive capacities of richer, developed states. Their infrastructures are already having trouble coping with existing population pressures (Bello-Schünemann et al., 2011). Head of the American Security Project, Retired Marine Corps General Stephen A Cheney, characterised the problem to researchers at the Environmental Justice Foundation as follows: "…wait 20 years and see what happens when climate change drives people out of Africa, the Sahel especially, and we are talking now not just one or two million but 10 to 20 [million], and they are not going to South Africa, they are crossing the Mediterranean."[2]

The populations of the Sahel and Sub-Saharan Africa will be under increasing migration pressures as temperatures get hotter and the environment drier.

4. Mediterranean cities and refugee populations

This chapter argues that deteriorating environmental conditions due to climate change combined with political instability threaten to turn this population movement from south to north into a veritable tsunami that will increase in force over the century as it impacts Mediterranean rim cities. Migrants will first swell the cities on the southern shores, stressing already overburdened infrastructures for housing, education, law enforcement, fresh water, sanitation and sewage, electricity generation, and garbage disposal. In short, they will make an already bad situation much worse. Many of these states: Morocco, Libya, Algeria and Tunisia already lack the capacity to deal with the migrant burdens now imposed upon them. Many of the new migrants will seek to join others crossing the Mediterranean by sea into the cities of the northern shore, creating a symbiotic mirror of the problems in the south that will be transported to the north.

How are these cities to address these multiple and interconnected crises? As a first step, city planners in the affected cities should avoid warehousing these populations in tent cities – as currently practiced by the UN. There is a growing awareness that there are useful lessons that can be learned from the world's experiences in accommodating refugee and displaced populations. As noted by Kilian Kleinschmidt, former official with the UN High Commission on Refugees: "I think we have reached the dead end almost where the humanitarian agencies cannot cope with the crisis. We're doing humanitarian aid as we did 70 years ago after the second world war. Nothing has changed."[3] People spend an average of 17 years in camps and, once constructed, these camps become permanent fixtures.

Lessons from the UN's experiences can be usefully combined with the principles of "Smart Cities" to develop templates that cities can use to adapt to the requirements of integrating climate refugees

2. Quoted in *Beyond Borders: Our Changing Climate – its role in displacement and conflict*, Environmental Justice Foundation, London, 2017: 4.
3. Talia Radford, "Refugee Camps are Cities of Tomorrow", *de Zeen*, November 23, 2015; online at https://www.dezeen.com/2015/11/23/refugee-camps-cities-of-tomorrow-killian-kleinschmidt-interview-humanitarian-aid-expert/

into expanding existing communities and build new ones (Robinson, 2017). These principles, among other things, suggest a fundamental rethinking of how planners design urban spaces and the technological platforms that can assist in integrating these spaces into vibrant, productive urban environments. Other research proposes that new urban areas focus upon creating sustainable economic opportunity and development zones to economically empower the migrant populations and make the urban areas economically sustainable (Refugee Cities, 2016).

Another avenue of adaptation for cities is to examine the experiences of planners at the annual Burning Man festival that establishes a community of 50,000+ people at Blackrock in the Nevada desert. For example, the festival launched a competition in 2016 called the *Big Book of Ideas* that resulted in over 100 plans designed by experts in 30 different countries. Such outreach could be used by Mediterranean cities to generate ideas and thinking as they contemplate the looming wave of environmental refugees.

Considering the prospect of adding to existing and/or creating new urban areas represents an opportunity for Mediterranean cities to take advantage of the theories suggesting a shift from cities designed based on the principles of centralised authority, hierarchy and institutionalism. Instead, planners can view these urban areas in holistic terms as complex social, physical and cultural ecosystems – principles around which to design new spaces and adapt old ones. This can lead planners into thinking about how to design urban spaces in ways that promote cultural assimilation, self-governance and relative economic independence (Williams, 2017).

Considering the prospect of adding to existing and/or creating new urban areas represents an opportunity for Mediterranean cities to take advantage of the theories suggesting a shift from cities designed based on the principles of centralised authority, hierarchy and institutionalism.

5. Implications for violence and unrest

Despite regrettable popular perceptions to the contrary, violent extremism and terrorism do not necessarily go hand in hand with migration. Political violence that manifests itself as terrorism is a complex phenomenon, and there is no consensus on the causes of radicalisation that results in attacks. Research points to myriad factors: structural factors in society that cause political alienation; a personal grievance that stems from some sort of act by a political actor; or charismatic leadership of a group that attracts followers, for example (McCormick, 2003). Suffice to say, however, migrants have been involved in a number of recent terrorist attacks in Europe, including Paris (March 2015, 137 killed and 413 injured), Brussels (March 2016, 35 killed and 340 injured) and Manchester (May 2017, 23 killed and 512 injured). As many as 5,000 Europeans have gone to the battlefields in the Middle East to fight in support of Islamic extremism. An estimated 1,500 have returned home to be reintegrated into their respective societies, with thousands more in refugee camps in Turkey and elsewhere awaiting repatriation (Schmitt, 2017).

The European Union and its host governments have created new data bases and greatly increased intelligence sharing with each other and their law enforcement agencies to gather and collate information on returning militants. This information sharing from such agencies

as Europol is wending its way into the police departments of many European cities. This information will help but will not eliminate the threat of future attacks – which are sure to occur.

It remains unclear how long the Middle East will remain unstable – with the havens this instability provides for violent extremists. Despite the taking of Raqqa and Mosul from ISIS in 2017, there has been an undeniable migration of ISIS fighters not killed or rounded up there to Libya, the Sahel in Sub-Saharan Africa, and elsewhere (UN, 2017). As a phenomenon, ISIS needs to be seen more as symptom than as an actual problem. Regional instability stems from unsettled political and religious arguments that show no signs of being settled. The region's authoritarian regimes show no interest in creating viable political processes under which the grievances can be settled peacefully. Further complicating the environment is that groups like ISIS are committed revolutionaries that are so far uninterested in accommodation – meaning there can be no negotiated settlement even if a political process existed to address grievances. Lastly, the instability is also fed by regional rivals in Riyadh, Tehran and Tel Aviv, and Moscow and Washington – ensuring that the wars in places like Syria, Yemen and Libya will continue longer than they otherwise would.

Cooperatively planning now for the migrant flows that will materialise from climate change represents an opportunity for the cities to restructure themselves in ways that reflect the advances in city planning and urban design offered by Smart and Wise City design principles.

The argument of this chapter is that migrant flows from persistent instability are becoming joined with and will almost certainly be subsumed by migrant flows created by environmental and climate pressures. Environmental refugees are a different kind of displaced and refugee population. It is not axiomatic that the Mediterranean cities of the northern and southern rims will see unrest and instability as the migrant flows build over the rest of the century – although some violence and instability is inevitable. While much is made of the prospect of violent extremists infiltrating societies as part of the refugee/displaced person flows, much more serious is what happens to these populations once they arrive and the degree of integration and assimilation into new societies with differing cultures. It is imperative that the rim cities begin collaborating now to deal with these issues.

6. Conclusion

The chapter argues that the pressures of environmental refugees will gather inexorable momentum over the rest of the century and beyond as the earth's environment continues to deteriorate – with catastrophic consequences for humanity. For the Mediterranean region, however, all is not lost. As noted at the outset of the chapter, the cities bordering this great body of water have had a long, symbiotic relationship with one another. Cooperatively planning now for the migrant flows that will materialise from climate change represents an opportunity for the cities to restructure themselves in ways that reflect the advances in city planning and urban design offered by Smart and Wise City design principles. This could allow the cities to turn these populations into positive, environmentally sustainable forces with economic, political, social, technological and cultural vitality.

Increased migrant flows will invariably stress the already-strained urban infrastructures of the rim cities. They will also create challenges for stability and security. Environmental refugees and their political brethren from the Middle East's broken societies are sure to arrive with political, cultural and religious expectations – not all of which will be successfully met no matter how smart and wise their host cities may be.

Perhaps the biggest challenge facing the rim cities and the host states will be the politics that accompany embracing and accepting migrant populations. Recent developments both in Europe and the United States show the dangerous mismatch between the strategic realities of climate change and the associated political reaction that feeds xenophobic and reactionary policies. Given their long history that goes back to Roman times, however, perhaps the rim cities of the Mediterranean can avoid this outcome and embrace the opportunities and challenges represented by the coming wave of environmental refugees.

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1. Introduction

The 2015 Paris Agreement and the recent Quito New Urban Agenda both emphasised the need to empower cities in climate change policies, including energy policies that aim at energy transitions towards more energy efficiency and the use of renewable energies.

This call is often justified by the fact that cities now house more than half of the global population and are responsible for more than 75% of greenhouse gas (GHG) emissions. Economic activities and wealth are also mainly concentrated in cities. In addition, many studies point to the increased vulnerability of cities because of the rise in urban temperatures, which could make summer life in many Arab cities unbearable. Rising sea levels are also expected to threaten a number of maritime cities, among them many Arab capitals and large cities. Being both factors in and potential victims of climate change, cities have many reasons to act. Therefore, there is a need to examine how changes in urban governance could indeed address this necessity and the challenge cities have to face.

This issue has been addressed in many studies and plans for cities in the Western and advanced industrial world. These cities have not only undertaken various initiatives and implemented projects, they have also embarked on new diplomatic actions, creating networks such as the International Council for Local Environmental Initiatives, or more recently the C40 Cities Climate Leadership Group, which the mayor of Paris, Anne Hidalgo, currently leads. Its aim is to promote policies and share experiences and technological and administrative tools. Urban governance change is needed, not just new technologies.

Hodson and Marvin (2010) began to examine this issue in the case of world cities like London, San Francisco and New York a few years ago. They have insisted on several points: Firstly, instead of considering only climate change issues, they stressed the need to understand ecological pressures more widely, particularly the way global energy pressures, like peak oil threats or price increases have created energy stress for cities. Secondly, they also

underlined how privatisation trends and the ascent of transnational energy firms reconfigured energy regulation by sidelining public energy utilities and companies. Thirdly, metropolisation, the concentration of wealth and power in the big metropolises, transforms urban governance. The role of states in energy regulation is thus undermined and metropolitan coalitions are more diverse and open to private and as well as local urban interests. Green growth becomes a new market for private firms, and metropolitan governments compete for jobs and investments in the sector. At the same time, ensuring the continuity of energy supply or of other infrastructure is another goal for metropolitan firms and authorities. This leads to new agendas, including local policies of energy transition, which combine the promotion of renewable energies and energy efficiency with the shortening of energy circuits.

Green growth becomes a new market for private firms, and metropolitan governments compete for jobs and investments in the sector. This leads to new agendas, including local policies of energy transition.

However, several factors that are favouring these changes in energy governance seem to be specific to world cities and might not apply in other contexts. The increasing – albeit contested – political autonomisation of such cities in their relation to national states and their specific wealth are cases in point.

My goal in this chapter is to look at Arab cities, for which, at a first glance, energy transition initiatives seem difficult to identify. If we look at the map of the C40 network, we observe that only three Arab cities form part of it: Cairo, Amman and Dubai. Out of more than 1500 members, the ICLEI network of Local Governments for Sustainability includes only ten from the Middle East and North Africa, five of them being Turkish. As for the Organization of Islamic Capital and Cities, which brings together 141 cities, its goals barely mention environmental and sustainable development issues and the network seems to be asleep.[1] All of this suggests that metropolitan energy and environment initiatives do not abound in this region of the world. The objective here is to understand why.

My chapter draws on a wide collective analysis of urban energy transition policies in ten metropolises from emerging economies, including several Arab cities such as Amman, Beirut, Tunis and Sfax (Jaglin and Verdeil, 2017; Verdeil et al., 2015; Verdeil, 2014a; 2016; forthcoming), and on secondary literature about the United Arab Emirates. It aims to propose some preliminary observations and to raise questions to fuel the upcoming debate. I will not present case studies but rather identify policy issues and policy options that vary greatly according to context and, above all, according to the national availability of fossil energy such as oil and gas and the social contracts that govern the redistribution of this wealth in exchange for loyalty.

2. Global energy pressures rather than climate change

Changes in energy supply emerge as a primary concern for MENA governments. By comparison, other ecological pressures trail behind, such as increased threats of flooding because of exceptional rainfalls and sea-level rise or hotter temperature prospects, which have recently made the headlines in Gulf cities. However, this concern takes a different form in energy exporting and importing countries. In oil and

1. See: http://www.c40.org/cities; http://www.iclei.org/iclei-members/iclei-members.html?memberlistRegion=North+Africa%2C+Middle+East%2C+West+Asia; http://www.oicc.org/

gas-producing countries, threats of peak oil and resource depletion are surfacing in some cases, such as in Bahrain, Dubai or Tunisia. However, in most cases, it's not the depletion by itself that is a concern, but rather the fact that growth in demand consumes more and more of national oil production, which then cannot be sold on the international market. This results in reduced incomes, which in turn compromise the ability to finance the redistribution that is at the heart of the social contract. Lower oil prices since 2014 have aggravated this situation.

Net oil and gas importers in the MENA region experience energy pressures in a different way. In a context of growing demand for energy driven by population growth and the rise of middle class consumption patterns (individual cars, electric appliances) the hikes in energy prices at the end of the 2000s strongly inflated energy spending and created fiscal tensions, as higher energy costs have not been passed on to the prices of essential goods. Low oil prices after 2014 were a relief for governments in net importing countries.

It is noteworthy that both energy poor and, more surprisingly, energy rich countries have experienced recurring electricity shortages in the last decade, sometimes for long periods (as in Lebanon). In a context of rising demand and new uses, power cuts are the symbol of the vulnerability of energy systems in the region and prompt strong calls for improved energy supply. Hence, policies of securitisation and diversification are topping the energy agendas, as will be discussed in the last section.

In contrast to the world cities mentioned earlier, climate change concerns are much less visible in these countries and barely motivate policy discourse. As in many emerging and developing countries, this issue is not central in political agendas. There are several reasons for this. Firstly, in Arab countries green parties barely exist. Environmental movements may mobilise people, but normally around local or national stakes (pollution, land-use conflicts) rather than global ones (Karam, 2006). Global threats such as climate change and energy transition investments are understood as a consequence of colonialism or as neo-colonialist avatars and therefore as threats to national sovereignty (de Souza et al., 2018). In addition, national and metropolitan governments have often manipulated environmental policies to attract international capital without implementing them seriously or only to advance private interests – as in Tunisia or in Syria – thus undermining the credibility of new claims in the eyes of local environmentalists (Barthel, Clerc and Philifert, 2013).

3. Centralised vs metropolitan governance of energy regulation

The specificity of metropolitan governance in most Arab countries is also worth unpacking, as it highlights the differences between Arab cities and the trends that Hodson and Marvin describe. Because of colonial legacy, post-independence state-building policies and authoritarian regimes, cities and, even more so, metropolises and capital cities often remain under the rather strict tutelage of national governments (United Cities and Local Governments, 2008; Harb and Atallah, 2015).

[In most Arab cities] metropolitan authorities have little political autonomy and lack financial and human resources. Implementing innovative policies seem largely out of the scope of their agendas.

Consequently, metropolitan authorities have little political autonomy and lack financial and human resources. Implementing innovative policies seem largely out of the scope of their agendas. Egypt is a case in point, hence the surprise to find Cairo within the C40 network, because its governor, acting on behalf of the government, hardly follows an autonomous agenda.

Amman briefly offered a counterexample with its Green Growth Policy at the end of the 2000s under Mayor Maani. But the experience, supported and funded by the World Bank, was soon terminated by the government as it appeared that allegations of corruption and the influence of foreign consultants and funders provided the king with an easy scapegoat in the face of mounting protests associated with the Arab Spring and energy tariffs (Verdeil, 2014b).

The so-called city-states of the Gulf region differ from other Arab metropolises. Dubai, Doha, Kuwait, Bahrain and Abu Dhabi implement energy policies that are de facto metropolitan but at the same time national or quasi-national. This specific configuration is one of the rare contexts where innovative energy initiatives unfold, and requires further scrutiny.

Centralised state governance is even stronger when it comes to energy. In the Arab world perhaps more than elsewhere, energy (and oil above all) belongs to the sovereignty of the state. Hence, opening this sector up to privatisation and foreign investments is a sensitive issue that governments have carefully monitored. In the case of electricity, Arab countries have been reluctant to embrace privatisation, in contrast to global trends, which show that this sector has widely opened to public-private partnerships (PPPs) (Somma and Rubino, 2016). When this has happened in the Arab world, it has been partial and prudent. Investments in electricity have been limited to specific segments of the market, such as renewable energies. But governments have avoided wider privatisation of electricity utilities, especially of the distribution segment. Jordan, again, can be seen as an outlier, as private investors now control both generation and distribution there. In most other countries, privatisation of electricity remains a red flag, such as in Tunisia. In any case, state utilities still control the transmissions according to the model of the single buyer (meaning that direct purchases of power by final customers are not possible).

The states remain everywhere in charge of regulation issues, such as fixing the energy tariffs for electricity, gas, gasoline and diesel. In some cases, supposedly independent regulatory committees have taken over. However, their independence remains theoretical. In Jordan, for instance, between 2008 and 2014, the same engineer has successively occupied high-ranking positions in electricity firms and the regulatory committee before becoming minister of energy, contradicting the separation of these positions that the theory of the principal and agent requires.

In the Arab world governments have kept hold of the steering wheel, in contrast to the governance changes that have affected the energy systems in many other countries, especially in the West. Metropolitan entities in the MENA countries generally have little power and this is

paramount when it comes to energy issues.

4. Three policy options and political issues

This section describes three kinds of policy in the field of energy. I show that governments increasingly worry about what one can label an urban energy question. However, if it is possible to speak of an urbanisation of energy issues, nowhere can one observe a territorialisation of energy regulation at infra-statal scale similar to the metropolitanisation that happens in the world cities mentioned previously.

Securitisation

Governments have considered energy security a major concern for a long time, above all in relation to geopolitical troubles at the regional scale. Conflicts over energy transportation in and from the region, by ships or pipelines, regularly make the headlines. However, a series of independent events have concurred in shifting attention from the national supply to the supply of metropolitan areas.

In the Gulf countries, the end of the 2000s witnessed a frenzy of urban development and at the same time alarming electricity shortages resulting from the lack of power generation that left new buildings without grid connection for months if not years. Hence, they needed to run their own generators. It is well know that Baghdad and other Iraqi cities, as well as their Lebanese counterparts, have experienced daily rolling power cuts for many years because of bad management and reconstruction policy failures (Verdeil, 2016). Popular protests against the governments' mismanagement of electricity multiplied, even though they never coalesced into threats against the regimes. In Egypt, however, energy shortages, both of electricity and natural gas, fuelled popular protests. Many rumours have circulated that the military aggravated the magnitude of those shortages in order to increase unrest and mobilisations against the Morsi government in the spring of 2013 (Lakhal, 2014). In Tunisia, a blackout in September 2014, days before the elections, triggered rumours and fears.

In all these contexts, power cuts may be related to diverse failures in energy systems, bad management and corruption. However, growing demand from energy users, both households and companies, is another reason. In Abu Dhabi, for instance, air conditioning represented 57.5% of residential electricity consumption in 2016 (IRENA, 2016: 33). This use in on the rise everywhere. In Tunisia, STEG, the electricity utility, circulated figures showing that 37% of households relied on air conditioning in 2014. Other electrical appliances also contribute to the growing demand, not to mention industry and services sectors that develop because of policies of economic diversification, particularly in the Gulf.

The lack of reliable electricity has economic consequences, pushing firms and private actors' representatives to lobby governments in order to reform and improve electrical output. The concern for energy security is not in itself much different from what is seen in other contexts.

Governments respond by diversifying their energy resources and technologies to mitigate their dependency on existing energy systems dominated by fossil energy.

Energy projects mainly rely on foreign investments. Governments display ambitious plans, but national companies lack expertise and capital.

Diversification

The diversification of energy mixes in the Arab region is not a response to calls for climate change mitigation and a shift to low carbon energy systems. This is not to say that renewable energy projects have not increased recently. But in contrast to European countries where this is motivated by climate change objectives and, at a second level, as a policy to strengthen new industrial sectors, in the Arab world this recent push is mostly market-led and follows the rapid fall in prices of solar panels and other devices. This shift has been long in the making, but remains modest until now. Morocco, Jordan and the UAE are its frontrunners.

More striking have been the moves toward more intensive use of grid-based natural gas, for instance in urban networks in Egypt and Tunisia. A major reason advanced by governments and development institutions that are funding these investments is the need to slash subsidies associated with the use of gas canisters (Verdeil et al., 2015). With these measures governments seek to promote more efficient use of energy and to save public spending. Tunisia has managed to curb energy consumption growth in the wake of their implementation. Other countries seek to diversify energy sources. In Jordan, the government launched the development of its oil shale deposits, using technologies developed by an Estonian company with Chinese funding, which will provide base-load capacity at a cheaper price than diesel-based generation. The objective is to raise oil-shale-based electricity generation to 14% of Jordan's electricity mix in 2020.

MENA programmes to develop nuclear power plants also illustrate a will to secure base-load generation capacity that prevents the burning of oil or gas, despite the financial burdens and the technical challenges for small and capital-poor countries. In Abu Dhabi a nuclear power plant is already under construction. In Jordan and Egypt, governments chase investments from Russia and China to reach their objectives. A pre-deal was struck with Rosatom in 2012 in Jordan, but securing the funding has proven difficult and no final deal has been reached yet, despite continuing negotiations. In Egypt, the government plans to launch a nuclear plant in 2029 with 85% Russian funding.

In this context, energy transition takes on a very different meaning, as the paths followed are very different from those of Western countries. Environmental motivations are hardly found in the Arab contexts. Promoting a green growth agenda, as in Western or East Asian metropolises, in order to favour the development of local energy champions, is a strategy that Abu Dhabi has followed in developing solar technologies with Masdar City and the new Shams power plants complex. Saudi Arabia seeks to emulate this strategy with urban projects such as the Neom city development in the northwest of the country. Elsewhere, energy projects mainly rely on foreign investments. Governments display ambitious plans, but

national companies lack expertise and capital. Plans to develop green urbanism or smart cities remain rather anecdotal and underfunded (Barthel, 2016). Beyond a few attempts, urban green capitalism has not found a path to Arab cities.

The urban politicisation of tariffs

The politicisation of energy tariffs highlights the increasingly urban standards of life that favour higher energy demand. This also points to the potential political power of urban masses that governments have learned to fear in the last decade.

Energy governance is becoming a new concern in world cities and in the West. However, the lack of powers for mayors in Arab cities and the shyness of green capitalism put limits on energy governance there. One cannot speak of any territorialisation of energy governance, i.e. the emergence of locally driven energy policies. However, interrupted or expensive access to energy represents a political threat, leading to angry street protests against power cuts and tariff hikes, as already mentioned with the cases of Egypt, Jordan and Tunisia (Lakhal, 2014; Verdeil, 2014a). The politicisation of energy tariffs has therefore become a major element that affects energy governance in the major cities. This is why I proposed to speak of an urbanisation of energy governance.

The existing tariffs on energy for transportation, cooking gas and electricity remain highly subsidised. This mirrors both the social contracts by which governments have sought to exchange loyalty for access to modern standards of life and the reliance of current energy systems on fossil-fuel technologies that have experienced strong variations in prices since the end of the 2000s. In addition, the so-called Arab Spring protests have temporarily blocked governments' attempts at reforming the pricing systems.

In Jordan, Tunisia and Egypt many studies have shown the biases associated with energy subsidies. A large part of the subsidies is captured by the wealthiest segments of the population, because the middle and upper classes use individual mobility much more than lower-income classes (Sdralevich, 2014). The same goes for electricity, where the first blocks of progressive tariffs subsidise consumption of every category of the population, regardless of income. The first announcements of tariff reforms triggered important mobilisations during the years 2011–2013 in major cities in Jordan and Tunisia. They quickly convinced governments to give up or delay the reforms. Eventually, tariff hikes were implemented more gradually, in a more prudent way, either by exempting many users from paying more, or by implementing systems of cash transfers, as in Jordan for gasoline for instance. However, even if energy subsidies have decreased they remain a sensitive issue, with a tension between social justice and fiscal efficiency (El-Katiri and Fattouh, 2017).

The case of energy-producing countries is a bit different. The fiscal burden of low price or almost-free energy access has been felt more strongly since the recent drop in energy prices, which have reduced states' incomes. Therefore, tariff hikes have begun to be implemented, affecting foreign residents more heavily than nationals. Despite this move, hailed by international financial institutions such as the IMF, the money spent on subsidies remains a huge burden and is still inefficiently targeted. Any move seems difficult in a context of intense power struggles, such as in Saudi Arabia (Moerenhout, Vezanis and Westling, 2017).

The politicisation of energy tariffs highlights the increasingly urban standards of life that favour higher energy demand. This also points to the potential political power of urban masses that governments have learned to fear in the last decade. In this respect, energy has become an urban issue, but one that is still governed from above.

5. Conclusion

This chapter discussed the way the metropolises of the Arab world tackle energy transition challenges. Therefore, the analysis followed Hodson and Marvin's analytical grid and sought to identify the environmental challenges these metropolises are facing, the networks of public policies that emerge and frame the public issues, the policies that are put on the agenda and the governance of energy that unfolds.

In contrast to world cities and many Western cities, we find that Arab metropolises do not emerge as strong autonomy-seeking powers, and remain under central governments' oversight. These national and business elites do not care very much about global ecological pressures such as climate change, despite growing evidence that big cities face multiple threats. They are far more concerned with energy security in the face of shifting oil prices and growing energy demand. This is triggering policies of energy diversification that include renewable energies but as a minor part of diversified technologies that do not ban fossil solutions. Green tech and urban sustainable policies remain the exception: only very rich oil exporting countries have begun to consider them. However, despite the lack of territorialisation of energy governance at the level of cities, energy issues are more and more discussed in cities. They trigger social mobilisations that have proved powerful and prompted governments to consider cities as a factor that matters for energy governance.

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HOW CAN REGIONAL COOPERATION IN THE MEDITERRANEAN SUPPORT CITIES' ENERGY TRANSITION EFFORTS?

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Union for the Mediterranean (UfM)

1. Introduction

The question "How can regional cooperation in the Mediterranean support cities' energy transition efforts?" is a call for a breakthrough more than an iterative improvement of current practices because it requires all actors to tackle together the limits of regional cooperation in the Mediterranean, due to the existing divergences, the energy transition, the slowness of the process, and, last but not least, the local authorities with their own governance controversies.

The challenges today in Euro-Mediterranean cooperation remain similar to those of the early days: overweening ambitions with very limited resources, weak confidence among partners, elitism creating distance from society, and a scarcity of economic liberalisation (Martinez and Hibout, 1998). In the region, energy transition, while an economic necessity, is more considered an opportunity to attract investments than a paradigm change in resource management; independence of economic actors vis-à-vis policies has not yet been achieved. While raising the price of energy services can play a crucial role in creating incentives to stimulate energy transitions, Mediterranean countries continue to use energy subsidies as a populist policy. Few national actions exist to raise awareness or to provide support for local authorities in their energy transition. A small group of active local authorities has emerged that is interested in taking action, but they mostly suffer from weak planning and operating capacities due to limited access to financial and human resources. Moreover, any effort by local authorities suffers from the general controversies of local governance, such as internal political tensions between central and local authorities, as well as the dynamics of territorial power distribution in each country.

International donors have started to consider the area as a priority and are now dedicating support to those local authorities willing to undertake pilot solutions. In these circumstances, an intergovernmental organisation such as the Union for the Mediterranean (UfM) can find a way to go beyond all these challenges as it has the capacity to capitalise on existing efforts,

eye effective actions, explore their replicability in different conditions, identify difficulties faced, report results to member states and advocate for regional policies.

This paper describes the pursuit of action that resisted all these challenges during four years of experience at the UfM Secretariat, with visits to projects, consultations with local actors (mayors, experts, officers) and cooperation with international donors. The original objective was to oversee the political and technical preparation process of a regional initiative for supporting local authorities' efforts in energy transitions. However, the conclusion reached was a humble regional cooperation for promotion of energy consumption measures, making local energy consumption visible, in which each member state can find its interest and participate.

Supporting cities' energy transition efforts through regional cooperation is a breakthrough more than an iterative improvement of current practices.

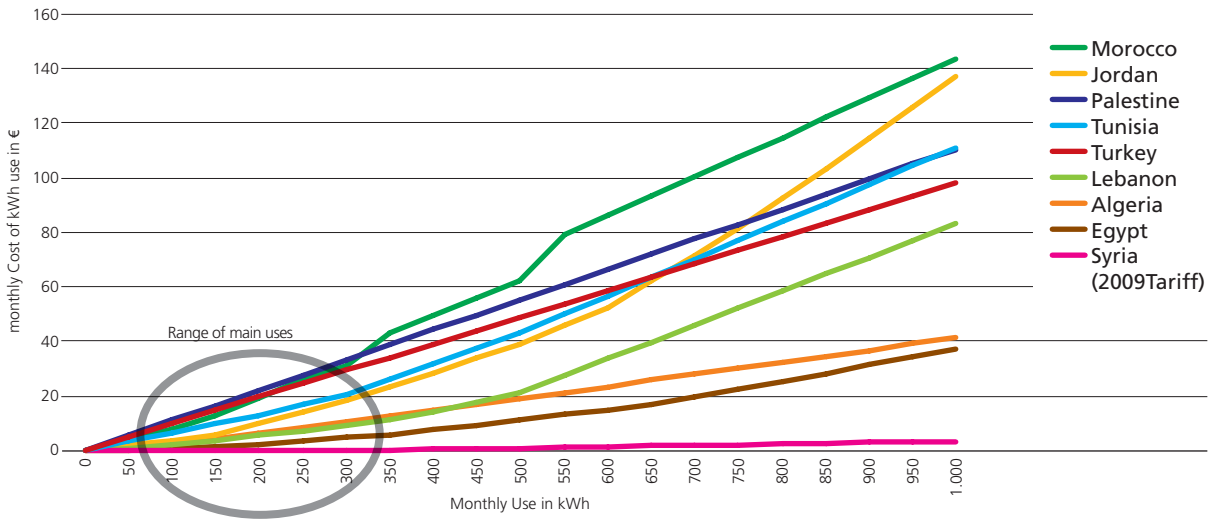
2. Energy transition in the Euro-Mediterranean

Energy management remains a hot issue for the Mediterranean region. Renewable energy investment is not substantial and there are not enough economic incentives for energy efficiency, as users' energy prices don't reflect primary energy's market prices, due to the high level of public subsidies.

Even in the most optimistic scenario, the Mediterranean region's energy demand is expected to increase by 7% over the next 25 years from today's level of 990 million tons of oil equivalent (Mtoe) up to 1055 Mtoe (ADEME, MEDENER and OME, 2014). Moreover, southern and eastern Mediterranean (SEMED) countries are facing energy scarcity – they are either now net energy-importing countries (e.g. according to the IEA, Morocco and Lebanon are importing more than 95% of their energy demand) or they have falling energy exports (e.g. Algeria and Egypt).

The energy transition, which requires a long-term structural change in energy systems for decarbonisation in SEMED countries (including multiple approaches, such as the development of renewable energy resources and the improvement of energy conservation and energy efficiency efforts, happening in parallel), represents an economic opportunity to attract investment or the selling of electricity to Europe, rather than just a non-mercantile commitment to climate change such as the Mediterranean Solar Plan Process launched in 2008 (Jablonski et. al, 2012). Tunisia, one of the region's leaders, still produces only 13.6% of its electricity from renewable sources (ADEME, MEDENER and OME, 2014), while in Morocco renewable energy's share in total electricity production does not even reach 10%, instead sitting at 8.7% of total electricity production – almost the same level as the US (IEA, 2014). Some countries have announced ambitious objectives for the future to increase the current use of renewable energy. For example, the Algerian Program for the Development of New Renewable Energies aims to produce 22,000 MW for the needs of the national market over the 2015–2035/40 period (and more than 4,000 MW of this capacity is intended to be achieved by 2020), while that country's current share of renewable energy in total energy production does not exceed 5% today. And in both Algeria and Tunisia, the total share of renewables in the electricity sector is still very low, at less than 1% (MEDENER, 2014).

Figure 1. The cost of monthly energy use in kWh in southern and eastern Mediterranean countries (October 2017, tariff exchange rate)



Source: Cornut (2018)

Energy efficiency remained, until the Paris Declaration, an area mostly filled with good wishes. However, following that agreement some ambitious policies have emerged from UfM member states, and hence current energy intensity rates are very high. For example, Turkey's National Energy Efficiency Action Plan targets to save $30.2 billion by 2033: nearly $1 billion in savings would emerge from energy efficiency transformation in 1.7 million residences, while $10 billion in savings is expected in the industrial sector. However, in 2017, Turkey was the only country with increasing energy intensity among IEA member states (IEA, 2017).

Tunisia was one of the first countries to develop a comprehensive energy conservation policy. In 1985, the country demonstrated its focus on the issue with the creation of the Agence Nationale de la Maitrise de l'Energie (ANME), which included a special section dedicated to energy efficiency. In 2000, the country established a programme for the control of energy use, and the ANME was put in charge of developing a strategic plan on energy efficiency. Tunisia and Algeria have introduced thermal regulations for new buildings. Tunisia has also set up energy audits for dwellings, which brought a decrease in Tunisia's energy intensity rate (Res4MED, 2016). However, Tunisia's total final energy consumption has been growing at a constant rate since 1975, according to the IEA.

This contradiction emerges from not just governance vulnerabilities, but also controversial energy pricing policies. Despite progress made in the legal framework, not all governments have consolidated their governance structure for energy efficiency policies and programmes. In Turkey, although the Ministry for Energy and Natural Resources is meant to have responsibility for energy policy in all sectors, in reality competence for energy efficiency remains divided across several ministries. Morocco, which aims to reduce energy consumption by 12% by 2020, and by 15% by 3030 through energy efficiency, only set up an agency dedicated to energy efficiency in 2016 – the Moroccan Agency for Energy Efficiency – which has limited resources and a very small share of the national budget.

Besides energy balance challenges, in the countries of the region, there is no arithmetic correlation between countries' GDP or other economic indicators, and the price of gasoline/diesel or electricity per consumers.

Besides energy balance challenges, the graphics from a UfM Secretariat study above show there is no arithmetic correlation between countries' GDP or other economic indicators and the price of gasoline/diesel or electricity per consumer (Cornut, 2018). The IEA recommended the southern and eastern Mediterranean region to progressively remove energy price subsidies to improve energy efficiency (IEA, 2014). As a measure of comparison, in 2012 energy price subsidy compensation charges represented 106% of Morocco's investment budget, and 6.6% of the state budget (Jebari, 2016). It is also important to note that Morocco is among the first countries in the Middle East and North Africa region to cut fossil fuel subsidies. However, at a similar price level, there is a wide disparity among countries in electricity consumption per household (MEDENER, 2014).

Despite the dependence on energy imports and vulnerability in terms of the energy mix, the disparity between energy tariffs and the high level of energy subsidies makes the environment unsuitable for energy transition, whether at the local, national or regional level, despite growing energy demand challenges.

3. Local authorities in the Mediterranean region

The global issue of growing urbanisation also remains a challenge for the Mediterranean region, one of the most urbanised in the world, with around 60% of the total population living in urbanised areas, and a 45% increase in urban populations projected by 2030, according to the United Nation's World Urbanization Prospects (UN, 2014). However, local authorities' governance models and their technical and financial resources do not follow the same trend.

In the region, as there is no systematic definition of local governance systems or the way the head of local government takes office (i.e. by election or appointment), there is tremendous variety in the size of cities, competencies and roles in administration. The 80 million population of Egypt is divided among 243 local authorities that can undertake energy transition actions (26 governorates and 217 towns, plus Luxor's special status), while Turkey, with 73 million people, has more than 4,000 local authorities (81 special province administrations, 3,225 municipalities and 16 metropolitan municipalities) and the 31.2 million people in Morocco are divided into 16 regions, 49 provinces and 1,497 municipalities The central governments retain substantial powers to intervene in local affairs, mainly through the position of governors. These officials are generally appointed either by the country's interior minister, another minister in charge of local authorities and municipal affairs, or directly by the head of state, such as the king or president (Bergh, 2010). In some countries, a council elected via direct suffrage assists the head of local authority. In the region, participation in local elections mostly fails to reach even 50% (e.g. the turnout at municipal elections was 45% in Morocco in 2017 elections and 43% in Lebanon in 2016). This makes local authorities even more vulnerable when it comes to considering undertaking the fundamental changes needed for something like energy transition.

The technical and human resources of local authorities constitute the second pillar of the capacity challenge. The main finance sources for local authorities in the SEMED region are not different to those of most OECD

countries, but the state of those funds is. These funds are mainly transfers from the central government and also some local revenue, such as rental and tax revenues from municipal real estate, taxes on property ownership, and taxes on industrial, commercial or professional establishments (e.g. a tourism tax). In some limited cases, extra revenue is also generated from the issuance of building permits and other licenses and fees, such as for water and electricity. However, unlike in OECD member countries, most local authorities in the region are unable to fully collect taxes and user fees from local residents and businesses. Whereas the local government's share of public expenditure tends to represent 20% of GDP in OECD countries, such expenditure averages only about 5% of GDP in Mediterranean countries – with a big part of this coming from central government subsidies and transfer. For example, in Jordan the total budget for all 99 municipalities amounted to $161 million in 2006. The sub-national government's expenditure reached only 3.6% of GDP in Morocco and 2.1% of GDP in Tunisia, according to a 2014 OECD study. These limited financial incomes for local authorities constitute about €100 per inhabitant per year – in comparison the average level in France or Germany is above €1000 per inhabitant per year. In most countries, local authorities don't have the legal autonomy to work with domestic commercial banks, international financial institutions, or other donors. (One exception is Turkey, where local authorities can make investments in cooperation with national and international banks – e.g. the Izmir Metro Project received a €70 million loan from the EBRD in 2017.)

As a consequence, local authorities are often unable even to pay their employees in a timely fashion. Moreover, their local employees largely consist of unskilled labour (e.g. cleaning staff and couriers). There is a lack of middle management civil servants with technical skills to the detriment of (productive) capital investments. In the absence of sufficient self-revenue from taxation and a lack of human resources to implement additional projects (such as energy transition or energy efficiency efforts), local authorities must opt to receive credit from state-owned municipal funds or banks, hope for grants from international donors, or collect voluntary donations from wealthy inhabitants. This dependence system creates a tendency towards poor planning and operating capacity in the region (Bergh, 2010).

4. Technical solutions

Some bilateral efforts to technically support local governance and territorial development, as well as efforts in energy transition, can be identified. For example, the French Agency for Development (AFD) and the European Investment Bank (EIB) are involved in several programmes tackling the issue of urban cohesion and regional disparities. Similarly, the World Bank (WB) has since October 2015 developed the Maghreb Lagging Region Task Force, and has recently started the implementation of an operation to contribute to the development of Upper Egypt.

In the specific area of energy transition, besides the European Union (EU) and the US Agency for International Development (USAID), some bilateral cooperation agencies have also started technical support programmes. When the EU decided to globally expand the EU-funded Covenant of Mayors (CoM) programme, special technical support was proposed

in the region for local and regional authorities that are voluntarily committed to the CoM convention. A local authority signatory of the CoM acknowledges that they will attempt to implement the EU's climate and energy objectives in their territory, which involves sharing a vision for making their cities decarbonised and resilient, making their cities places where citizens have access to secure, sustainable and affordable energy, and committing to developing sustainable energy and climate action plans to implement local climate change mitigation and adaptation activities. To support CoM signatory cities, the EU has recently implemented two regional programmes: Cleaner Energy Saving Mediterranean Cities (CES-MED) and Sustainable Urban Demonstration Projects (SUDEP). A bilateral programme under the Instrument for Pre-Accession Assistance (IPA) is under preparation for Turkey as well. CESMED provided support to more than fifty cities for sustainable energy action plans. SUDEP provided, meanwhile, technical assistance to 12 municipalities across Lebanon, Palestine, Jordan, Israel, Tunisia and Morocco for the implementation of pilot actions responding to sustainable energy challenges – i.e. actions such as energy saving, energy efficiency and increased use of renewable energy sources. USAID has, since 2012, run the Building Alliance for Local Advancement, Development, and Investment (BALADI) programme in Jordan and Lebanon, while the Swiss government is supporting Tunisia's energy efficiency agency (ANME) in implementing the programme of the Cities Alliance for Energy Transition.

International organizations create pilot actions and starts energy planning in the region. However, it also creates a system of dependency on international aid, grants and funding, as they are not accompanied by national policies.

This international support creates pilot actions and starts energy planning in the region. However, it also creates a system of dependency on international aid, grants and funding, as they are not accompanied by national policies that might create an ecosystem for the multiplication of these actions and the development of long-term policies.

5. New forms of decentralised service delivery models

Within the limits of local governance, institutionalisation of energy transition at the local level is a must for ensuring the sustainability of efforts. Moving from a model of central provision to one of decentralisation to local governments is not a priority for most southern and eastern Mediterranean countries. For example Turkey, which is one of the OECD's most centralised countries, is still one of the most decentralised countries in the region (Houdret and Harnisch, 2017). Non-traditional actions like energy transition require creative thought, thus allowing new forms of decentralised service delivery models, such as public-private partnership (PPP) frameworks, to emerge.

There is no single widely accepted definition of PPPs. The World Bank's (WB) PPP Knowledge Lab defines a PPP as "a long-term contract between a private party and a government entity, for providing a public asset or service, in which the private party bears significant risk and management responsibility, and remuneration is linked to performance" (World Bank, 2018). With this definition the WB underlines the fact that PPPs do not include service contracts or turnkey construction contracts – as they are delivered through the public procurement process – or the privatisation of utilities, meaning there is a limited ongoing role for the public sector.

The Sala Noor Corporation, the local development corporation (LDC) entirely dedicated to the public lighting management of the city of Salé in Morocco, gives a good illustration of the public-private partnership for implementing energy transition. This partnership between the Urban Community of Salé, the national public company of Société D'Investissement Strategic (SIE) and OKSA created the Sala Noor Corporation. This project benefits from the World Bank's Communal Infrastructure Fund (FEC) contribution to the financing of a share of the communal participation in the equity of the LDC and the support of the Ministry of Interior and the Ministry of Energy, Mines, Water and Environment. The Ministry of Interior and SIE are now considering building a public lighting management model to replicate this initiative in other cities in the country.

A better understanding about how energy is used by households and decision-makers would help to identify potential savings via energy efficiency technologies and improved behaviour.

However, multiplication of these kinds of PPP models requires at first the improvement of a national legal framework for PPPs, and constant legal and technical support from an independent organisation dedicated to the local authorities' negotiations with a private company. For example, the OECD, who consider Tunisia's new legislation for PPPs very close to global best practices, recommends Tunisia make available a technical assistance fund to support the preparation and management of PPP projects, and create an independent institution to accompany public institutions in this process (OECD, 2017).

Considering existing examples, this special institution would need to have human resources with knowledge of all the legal and financial constraints affecting local authorities and be aware of technical details – as a local authority will likely not have among its own staff the specialists needed to create such a framework. For example, in France this role is held by the National Federation of Communities (FNC), with subordinate networks for water, energy, transportation, waste management, and so on. In Turkey, the Union of Municipalities (TBB), as the sole union for municipalities at the national level, assumes a similar role. In compliance with Article 20 of Law No. 5355 (2005), all 2,950 of Turkey's municipalities are natural members of the TBB, and the TBB provides municipalities with technical support on specific themes, like PPPs.

6. Regional cooperation

Local authorities face several layers of challenges when they undertake actions. On the one hand, weak financial and human resources limit their ability to undertake actions in response to their energy transition needs (alongside a reticence about decentralisation). On the other hand, energy transitions do not usually contain all the necessary frames required to receive support from a national policy, instead relying on securing international funding. However, sustainable action requires an institutional frame that can draw the attention of the private sector, which is currently missing in the region. (Turkey is a notable exception here.)

In such circumstances, an intergovernmental organisation such as the UfM can be a convenient platform where project promotion can be used as a tool to ensure cooperation. For example, in the First UfM Declaration on Energy (December 2016), member states included a short statement on their willingness to launch determined common metrics and an effective unifying medium: "for those countries who are willing to explore

the possibilities, notably in the framework of the Covenant of Mayors, to better coordinate ongoing and future efforts by local authorities in promoting and deploying renewable energy and energy efficiency measures, in reducing greenhouse gas emissions and in addressing the adaptation challenges that a changing climate poses".

This mandate raises the question of how regional cooperation in the Mediterranean could support cities' efforts in energy transitions, according to the UfM Secretariat's agenda.

The first immediate answer was by networking among active and willing heads of local authorities, such as mayors, governors and walis. However, political concerns about decentralisation, reticence regarding the larger ideology on the part of local elected figures hampered this approach. Any work in direct relation with heads of local authorities was first suspected to modify the power balance between local and central authorities. The second suspicion, which made slow work with local heads, surrounded the ideological differences that might exist between the central government's power and theirs. Any action that roused suspicions could become untenable.

Once those two political hurdles were overcome, then came the question of identifying the common interests for all member states – i.e. the ones which did not conflict with national policies. In this framework, the first path of action could hardly go beyond identifying existing efforts and giving them increased visibility, with the objective of promoting their replication.

But when it came to how to support actors and institutions interested in undertaking larger actions, other challenges emerged. To whom the institution would provide technical support and how to define that project selection criteria remained significant barriers. Therefore, the next step was not to provide direct technical support, but rather to make existing resources available for the entire region, consolidating easy access to the most useful information on the efforts of local authorities for energy efficiency and renewable energy through a database where reports, practical guides, methodological tools and evaluations could be found in an organised way.

However, none of these actions involved advocacy for the development of policies that could prompt a regional campaign on measuring how energy is spent at the local level. An energy consumption measuring campaign undertaken by cities – one consisting of measuring the energy expenses of cities, with detailed classifications linked to economic conditions, geography and climate – would give a better understanding about how energy is used by households. This data could help to identify potential savings with energy efficiency technologies, and to improve behaviour, both to support energy transition efforts and to further the often-stated goal of regional integration, without interfering with other political tensions.

A better understanding about how energy is used by households and decision-makers would help to identify potential savings via energy efficiency technologies and improved behaviour. Therefore, measuring campaigns on a sample of households and monitored demonstration

projects will be useful to provide evidence of these benefits. If measuring campaigns could be conducted in all member states at the same time, member states would have the possibility to compare their actions and evaluate their improvements. With that information, they could then decide on the required adequate energy tariffs, reasonable energy efficiency regulations and adequate financial support needed to treat their national condition.

7. Conclusion

When one sees actions undertaken by a small group of brave and entrepreneurial actors to reduce their energy consumption or produce electricity from renewables, all theoretical questioning on how much local authorities can implement actions despite their lack of capacity loses its meaning. Energy transition is now a local matter in the Euro-Mediterranean region. It is a rising trend, despite the scarcity of strong national political support. Now the question should be which institutions will accompany this trend, how they will do this, and what level they can reach.

Energy transition is now a local matter in the Euro-Mediterranean region. That it is a rising trend, despite the scarcity of strong national political support, is a given.

This paper has outlined the limits on local authorities taking on energy efficiency transition efforts, highlighted their impact on ongoing actionable projects, and ended by proposing "measuring" as a common way of both overcoming these challenges and building up a common synergy for cooperation. Today in the region we are still far from reaching the level of self-confidence and willingness of state officials in, for example, California, who brazenly speak out and ignore their federal government's efforts (under US President Donald Trump) to end policies targeting climate change (Davenport and Nagourney, 2017). Until the day that becomes possible, only regional and horizontal cooperation can make this movement wise, effective and sustainable across the whole of the southern and eastern Mediterranean region.

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SOCIAL SUSTAINABILITY

RUNAWAY URBANISATION IN TUNIS: RETHINKING THE TERRITORIAL BOX OF THE METROPOLIS

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1. Introduction

By now, the notion of a "Planet of Slums", in urbanist Mike Davis's alluring apothegm, has become a way for many to see the urban question in the Global South (Davis, 2007). This pathology has not spared Tunis, Tunisia's capital and biggest metropolis. Its symptoms are visible in the city's physiology: congestion, pollution, metastatic sprawl. These problems overlap and make each other worse in a whirl of socio-ecological duress. As sprawl seeps into agricultural land, people need to travel further and further to get to work. Since mass transit has been difficult to erect in immiserated, capital-strapped, and socially hollowed-out Tunisia, everyone drives or uses jerry-rigged collective taxi services, previously the province of the countryside, where they were called Taxi Rifi – rural taxis. Whether higher-density collective taxis or individual taxis for the middle class, more cars means more and more traffic. Of course, if the poorer portions of the population had private cars, the problem would be even worse. In turn, Tunis emits more and more carbon dioxide and non-greenhouse-gas pollutants, damaging air quality and slowly pushing the country up the ladder of greenhouse gas emitters. These workaday problems of non-functional cities have been paired with endemic and unsolvable unemployment, sectoral and general strikes and mass protests that paralyse roadways, mines and cities, and which occasionally produce an unrest so combustible as to set off immolations – such as the one which led to the tragic death of Mohamed Bouazizi in the interior city of Sidi Bouzid, the spark of the Arab Spring.

Much contemporary planning literature, including that on slums, considers cities boxes within which governance takes place. More heterodox formulations cast the city as a unit of a multi-scalar polity – both subject and object of multi-scalar governance processes. Nearly all scholarly works posit urban development as a question of trade-offs: development damages the "natural" exterior but reduced development damages the increasingly naturalised "social" urban interior. A subset of this accepts, in the dubious words of geographer David Harvey (2012), "the traditional peasantry was disappearing and that the rural was being urbanized," with the result that "the mass of humanity is thus

It is no longer the countryside which young people consider unliveable amidst the allure of the city. It is Tunis itself they considerable unliveable amidst the allure of the Global North metropolis.

increasingly being absorbed within the ferments and cross-currents of urbanized life". In turn, for Harvey, the political subject of social change and the site of struggle is the "right to the city," with the rest of the world a kind of antediluvian remnant. I question the degree to which such an ad hoc social mapping, structural diagramming for planning, or positing of political subjectivity speaks to the social struggles of today and the planning regimes of tomorrow. This is not to say that cities are not sites that merit both planning-level and political engagement. Rather, I suggest that we examine the city as the outcome of the history of development (Ajl, 2014). Thus, we ought to regard Tunis as it is not as teleology, but as the outcome of choice and struggle – the outcome of history, not the object of timeless social-scientific modelling. By understanding choices made and unmade, we might better understand the choices before Tunisian policymakers today, understand which choices are *not* on the agenda, *why* they are not there, and in turn push some alternative, affordable, feasible, and real Utopias for arresting the cascade of crisis that is Tunis today.

2. History

Tunis has grown rapidly in at least two stages. The first ran from 1936–1956, as the effects of French agricultural colonial-capitalism dramatically transformed the rural world (El Annabi, 1975). On the coast, usury and debt, price manipulation and warehousing were the socio-financial alchemy which converted olive growers into the victims of debt peonage, leading to rural social crisis and, subsequently, massive migration to the cities – in fact, to slums, and the birth of the *bidonvilles*, the term used in Tunis for the temporary knots of housing in urban semi-peripheries. The northern cereal belt, which confronted intense mechanisation and drastically reduced labour needs on the colonial wheat plantations, haemorrhaged population (Kassab, 1979). Some went to tenuous hillside farming, but more went to Tunis, as it kept shooting out pseudopods of growth from the old urban core centred around the Medina. Such extensions and even the core city itself – alongside slightly wealthier Lafayette – soon brimmed with deracinated peasants. Those people were less drawn by the allure of the city and more fled a countryside without a place for them. In the former, there was no question of them taking up posts in productive circuits: they were, instead, relegated to the tertiary circuit.

Post-colonial planning accelerated rather than arrested this process. This occurred in two phases, but with the same mindset animating both: that agriculture could soak up some quantity of the unemployed, but labour-light, machine- and capital-intense modes of production ought to prevail in the cities, in the burgeoning network of factories which urban-based planners identified as inseparable from if not equivalent to that eternal eidolon in the eyes of city-based social managers, modernity.

In the first stage, from 1961–1969, capital- and machinery-intensive coops burst across the north, gathering together peasants on their small scraps of land and around state-owned nodes (Amrani, 1979; Makhlouf, 1968). Because the state opted for capital-intensive and technicist modernisation and US aid programmes pushed tractors on the population beyond any plausible need, there was a temporary crowding of the population into

coops which bled money. Meanwhile more of the population fled the countryside to Tunis, a flow magnified after the state put an end to the cooperatives in 1969. Tunis grew alongside the urban factory base for import-substitution industrialisation and rural tractor fleets.

The second phase was equally based on capital-intensive agriculture and urban industrialisation – this time through the "off-shore" regime (Gouia, 1988; Romdhane, 1981). Agricultural modernisation rested on a Green Revolution. The logic of technicism, *deus ex machina* solutions to social problems through chemical, genetic and mechanical modernisation of the rural cereal-growing world reached its consummation. USAID planners and Green Revolution acolytes in Tunisian ministries converged on a plan with the ambition of increasing cereal yields for Tunisia's swiftly growing population, further replacing labour with machines, but skipping entirely the reorganisation of the social organisation of labour as occurred through the cooperative mirage. Instead, private farm-owners would organise this process. The state dumped subsidies into improved seed, fertilisers and tractors. As chemicals and metal replaced men and women, people fled the country to the city. But not just to the city of Tunis. By the late 1960s national planners were predicting that industrialisation would be unable to produce enough jobs to deal with the populations continually displaced from production in the countryside (Centre de Recherches et d'Etudes Administratives, 1967). Tunis's urbanisation-industrialisation project was neither resilient nor capacious enough to provide for the exiles from the countryside. In turn, many of them became adjuncts to the European and Libyan industrialisation projects. People went at first in equal measure to Saudi Arabia, Libya and France. Later, as the former two saw oil boom turn to bust, France became a preferred destination for labour emigration – or more accurately, labour export. Tunisia's rural problems were never solved. Its people were just transposed to cities where the country could not afford to incorporate them, leading to ever-mounting problems.

From the 1960s, well before Tunisian cities had any labor-absorption capacity whatsoever, planning literature, educational curricula, and cultural programming was replete with contempt towards "tradition".

Amidst intense urbanisation, the transport sector now absorbs 45% of total fossil fuel consumption and is the second largest user of energy after industry. Fully half of that is private cars. Bank loans accelerate and exacerbate this process, since car ownership is a status symbol and credit for car purchase is released easily and frequently. The car fleet increases 6% per annum while the bus fleet is more like 0.6% per annum, with the latter often too crowded to even enter while proceeding slower than walking speed. Increased density in the urban core and increased car use combine in a synergistic mélange, increasing car travel time, energy consumption and, finally, emissions. Infrastructural investments – a site of chronic under-investment on the part of the public authorities – orient more towards road infrastructure and less towards investments in public transport. Indeed, the two are in a spatial zero-sum game in downtown Tunis where they literally share road space (Mraihi et al., 2015).

One obvious solution is increased investment in public transport using clean-burning energy. But I wish to make a less obvious suggestion and put forth the idea that the problem of the city in Tunisia, and the problem of the city of Tunis, must also be considered as a question of demography. Of course, a caveat is necessary: demography is not a natural fact but becomes a problem only because of the structuring of the institutions which exist to absorb and manage population growth and allocate resources. Put differently, demography is not primarily a problem

of fertility but in fact is the demographers' translation of systemic social malaise. I wish to first raise the socioeconomic point that Tunisia – and Tunis – do not provide enough jobs for the denizens of the city, despite ongoing growth and its function as a population magnet. People come to the cities, flock to their mushrooming private universities, but then find themselves unable to find jobs. Tunis's structural maldevelopment then becomes one of the country's exports, and the problem of other countries, since most young people see no future for themselves in the country. This is in effect a loss of value – the country feeds and educates them when they cannot add to social wealth, and then loses them to Europe when they can. Furthermore, there are those in the capital who live in a complex relationship with the countryside: they spend much of the week in the city, working in the tertiary or secondary sector, while their wives may work on a farm in a primary sector. Urban life is a means to increase incomes, while it ends up contributing to urban dysfunction. Such an outcome is neither inevitable nor positive.

But such an attitude is the fruit of many people's reading of the socioeconomic landscape. I suggest that we turn the question on its side, and ask: If people move within Tunisia to its capital, and abroad, in search of meaningful and remunerative labour, what then is the cheapest way to make jobs?

3. Policy mechanisms

We are accustomed to considering prices the outcomes of a fey and indecipherable market logic which produces outcomes in accordance with the arcana of supply and demand. Meanwhile, ownership titles are frequently considered as natural facts with an appropriateness if not a permanence akin to the tides or the mountains. Both price and land-tenure policies in Tunisia – as I indicated above – led to population shifts from countryside to city. But, as I also indicated above, those were the outcomes of history, and history is made and unmade by men.

As partial policy remedies, I here propose four ways to lighten the rural-urban population flows which aggravate contemporary Tunis's mounting urban issues. The first is to consider the question of shifts in ownership titles, or to consider what agrarian reform could do for Tunis. In the first place, in Tunisia as elsewhere, labour intensity per hectare is in an inverse relationship with plot size, and productivity measured in dollars per hectare generally has an inverse relationship with plot size. Although in the Tunisian case this ratio is perhaps slightly more complex due to the tendency towards irrigation as a means of intensification, it then also becomes a function of access to credit or capital to finance such means of (usually unsustainable) intensification. A redistribution of land is tantamount to a redistribution of income. Economic modelling and planning schemas are based on the "pull" factor of the city, based on the relative outcomes of living in cities. Because such planning has been premised on existing agrarian inequality that inequality has endured, converting the countryside, particularly Tunisia's western belt, into Tunisia's repository of poverty. A redistributive agrarian reform would, in the first place, rein in rural-urban migration by making the countryside a more remunerative place for people to live their lives.

Consider also the historical process through which Tunisia moved to low-value-added export-oriented industrialisation alongside wage containment in the urban centres where industry concentrates. This history occurred in part because of the narrow size of the internal market, thereby making selling products from urban factories relatively less attractive for private capital. Because of a constrained internal market – and keeping in mind that the magnitude of the internal market is no natural fact but the outcome of a variety of choices and struggles – there was insufficient internal articulation of the productive system. Thus, Tunisia moved to a system of production based on using industry for export. As studies have shown, such efforts, for example in the textile sector, are only successful, or can only be evaluated as successes, when the metric is monopoly profitability (Baghdadi et al., 2017). Workers' livelihood outcomes are less successful, giving them less income, leading in aggregate to less demand.

A redistributive agrarian reform would, in the first place, rein in rural-urban migration by making the countryside a more remunerative place for people to live their lives.

A larger and more articulated internal market, which would emerge if Tunisia adopted an agrarian reform and more justly redistributed internal incomes, would create more opportunities for a wider-ranging programme of import substitution industrialisation (ISI). This is the second policy – industries, especially those based on processing primary-sector production, could produce for a wider internal market and subsist if not prosper based on economies of scale rather than wage containment. Accordingly, wages could increase in the cities, thereby allowing for both higher income and demand. Because there would be a wider internal market, there would be a greater need for all kinds of wage-goods, both agricultural and industrial. To create those goods, more jobs would be needed, and more jobs would thus be available to absorb urban unemployment. Such goods need not be typical ISI, or non-productive manufactured goods. Even better, they could also be implements like solar energy grids, or tools for alleviating labour intensity without resort to inappropriately heavy farming implements. Solar energy could free up capital spent on imported fuel, allowing the state more resources for price engineering or, for that matter, jobs in sectors not oriented towards profit – such as hospitals. Such a combination could set in motion virtuous circles of economic growth based on relatively less entropic modes of production. In this way, changing what factories make in Tunisia could easily make the countryside a better place to live.

A third policy mechanism would be getting prices wrong. Of course, the notion of "wrong" prices is always a bit of a provocation, since "right" prices do not exist. In any event, this mechanism is not new to Tunisia. In fact, price engineering has been central to Tunisia's post-colonial experiment in economic management. Throughout the 1960s, wages were nearly frozen, to take one "price" – the price of labour. There is no reason that the terms of trade need to be weighed against the goods produced by labour-intensive agriculture, such as durum wheat and barley, except that this has been understood as the way things work. I would suggest that anti-agricultural goods terms of trade are also a mechanism for siphoning off rural value. And like all such suction devices, it takes the people along with it. The movement of people from countryside to city is not a natural phenomenon such as the movement of light, the movement of the moon across the sky, or gravity pulling planets together. It is the result of sociopolitical arrangements, which are a kind of human-designed gravitational field pulling people hither and yon. Because they were made socially, they can be unmade and remade differently. A government could use selective price policy

alongside an agrarian reform to *strategically* rework the terms of trade, favour agricultural goods that are labour-intensive and concentrated in poorer areas of the countryside, and thus induce a relatively more favourable standard of living in the countryside. Because such policies would divert more capital to small farmers, they would also allow for increased investment, creating more wealth in the countryside and more demand from farmers for goods which enhance rural production, such as appropriate-scale mechanisation.

Tunisia's rural problems were never solved. Its people were just transposed to cities where the country could not afford to incorporate them, leading to ever-mounting problems.

A fourth policy mechanism is preferential interest rates for small farmers and opening the spigot of loans and capital for small farms. In Tunisia, there is an absolute capital shortage and a fundamental incapacity of the state to supply enough credit at competitive rates to the smallest farmers, whether seasonal credit or medium- or long-term credit. Creating a credit system that benefits large plot owners is another way of making the countryside less attractive to rural people, since large farms substitute capital for labour. Put differently, in a credit-limited system – freezing other variables for the moment – opening wider the flow of credit is akin to choosing which plant one wishes to grow in a world in which only so many plants can grow. The choice to over-allocate credit to industry, and furthermore to over-allocate credit to city-based private real-estate development, is in form and content precisely a decision to not allocate enough credit to small farmers. Increasing credit to small farmers in the context of expansionary macroeconomic policy in fact increases overall small-farmer wealth, with effects analogous to agrarian reform, thereby increasing the country's overall wealth.

4. Non-livelihood cultural investments

At least two other policy reversals would need to accompany such a programme. The first: a revision of the educational curriculum and the language of state planning. From the 1960s, well before Tunisian cities had any labour-absorption capacity whatsoever, planning literature, educational curricula and cultural programming were replete with contempt towards "tradition" (Akkari, 1993). Tradition meant that which was affiliated with the rural world, above all the world of the centre and south. Population flows correspondingly moved along channels lubricated by an ideological value system which told young people that the good life was in the city and the bad life was in the countryside (Amami, 1982). Such a programme is not inevitable. It is a choice, the result of policies oriented towards replacing men and women with machines in the countryside and concentrating the population in the urban core, above all Tunis. In 2018, this experiment has failed. It is no longer the countryside which young people consider unliveable amidst the allure of the city. It is Tunis itself they considerable unliveable amidst the allure of the Global North metropolis. That is a choice, the result of people-made development, infrastructure, investment and planning policies. Furthermore, there is a question of the "objective" allures of city and country life – culture, museums, culinary diversity. I would simply suggest that a policy suite based on decentralising populations and not allowing any further growth of a city like Tunis ought also to be partnered with cultural investments in local urban centres, as well as means for people to access those centres.

5. Conclusion

This chapter has historicised the concentration of Tunisia's population in the coastal belt and above all Tunis. It has located the origins of those demographic shifts in a set of policies which, when clumped together and put in simple words, made it so that country people could not make a life for themselves in the countryside and thus went to try to make a life for themselves in the cities. What I propose is that planners concerned with constantly swelling cities make problems easier for themselves – and for the people on whose behalf they plan – by looking at why cities keep growing faster than population rates in countries like Tunisia and try to grasp the problem not by its thorny and difficult exterior, but rather with a little more digging, at the origin of all things – its root.

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MEDITERRANEAN CITIES AND VERTICAL FARMING: FOSTERING SUSTAINABLE LOCAL FOOD PRODUCTION AND BUILDING NEIGHBOURHOOD ESPRIT DE CORPS

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1. Introduction

In 2010, for the first time in the history of the world, the proportion of the world's population living in cities exceeded 50% (UN, 2014), despite the world's cities occupying only 3% to 4% of the planet's land area (Schirber, 2005). Such a proportion is projected to rise further to 60% by 2030 and to over 70% by the middle of the century, when global population is projected to reach 9.7 billion (FAO, 2009).

People the world over are drawn to live in cities because cities, quite simply, constitute the world's undisputed economic engine. Just 600 cities today account for about 60% of the global economic output (Dobbs et al., 2011). By 2025, the world's top 600 cities will be home to an estimated 220 million more people of working age and will account for more than 30% of the expansion of the potential global workforce (Dobbs et al., 2011). The biggest economic transformation the world has ever seen is occurring today simultaneously with the population expansion of cities in emerging markets, generating millions of new consumers with rising incomes and whose spending power will change the way the world shops – including people living in cities buying more of their food locally.

To meet the food demand of a global population that will increase from today's 7.6 billion to approximately 9.7 billion by 2050, the United Nations projects that food production will need to increase by 70%, necessitating a doubling in crop production (FAO, 2009; Ray and Schaffer, 2011).

In the Mediterranean region – which encompasses about 850 million hectares of land in 22 countries across southern Europe, the Middle East and North Africa – about 14% of land is agricultural (EC, 2014). Among the eight Mediterranean countries that were part of the EU in 2012 (Cyprus, France, Greece, Italy, Malta, Portugal, Slovenia and Spain), however, the proportion of agricultural land is larger, at 34% (EC, 2014). But at current rates of land degradation and urbanisation,

it is projected that 8.3 million hectares of agricultural land will have been lost by 2020 in the Mediterranean since 1960 (EC, 2014). In that same period, the region's population will have doubled, effectively reducing by about 56% its agricultural land per capita from 0.48 to 0.21 hectares (EC, 2014), raising the grand challenge of food security in the region, especially among its Middle Eastern and North African countries.

The population expansion of cities in emerging markets generates millions of new consumers with rising incomes and whose spending power will change the way the world shops.

2. Urban agriculture and vertical farming

Given that agriculture already makes use of almost half of the land surface of the planet, consumes over 70% of all current freshwater withdrawals worldwide, and expends 30% of the global energy demand on food production and its supply chain, it is clear that a doubling of crop production will put enormous pressures on land, water and energy resources worldwide, particularly in arid and semiarid regions of the world, including the Middle East and North Africa.

Does it make sense, however, to grow food in cities or around cities to help meet the prodigious demand for food of the world's multiplying megacities? In 2016, there were 436 cities worldwide with a population of 1–5 million each, and 31 cities had a population of over 10 million each (UN, 2016). In 2030, these figures are projected to rise to 558 cities with a population of 1–5 million each and 41 cities with a population of over 10 million each (UN, 2016).

An affirmative stance for urban agriculture is in part supported by the argument that cities, with their infrastructures and centralised planning for supplying water and energy as well as for treating and reusing wastewater and even generating renewable energy, lend themselves well to organised and potentially more efficient utilisation of water and energy for crop production.

Urban agriculture takes on several forms, including establishing community gardens on vacant lots and, more recently, rooftop greenhouses. The company Gotham Greens built the first such commercial-scale facility in the United States in Brooklyn, New York in 2011, covering over 1,394 square meter (15,000 square feet) of production area and yielding over 45.4 metric tons (100,000 pounds) of fresh leafy greens annually (Gotham Greens, 2018). In 2015 the company opened its facilities in the Pullman neighbourhood of Chicago's south side, covering over 6,968 square meter (75,000 square feet) of production area and produces up to 10 million heads of leafy greens and herbs year-round (Gotham Greens, 2018).

Vertical farming, meanwhile, constitutes the third form of urban agriculture. Vertical farming is generally defined as the production of crops in vertically stacked growing shelves or trays typically in an enclosed warehouse-type environment. In Japan, where vertical farming has been pioneered, the name "plant factory" is typically used (Ono and Watanabe, 2006). Vertical farms as pioneered in Japan typically employ hydroponics technology, or soil-less agriculture, through which crops are grown in liquid

nutrient solutions. The crops are also provided with either exclusive or supplemental electric lighting using fluorescent lamps or light-emitting diodes (LEDs). Japan-designed vertical farms have always focused on developing controlled-environment hydroponic technologies for crop production because they enable intensive crop production with significantly increased yields (2x to 3x) at siificantly reduced water input (about 80–90% less) without the need for arable land and with a significantly reduced land footprint when compared with open-field farming.

Vertical farming makes it possible to achieve both maximum crop productivity and quality constantly throughout the year, independent of local weather and climate, of whether arable land is available, and at 80–90% reduction in water consumption.

The commercial development of vertical farms in Japan began in earnest in the 1980s. The 1980s saw the establishment of Daiei Biofarm and Miura Farm; the 1990s saw the establishment of La Planta, TS Farm and CosmoFarm; and in 2000's Fairy Angel and MIRAI were established (Ono et al., 2011). With the technology improvements achieved over the years, particularly in lighting technology, the production capacity of vertical farms in Japan has steadily risen. For instance, while the maximum production capacity of vertical farms in Japan in the 1990s was only 3,000 to 5,000 lettuce heads per day, the maximum production capacity for today's vertical farms in Japan reaches approximately 10,000 lettuce heads per day (Palus, 2014).

The concept of a modern skyscraper vertical farm was introduced by Dickson Despommier, a professor at Columbia University, in 2010 (Despommier, 2010). Owing to the subsequent association of the concept of vertical farms, fairly or unfairly, with grand architectural designs of awe-inspiring and often futuristic-looking edifices, the prospects for vertical farms in recent years have been significantly diminished by their projected high costs, particularly on account of the prohibitive costs of the conventional buildings needed to house the actual farms. Thus, to devise a new strategy for designing and developing vertical farms that can achieve economic feasibility, it has been crucial to decouple the concept of vertical farms from the conventional buildings with which vertical farms have become inadvertently intertwined.

3. Vertical farming 2.0: The Vertical Greenbox Solution

The "Vertical Greenbox Solution" was introduced as a new paradigm or strategy for designing vertical farms to achieve economic feasibility (Cuello, 2014). The Vertical Greenbox Solution, also known as Non-Building Vertical Farms (NB-VF), pertains to vertical farms constructed without using standard or conventional buildings, but using minimally-structured, modular and prefabricated structures that would be capable of supporting agricultural operations. The range in wall type for a module, for instance, could conceivably go from solid and non-transparent all the way to transparent plastic material, while the size range for a module could go from that of a used shipping container all the way to that of a sizable warehouse.

The Vertical Greenbox Solution paradigm prescribes the following three critical architectural features:

1) **Minimally structured** – reduced load-bearing requirement; reduced materials; reduced total weight; reduced plumbing and electrical services;
2) **Modular** – uniformity of growing space, hardware and environmental control; consistency of operational procedures; interchangeability of units; allows use of varied growing systems; allows development of turn-key operations;
3) **Prefabricated** – allows off-site construction and assembly of modules; significantly lower costs of construction and labour.

The modular boxes can be stacked vertically and arranged in a number of geometric configurations to achieve optimal use of land area and also to optimise growing operations, which could include the use of elevators to move growers to gain access to the individual modules. The possible geometric configurations for the Vertical Greenbox vertical farm include: (1) cylindrical configuration, where columns of the vertically stacked modules linked end-to-end radiate outwardly from a central core; and (2) linear configuration, where columns of the vertically stacked modules linked end-to-end are arranged in parallel.

The Arizona Green Box, a modular and movable shipping container designed by the author and his team of students at The University of Arizona to implement sustainable intensive production of high-value crops (e.g. lettuce and microgreens), is an example of a modular unit for a Vertical Green Box Solution. With its standard size, a used shipping container provides the following significant advantages in implementing movable and modular controlled-environment hydroponic boxes: (1) economical (about $2,000 or less per unit); (2) easily procured; (3) movable and easily transported (whereas a greenhouse building is typically fixed in location); (4) modular with standard size (thus, the configuration and arrangement of hydroponic cultivation systems inside a unit can be customised, optimised and standardised to be identical for all other units); (5) scalable (the modularity of the unit lends itself to convenient scalability through simple unit multiplication); (6) convenient control of physical environment (on account of the modularity of the unit); (7) can be stacked vertically one on top of the others if needed to save land area; and (8) easily secured.

4. Prospects for vertical farming in Mediterranean cities

The abundance of solar radiation in the Mediterranean region, especially in the Middle East and North Africa, makes possible the provision of renewable solar-based electricity to power vertical farms in the region. This represents a significant competitive advantage for the region economically, but is also a highly promising strategy to combat food insecurity while fostering environmental sustainability in the face of water scarcity, desertification, climate variability and other environmental challenges.

It would, of course, be unrealistic to expect Mediterranean cities as well as other world cities to become fully food secure by producing all of their food needs through vertical farming or any other means. At present, vertical farming is oriented toward the production of high-value crops.

Thus, the production of lower-value commodity crops (e.g. rice, wheat, barley, corn, soybeans, etc.), whose domestic supply is also regulated by most governments, remains best done in scalable open fields. The production, however, of higher value salad and vegetable crops and certain fruit (e.g. strawberry) – which is enormous and very resource-intensive when conducted in open fields – can be reasonably implemented in or around many cities around the world through vertical farming. This initial "division of labour" between open-field cultivation of commodity crops and production of high-value salad and vegetable crops through vertical farms, if implemented, would result in significant positive environmental impact worldwide in terms of significantly curtailing agriculture's inordinate use of water, nutrients, etc.

Vertical farming shows significant promise, not only in terms of its high potential for both economic and environmental sustainability, but also as an effective catalyst for community cohesion building and strengthening.

The production of salad-type crops is by no means insignificant. China and the United States, for instance, had a combined production of 18 million metric tons of lettuce in 2013, worth $8.4 billion, while Spain in the same year produced close to 1 million metric tons of lettuce, valued at $407 million (Benedict et al., 2014). China is also the world's dominant producer of spinach, producing 22.1 million metric tons in 2014, representing approximately 85% of the global supply (Worldatlas, 2017).

Vertical farming, similar to most open-field cultivation, requires the use of nutrients delivered through inorganic fertilisers. Vertical farms, however, have the advantage of almost 100% utilisation efficiency of fertilisers since the liquid nutrients are recycled and reused and, as the liquid nutrients are contained in a closed system, the nutrients do not leach out to pollute groundwater, which is frequently the case in open-field cultivation. The use of recovered or recycled nutrients from wastewater or animal farm operations – properly sterilised – could make the nutrient usage in vertical farms more environmentally sustainable.

Vertical farming has yet to emerge as an industry in the Mediterranean region, but the prospects are good and an industry is expected to emerge within a decade. The vertical farming hydroponic company AgraTech Farms, for instance, has recently established bases of operation in Madrid, Spain and Lisbon, Portugal. The company owns 16 acres of land just outside Lisbon that is zoned specifically for vertical farm hydroponics.

5. Vertical farming and esprit de corps (or social capital)

For the purposes of this paper, esprit de corps is equated with the formal concept of social capital, which the OECD defines as "networks together with shared norms, values and understandings that facilitate co-operation within or among groups" (OECD, 2007). Networks here pertain to "real-world links between groups or individuals," including "networks of friends, family networks, networks of former colleagues, and so on" (OECD, 2007). Thus, social capital is what builds trust within a group, enabling the members of the group to work together. Social capital "provides the glue which facilitates co-operation, exchange and innovation" (OECD, 2007).

Vertical farms can help build social capital in specific ways in the cities and communities in which they are located. It is important to note, however, that the vertical farm's economic sustainability and environmental sustainability, together, serve as the base for the vertical farm's social sustainability in that the latter would not exist and develop without the former.

The economic sustainability of vertical farms for a community encompasses income and wealth generation, jobs creation, business multiplier effects, etc. The environmental sustainability of vertical farms, meanwhile, focuses on the fostering of resource-efficient local food production.

A principle that articulates the need to continually improve the resource-use efficiency while increasing the crop productivity of vertical farms is Cuello's Law, that is, a projected industry goal that crop productivity with respect to resource use in a tech-dense indoor farm (including vertical farms) should double every four to five years (Cuello, 2016). This means that at least every half a decade in the next 10 years, tech-dense vertical farms should achieve a doubling of crop productivity per square-meter of land area, per litre of water, per kilogram of nutrients and/or per kilowatt of energy. Cuello's Law is a challenge posed to the vertical farming industry to further innovate and help meet this century's massive food demand while securing resource sustainability.

Certain vertical farms are already attaining impressive resource productivity levels. The Mirai Company in Japan, for instance, reportedly produced 10,000 heads of lettuce per day over an area of 2,323 square meter (25,000 square feet) using 99% less water and 40% less power than outdoor fields. With the gradual advent and application of artificial intelligence strategies in vertical farms, periodic doublings of resource-based productivity levels are anticipated to be attained in the coming decades.

6. Vertical farming's SANE benefits

Vertical farming helps build social capital in cities and communities in which they are located through its SANE social benefits (Cuello, 2016). The acronym SANE stands for the following:

S - Safety of Fresh Food
A - Access to Fresh Food
N - Neighbourhood Building and Strengthening
E - Enabling of Equity Building

S - **Safety of Fresh Food**. A major factor that has been enabling vertical farm enterprises to make rapid and successful inroads into China's numerous big cities is the series of high-profile food contamination cases that have scandalised China's citizens in recent years, fuelling the demand in cities all over China not only for fresh produce, but also for scalable crop production systems that are demonstrably safe to consumers. Chinese consumers experienced a "crisis of confidence" in their nation's food industry after it was discovered that melamine was found in domestically produced baby

formula in 2008, making 300,000 babies sick and resulting in at least six premature deaths. Subsequent stories on "fake eggs, diseased pork, recycled oil, mislabelled meat" (South China Morning Post, 2018) together with the unregulated use of pesticides on crops and antibiotics in aquacultured fish and aquatic animals only deepened the distrust felt by consumers toward their food industry, ultimately leading to clamorous calls for reforms. The subsequent emergence of vertical farms and other forms of urban agriculture (e.g. greenhouses) around Beijing and Shanghai, for instance, has attracted many consumers in part because they can observe how the crops are cultivated in controlled or semi-controlled environments which the consumers perceive to be not only efficient, productive and promoting premium crop quality, but also safe. When city residents gain the confidence that their food supply is safe, it certainly helps build the social capital in the city's many communities and helps dispel a troubling communal sense of anxiety, distrust and unrest.

A - Access to Fresh Food. Vertical farms in and around cities not only help collapse the distance fresh crops travel from the farm to the dinner table – which in the United States averages 1,500 miles – but also help make possible the elimination of myriads of food deserts. The United States Department of Agriculture (USDA) defines food deserts as areas of the country that are lacking or devoid "of fresh fruit, vegetables, and other healthful whole foods, usually found in impoverished areas. This is largely due to a lack of grocery stores, farmers' markets, and healthy food providers" (American Nutrition Association, 2011). The modular types of vertical farm, such as a movable shipping container repurposed as a Green Box, can constitute an innovative, practical and cost-competitive strategy to grow and deliver fresh vegetables to food deserts, especially given that conventional greenhouses remain costly to build. Modular and movable vertical farm units also lend themselves readily to emergency food aid for natural-disaster relief in cities and wherever there may be food shortage and famine.

N - Neighbourhood Building and Strengthening. Vertical farms can foster community cohesion, building and strengthening by encouraging community participation and involvement in their production operations. Social farming applied to vertical farming constitutes one notable example. The United Nations (UN) Food and Agriculture Organization (FAO) defines social farming (also called care farming) as "a farming practice that uses agricultural resources to provide social or educational care services for vulnerable groups of people" (FAO, 2014). Social farming is widely practiced in Europe, directed towards such vulnerable groups as people with intellectual or physical disabilities, ex-combatants, convicts, etc. Thus, social farming is the use of agriculture to help vulnerable groups of people to integrate back into society through providing them with new skills, accompanied with the feeling of utility and self-appreciation. Social farming helps promote the group's "rehabilitation, social inclusion and employability" (FAO, 2014). Further, vertical farms can readily serve as a de facto centre or focal point of activities for communities through volunteerism among the youth or senior citizens, educational tours for students, internships for students, etc. The direct capacity of vertical farms to help build social capital in communities through the foregoing programmes and activities should not be underestimated.

Each urban vertical farm could be designed not only to become an integral part of its community, but each vertical farm could deliberately make the community it belongs to an integrated ecosystem in itself

The city of Atlanta in Georgia, United States, serves as a noteworthy example of a city that has been proactively promoting urban farming and which in the process has been reaping significant benefits in neighbourhood building and strengthening. Atlanta's Mayor's Office of Resilience launched its urban agriculture programme to help address the problems posed by food deserts in the city by establishing a goal of bringing local food within a half mile or 10 minutes of 75% of city residents by 2020 (Williams, 2017). Today there are over 90 community gardens and 300 urban farms within the city.

Truly Living Well (TLW) is one such urban farm, growing 15.9 metric tons (35,000 pounds) of herbs, fruits and vegetables, and selling directly to neighbours and residents around the city at various markets four times per week (Okona, 2017). The farm's Community Supported Agriculture (CSA) programme allows its subscribers to fill their baskets at those markets 13 times a year at discounted rates of $400 per year for a full-share membership and $195 per year for seniors (Okona, 2017). Further, TLW's programmes provide interaction and instruction with master urban farmers. An Urban Grower boot camp for working adults and students is conducted on weekends, while a Young Urban Growers programme is specifically designed for children (Okona, 2017). Thus, TLW is not only an urban farm in Atlanta, but has become a de facto education and training centre for urban farming in several communities across the city.

E - Enabling of Equity Building. The specific type of vertical farm employed in a community could spur and enable members of the community to cooperate together and participate in vertical farming as a business enterprise. For instance, the modular type of vertical farm such as a movable shipping container repurposed as a Green Box is certainly more affordable to community associations or cooperatives than conventional greenhouse buildings which are costly to build. One conceivable scenario is for a city to build the modular units of vertical farms and then lease or rent the modular units to various community groups, including neighbourhood associations, student groups and even schools. Thus, vertical farms can help build and grow the community's social capital (or equity) as well as its financial equity.

7. Conclusions

Given the significant diversity among Mediterranean countries in terms of economic development, technological advancement, geographical and climatic conditions as well as levels of environmental degradation, designing solutions for fostering sustainable local food production and building neighbourhood esprit de corps in urban areas across the Mediterranean is not an easy task. Vertical farming as a solution, however, shows significant promise owing to the potential of its controlled-environment and soil-less production strategy to be made independent of the vagaries of local climate and geographical conditions and on account of its high water and nutrient-use efficiencies, thereby fostering environmental sustainability. It helps that numerous countries in the region receive abundant supplies of solar radiation, which could then be harnessed to produce renewable electricity to power the various operations of the vertical farms. Further, vertical farms, especially the modular and movable types, lend

themselves readily as effective catalysts for community cohesion building and strengthening.

Realising the promise of the economic and environmental sustainability of vertical farms in cities across the Mediterranean will require not only capacity building for the scientific and technical knowledge and skills that are necessary to design, build, operate and manage vertical farms, but also the business management and financial expertise and resources needed to establish entire urban ecosystems for vertical farms – with distributed production facilities and supply chains – both locally and regionally. And realising the potential for social sustainability of vertical farms will also require proactive cooperation and partnerships between vertical farms and their communities. The role of local governments in inciting and facilitating such business-community partnerships through financial and other incentives will also be crucial. Establishing robust and vibrant urban ecosystems for vertical farms will clearly require proactive government-private-community partnerships. In so doing, each urban vertical farm could be designed not only to become an integral part of its community, but each vertical farm could deliberately make the community it belongs to an integrated ecosystem in itself – economically, environmentally and also socially.

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INFORMAL SETTLEMENT DWELLERS IN ALGERIA: HOW LOCAL INITIATIVES AND PRACTICES CONTRIBUTE TO IMPROVING THEIR LIVING CONDITIONS

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1. Introduction

Recently there is a growing interest in re-understanding urban informal settlements by stressing the importance of social context and dynamics in the formation and development of informal settlements.

In scientific research with a purely economic perspective, informal settlements have often been viewed as bad physical environments, associated with illegality, marginalisation, precariousness and social problems. Over the years new perspectives have emerged. In 2000, De Soto used the term "survivalist strategies" to highlight the ingenuity and creativity of informal settlement dwellers (De Soto, 2000). Friedman introduced the notion of empowerment, self-organisation and coping strategies by which informal settlement dwellers improve their conditions (Friedman, 2005). Roy has emphasised how informal settlements need to be understood in a different way and introduced urban informality as "an organizing logic" (Roy, 2005: 148). This shows the growing interest in re-understanding urban informal settlements by stressing the importance of social context and dynamics in the formation and development of informal settlements.

Recent Algerian research has begun to reveal the dynamism of informal settlement dwellers, their commitment and their struggles for the improvement of their living environment (Bekkar, 1995: 64; Semmoud, 2009: 67; Kerdoud, 2005; Mouaziz, 2016). Starting from this perspective, this chapter aims to highlight the socio-spatial, cultural and contextual factors that contribute to the formation and persistence of informal settlements in Algeria. It focuses on the case study of Batna, one of the most dynamic cities in eastern Algeria and the most affected by the expansion of informal urbanisation. Its share of informal housing exceeds 60% (Chaline, 1990: 188). In addition to this, Batna is a colonial city that was founded in 1870. This specific characteristic of the city, which sets it apart from other Algerian cities, makes it easier to identify the conditions of emergence and expansion of its informal neighbourhoods by examining its urban growth process.

The first aim of this chapter is to examine the process of informal settlement expansion. Secondly it tries to understand the cultural and

local dynamics of formation and transformation of informal settlements in this city. Focusing on their initiatives and practices, the chapter seeks to examine the means by which informal dwellers organise and initiate actions to improve their living conditions.

Some selected informal settlement dwellers in Batna were asked open questions focusing on their complete migration history, their daily life and practices in order to examine their degree of involvement in their neighborhood life.

2. Methodology

For the purpose of this article, we focus our attention on recent and peripheral settlements in the city. The investigation is structured in three types of analysis. Firstly a spatial analysis is made in order to obtain an insight into the housing conditions and spatial issues in informal settlements. This is mainly based on data collected in numerous masters' theses by architecture students at Batna University which I supervised from October 2016 to June 2017.

Secondly a number of semi-structured interviews were conducted with various stakeholders, including community leaders and representatives of public authorities in Batna municipality, chief planners and experts in various urban planning and construction services. The objective was to gain a range of insights into specific issues related to the causes and consequences of the emergence and expansion of informal sites in the city as well as the impact of public policies and improvement programmes at these sites.

Thirdly, informal discussions with focus groups in each of the selected settlements were arranged to collect qualitative data. The proximity and contacts established with the dwellers over a year of site visits helped in arranging informal in-depth interviews with two informal settlement leaders in the neighbourhoods of Ouled Bechina and Hamla. They were asked open questions focusing on their complete migration history, their daily life and practices in order to examine their degree of involvement in their neighbourhood's life.

3. Informal settlements in Algeria

Throughout the colonial period, strong disparities existed in Algeria between the "planned" European city and the "informal" autochthonous city. Informal housing was the prevalent urban housing model of the indigenous populations. After independence in 1962, the housing sector was not given any priority since many houses were left empty by the European *pieds noirs* and others who fled the country after the war of independence.

The impact of social policies and the agrarian revolution on the development of informal settlements in Algerian cities during the 1970s was significant (Boulahbel, 2005: 62). The agrarian reform programme redistributed land to landless peasants and relied on cooperatives run by the government. To deal with the ongoing nationalisation process, many private landowners subdivided their agricultural lands into small parcels and proceeded to sell them as urbanised lots. A written agreement was arranged informally in order to assure purchasers who were attracted by the lower prices of the land plots despite them being outside the prevalent legal norms.

In the 1980s, Algerian cities experienced a rapid urbanisation process fostered by population growth and accelerated by industrialisation and rural exodus to the cities. This resulted in an expansion of slums around large cities, such as Algiers, Constantine, Oran and Annaba. Industrialisation and rural flight were the main underlying causes of the expansion of slums in the 1980s (Benattia, 1980; Benmaati, 1982).

During this period large social public housing programmes with standardised multi-storey buildings were launched across the country. Unfortunately, in spite of their social character, public housing units were not reserved for the people who needed them most. Municipalities and governorates that were in charge of the allocation of social housing retained a significant share of social housing for executives, officials and employees. Low-income housing demand was not satisfied: people who continued to move towards cities had no alternative but to settle on the fringes in unplanned areas, totally deprived of basic facilities and services.

To deal with this problem, the Algerian government implemented improvement programmes in the urban slums of most cities in the mid-1980s. Originally, the programmes upgraded elements of physical infrastructure, including the development of sidewalks, drains, sanitation and street lighting, which improved slum environments and the health conditions of the poor and their quality of life.

In the 1990s, an economic crisis raged and the government fought a brutal civil war against Islamist insurgents. During this decade an unprecedented decline in the delivery of social housing occurred. The situation was aggravated by massive cityward flows of rural dwellers fleeing the countryside mainly as a result of insecurity. In the late 1990s, the shortage of housing had become critical and there was a large sprawl of informal housing.

In the 2000s, with the economic recovery and civil reconciliation a new housing policy was instituted. Large housing programmes were launched all over the country. Loans and financial aid facilitate the access of middle classes to housing. The social housing formula has been retained, but is reserved only for low-income classes. To make rural people stay in the countryside, financial aid for rural housing has been introduced.

These programmes have improved the housing situation in Algeria and succeeded in meeting the needs of middle-class housing, but the demand for low-income housing remains unsatisfied and left to the informal sector. The informally employed urban poor have been excluded from housing allocation mechanisms. At present, informal settlements remain a problem in most Algerian cities, indicating that increasing demand is not met by formal supply (Bellal, 2009: 109).

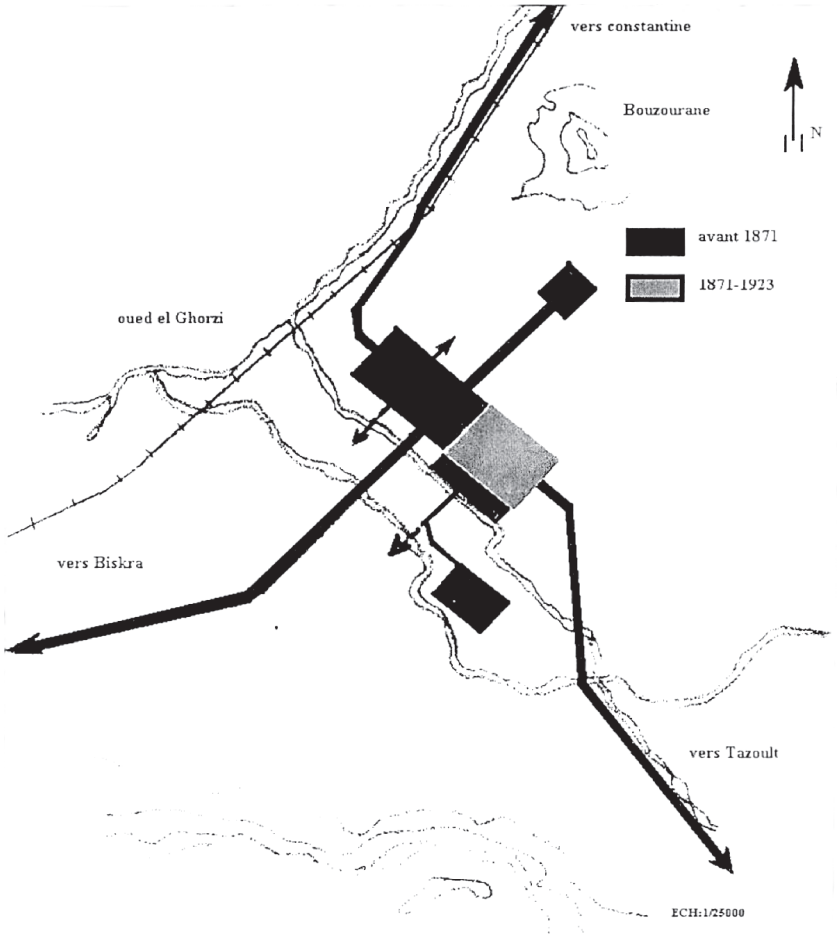
In addition to population growth and a housing shortage, the constant rural exodus to cities since independence has a significant effect on the expansion of informal settlements in Algeria. The latest 2008 census data showed the impact of rural migration on urban population growth since independence. The urban population was estimated to be 66.3% in 2008 while it was 49% in 1987 and only 31% in 1966. In contrast, the rural population decreased from 68% in 1966 to 33% in 2008 (RGPH, 2008).

4. BATNA CITY and the development of informal settlements

Batna was founded in 1844. The first settlement was a military camp and the choice of its location was strategic. The objective was to better control local populations and ensure the supervision of military expeditions into the south of the country. Later, planned colonial neighbourhoods developed on the northern extension of the military camp. They were exclusively for European populations and selected families among their local allies.

The Zmala neighbourhood emerged on the southern fringes of the planned city. It was a traditional neighbourhood intended to shelter indigenous and pauperised populations. The urban layout of the city in 1923 clearly shows the distinction and separation between the two cities, the planned and the informal (see Fig.1).

Figure 1. Batna in 1923



Source: Naceur (2004).

The first spontaneous sites appeared in the 1940s on the outskirts of the traditional Zmala neighbourhood. On the agricultural southern lands near Zmala, the oldest and largest informal district of Bouakal emerged.

At the end of the 1960s, new spontaneous neighbourhoods followed on the outlying peripheral sites of the city: Kéchida on the western outskirts and Park à Fourrage in the east.

The rural-urban migration processes had a profound impact on the proliferation of this informal urbanisation. The drought and the dramatic consequences of the Second World War led to an impoverishment of the Algerian countryside between 1940 and 1949. As a consequence, the city experienced a first major increase of its population from 15,000 inhabitants to 25,000 inhabitants.

Urban population growth continued between 1949 and 1962, increasing from 25,000 to 55,000 inhabitants. This was due to the impact of the Algerian revolution and the effects of the rural regrouping policy in cities to thwart the revolution.

New migrants moving to the city settled in the informal settlements and rented rooms in the courtyard houses. These neighbourhoods constituted ideal refuges for people that were persecuted by the colonial authorities because of their engagement in the revolution. Those of them who had more financial means started buying land from big landowners. The land belonged to large families that were allied with the French authorities; they sold small plots of land according to the purchasers' possibilities.

The private status of agricultural land in Batna was one of the main causes of the growth of informal urbanisation. The agrarian reform law in 1974 accelerated this urban encroachment of agricultural land. The specificity of informal settlements in Batna is that they are not built on land that belongs to the government, but rather on private land that has been purchased by the occupants who built their housing units on it later.

Most of the land on which informal settlements are located was owned privately.

The two largest informal settlements, Upper Tamchit and Tazoult Road, are exclusively built on private land that originally belonged to two large families. Over the years, lands were fragmented and sold informally to new buyers: the current occupants of the neighbourhoods. The Chikhi neighbourhood still bears the name of the original owner family.

5. Impact of the continuous rural migratory flows towards the city

AS A RESULT OF RURAL FLIGHT AND INTERNAL GROWTH Batna has experienced rapid population growth over the past five decades: from 108,700 in 1977 to 319,742 inhabitants in 2013. The Special Aures programme launched in 1968 aimed at modernising the whole region. However, the concentration of equipment and infrastructure in the urban centre of Batna created an urban imbalance between the city and its surrounding rural communities. The creation of the industrial zone in the 1970s has made the urban centre more attractive and encouraged the influx of migrants to the city in search of employment and better living conditions.

During the first decades of independence no housing programme was designed to meet residents' pressing needs, despite the urban growth. It was not until 1980 that the first housing programmes were launched: ZHUN 1 with 3,416 housing units and ZHUN 2 with 2,366 housing units. However, delays in housing delivery aggravated the housing crisis, as the first housing units were not occupied until after 1985. Meanwhile, the rural influx increased throughout the 1990s as a result of acts of violence and insecurity that affected the countryside all over the region. The dynamic of the construction market in the wake of the economic recovery of the 2000s then attracted even more peasants to the city.

6. Impact of the improvement programmes on inner informal settlements

As part of the improvement programmes for slums that were launched in the mid-1980s, an urban development programme was implemented in Batna in 1985. The objective was to provide informal settlements with basic urban services including clean water, improved sanitation, electricity and paved roads. The programme aimed to integrate them into the formal fabric of the city through two actions:

1) Completion of basic urban infrastructure like water, sewers, electricity and waste disposal;
2) Street network reconfiguration, improvement of street layout.

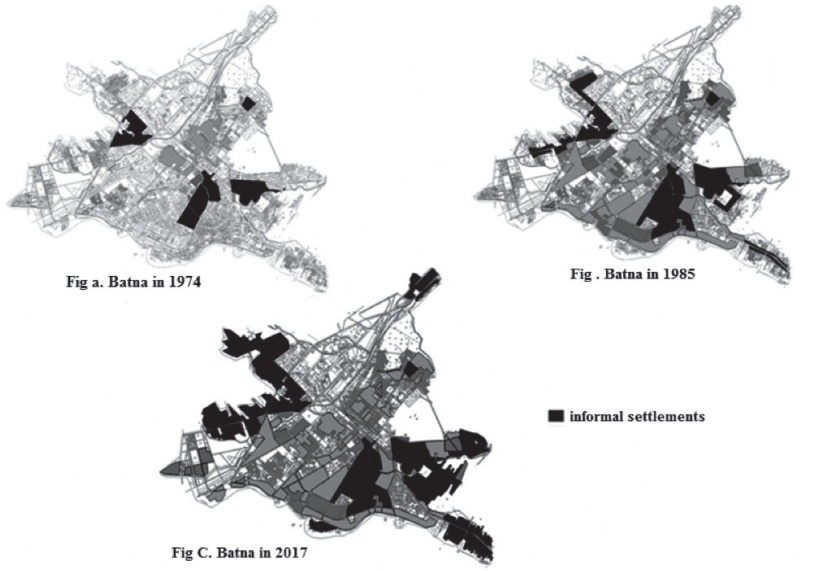
Many services were initiated for the improvement of informal neighbourhoods. It was decided to use the free lands for the construction of several public buildings and facilities that were lacking. The resulting changes benefitted the older inner informal settlements. (Naceur, 2013: 405). Currently some of them have become new commercial growth poles that are attracting not only rural, but also interurban migrants (Saidi, 2009: 59; Cote, 2011: 81).

7. Urban SPRAWL: The new peripheral informal settlements

The rapid expansion of informal sites and the private status of urbanised land in Batna has affected the implementation of successive urban development plans negatively since 1994. Urban peripheral areas were extensively consumed because of urban sprawl. However, informal urbanisation continues through three axes: Tazoult Road, Fesdis Road and Route d'Oued Chaaba (Driddi, 2015: 219).

Currently, five illegal neighbourhoods are identified by the Batna municipal technical services: Ouled B'china, Bukhriss and Hamla in the north-west and higher Tamchit in the south and Tazoult Road in the south-east. They are located on private lands on the outskirts of the city, outside of the urban perimeter. According to the latest census data from 2008, 5,878 households containing 34,146 people live in these neighbourhoods. They consist of 8,252 housing units: 5,140 are occupied, the rest are still under construction. The average occupancy rate is 6.64 persons per dwelling.

Figure 2. Informal settlement expansion in Batna



Source: Meziane (2017).

8. How local initiatives and practices contribute to improving living conditions in informal settlements

Impact of affiliation and kinship ties

The majority of rural migrants to the city gathered in informal settlements according to their tribal affiliations and kinship ties. The migratory trajectory history of Ami Houssine, one of the leaders of the Hamla neighbourhood, showed us that even today groups are still based on kinship ties, despite informal speculative market processes.

Ami Houssine arrived alone in Batna from Seddouk, his natal village in the northern Kabylie region, looking for job in construction. He has now become a leader of the Hamla informal neighbourhood. He undertakes his work on many building sites and has over the years succeeded in asserting his mastery of roof construction with wood-frame tiles – know-how that disappeared in Batna with the appearance of the full slab. Like many other migrants he bought a plot of land and built his own house on it. Then he brought the family he had left in his hometown. His success allowed him to found his own building company and to bring many workers from his village, among them his cousins and relatives. To help them settle in the area, he initially hosted them and convinced them later to buy small plots near his land and built on them.

Taking advantage of low land prices, he managed a second time to buy a large plot of land in Hamla in order to resell it to the newcomers among his relatives. He did not hesitate to offer them credit to help them acquire the land lots. In addition to the great number of relatives he has brought, he has organised several marriages between his workers ("Chaouis" natives of Batna) and Kabyle women from his hometown. These alliances consolidated the bonds in the neighbourhood and he became a leader in Hamla over the years.

With political openness, informal settlements dwellers in Batna are beginning to seek greater representativeness in the political spheres to support their demands.

Mutual aid spirit: "Touiza"

In most rural Algerian areas, people help each other to build their homes. This mutual aid draws its origins from the traditional value of "*touiza*": a traditional solidarity practice based on mutual assistance for the realisation of general interest works. House construction is collective work (Adad, 1997: 370). Our observations revealed that the *touiza* value is still present among rural migrants in informal settlements and exists today in different forms. The people interviewed in the old informal settlements told us that until the 1980s most people used to help each other to built houses, especially for structural work such as pouring the solid slab.

The spirit of mutual aid is crucial for residents facing the lack of facilities and comfort in these neighbourhoods (Naceur, 2003: 6). People usually arrange to get electrical connections from a main house that becomes the distribution point for several houses on the street. The neighbours then arrange to pay the bills together to the main owner.

The Oued Bechina settlement is known for its tribal dominance and its high degree of homogeneity. Its dwellers managed to organise themselves and succeeded in equipping their homes with drinking water. Because of the shortage of drinking water, this site has been negatively connoted the "Douar el Attach" the "village of thirst". Gathered around a notable figure, Haj Boutris, who belongs to the Ouled Selam, the most dominant tribe in the neighbourhood, people led many initiatives during the 1990s, ranging from negotiations with the authorities to lobbying for the provision of drinking water for their neighbourhood. They even participated with local authorities in financing the electrification of the entire neighbourhood. Thanks to his prominence as leader, Haj Boutris succeeded over the years in becoming a privileged interlocutor with the authorities.

Informal neighborhoods and job opportunities for new migrants

Informal settlements constitute autonomous units: they offer not only low-cost housing, but also employment opportunities for newcomers. Lack of drinking water has become a source of income for water vendors who cross the neighbourhood with their tanker trucks all day long in order to sell and distribute drinking water in the streets. Garages are the first elements built in most houses. They are usually rented to newcomers who use them for sleeping and as a first base. Afterwards they find job opportunities in the informal building sites around. Once they improve their conditions, they usually build their own houses after purchasing small plots of land in the same neighbourhood. While most migrants are attracted by the construction sector, many turn to vegetable and fruit sales and become street vendors. Others engage in various other informal activities.

Strategies used to ensure their establishment in informal sites

Dwellers bought lands informally in transactions that were illegal and which did not allow them to acquire "building permits", especially since most of the land was originally agricultural and not destined for urbanisation. To deal with this situation various strategies were used to avoid "demolition

decisions". Firstly, to secure their transactions, purchasers quickly start building on their lots of land. To achieve this, efficient organisation can be observed on building sites. To avoid urban police controls, construction work particularly intensifies during weekends, or even at night.

Added to this, concrete building materials are used on almost all informal construction sites in Batna: bricks for walls and solid reinforced concrete slabs. These materials make the task of demolition more difficult for authorities.

To improve their living conditions informal settlement dwellers in Batna also apply political strategies, ranging from negotiations with local authorities to pressuring them with sit-ins and the closing of roads. Often they also organise themselves in groups to claim access to water, electrification and sewage networks.

In addition to many informal leaders, numerous "formal" associations are emerging in these neighbourhoods (Naceur, 2003: 5). To better assert their claims to the authorities, people use various media: local radio, print media, television and recently social networks. With political openness, populations are beginning to seek greater representativeness in the political spheres to support their demands. Currently, some locally elected representatives of informal settlements are the new relays and interlocutors with the authorities.

Results of the investigation revealed a high degree of cohesion and a strong commitment and involvement among informal settlements dwellers in their daily life.

9. Conclusion

This chapter showed that urban informality is a lasting phenomenon in Algeria, which emerged during the colonial period and developed further since independence. Industrialisation, the housing crisis and especially the continuous rural exodus to the city since independence are the main causes of expansion of informal sites in Algeria and in Batna. The private status of agricultural land was another cause of the expansion of informal urbanisation in Batna. The agrarian reform law in 1974 accelerated this urban invasion of agricultural land.

The chapter highlighted the socio-spatial, cultural and contextual factors that contribute to the formation and persistence of informal settlements in Batna. Focusing on their initiatives and practices this study showed the means by which informal dwellers organise and initiate actions to improve their living conditions. It showed the dynamism of informal settlement dwellers, their commitment and their struggles for the improvement of their living environment.

The results of the research revealed a high degree of cohesion and strong involvement among informal settlement dwellers in their daily lives. A great sense of community and traditions of mutual, often kin-based, assistance are crucial aspects in the improvements of informal settlements in Batna.

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ECONOMIC ISSUES

- TOURISM, PLACE-MAKING AND URBAN TRANSFORMATIONS IN BARCELONA AND BEIRUT

  Waleed Hazbun

- THE NEW CAIRO WASTEWATER TREATMENT PLANT (EGYPT)

  Miquel Rodríguez Planas

- FROM FARM TO LANDFILL: HOW ROME TACKLES ITS FOOD WASTE

  Daniele Fattibene

TOURISM, PLACE-MAKING AND URBAN TRANSFORMATIONS IN BARCELONA AND BEIRUT

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1. Introduction

Sustainable urban development requires strategies to promote tourism development while managing it through inclusive, democratic, community-involved processes.

The activity of visitors and tourists is vital to the economic systems of most large urban areas. As cities face global competition for visitors they become more interested in refashioning their built environment and marketing their image to encourage and sustain these flows. At the same time, tourism-oriented urban transformations help integrate cities into the global market economy of tourist, capital and image flows. In the process, the interests, agency and built spaces of urban communities risk being marginalised in the face of the demands of global markets. At the extreme, as we have seen in Barcelona, Venice and other popular and "successful" tourist cities, local communities mobilise to limit these tourist flows, challenge the tourism-oriented development model, and seek to reclaim their "right to the city." Sustainable urban development therefore requires strategies to promote tourism development while managing it through inclusive, democratic, community-involved processes. This chapter explores these dynamics through a study of the contrasting experiences of tourism development in the Mediterranean cities of Barcelona and Beirut.

Since the mid-20th century, Mediterranean states have viewed tourism as a means to promote economic development. It has only been in the past two decades that attention has shifted from coastal "sun, sand and sea" tourism to the promotion of urban tourism. In the 1990s Barcelona was able to use its experience as host of the 1992 Summer Olympics to enhance its infrastructure, global profile and urban spaces to emerge as a leading global tourist destination and seeming "model" for urban tourism development across the Mediterranean. The Barcelona experience is noteworthy in how local community participation helped shape the transformation process and produced urban experiences shared by residents and visitors rather than an isolated tourist bubble. More recently, however, the excessive growth of tourism in Barcelona has led to urban transformations such as gentrification and a housing crisis that threaten the interests and vitality of local communities. Social movements in the city have mobilised to challenge patterns of tourism expansion and reclaim the historical

popular right to the city. Using the Barcelona experience as a template this chapter then considers the experience of urban tourism development in Beirut to highlight how tourism development there has often been limited to enclave spaces where economic growth is driven more by real estate markets, speculative capital flows and large business interests than by place-making by and for tourism. The chapter concludes by suggesting that planners need to encourage and empower community-oriented place-making in order to promote more sustainable, equitable, and creative modes of urban tourism development.

2. Cities, place-making and urban tourism

In the 1980s tourism development emerged as an urban growth strategy in many North American and northern European cities. In particular, transformations caused by deindustrialisation and economic decline in the 1970s resulted in the erosion of the economic base and physical infrastructure of urban areas while the shifting geography of economic activities led to declines in population in some areas and rises in others. In both hard-hit areas as well as more established tourist cities (such as European capitals) tourism development – following a neoliberal economic logic – offered a tool for urban revitalisation and economic development. In the process, many residential neighbourhoods of the urban poor located near former manufacturing locations were razed as historic and heritage sites were preserved and remodelled. Along these lines, cities were "remade" to attract international visitors as well as day-trippers from the suburbs and provinces. Most critically, this remodelling orchestrated by new public-private partnerships sought to rebrand the image of the city to attract investment in real estate and service sectors. As part of this process, new urban cultural institutions as well as commercial shopping spaces helped cities forge new identities.

The process of reshaping urban spaces to attract tourist investment and consumption is sometimes referred to as "place-making." It can be either be driven top-down by political and economic elites or bottom-up by communities and visitors (see Lew, 2017). Place-making as a process includes physical changes (such as razing old buildings and creating comfortable, appealing sidewalks) and commercial developments (such as shops, restaurants and entertainment facilities). It also includes developing tourist attractions such as heritage sites and monuments as well as marketing and "place-branding." Urbanist Dennis Judd (1999) argues that in many cities in North America and parts of Europe that promoted revitalisation through tourism development the resulting transformation led to the formation of "tourist bubbles". These are spaces organised for tourist consumption partitioned off from their surroundings, which might include poorly serviced urban neighbourhoods with abandoned lots and derelict buildings. The spatial logic of the tourist bubble delimits the space to be reconfigured for the tourist gaze and commodification by planners and private investors. This technique allows a wider range of urban areas to craft discrete urban tourist zones but at the same time the strategy of partitioning heightens the differences and tensions between the local and tourist economies.

3. Urban heritage and tourism in the Mediterranean

During the rapid expansion of the international tourism economy in the 1950s and 1960s, to the degree that national governments of Mediterranean states viewed tourism as a means to promote economic development, they focused their efforts on developing their "sun, sand and sea" tourism sectors in line with the operations of large European tour operators. Through the 1970s as well, urban and heritage tourism tended to attract a limited market or was offered as an add-on excursion. Urban areas otherwise served as gateways between the international transportation infrastructure and coastal leisure areas.

In the late 1970s and early 1980s, Mediterranean tourism sectors sought to diversify their product to respond to the saturation of the beach tourism market and the rise of interest in cultural, heritage and nature tourism. Mediterranean cities, with a few exceptions, did not have same sort of urban industrial areas that provided platforms for urban revitalisation in North America and northern Europe. Instead, a major vehicle for the expansion of the urban heritage market was the 1972 UNESCO Convention Concerning the Protection of the World Cultural and Natural Heritage. Beginning with locations in Cairo, Tunis and Jerusalem, by the late 1980s major locations across the Mediterranean, including the Parthenon in Athens and historic areas of Istanbul, had been declared World Heritage Sites. UNESCO, together with national governments and international aid agencies, sought to promote both heritage preservation as well as tourism development. At the same time, following economic recessions, debt crises and the implementation of structural adjustment policies, many Mediterranean states sought to promote neoliberal economic policies in order to increase hard currency export earnings and generate employment. These efforts gave a higher profile to urban heritage-based tourism, up to that point dominated by the historical capitals of northern Europe. They also emphasised tourism as a mechanism for cultural exchange. Few Mediterranean cities, however, had developed tourism infrastructures, including hotels and museums, for urban visitors that would allow them to compete with northern European destinations.

4. The Barcelona experience: Beyond the tourist bubble

In the 1990s, Barcelona emerged to represent a new "model" for urban tourism in the Mediterranean and beyond. Like the earlier experiences of tourism-centred urban revitalisation in northern Europe and North America, the Catalan city had a historic industrial urban core that had suffered economic decline. With the dominance of sun and sea tourism along the Spanish coast, Barcelona had yet to develop its own tourist image when in 1992 it hosted the Summer Olympics. The city used this moment of global attention to reconstruct its urban spaces while projecting a dynamic, progressive global image based on its urban design and quickly established itself as a leading Mediterranean, and more broadly European, tourist destination.

Rather than representing a new model, the development of tourism in Barcelona is best viewed as a dynamic process (Degen, 2004: 132). At the core of its "success" is how the socialist-dominated municipal gov-

At the core of Barcelona's "success" is how the socialist-dominated municipal government promoted a series of interventions in the urban landscape that reconfigured both spaces and flows.

ernment promoted a series of interventions in the urban landscape, such as new parks, public spaces and infrastructure that reconfigured both spaces and flows. A new waterfront opened the city to the sea while new public spaces and physical upgrades opened up Barcelona's historic city centre, serving both local neighbourhoods and international tourists. While hosting the Olympic Games expanded visitor flows and helped remake the city's image, participatory political processes were critical to enabling and defining these dynamics.

Neighbourhood associations played a central role in shaping the urban transformation process, maintaining both a stake in the consequences and a sense of ownership. As a result, commercial developments like bars and restaurants did not only cater to tourists and produce areas of "staged authenticity" in tourist bubbles; rather, the revitalisation of street life served residents on a daily basis while offering a vibrant cultural experience for visitors. Within this urban ecology, cultural institutions, convention centres and business facilities, as well as educational institutions, could be developed to expand the diversity of visitor flows attracted by the vibrant image of the city.

The blurring of the boundaries between the local and the tourist economies allows for the increased circulation of people and economic activity, but it also makes the city vulnerable to the consequences of emerging as a leading "global" city. As the city rose in global profile, its economy became more globally integrated, increasing the power of political and business elites (in Barcelona and beyond) to direct urban transformations to serve their own interests. By the late 1990s, as Barcelona emerged as a major hub for European business and culture, the path of its urban transformations became less directed by neighbourhood associations and more often responsive to the needs and demands of global markets and capital (Degen, 2004). Low cost flights, cruise ships, immigration and European integration facilitated the flows of tourists, sport fans, migrants and business people eventually making Barcelona the third most visited city in Europe. Between 1990 and 2013 the numbers of annual tourist visitors increased fourfold from 1.7 million to 7.5 million, amounting to four times the city's resident population. The tourist sector now amounts to about 15% of the urban economy (Burgen, 2015).

As the urban economy grew, Barcelona attracted more creative design-oriented businesses, fashionable boutiques and high-income residents. Rents rose and shops and housing in the urban neighbourhoods catered more to high-income residents and visitors. In the process, local communities were displaced by upscale bars, designer shops and more expensive housing. Meanwhile, much of the employment generated by the expansion of tourism has been limited to low-wage service jobs often taken by immigrants (Puig Raposo, 2015: 58). This gentrification process marginalised the local – especially working class – communities, and altered the character of these spaces (Garcia-Ramon and Albet, 2000; Russo and Scarnato, 2017).

5. Counter-movements in a tourist city: Mobility and the right to the city

The case of Barcelona as a tourist city is important not only for its experience of successful urban transformation, but also as a leading front in

what might be viewed as the anti-tourism counter-movement. Drawing from work by Karl Polanyi (2001[1944]), I view this counter-movement as not only a reaction to the excesses of tourist behaviour but more broadly a reaction to how the growth of the tourism economy escaped regulation by local communities and increasingly came to be shaped by global markets and capitalist interests. The counter-movement seeks not only to limit tourist flows but, more critically, to re-establish local communal agency in the process of tourism development while reclaiming public spaces in the city for community residents.

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By the 2000s, communal support and involvement in the process of tourism-driven urban transformation in Barcelona began to decline as visitor numbers continued to increase. In the wake of the 2007 economic crisis, the gap between the wealthy global elites who visited and worked in the city and the lower-class residents, whose welfare and work conditions suffered, only increased. New technologies and business practices, such as the expansion of Airbnb, allowed for the increased commodification and financialisation of urban housing, leading to a rapid increase in the share of urban accommodation devoted to visitors. While the early phases of urban transformation in the 1990s were governed by the municipality with the involvement of local neighbourhoods, the transformation of the accommodation sector was driven through market mechanisms that escaped the existing regulation of hotel construction and the tourist use of urban housing (Russo and Scarnato, 2017: 9).

Many of the urban spaces that had been remodelled and opened to tourists (such as Las Ramblas and La Barceloneta neighbourhood) progressively became dominated by mass tourist activity displacing their function within everyday Barcelona society (Russo and Scarnato, 2017). The noise, traffic, pollution and uncivil behaviour that tourist flows brought helped lead to drastic declines in residents' support for the tourism sector as a source of economic benefit and increased concern about tourism as a major urban problem.

One of the emblematic cases of tourism-driven transformation that provoked a collective communal response is that of Park Güell, designed by Catalan architect Antoni Gaudí. As a major tourist attraction in the city, with the increases in tourist flows to the city, the public park faced unmanageable crowds. The municipal government was forced to take action to preserve the park and the visitor experience. As a solution, in 2013 the municipal government implemented an access plan that required tourist visitors to queue in line and purchase a ticket for entry. The park went from being a public, open space free to visitors and residents to an enclosed space like an "open-air museum with restricted access" (Arias-sans and Russo, 2016). Some local residents and activists, however, refused to accept this neoliberal solution. They formed a platform "Let's defend Park Güell" and argued that rather than enclosing and commodifying the space it should remain an open, common space and that the community should be involved in efforts to develop a solution. As Arias-sans and Russo (2016) argue, what is at stake is not simply the cost of access to the park, but the notion that public spaces made open for tourism should not become "tourist space" governed by the tourism economy. Rather, they suggest, it is imperative to fight for the "commoning of the tourist city."

The impact of tourism on the city was so great that the anti-tourism counter-movement would rise to become a powerful political force in Barcelona. Housing activist Ada Colau played a major role in developing this movement, highlighting the negative impact of the existing level of tourist flows to the city. In 2015, Colau led a left-wing coalition that came to dominate the city government and promotes policies that sought to regulate hotel construction, limit the use of Airbnb, extract taxes from the sector to pay for public works and housing, and more broadly ensure that resident needs are incorporated into strategic tourism planning.

6. Neoliberalism, real estate and the making of urban tourism spaces: The case of Beirut

Since the 1990s, Mediterranean cites have sought to promote urban tourism development. These efforts, however, have become dominated by neoliberal logics as they promote urban restructuring and real estate speculation. As noted above, in the 1980s UNESCO encouraged a major movement towards heritage preservation and conservation. While this strategy was embraced by national governments that sought to develop historic locations and heritage sites as part of national identity construction, these efforts were costly, usually requiring multimillion-dollar external loans. They tended to be framed in terms of their revenue generation potential and assessed on a cost-benefit basis. As a result, not only were urban transformations increasingly dominated by an economic logic shaped by existing power structures, but local developments were highly vulnerable to global tourist markets and financial patterns rather than local community concerns. Without local regulations, community participation, or a vision for the city, the function of tourism in the urban economy became limited to its commercial functions: visitors were valued only to the degree they represented spending on high-end retail products and services. Beirut made an effort like Barcelona to promote tourism-oriented urban transformation, but within the context of elite, exclusionary political and economic structures that marginalised local communities from the beginning of the process.

In many ways, the process of urban transformation in Beirut parallels Barcelona's. In the 1990s Lebanon was recovering from 15 years of civil war following the end of the Cold War and at a time of hope for regional Arab-Israeli peace. Lebanon's political and economic elites sought to rebuild and redefine Beirut's image and regional position. The new Lebanese government was led by Saudi-Lebanese businessman Rafiq Hariri, who worked to reestablish the city as a regional, if not global, hub by converting the downtown area, turned to rubble during the war, into a modern-looking central business district to serve as the heart of its new real estate, finance and tourism-oriented urban economy and as a symbol of post-war Lebanon.

The task of designing and reconstructing the planned "central business district" was given to a new public-private partnership, Solidere (*Société Libanaise de Développement et Réconstruction*), run by Hariri's business associates. In contrast to Barcelona's efforts to work with local neighbourhood associations in an attempt to develop a series of localised interventions to open up public spaces, Solidere's strategy sought

to marginalise local agency from the process of technocratic top-down masterplanning aimed at connecting the city centre to regional and global circuits of capital. Solidere expropriated the property of thousands of diverse pre-war owners, tenants and lease-holders in the downtown area in exchange for shares in the joint-stock company. Solidere and its backers argued that without such an approach the fragmentation of ownership rights would have created legal and political obstacles inhibiting the reconstruction effort.

Solidere's strategy sought to marginalise local agency from the process of technocratic top-down masterplanning aimed at connecting Beirut centre to regional and global circuits of capital.

After an initial high modernist design by a consulting firm commissioned by Hariri that planned to divide the urban core into single-function zones was challenged by Lebanese architects and planners, Solidere set out to develop a modified plan with a closer relationship to the pre-war city (Hourani, 2012). Most of the street grid and street names were preserved, while heritage gardens for unearthed archaeological ruins were incorporated into the plans, which developed mixed-use zones. Solidere also conserved and restored many buildings and maintained many of the newly developed structures within a uniform architectural look defined by early 20th century styles. The planners highlighted the value of Beirut's culture and heritage to the new Beirut's global image while Solidere distributed funds to various confessional communities to restore and preserve the monuments and places of worship of Lebanon's diverse range of religious communities. Within the initial design for the rebuild of the "Souks" commercial area, some planners even proposed a "progressive rental policy" that would facilitate the return of diverse small, middle-class merchants that represented the multi-sectarian cosmopolitan character of the pre-war city core (Hourani, 2012).

While Barcelona's initial success (following the "Olympic effect") led to the increased influence of global market forces in shaping its patterns of urban restructuring, in contrast, Beirut failed to quickly attract the private investment and business headquarters relocations that would have been needed to realise the planners' vision for a regional commercial and financial hub. In the meanwhile, commercial developments around Beirut sprung up in areas some distance from downtown. Solidere then shifted to a debt-driven model that promoted a different path: tourism development. As Najib Hourani (2012: 153) observes, "restoration of the onetime urban heart of the nation was eclipsed by a drive to produce an urban enclave for international business travellers and the wealthy of the Arab world".

The urban space of downtown Beirut was transformed into a space that retained little connection to even the nostalgic memories of its pre-war urbanity. Instead, its urban form was shaped by the opulent, exclusionary aesthetic of commercial developments, gated housing complexes and shopping malls of the oil-rich Gulf states. Rather than serve as the heart of the city, the new downtown functions as an isolated enclave for the economic and political elite. Commercial developments focused on very high-end foreign-brand retailers, restaurants, and entertainment complexes catering to the spending patterns and tastes of high-income Lebanese and visitors from the Gulf. The planned small retail lots in the new Souks structure were replaced by larger lots accommodating luxury retailers (Hourani, 2012). With rents so high, only a limited set of exclusive outlets could afford the location. A few elite business groups soon came to dominate the urban commercial landscape.

Rather than serve as the heart of the city, the new downtown functions as an isolated enclave for the economic and political elite.

The commercial zone of the Souks complex opened in 2009 and in the years since its economic fortunes have been subject to waves of political calm and eras of local and regional conflicts. At times, especially in the summer months, the downtown has witnessed waves of patrons — wealthy Lebanese and visitors from the Gulf — crowding cafes in the evening, and more selectively patronising the high-end shops. Studies of Lebanon's travel and tourism sector show that tourist spending is mostly dedicated to fashion, clothing and jewellery, while visitors from Saudi Arabia, the UAE and Kuwait represent the largest shares of spending (Bank Med, 2017). In times of political unrest or regional conflict, these flows are disrupted and subject to political disputes.

Meanwhile, the vibrant community of young Lebanese professionals and diverse expats, joined seasonally by the Lebanese diaspora, sustains demand for social urban life ranging from exhibits by artist cooperatives to a nightlife of patronising bars, restaurants and clubs. Unlike Barcelona, however, there are few municipal-led programmes that foster these activities within public institutions and spaces. The lack of a public transportation infrastructure and the many barriers to urban mobility reinforce a pattern of fragmentation. Most developments are sponsored by small independent non-profits, sometimes with assistance from externally funded programmes or local business interests. As a result the cultural landscape remains highly fragmented into overlapping private networks dominated by the wealthy and educated elite. With limited opportunities for creative cultural and commercial activities within the high-rent downtown, in the past two decades most of the developments have taken place in a shifting set of trending neighbourhoods, including Gemmayzeh, Hamra, Mar Mikhael and Badaro. At different times these areas have undergone phases of rapid commercial development with the opening of bars, restaurants, cafes, designer boutiques and art galleries. Some of these gentrified spaces might mimic the texture of areas of Barcelona or Berlin, but they evolve without government planning or local community consultation. As such, gentrification takes place without regulation or incentives to value the preservation of the urban heritage or integrate into the existing social and cultural environment. Rather than become stakeholders in these developments, local residents are often disconnected from and hostile to the rise of "nightlife tourism" in their neighbourhoods (El Maalouf, Ghadban and Shames, 2015). Moreover, in each location the development of urban cultural spaces is often followed by investment from well-financed real estate developers with little concern for local communities. The developers are able to transform these spaces for their own commercial purposes, disrupting local creative developments and displacing populations (Krijnen and De Beukelaer, 2015).

The dominant trend of gentrification across the rest of Beirut has not been the rise of a "creative class" but the widespread transformation of urban space by razing old buildings, displacing their former residents and building high-rise luxury apartments. This process is driven by the continual inflow of capital from Gulf residents and the Lebanese diaspora combined with debt-financed local real estate investments. The resulting skyrocketing real estate prices often crowd out creative entrepreneurs as well as displace local residents (Krijnen, 2013). In both the downtown area and other parts of the city, high-rise real estate development has come to dominate the transformation of urban space

in Beirut. For decades, block-by-block, Beirut has been transformed by well-connected developers. Their building projects serve as financial investments or means to store value rather than provide accommodation. Moreover, amidst a housing crisis many high-rises remain empty and thus they fail to establish the urban density needed to promote the street-life essential to sustaining mixed-use areas.

7. Reclaiming the city?

The transformation of urban space initiated by Solidere and driven by the city's commercial and financial elites has been met with some resistance and efforts to build alternatives. The political divisions and social fragmentation of Beiruti society, however, limits the mobilisation of a counter-movement such as we have seen in Barcelona.

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One notable response, or at least alternative, to Solidere can be found within the Shia community in the southern "suburb" (or *Dahiya*) of Beirut. These generally poorer areas of the city, which nevertheless include middle-class communities, represent a world apart from downtown Beirut. These areas are dominated by the political movements Hezbollah and Amal, which are the political rivals to the Future movement founded by Rafiq Hariri and led by his son Saad since his assassination in 2005. As documented by Harb and Deeb (2013) in the years following the Israeli evacuation of southern Lebanon in 2000, there was an increased effort to develop leisure spaces for the Shia community in Beirut. These spaces include cafes, family entertainment complexes and even "themed" restaurants such as Al-Saha Traditional Village. Developed within the norms of Islamic piety and modesty (for example, they do not sell alcohol), these commercial spaces, while open to all, have been primarily developed as means to open up social spaces for the local Shia community. Many of the venues are not public spaces per se, but within the Shia community operate as spaces for gathering and community and in a way, represent for some an effort to claim their own right to the city.

The transformation of the *Dahiya* has had a limited impact on the rest of the still fragmented city. In recent years, however, a new political movement has been organised to challenge patterns of urban development in Beirut. Promoting new patterns of tourism is not on their agenda, but these local activists have often mobilised to counter efforts by politically connected developers to privatise public spaces such as beaches and coastal access areas. In recent years, diverse activists have been brought together to challenge the corruption and failure of Beirut municipality and the national Lebanese government to provide basic public services. The most inspiring development was the formation of the *Beirut Madinati* (Beirut is My City) coalition of activists and planners that contested the municipal elections in 2016. Their platform calls for, among other things, developing urban public transportation systems, building public housing, community access to public spaces such as the Beirut waterfront, creating green spaces, fostering conditions for the development of local small producers and businesses. Despite running an impressive campaign that gained much support, the nature of the Lebanese electoral system prevented them from gaining any seats in the municipal council, although many members continue to seek change through other means.

8. Empowering community-oriented place-making

This chapter has argued that the Barcelona experience of tourism development is noteworthy in how local community participation helped shape the transformation process and produced urban experiences shared by residents and visitors rather than an isolated tourist bubble. The rapid growth of tourism, however, led to urban transformations such as gentrification and housing crises that threatened the interests and vitality of local communities and mobilised social movements that challenge patterns of tourism expansion and seek to reclaim the historical popular right to the city. Using the Barcelona experience as a template, this chapter has considered the experience of urban tourism development in the case of Beirut to highlight how tourism development there has often been limited to enclave spaces where economic growth is driven more by real estate markets, speculative capital flows and large business interests than by place-making by and for tourism. One lesson from this comparison is that tourism planners need to encourage and empower community-oriented place-making if they wish to promote more sustainable, equitable and creative modes of urban tourism development.

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THE NEW CAIRO WASTEWATER TREATMENT PLANT (EGYPT)

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1. Context

At the beginning of this century, a drinking water shortage was identified as a pressing issue in Egypt's environment sustainability, particularly in densely populated areas. The existing wastewater treatment infrastructure did not produce water with adequate quality to use for agricultural and urban green area irrigation, meaning fresh water had to be used instead. Therefore, the government decided to build new infrastructures to reuse urban wastewater for the mentioned purposes, reducing fresh water use.

One example of this situation was in New Cairo, a city created in the southeastern part of Cairo in 2000 in a former desert area, to ease the problems of an overcrowded capital. One of the main challenges faced by the city was the shortage of drinking water due to the harsh environmental conditions.

On the other hand, in 2006, the government of Egypt adopted a new long-term policy to increase the involvement of private firms in the country's economic development as a source of capital financing and know-how. The aim of the new policy was to expand the much-needed investment in infrastructure within the country. Using public-private partnerships (PPPs) was one of the goals of this new policy.

It is in this framework that the New Urban Communities Authority (NUCA), the national agency in charge of developing new areas and redistributing the population far from the narrow strip of the Nile Valley, was in charge of leading the implementation of a wastewater treatment plant (WWTP) in New Cairo.

The plant was designed to:

- Reduce the use of freshwater for tasks such as agriculture and urban green area irrigation, as the sludge from the wastewater will be used for agricultural activities as fertiliser.

1. This chapter is an adaptation of the study *New Cairo Wastewater Treatment Plant (Egypt): Case Studies PPP for Cities* prepared by: Jordi Salvador, Miquel Rodríguez Planas, Francesc Trillas, and Joan Enric Ricart.

- Limit the volume of polluted water dumped into the river with consequent negative effects on human health and the ecosystem.
- As a consequence of the previous point the project will additionally reduce the water pollutants disposed into the River Nile.

At the beginning of this century, a drinking water shortage was identified as a pressing issue in Egypt's environment sustainability, particularly in densely populated areas.

Before the New Cairo WWTP was in operation, New Cairo's wastewaters were disposed into the river with significant negative effects on the river ecosystem and public health.

2. The characteristics of the WWTP

It was, at the time, the first successful PPP in Egypt. In terms of capacity, the WWTP was an urban wastewater treatment plant with an average daily flow of up to 250,000m³/day, with capacity to serve over 1 million residents, the expected population growth of New Cairo at the time the project was designed.

The project company, Orasqualia, was named after the two shareholders in the special purpose vehicle (SPV), Aqualia (subsequently replaced by Aqualia New Europe in February 2015) and Orascom Construction Industries (subsequently renamed OC), each of them holding 50% of the shares in the consortium. Aqualia New Europe (ANE) is a joint venture between Aqualia (51%) and the European Bank for Reconstruction and Development (ERBD) (49%).

The construction process started in March 2010 and ran for 26 months, until May 2012. The construction period was finished with only two months of delay despite the political situation during 2011. The delay in the operation period resulted from problems deriving from the quality of the outflow during the commissioning period. During this period, NUCA did not accept – as is the common rule – any discharge of water with quality outside the parameters established in the contract.

The plant started service in October 2013, 16 months after construction finished. However, it used only one line of biological treatment out of the six constructed lines (each of them with a capacity of 41,500 m³/day). The reason was that the forecasted urban development for New Cairo did not materialise due to political instability, limiting the sewage water inflows to the WWTP.

3. Bidding process

In 2006, the government requested funding of $75,000 for the Public-Private Infrastructure Advisory Facility (PPIAF) to prepare an assessment for the plant. PPIAF recommended the use of a PPP framework to carry out the project.

The procurement method of New Cairo WWTP was an international open tender with a previous prequalification stage. Five consortia presented offers in the bidding process. Of these five, Orasqualia won the tender for the following reasons:

- The technical proposal complied with all the requirements of the Instructions for Bidders and its quality was considered appropriate.
- The consortium presented the lowest-cost financial proposal with an adequate financial structure.

4. Internal characteristics of the project

Finance and funding

The New Cairo plant mobilised private investments totalling approximately $140 million and the debt related to the project amounted to $103 million.

Payment method

Orasqualia issues a quarterly invoice for the wastewater treatment service, the so-called Sewage Treatment Charge ("STC"). The invoice is structured in four different payment parameters:

1) Capacity Charge: A fixed payment covering:
   a. Total investments made in design, construction and start-up of the plant and capital expenditure required during the operations period;
   b. Debt service costs, including interest payments and any other fees stipulated in the financing agreement;
   c. Return on equity;
   d. Insurance premium for the required insurance policies.
2) Fixed Operating Charge: A fixed payment covering the operating costs that are not volume related.
3) Variable Operating Charge: The charge (per cubic metre (m^3)) covering variable operating costs per cubic metre of effluent (with the exception of the electricity consumption cost).
4) Pass-Through Charge: Reimbursement of the full cost of electricity (up to a maximum electricity consumption proposed in the bid by the awarded consortium).

Any applicable sales tax will also be added.

Risk assignments

As in any PPP project, a proper assessment of the risk was a critical issue for the success of the service. In the literature, it is often said that the risk should be transferred to the part that best can deal with it.

The following table shows the risk assignments between the private company and the administration.

Table 1. The risk assignments between the private company and the administration	
Risk category	**Assignment**
Land & space	Administration (NUCA)
Design & Construction	Private firm
Financing	Private firm
Inflation	Administration (NUCA)
Interest rates	Administration (NUCA)
ForEx	Private firm
Credit worthiness	Administration (NUCA)
Operations & Management	Private firm
Maintenance	Private firm
Supply of Utilities	Administration (NUCA)
Demand	Administration (NUCA)
Performance	Private firm
Political	Administration (NUCA)

Source: Salvador, et al. (2016).

Governance of the project

The governance of the project concerns the mechanisms (normally through the contract itself) or the organisations in charge of dealing with the problems that might appear during the PPP's existence. PPP's are normally long-term projects (more than five years, but can reach 30 or 40 years), with very complex contracts, in which many problems can arise during the construction process and also during the operation activities. Therefore, the governance of any PPP is a crucial element to guarantee the correct development of the project.

Two of the main difficulties experienced by the consortium resulted from the absence of a specific PPP law (one was approved one year after the financial closing) and the fact of being the first implemented PPP project handled by the public administration.

The actors involved in the project were:

- **The New Urban Communities Authority (NUCA)**, the contracting authority. NUCA is in charge of defending the public administration's interest. NUCA is part of the Ministry of Housing, Utilities and Urban Development (MHUUD).
- **Orasqualia**, the SPV that was awarded the project which operates the New Cairo WWTP.
- **The PPP Central Unit** is a unit within the Ministry of Finance that is charged by the government with developing PPP practices and taking a vital role in the delivery of the initial projects.
- **Experts** – independent financial expert and independent technical expert.

Beside the specifications of the contract, the governance of the project was guaranteed by two governance committees that supervised the project's functioning and dealt with unexpected situations arising during the contract duration.

- **Partnership Committee**: comprised of senior executives of NUCA and Orasqualia for amicable dispute resolution. Composed of ten

members: five from the NUCA side (NUCA, Construction Authority for Potable Water and Wastewater, MHUUD, PPP Central Unit and the Egyptian Water Regulatory Agency (EWRA)), and five others from the Orasqualia side.

- **Performance Monitoring Committee**: to monitor the performance of the project. Composed of three members: one representative each of NUCA and Orasqualia and one of the experts, depending on the case.

5. External characteristics of the project

Economic conditions

In 2008/09 Egypt weathered the impact of the global financial crisis relatively well due to limited direct exposure to the affected financial products and the country's low levels of financial integration. The reforms adopted since 2004 reduced fiscal and monetary vulnerabilities, leaving some room to manoeuvre on the macroeconomic policy response. The government undertook a package of additional (mainly infrastructure) expenditure to help support economic activity. During the first years of the contract, the exchange rate of the Egyptian currency rose from 5.64 EGP/$ in 2010, during the bidding for the contract, to 18.14 EGP/$ in 2017.

Legal conditions

At the time of signing the contract for the New Cairo wastewater project there was no specific PPP legal framework in Egypt. The existing legislation for public procurement was Tender Law No. 89 adopted in 1998. With the purpose of providing regulatory support, the Egyptian government issued a special law on August 2010, Law No. 67, regulating the Private Sector in Infrastructure Projects and Public Utilities.

Social conditions

According to the Human Development Index (HDI) published by United Nations Development Programme in 2014, Egypt stands in position number 108. Since 2009 the country has moved down three positions in the HDI ranking[2].

Political conditions

The political situation was influenced by social and political instability due to the protests that started on January 25th 2011 in Tahrir Square. The protest led to what is known as the Egyptian revolution that ended with President Hosni Mubarak's ousting after almost 30 years in power. On June 30th 2012 Mohamed Morsi, the leader of the Freedom and Justice Party, was elected president of Egypt, a position he held until July 3rd 2013 when he was succeeded by General Abdel Fattah el-Sisi, who has governed the country until now.

2. http://hdr.undp.org/en/countries/profiles/EGY

Problems faced by the PPP

The PPP basically faced two problems. One was an internal one, related to the construction process, and another was related to the political conditions.

The PPP basically faced two problems. One was an internal one, related to the construction process, and another was related to the political conditions. The problem related to the construction process derived from the construction of the two-kilometre pipe. The issue started when, during the Commissioning Period (from May 2012 onwards), NUCA did not accept the New Cairo WWTP offloading partially or untreated water, despite this being a regular practice during the start-up period (nothing was mentioned in the contract about it). NUCA required Orasqualia to construct a pipe 1300mm in diameter and 2km long to the closest water treatment plant (Hassan Allam WWTP) at its own cost. The problem was solved through an amicable agreement on November 24th 2013. In the end, the construction process had cost overruns of only 10% of the initial cost related to the building costs.

The political problem was the one related to the Egyptian revolution that triggered the overthrow of the Egyptian government. The result was that from the signing of the contract (June 2009) to the start of the operation (October 2013) there were three presidents of Egypt (Mubarak, Morsi and Mansour) and four prime ministers (Nazif, Shafik, Sharaf and Qandil). These political movements could have posed a threat to the project, as the different governments could have decided to modify or cancel the project. None of these things happened. The stability of the PPP has to be found in three reasons:

- **The independence of the public officers managing the PPP contract**: the creation of an autonomous Central PPP Unit inside the Ministry of Finance allowed the project to be isolated from the political situation and allowed it to have a stable interlocutor with the contractor.
- **External advisors**: the participation of external and international advisors during the planning of the bidding process allowed a correct bidding process to be defined.
- **Correct selection of private partners**: the selection of multinational companies with complementary competitive advantages, and with deep experience in the construction process and management of water treatment plants. Those partners helped to reach the milestones of the project and also to face the economic difficulties of the contract payments related to the rising exchange rates.

7. Impacts of the project

New Cairo has successfully implemented new infrastructure with cutting-edge technology using private financing. This financial framework limited the pressure on public finances during the construction years.[3] That was challenging considering the political situation the country was going through. The administration benefited also from transferring the risk of certain parts of the project to the private operator, as previously stated. Additionally, with the new plant the country reduced the consumption of freshwater by using treated water for farming and green area irrigation.

Society, in a broad sense of the term, benefitted from the project, mainly through an increase in freshwater availability. The reduction in pollutants deposited into the river led to human public health improvement. Moreover, the better quality of water used for farming not only increased the quality

3. The Egyptian government should however add the financial commitments of the project during the whole period in the balance sheet.

of products with direct effects on human health but might have increased agriculture productivity, fostering economic growth in the region. In terms of employment, the plant provided regular jobs for 63 permanent skilled workers directly, 60 of them locals. During the construction period the company hired 1,500 workers and created 150 indirect jobs.

Lastly, there was also a design and construction operation know-how transfer from which local private firms could benefit. Egyptian citizens were additionally able to benefit from cutting edge technology and reliable operations to tackle the environmental and water availability problems without additional cost. The wastewater collection and treatment costs are already covered by the water tariff paid previously without suffering any increase. The side effects resulting from the plant construction were very limited due to the location of the plant outside urban areas.

With the new plant the country reduced the consumption of freshwater by using treated water for farming and green area irrigation.

8. Assessments of the project

Assessments on the PPP methodology

Table 2. Conditions related to the selection and development of the Orasqualia project

	New Cairo Wastewater Treatment Plant	
PPP Methodology	**Existing**	**Details**
1. Procurement method & Bidding process		
1.1. Value for Money analysis or CBA*		
1.2. Real Competition for the Contract	Yes	5 Bidders
1.3. Tender evaluation committee	Yes	Internal
2. Contractual issues & incentives		
2.1. Bundling	Yes	DBFOT
2.2. Quality verifiable	Yes	via outflow
2.3. Externalities	Yes	Positives
2.4. Duration		20 years
3. Risk, finance & payments		
3.1. Construction & Operation Risk	Transferred	
3.2. Demand Risk	Not transferred	
3.3. Policy & Macroeconomic Risk	Partially transferred	ForEx
3.4. Payment Mechanism	Usage + Availability	Usage + Availability
3.5. Special Purpose Vehicle (SPV)s	Yes	Aqualia New Europe & Orascom (50%)
4. Governance		
4.1. Transparency	Yes	
4.2. Participatory decision-making process	Not observed	External monitoring during tender and awarding (IFC) and operation (experts)
4.3. International/External monitoring	Partially	
4.4. Legal framework	Not at the beginning	
4.5. Distribution of tasks	Contracting	NUCA & PPP central unit
	Monitoring compliance	NUCA
	Renegotiation	NUCA
	Regulation	NUCA
	Operation & Quality	NUCA
5. Building process		
5.1. Cost Overrun	Yes	Pipe construction to nearest WWTP
5.2. Delayed deadlines	Not observed	
6. Potential Benefits		
6.1. Possible Price Certainty	Yes	Unquantified
6.2. Transfer of responsabilities to privates	Yes	
6.3. Scope & Incentives for innovation	Yes	
6.4. Savings in public payments	Yes	
6.5. Life-cycle approach	Yes	
6.6. Incentive to be on time	Yes	

(*) Cost-Benefit Analysis.

Source: Salvador, et al. (2016).

Beside the summary of conditions related to the project transcribed in the previous table, New Cairo WWTP is a very interesting PPP that shows the importance of adaptation of governance to a very unstable political context.

Three features of a good PPP are clearly present in the project:

- Competitive bidding;
- Bundling of construction with operation;
- Importing efficiency through an experienced multinational enterprise in alliance with a local operator. This has benefits not only for efficiency in general but also for public finances.

According to the book by Engel et al. (2014), the public finance gains of a PPP do not come from the fact that private funds are initially invested (they have to be recouped later on), but from the fact that an efficient private operator can build and operate the project with lower costs, which reduces the tolls or public funds that are needed to cover them.

The governance of the project is not first-best, but the best possible given political circumstances. In a first-best governance model, we would have primary legislation protecting investors and introducing transparency before undertaking the project. And we would have a clear separation of powers between the contracting unit (NUCA) and supervising units. But in a second-best world, it seems hardly inevitable in a very volatile political context that the contractor would find protection for their investment in an "amicable" relationship with the contracting unit. Similarly, if the legislation protecting investment returns had been approved prior to the project's start, perhaps the changes in regime would have quickly overturned that legislation. Passing the law "on the march", the benefits of the project might have helped to secure the approval and stability of this legislation. From a theoretical point of view, when a complete written contract is not feasible, a more "relational contract" is inevitable and desirable if the project has a positive social value.

Risk sharing seems reasonable: many risks are borne by the operator, but demand and political risk are covered by the public sector, because there is nothing that the contractor could do to manage these risks. Possible improvement could be made with the introduction of international arbitration.

Finally, it has been observed that there was no cost-benefit analysis before the competitive bidding, which is necessary to make an objective and transparent assessment of the need for the project and the advantages of a PPP compared to traditional provision.

Assessments on achieving the UN SDGs

The New Cairo WWTP was also aligned with the following Sustainable Development Goals (SDGs) of the United Nations (UN), as can be seen below:

Table 3. United Nations Sustainable Development Goals		
Sustainable Development Goals	**High Impact**	**Moderate Impact**
1. No Poverty		✓
2. Zero hunger		✓
3. Good Health & Well-being	✓	
4. Quality Education		
5. Gender Equality		
6. Clean water & Sanitation	✓	
7. Affordable & Clean Energy		
8. Decent work & Economic growth		✓
9. Industry, Innovation & Infrastructure		✓
10. Reduced inequalities		✓
11. Sustainable cities & communities		✓
12. Responsible consumption & production		
13. Climate action	✓	
14. Life below water	✓	
15. Life on land	✓	
16. Peace, Justice & Strong Institutions		
17. Partnership for the Goals	✓	

Source: Salvador, et al. (2016).

Of all the UN SDGs, numbers 3, 6, 14 and 17 look to be the ones with closest links to the New Cairo WWTP. As infrastructure aimed at ensuring the availability of freshwater and improvement of sanitation systems, it is possible to affirm that the New Cairo WWTP is aligned with the goal of clean water and sanitation.

When looked at in detail, the New Cairo WWTP can help achieve most of the different targets of Goal 6 (Clean water and sanitation). WWTP helps reach an adequate and equitable sanitation and hygiene system for all the citizens and improves water quality by reducing disposal of untreated wastewater into the river. Finally, WWTP seriously reduces the volume of polluted water disposed of.

Other UN SDGs can be reached, such as Goal 3 (Good health and well-being). In that sense mortality and diseases can be reduced as the water outflow after treatment in the New Cairo WWTP is of much better quality than that dumped into the River Nile before the existence of the infrastructure. Goals 13, 14 and 15 (Climate action and Life below water and on land), seem to benefit from the WWTP, as dumping less polluted water into the River Nile has direct consequences on the environment and the protection of ecosystems. Finally, among the attainable goals is Goal 17, because of the framework under which the infrastructure was designed, built and is operated, that is, through a PPP. A detailed look at some targets of Goal 17 show that the financial instruments used in this PPP helped to achieve the specific targets derived from this Goal.

Besides Goals 6, 3, 13, 14, 15 and 17, other UN SDGs are also impacted by this PPP, although in a weaker way. These are the cases of Goals 1 (No poverty), 2 (Zero hunger), 8 (Decent work and economic growth), 9 (Industry, innovation and infrastructure) 10 (Reduced inequality) and 11 (Sustainable cities and communities), which are partially achievable thanks to the WWT.

In summary, the New Cairo WWTP is a powerful tool for achieving some of the UN SDGs, especially the ones related to environment and economy, thanks to the increase in productivity expected in agricultural activities and the regular jobs created to build and operate the infrastructure.[4]

Assessments of city development

To consider the impact of the project on city development we use the ten dimensions of the IESE Cities in Motion model and evaluate the impact of the project in each of these dimensions:

Table 4. Cities in Motion

	New Cairo Wastewater Treatment Plant	
Smart City Evaluation	**High Impact**	**Moderate Impact**
1. Human capital	✓	
2. Social cohesion		✓
3. Economy	✓	
4. Public management		✓
5. Governance		✓
6. Mobility and transportation		
7. Environment	✓	
8. Urban planning	✓	
9. International impact		
10. Technology		✓

Source: Salvador, et al. (2016).

As can be seen in the table, the project will have a high impact on the human capital dimension. The project will create many jobs (1,500 direct, 150 indirect) during the construction period, jobs that will last for 2 years and will help develop the talent pool in the region. The number of jobs during the total life-cycle of the project would be much smaller but still significant, as they will be long-term jobs.

The project will help decrease inequalities in the region, which has a positive effect on social cohesion. In contrast, greater impact on the economy is expected. Such impact comes from different factors. First the transfer of cutting edge technology that increases the quality of the talent pool in Cairo; second it increases the efficiency in the treatment of water, provides more drinking water and decreases prices while improving the overall environment and in particular the fishing opportunities. All those factors may help attract new business, increase the efficiency of established ones and generate new business opportunities.

Two dimensions where highly impacted – environment and urban planning. The environmental impact was set out in the evaluation of the UN Sustainable Development Goals section and is the key reason for the whole project. There is great impact on urban planning as the project forces city officials to think long term in the infrastructure development of the city.

4. Not necessarily net jobs.

Finally, it can be considered to have a moderate impact on public management because of the increases in efficiency of the provision of a public service such as water, drinking and non-drinking water. However, the impact on governance will be much greater. The success of such complex projects in which governance issues are very important are significant learning experiences. Public and private partners should collaborate, develop a legal environment and a trusting context to make this feasible and the relations established and the trust developed are a key capability for facing similar projects in the future.

9. Conclusions

The case of the New Cairo Wastewater Treatment Plant is a very interesting PPP project as it brings qualitative and quantitative information on good practices on PPP to implement in future collaborations between public and private partners.

A first interesting element is the very fact that this project is the first successful PPP project in Egypt; and related to this, is the manner in which the legislation was adapted. The new Egyptian law on PPP was adopted by learning from the New Cairo projects. Several conditions help to explain why this PPP was successful, despite being the first PPP finished in Egypt, with only a delay of two months and a cost overrun of 10%:

- the participation of external and international advisors during the planning of the bidding process, to help to define a correct bidding process;
- the creation of an autonomous Central PPP Unit inside the Ministry of Finance, allowing the project to be isolated from the political situation;
- the selection of multinationals with competitive advantages that are complementary, and that have deep experience in the construction process and management of water treatment plants.

The creation of an autonomous Central PPP Unit inside the Ministry of Finance allowed the project to be isolated from the political situation and allowed it to have a stable interlocutor with the contractor.

Table 5. Characteristics of the PPP contract
Project type: Greenfield large-scale urban wastewater treatment plant.
Project capacity: Average daily flow 250,000 m_/day
Delivery Mode: Design - Build - Finance - Operate - Transfer (DBFOT)
Private investment[4]**:** $140 million
PPP contract value[5]**:** $482 million for 20-year concession
Final cost: No change compared to the bid price
Expressions of interest request: October 2007
Bidding invitations: December 1st 2008
Final tender documents published: February 15th 2009
Bid submission deadline: March 31st 2009
Contract start: June 29th, 2009 (financial closure: February 3rd 2010)
Contract end: June 28th 2029
Payment method: Payment based on a Sewage Treatment Charge, including a fixed payment plus variable operating charge based on volume of treated sewage (m_)
Duration: 20 years (construction 2 years and operation 18 years)
Contracting Authorities: New Urban Communities Authority (NUCA)

Source: Salvador, et al. (2016).

5. Investment for the infrastructure construction.
6. Total cost of the New Cairo WWTP including operation costs over 20-year period.

As a result, the project had several outcomes that benefit Egyptian society. The PPP guaranteed revenues for the public authorities, 63 permanent jobs were created, and experience from the building process was acquired by the 1,500 workers involved. Public health and the environment were clearly improved. Overall, the outcomes seen show that this PPP project helped to reach some of the United Nations Sustainable Development Goals.

Bringing all stakeholders into the project is crucial for the development of successful public-private collaborations.

Beyond the Cairo case

Studying the PPP for the New Cairo wastewater treatment plant, but also several other PPP cases, has permitted us to observe that to achieve successful PPPs, they have to fulfil the following conditions:

1) **Value creation**. As with any public policy, a detailed analysis should be done by policymakers before the implementation of a PPP. Local authorities should put forward a cost-benefit analysis in order to see whether the project is worth doing. Also, in some cases, a value-for-money analysis can bring insight to local authorities to understand if the specific public-private arrangement chosen does indeed serve as the best model for the delivery of the public service.
2) **Governance and transparency.** PPPs require special attention to governance issues (tailored to local circumstances) and stakeholder engagement so that they can be part of a shared vision, as developed previously in the document. Transparency, openness and engagement between stakeholders are necessary conditions for a public-private collaboration to succeed.
   Additionally, governments should foster the creation of independent institutions that monitor all the collaboration process. This includes the tender process and the implementation of the project. In this way, an independent institution can ensure that the project will have as a goal to provide benefits for citizens, and not only private firms, governments or public officials.
3) **Innovation and contract flexibility.** Innovation is key to fostering a more efficient supply of public services. As we set out previously in the document, one of the key benefits collaboration brings is the know-how and innovation of the private sector that allow services to be supplied more efficiently.
   In order to obtain the maximum advantage from innovation, it is necessary to give contracts the necessary flexibility for the concessionaire to innovate. Otherwise the incentives for a better provision of the service will be driven out. For this, contracts should focus on (1) outcomes rather than a detailed definition of inputs, and (2) services rather than assets for the firm to innovate.
4) **Externalities and agglomeration effects.** The positive externalities that a public-private collaboration can cause can be spread widely among all agents involved. In this sense, authorities should investigate how implementing specific projects can have deeper and more complex effects in the economy when developing analyses of the benefits and costs of the project. However, sometimes infrastructure can also generate negative externalities. Governments should be aware of them and try to mitigate them.
5) **Participation.** Bringing all stakeholders into the project is crucial for the development of successful public-private collaborations.

Local authorities can benefit from the expertise of the private sector, as well as the knowledge of citizens' needs that citizens and communities have.

6) **Payment systems and new business models.** Especially in the urban context, local authorities should also evaluate the possibility of using new payment systems that go beyond subsidies and user fees when developing projects (using other systems such as advertising income or capturing land value surplus from infrastructure construction). Due to high population densities, city-based projects may allow local authorities to generate income from vending machines or restaurants in public facilities, as well as from solar panels, the energy from which can easily be sold due to economies of scale, for example.
7) **Data management.** The constant interaction and use of public and private services by individuals in urban areas creates a massive amount of information that can be of use both to the public and private sectors. The rise of the so-called big-data revolution can give insights to both public and private actors about citizens' behaviour, as well as about how to provide services in a more cost-efficient and effective way. Local governments should try, whenever possible, to foster private actors' access to public data in order to allow them to create new uses that can allow services to improve.

Together these conditions allow successful collaborations to be built. Indeed, even though choosing the right type of public-private collaboration is a crucial step in the process of improving services and fostering successful collaborations, making sure every collaboration satisfies a number of conditions will be crucial for collaboration to bring benefits to society at large.

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FROM FARM TO LANDFILL: HOW ROME TACKLES ITS FOOD WASTE

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1. Why do we need urban food policies?

Introduction

In the last decades, cities have come to the fore as new crucial actors in national, regional and global food security. For a long time, urban environments had not been considered important food security players, as food was meant to be produced exclusively outside of them. Urban citizens – either those involved in the distribution or consumption phases – were considered marginal within the entire food supply chain. However, several studies (Deakin et al., 2015; Mendes, 2008) have demonstrated the role that urban food policy governance can play in creating a more sustainable agri-food system. This is particularly true for the Mediterranean region, where social, political and economic factors will inevitably make cities the new frontier in the new geography of food security (Sonnino, 2016). There are several reasons for this. First, the Arab Spring and food riots have dramatically highlighted that if food insecurity is coupled with other grievances such as demographic stress, climate change and existing socioeconomic marginalisation, it can be a trigger of social unrest and political instability, especially in cities. Second, the fragility of the agri-food system makes Mediterranean countries vulnerable to endogenous and exogenous threats (i.e. environmental disasters, food price volatility). Third, the tremendous urbanisation rates on the southern shore of the Mediterranean push mayors and urban planners to rethink their food systems to meet citizens' demands. Therefore, the region's agri-food chain will need to change in a wiser and environmentally sustainable way by increasing productivity without threatening ecosystems and biodiversity. These phenomena will involve cities from the two shores of the Mediterranean, although at different scales. One of the dimensions linked to food security that mayors and citizens will need to tackle is food waste management, specifically, reducing the unacceptable amount of food losses and creating food supply chains based on a closer linkage between producers and consumers. This will have an impact both in social and environmental terms, for instance by considering the amount of greenhouse gas (GHG) emissions produced by the agri-food system. This

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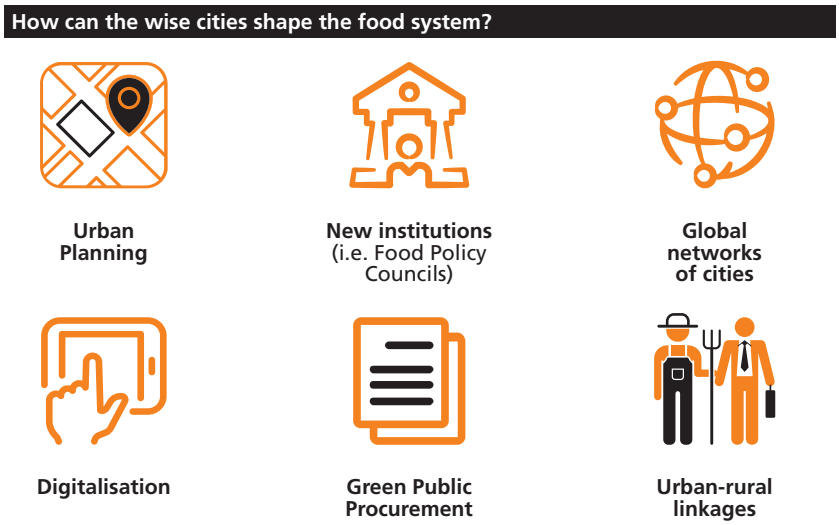
has been clearly acknowledged not only in several documents drafted by the FAO (FAO, 2015) but it is also one of the pillars of the EU's circular economy package (Lee et al., 2017). The infographic below summarises the reasons cities are more and more important actors in regional and global food security.

Cities inevitably need to start to fill the political vacuum that states have left by using public procurement to shape their policies in a more sustainable way and give citizens the right incentives to start up a true food revolution.



Cities need to evolve to promote a new vision of food supply chains from farm to landfill, which strongly integrates urban, peri-urban and rural environments through a circular approach. In other words, the time is ripe for urban food policies that ensure access to sufficient nutritious and environmentally sustainable food for all and are perfectly integrated with non-urban environments. The aim of this chapter is to offer a critical assessment of the new Waste Management Plan in Rome by focusing on its main food-related policies (e.g. the "zero impact food markets" and the actions taken to tackle food losses and waste). In order to achieve this goal, the chapter is divided into three sections. The first offers a concise review of the efforts taken at the global level that have transformed cities into crucial food security players. The second part describes the new Waste Management Plan in Rome through a critical analysis of its strengths and weaknesses, as well as shedding light on the need for the city to eventually launch an effective food policy. The final section draws some conclusions and introduces a couple of topics future research will need to focus on.

Some initiatives at the international level

Due to the lack of a clear theorisation of what food policy actually means, existing literature has focused so far on different aspects of urban food governance. Some authors (Blay-Palmer, 2009; Sonnino and Spayde, 2014), have analysed food policy councils, whereas others have tackled planning systems (Morgan, 2015) or public procurement policies (Morgan and Sonnino, 2008). Cities have indeed followed different strategies to implement their food-related activities: some have developed comprehensive strategic documents and long-term plans, while others have worked more on sectoral projects (e.g. school meals reforms). Moreover, some mayors have set up new institutional

arrangements (i.e. food councils) to promote coordination at the implementation stage or they have appointed new staff or created new offices working with cross-departmental teams (De Cunto et al., 2016). No matter the approach chosen, cities are undoubtedly recasting themselves as key actors in the food system. All the documents issued have some common denominators: a systemic approach to food; an emphasis on civil society involvement in governance; a flexible approach to re-localisation; a new focus on translocalism (Sonnino, 2017: 1).

The role of cities as new agents of change in the global food system has emerged in four ways. First, they have progressively gained important recognition at the UN level, not only thanks to the Agenda 2030, but also through the so-called New Urban Agenda. Both clearly call for inclusive, safe, resilient and sustainable cities. Second, the Paris Agreement for the first time recognised the role of cities in a universal, legally binding document. Third, at the EU level cities have been identified as key players in the fight for sustainable development and they have gradually started to play a significant role also thanks to several EU-funded projects. The EU is a perfect case study, because most of its citizens live in cities. In addition, a large part of EU policies, legislation and funds (De Cunto et al., 2016: 49–53) are implemented in cities. Cities are also key leading innovation hubs, as well as laboratories where urban, peri-urban and rural food systems can coexist. It is no coincidence that the Pact of Amsterdam in 2016 launched the so-called EU Urban Agenda by identifying three pillars: better regulation, better funding and better knowledge. A recent report issued by the European Commission (European Commission, 2017) highlights the potential of the agenda to serve as a common framework for urban policy initiatives launched by the EU's institutions. Furthermore, the new EU Consensus on Development clearly recognises the role of cities as "hubs for sustainable and inclusive growth and innovation" (European Union, 2017: 31) by promoting sustainable land use planning, equitable management of land markets and resilience to shocks through a low-emission and climate resilient economy. Finally, the growing role of cities in regional and global food security has emerged through the so-called translocalism. In the last years a variety of cities networks have blossomed at the global level. Among them, the most significant are EUROCITIES and the Milan Urban Food Policy Pact, but there are others, such as C-40, the Global Covenant of Mayors for Climate and Energy and the 100 Resilient Cities grouping. All these fora have been working a great deal to share lessons learnt and keep the debate alive on the issues of sustainability, climate change adaptation and resilience. In addition, their role is important, as they create true alliances which do not leave cities alone especially when their managers are not willing to invest in sustainability.

2. The new Waste Management Plan in Rome

Objectives

For years Rome has been considered one of the leaders in the quest for a more sustainable food system, with a series of initiatives launched in this field. One of the most relevant was the school meals reform which allowed the city to become until 2008 a true model of an "economy of quality" (Morgan and Sonnino, 2008). At the beginning of the

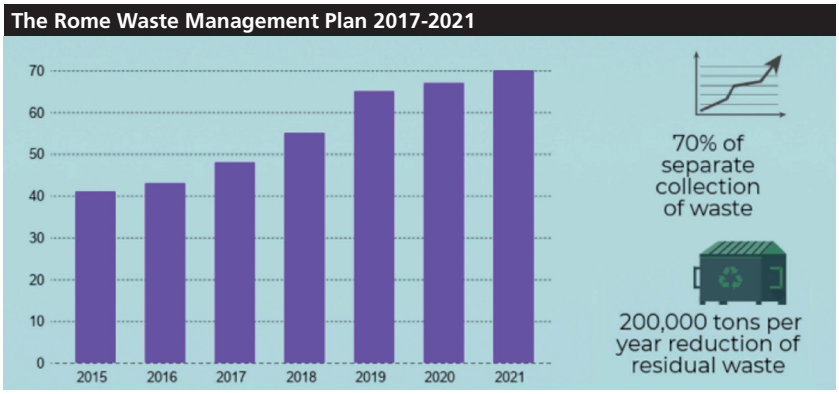
2000s, the city decided to launch an impressive school meals revolution which delivered "environmental, economic and social benefits of sustainable development" in and beyond the food system (Morgan and Sonnino, 2008: 67). This was made possible by using the unique economic advantage that the public sector has: the complete control of the public procurement market. By putting together consumers and producers, city officials and non-profit organisations, Rome set up an innovative public procurement market for catering companies based on seasonality, variety, locality and nutritiousness (Morgan and Sonnino, 2008: 80). Unfortunately, this revolutionary, dynamic, integrated and inclusive system has been dismantled in recent years and the "Roman model" has been negatively affected by corruption, political scandals and bad management of public resources ("*Roma ladrona*"). Waste management, which is a crucial part of a city's food system, has not been immune to these dynamics.

The new Waste Management Plan is expected to produce a decrease of around 200,000 tons of urban waste as well as an increase in the percentage of separate collection of waste, with the aim to shift from the current 44% to 70% in 2021.

At the moment, all actions undertaken by the city on sustainability are linked to the Sustainable Energy and Climate Action Plan (SECAP), to be issued by 2019. The plan integrates several activities, not only the participation in global networks of cities, but also the initiatives taken on mobility (i.e. the Sustainable Mobility Plan), resilience (i.e. the Preliminary Resilience Assessment), smart infrastructures and waste. In this context, in March 2017, Rome launched its new Waste Management Plan. The Plan, called *Piano per la riduzione e la gestione dei materiali post consumo* (Comune di Roma, 2017b) covers a five-year period and is based on two pillars: prevention and reuse on the one hand, collection and recovery on the other. The plan is probably the first in Italy which theoretically integrates the reduction and disposal dimensions. For instance, it does not refer to waste but rather to "post-consumption materials". In order to highlight its circular rationale, the plan envisages 12 kinds of actions,[2] which are expected to produce a decrease of around 200,000 tons of urban waste, leading to a significant reduction from the current 599 kg to 522 kg per capita of waste generated by each citizen every year. This result will align Rome with the levels registered at the national (486 kg per capita in 2016) and EU levels (476 kg per capita in 2015) (ISPRA, 2017). All these actions will be accompanied by a significant increase in the percentage of separate collection of waste, with the aim to shift from the current 44% to 70% in 2021, mainly through an extension of the door-to-door collection system, which will involve 1.2 million inhabitants in the next months. The infographic below summarises the main targets set by the Waste Management Plan.

The new plan foresees the intervention of several actors. The main ones are the Environmental Sustainability Assessorship and the Environmental Department. In addition, due to the complexity of the topics and actions envisaged, these two actors will be supported by other players, such as the Finance Assessorship, trade associations (Confartigianato, Confesercenti, Confcommercio, etc.), the 15 city districts (*municipi*) and the public waste company (AMA). While the Environmental Sustainability Assessorship has indicated the political priorities, the Environmental Department is working to issue the necessary administrative actions and procedures to enforce such political guidance. The two main projects dealing with food policy in the plan are "zero impact food markets" and the actions to tackle food losses and waste.

2. Green card; reduction of packaging; increasing use of the deposit scheme; fight versus food losses and waste; household and community composting; reusable nappies; creation of "Reuse Hubs"; green public procurement; eco-events; waste tax reform; reuse of garden waste; management of waste from the building sector.



"Zero impact food markets" and the fight against food losses and waste

Rome is a very unique city in Europe as, despite its huge territory, there are several local food markets on its area. Now the goal is to reduce their environmental impact in terms of waste production and redistribution of surplus food. Already in 2015, the city extended separate waste collection to local food markets with the aim of collecting organic waste, paper boxes, cardboard and all plastic needed for packaging. The new plan envisages a nine-month pilot project to started in April costing around €400,000, which will involve 15 local food markets, one for each district. The goal is to have the lowest possible level of residual waste, by recycling and reusing all kinds of materials and redistributing surplus edible food. In this sense, in 2017, a first test was conducted in the Montagnola food market (in the southern part of the city). Working tables have been activated with trade associations, charities and non-profit actors to extend this test to other local markets. The pilot project will be led by Roma Sociale Foundation who will train a total of 20 people for nine months. The 2018 pilot project will be key not only as it will involve a plethora of public and private actors but most of all because it will help to collect significant data to eventually launch the reduction of waste taxes (TARI), which should be replaced by a new system. These data will allow how much waste (including food) is saved by reducing costs for disposing of it to be calculated. City officials estimate that around 1,000 tons of food will be saved, with significant savings for the city's budget.

Another sector which is likely to reshape the landscape of the Roman food system for the positive regards the broader initiatives to fight against food losses and waste, in line with the new national law (the so-called Gadda Law). To start with, they will involve food which is not consumed, targeting restaurants and offering them some alternatives, such as the so-called "family bag". Second, the plan will focus on food which is not served by activating a system which enables it to be stored and transported to charities. Finally, the projects will deal with food which is close to its expiry date or which has packaging defects. The main targets in this sense will be big, small and medium shops and supermarkets. To be effective the system should first of all map all businesses which are willing to take part in this project. Then, it will be essential to organise the collection by also involving charities which have canteens and storage rooms. For this reason, Rome will sign memoranda

Citizens' participation and empowerment is essential to allow the city to overcome this crisis until new plants are established.

of understanding with all non-profit stakeholders which can fulfil these activities. Other solutions may be offered by digitalisation, as there are many apps already available on the market which are successfully tackling these phenomena (e.g. LastMinuteSottoCasa or My Foodie). This new sustainable approach to catering services may be extended to others, such as company canteens, with initiatives aiming to reduce waste (i.e. by banning the use of plastic cutlery), increase the use of dispensers for drinks or tap water in public places (e.g. bars, restaurants, pubs, pizzerias, etc.) and even by testing deposit systems.

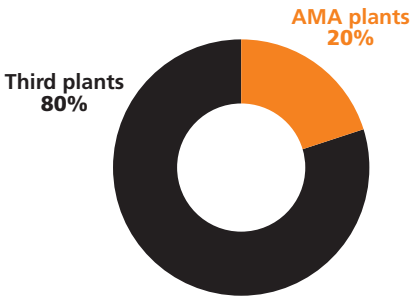
The two projects present however some big challenges. The main one regards the incentives for shops and trade associations to support this initiative. The waste tax reduction is definitely a good one, but some administrative work is still needed for instance to revise the city regulation on waste tax. The review of the regulation will be accompanied by an accurate mapping of the real demand for surplus food and then a data certification process, which will be undertaken jointly by the Environmental Sustainability and Finance Departments. A successful solution would be to launch a Phase 1 with a fixed cap of requests for tax deductions. This would help prevent an excessive number of requests and give time to successfully map the real demand for food which could be donated, before extending it through a Phase 2. Another solution would be to launch these initiatives in a specific district to work as a pilot for the others. At the moment, the city has established a working table with charities and non-profit organisations which have dealt with food donation for decades (e.g. Banco Alimentare). The tax reduction, which may generate up to 30% savings for subjects supporting the initiative, will obviously be proportional to food donated, and should be operational between 2019 and 2020.

Critical aspects

The actions envisaged in the plan are very ambitious and if successful Rome may actually (again) become a model and a leader in the sustainability sector. However, many challenges can be identified. The first is the current chronic fragility of the Roman waste system. At the moment, Rome can count only on four plants for its residual waste, which are not enough to process the 4,600 tons of waste generated every day. Hence, most of waste sorted is sent to third plants for processing, which represents a further cost for the city. Such fragility means that whenever one of the city plants is not working at its maximum capacity (for instance due to maintenance works), the cycle gets paralysed. The Mayor of Rome Virginia Raggi has explained that this weakness stems from the decision taken in 2013 to shut down the Malagrotta landfill, back then the biggest in Europe. Unfortunately, this decision was not accompanied by the complementary creation of new infrastructure that AMA could use. In other words, since 2002 the city has done very little to set up a modern waste infrastructure, thus falling into a chronic, relentless "trash crisis". Therefore, the City Council has identified two locations for creating composting plants and one for plastics recycling. The new waste infrastructure will help Rome not only to be more autonomous in managing organic waste, but also to save the money (up to 30%) needed today to transport it to other plants outside the region. Yet, this process will take years, not only due to bureaucratic reasons (i.e. authorisations) but most of all due to the inevitable

opposition of citizens who live close by these plants. Such mistrust is probably the biggest challenge to be faced by any political authority. The scandals linked to the infiltration of criminal organisations in waste management is still very strong in the population. In this sense, the city is trying to identify the best technologies in terms of environmental impact, while also working with local communities on other aspects such as household composting, prevention of waste and community composting,[3] to show the population the benefits of recycling and composting waste. Citizens' participation and empowerment is essential to allow the city to overcome this crisis until new plants are established. In the meanwhile, it is clear that only by increasing the separate collection of waste will Rome manage to reach the target of 65% to get out of this emergency situation and to plan future steps in a more effective way. Despite all these obstacles, Rome is in the top-10 of biggest EU cities in terms of percentage of separate collection of waste, a result which is even more significant as the city also collects organic waste. The graph below clearly explains the current infrastructural weakness of the city.

Rome: the current fragility of the waste management system



	% 2016	
	AMA plants	Third plants
Residual Waste	34%	66%
Organic waste	8%	92%
Paper/Cardboard	0%	100%
Glass	0%	100%
Plastics	8%	92%
Other	0%	100%
Total	20%	80%
	1,700k tons per year	

Source: Istituto Affari Internazionali

The second main problem regards the lack of proper intra-institutional cooperation. Waste management is a complex topic, which involves many actors such as cities, regions and the central government. To be effective, all these three levels need to work in a synergic way. In the case of Rome, the main challenge is to create a proper waste industrial management, which involves not only the city and its region, but the entire country. Like all huge European metropolises, Rome will never be able to deal autonomously with its waste without a national system supporting it. Rome is huge and very highly populated and therefore needs to be properly supported by the other regions.

Third, there is a problem of citizens' education. It will not be possible to achieve any of the goals set in the plan if the Roman population is not fully involved and committed to these activities. Education towards a more circular and sustainable lifestyle and food system needs to start in schools and involve families and local communities. The legacy of the "school meals revolution" and the SEPAC could be an important

3. The region will finance the creation of 80-ton machines able to collect organic waste. These machines will also be installed in the urban gardens (*orti urbani*).

Rome is a very unique city in Europe, with a peculiar urban fabric, which integrates city and countryside, and several local food markets.

starting point. Yet, in order to make it more effective, there is the need for stronger leadership and protection at the officials' level as well as the clear commitment of political authorities. This has been very apparent in the case of the door-to-door collection system, which has paradoxically triggered the so-called "waste migration" phenomenon. In some districts (such as V and IX) this system has been organised in a hasty and fragmented way, with only a part of the population covered by it. Therefore, citizens have literally started to move waste to those parts covered by the traditional collection system, creating serious management problems for AMA. In addition, such a hasty process has produced an unbalanced distribution of human resources, as most of the personnel have been shifted from street sweeping to door-to-door collection. Now a reorganisation is needed in order to have more effective waste collection. This work is being done in the X and VI districts, where the new system was launched in 2018 with a mapping and then a distribution of new kits to the citizens. A good signal is the new memorandum of understanding signed with the National Consortium for Packaging (Consorzio Nazionale Imballaggi – CONAI), which will support the city in these activities.

Is the time ripe to launch a Rome food policy?

The new Waste Management Plan and particularly its food-related activities offer Roman policymakers the chance to reflect upon the possibility to launch a comprehensive Roman food policy. Rome has some unique features which make it a very suitable place to set up this policy. Rome has a long history of sustainable food systems, with several activities launched in the past years such as the "farmers' markets" (Marino, 2016) and the above-mentioned "school meals revolution". Now the time is ripe to recover that spirit and to integrate these initiatives into a common framework. Rome has a peculiar urban fabric, which integrates city and countryside, and several local food markets. A food policy would help to overcome the current fragmentation of plans and activities by avoiding the risk of a silos approach. A systemic approach which includes all these plans within a comprehensive strategy would bring more clarity and make it easier to understand *who does what*. This is even more important as, due to the complexity of the topics, several actors are inevitably involved in the implementation phase. Finally, Rome has a vibrant civil society which is ready to embrace radical change and to fight to set up a more nutritious and environmentally sustainable food system. Rome thus provides the best soil to create a solid linkage between urban, peri-urban and rural ecosystems by linking producers and consumers.

However, there are some obstacles which make it harder to reach this goal. First, the feeling of coping with a constant "trash crisis" overshadows other initiatives and makes it apparently impossible to think about some more innovative activities. In addition, the school meals reform highlights how city officials need to be put in the best conditions to do their work, and to be protected by decision-makers. Second, there is a problem of education. The city needs to invest more in educating citizens about the need to start a revolution for a better and more sustainable food system. Finally, policymakers have to adopt food policy as a clear political priority. This is the necessary precondition to make possible a long-term vision of alternative, shorter and sustainable food chains.

3. Conclusions and future areas of research

The sections above have highlighted that there are several elements which now allow cities to be considered crucial actors in the global food system. Cities inevitably need to start to fill the political vacuum that states have left by using public procurement to shape their policies in a more sustainable way. The time is ripe for them to launch effective food policies based on a holistic approach in which food is embedded with several other dynamics, such as waste management, public procurement, urban planning and climate change adaptation. This implies an institutional change, as food charters and strategies need to be accompanied by new institutional settings (i.e. food policy councils, new departments), which gather several stakeholders at all decision-making levels. This also implies empowering those people at the bureaucratic level who are willing to adopt innovative and more sustainable solutions. EU-funded projects could play an important role as they can facilitate the creation of specific departments, hence the appointment of skilled people who are motivated to work on these topics.

The time is ripe for cities to launch effective food policies based on a holistic approach in which food is embedded with several other dynamics.

Against this backdrop, the Roman model can offer several lessons learnt to other Mediterranean cities. To start with, Rome is a perfect example of a city which strongly integrates urban, peri-urban and rural agriculture. Rome is one of the biggest cities in Europe by area dedicated to agricultural activities. In addition, Rome has started to successfully manage alternative food systems in several city districts, such as urban gardens or farmers' markets (Marino, 2016). Moreover, the school meals revolution has shown how public procurement can shape market choices in a sustainable way, with important positive implications for the local, regional and national agri-food chain. Unfortunately, the Roman case also highlights that without a strong vision and alignment between sectoral food policies and political priorities all initiatives are doomed to fail. In this case, international cities networks can be important to protect these policies from sudden political changes, as these alliances can help develop mechanisms which protect food policies from electoral cycles. Furthermore, Rome shows that only through education can mayors contribute to giving citizens the right (not just economic) incentives to start up a true food revolution based on a short supply chain, seasonality and a closer linkage between urban, peri-urban and rural food systems. Finally, the Roman example demonstrates that the best recipe for making cities more sustainable is to set up participatory approaches. Citizens need to be involved both in the design as well as the implementation phase of these policies. In other words, they have to feel part of a common struggle for a more durable and healthier food system.

Research can definitely complement this quest for sustainability. There are two main topics future work will need to focus on. The first is a true theorisation of what a food policy really means. This will help not only to identify indicators to monitor performances in a longitudinal way, but also to measure the real impact of cities in changing food systems. The second topic regards the need to better grasp the urban-rural linkages and the reconnection of cities with the countryside. No food revolution will be ultimately successful if it does not interlink all actors involved in national, regional and global food systems.

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BEYOND THE MEDITERRANEAN: THE GULF AND SUB-SAHARAN AFRICA

- URBAN SPRAWL AND POLITICS IN SAUDI ARABIA

  Pascal Menoret

- THE AFTERMATH OF A MASTERPLAN FOR KUWAIT: AN EXPLORATION OF THE FORCES THAT SHAPE KUWAIT CITY

  Sharifah Alshalfan

- JEDDAH: A "WISE OLD CITY" FACING THE CHALLENGES OF URBAN REQUALIFICATION?

  Elena Maestri

- SUB-SAHARAN AFRICA'S URBAN TRANSITION

  Julia Bello-Schünemann

Pascal Menoret

Brandeis University (Massachusetts)

"Communism, or… the affluent suburbs…?"
Walt Whitman Rostow, 1960[1]

1. Introduction

Saudi cities have sprawled during the past fifty years. Suburbanisation has posed issues of sustainability and equitability: energy and water consumption, housing and transportation costs have soared, increasing class differences and dissolving urban society into smaller, disconnected units. Meanwhile, state institutions have devised few mechanisms of participation: if limited municipal elections have been held since 2005, strong state repression and disenfranchisement of non-citizen populations have ensured the permanence of several rifts, between haves and have-nots, citizens and non-citizens, men and women, urbanites and rural migrants. Pre-sprawl urban governance, characterised by personalised relationships, informality and the density of political and social networks, has been on the wane since the 1970s. Scattered and divided populations are now placed under the heavy surveillance of the state. Organising any form of collective action in these conditions is a challenge.

While Saudi cities were growing and suburbanising, the political opposition to the Al Saud was morphing, too, from unionist, socialist, communist and nationalist groups in the 1950s and 1960s to looser networks of Islamist activists from the 1960s on. How did Islamists organise despite heavy state control, with political parties, unions, independent associations banned and with the state curbing any attempt at public political discourse and mobilisation? Repression did not manifest itself only in bans and state brutality, but also in the geography of the Saudi suburbs. The very spatiality of Saudi society, engineered by the state during the past fifty years, is a structural obstacle to politicisation and activism. How do suburbanites get together, organise and challenge political authority?

This political puzzle is an outcome of the Cold War. After WWII, North American and European development experts advocated for

1. Rostow (1991: 2); quoted by Citino (2005/6: 39).

Suburbanization is a Cold War containment strategy. Introduced by Western corporations and experts to accommodate rapid urban growth and support free market solutions, suburbanization became an efficient depoliticization tool.

individual housing in the regions that were crucial to the durability of Western hegemony: the American heartland, Latin America, Western Europe, and the Middle East. Cold War experts worked toward the depoliticisation of urban spaces and imposed top-down development in places where collective action could threaten the status quo (Ferguson, 1994; Escobar, 1995; Menoret, 2014).

Saudi suburbia was created by Cold War experts (Citino, 2005/6), and this fact had serious consequences on collective action. Rather than studying Islamism as an ideology, I examine here what Islamist activists call Islamic action (*al-'amal al-islami*) in the local and global context of its emergence: the suburbs that were engineered by urban planners, developers and builders to better control society. Shaped by spatial and police repression, Islamist action became in turn the matrix for several types of politicisation. Saudi Arabia, an early US beachhead in the eastern hemisphere, is a central site of this political transformation. In the Saudi fragmented metropolises, new Saudi urbanites were depoliticised and disempowered by suburbanisation. Saudi Islamism is a response to this dislocation.

2. Cold War suburbanisation

The US oil company Aramco started building a California-style suburb for its American employees in Eastern Arabia in the 1940s. The neighbourhood sat on top of Jebel Dhahran, a few miles from the coast. The contrast between this manicured "American Camp" and the squalid conditions of the "Arab Camp" downhill, as well as the minutiae of rules that kept Saudis outside of the white man's paradise, were among the issues that infuriated Saudi oil workers. Beginning in 1945, they organised demonstrations and strikes to protest the oil company's Jim Crow system. They demanded an end to racial segregation and asked for better housing, working conditions and wages. Aramco repeatedly called in the Saudi armed forces to repress them (Mubarak, 1992: 128–130; Vitalis, 2007).

The oil company also launched an ambitious urban renewal programme. In 1947, the governor of the Eastern Province of Saudi Arabia asked Aramco to draw up plans for the twin cities of al-Khobar and Dammam. Both towns, located between the oil wells and the company's landing pier on the Gulf, had boomed after Saudis, lured by the prospect of oil wages, flocked to the province. Shantytowns around Dhahran were demolished and their inhabitants displaced to large tracts, far away from the gaze of US residents. Suburbia was modern, but also exotic and threatening. Its regular street design emulated US frontier towns and showed little consideration for local urban patterns (Mubarak, 1992: 131–133; Citino, 2005/6).

Aramco created the Home Ownership Program for its Saudi employees in 1951. Employees received free lands in the new developments and were entitled to free construction loans, as long as they built recognisably suburban villas, one story high, set back from the street. The goal was to pull the rug from under the unionists' feet and to discipline Saudi workers by way of loans and red tape. Suburbanisation aimed at preventing conflicts and speeding up oil exports to industrialised countries (Mubarak, 1992: 131–133; Vitalis, 2007).

Suburbanisation reinforced racial segregation. Urban renewal was particularly dramatic in al-Khobar, where the old town was razed to the ground and replaced with a grid of streets. This was a time when US elites viewed home ownership, cheap loans and consumerism as a powerful alternative to communism. Suburbanites living in Northern Virginia and commuting to the suburban campuses of the CIA and the Pentagon conducted US foreign interventions, engineered coups, overthrew regimes and helped create large consumerist economies. French and British colonisers had built cities; the US empire was distinctly suburban (Friedman, 2013).

Aramco's Home Ownership Program turned the varied scenery of the Eastern Province, speckled with ancient towns and palm groves, into a dull landscape of wide roads and single-family houses. Home Ownership did not succeed everywhere, however. Workers hailing from close-knit communities were often reluctant to leave for anonymous single-family villas placed under company surveillance. Wives of Aramco workers were particularly vocal against moving to the suburbs, where they would be cut off from social networks, physically isolated in vast, non-pedestrian neighbourhoods, and condemned to stay indoors most of the time. Women saw early on that suburbanisation, instead of bringing about more autonomy, would force them into purely domestic roles. Oil suburbs were a macho space (Citino, 2005/6).

3. Planning against the city

"Aramco's Levittown" was the template for the suburbanisation of Saudi Arabia. The 1941 road and building statute, prepared by the Mecca municipality and later extended to the rest of the country, established clear functional zoning, setback requirements, minimum building and plot surfaces, and maximum building height. Suburbanisation became national policy when state agencies and ministries moved from Jeddah to Riyadh in 1953. The finance ministry designed the suburb of Malaz (or New Riyadh) to house civil servants and their families. Planned in 1957, Malaz was made of more than 750 single-family villas built along a grid of perpendicular streets, and set new standards for subsequent developments. Single-family two-story houses built in the middle of their plots, set back from large, straight streets, financed by state loans, and linked to one another and to the city by private transportation became the norm. Saudi suburbia was officially born (Al-Said, 2003).

By 1962, the Al Saud royal family saw in dense cities one of its main enemies. Cities were growing fast: in 1968, rural migrants were 54% of Riyadh's nearly 300,000 inhabitants. Rural Saudis were leaving drought stricken steppes and oases and seeking employment, education and health services in cities. Internal migration worried the royal family at a time when discontent was seething among oil workers, students, the armed forces and even junior princes. Senior Al Saud princes feared that urban density would facilitate political mobilisation, and viewed slum removal and suburbanisation as tools to prevent unrest. King Faisal thought slums were pockets of "unhealthy conditions and unrest," and asked Greek architect and urban planner Constantinos Doxiadis to plan a safer, cleaner and more efficient capital for the country. Doxiadis had been the Marshall Plan's point person for Greece

Saudi political and economic elites used suburbanization to deport nomads, remove slums, and tie citizens to the state through real estate network and free loans. Meanwhile, they actively repressed any leftist or nationalist opposition.

and had designed cities and developments in Pakistan, Vietnam, Iraq, Iran, Syria, Egypt, Venezuela and Yugoslavia (Menoret, 2014). He was the travel companion of those US State Department experts who had brought suburbanisation to Latin America, from Colombia to Brazil. Their avowed goal was to combat communism: as the US ambassador to Nicaragua explained in 1958, "if you put a man in a home, you make a little capitalist out of him" (Renner, 2011: 10).

To rein in urban growth, King Faisal first tried to slow down rural migration by fixing nomadic populations to the land through irrigation schemes and agricultural subsidies. But well-connected farmers monopolised subsidies, and irrigation projects prompted more departures to the cities, where wages and personal freedom were more plentiful. Following the example of Aramco, the Al Saud then resorted to slum removal and to the deportation of slum dwellers out of the cities, what David Harvey calls "accumulation by dispossession" (Harvey, 2004). Soon after Doxiadis arrived in Riyadh, the municipality asked him to help remove 60,000 slum dwellers (one-fifth of the city's population) and relocate them to the south of the city (Menoret, 2014).

After the 1973 oil boom, suburbanisation overwhelmed the plan. New suburbs sprawled around the city planned by Doxiadis, more than doubling its overall surface. Suburban growth was halted neither by the 1982 master plan nor by the 1989 municipal "Urban Growth Boundary" policy: developers and investors were not deterred by regulations (Mubarak, 2004).

Following the example of Riyadh, most Saudi cities became flat, far-flung, tedious grids of perpendicular avenues organised in superblocks and lined with single-family houses. Everywhere in the country, powerful developers turned empty land around old city cores into sources of quick enrichment. Municipalities had relatively limited resources and could not resist the strategies of well-connected investors. What could they do against Al Saud senior princes actively donating or selling lands? Through their real estate operations, the Al Saud gained the allegiance of investors, developers and builders, and created a new class of wealthy and docile businessmen. Suburbanisation sacrificed urban governance on the altar of capital accumulation. By scattering people across vast subdivisions, it rendered society both weaker and, paradoxically too, less governable. The princes no longer believed in cities: instead of urban planners, they needed more developers, builders and security providers.

4. Suburbs and protest

The transformation of recognisable cities into vast, shapeless urban spaces was most dramatic in parts of the country where political protests had taken place. In November 1979, a Salafi group occupied the Mecca Grand Mosque for two weeks. After the French GIGN crushed the occupation, French experts started planning new suburbs around the holy city (Menoret, 2008). The old cities of Mecca and Medina were progressively razed to the ground between the 1980s and the 2000s, and rebuilt with the help of domestic and international capital. In Mecca, the built environment and the very landscape of the city (hills and valleys) were flattened in preparation for the extension of

the Grand Mosque and high rise developments, including the second highest skyscraper in the world, an oversized replica of Big Ben.

Still in November 1979, another protest movement unfolded in the Eastern Province, where Shiite Islamists demonstrated against discrimination and economic marginalisation. Residents used the tight urban spaces of the old walled city of al-Qatif to organise protest and dodge repression. They used a maze of narrow passageways to hide from the police and move from building to building. After the "Intifada of the Eastern Province," the state razed the walled city to the ground, officially to facilitate real estate activity in the area but, more probably, to prevent further activism. The centre of town remained barren until the late 2000s, when it was converted into a huge parking lot. The inhabitants were relocated to the outskirts, and their forced exile opened a new property market to investors. In the 1980s and 1990s, the areas surrounding al-Qatif became suburban subdivisions; palm groves were uprooted and land was reclaimed from the sea. The Portuguese had built a fort on neighbouring Tarut Island in the 16th century; the British had signed there a protectorate with the Al Saud in 1915; Tarut Island was now encased into a glacis of superblocks à la Doxiadis. Suburban developers were marching in the footsteps of imperial soldiers and colonial agents (Jones, 2006; Ghrawi, 2017).

In Riyadh, urban renewal projects in the old city pushed out vulnerable populations and forced them to relocate to the inner city or to the inner suburbs. Cities were hollowed out and disposed of by force, market penetration, or both. Everywhere developers built sprawling suburbs and sold villas to middle class wage earners, whom they expected to behave like responsible homeowners, repay their loans, and live quiet, dull, controlled lives.

Based on a free market celebration of private property and individual transportation, suburban sprawl was meant to deter politicisation: sprawling cities were harder to turn into spaces of contention. Yet it is precisely in the suburbs that Islamist action emerged as a powerful way to protest state power. In Saudi suburbia, extracurricular religious activities in schools, Koranic circles in mosques, and summer camps in schools and mosques became the backbone of Islamist mobilisation. The Islamist movement was first and foremost a students' movement, and developed in the capital's vast suburban expanses.

5. Islamism in Saudi suburbia

The evolution of Islamist action is inseparable from its suburban context and from pervasive repression. By linking individuals to the state's financial institutions, suburbanisation contributed to the dissolution of horizontal links and to their replacement with vertical ties between wage earners and the state. Repression crushed unionism and leftist, nationalist, Salafi and Muslim Brotherhood activism. Yet at the same time, suburban sprawl created new opportunities for collective action. Away from the gaze of the administration and of the police, for instance, vast suburban landscapes became spaces of freedom for joyriders and car drifters. These young men stole cars and organised joyriding and drifting games along the new suburban highways of Riyadh, Dammam and Jeddah (Menoret, 2014).

Suburbs were ambiguous. They witnessed depoliticization and repression while providing spatial resources for a new type of political activists, the Islamists, whose mobilization centered on suburban mosques and schools.

Islamist activists, for their part, took advantage of the dense networks of schools and mosques built in the 1970s and 1980s in each city superblock. By caring about youth in a time of upheaval, Islamists were meeting middle class fears and aspirations. They organised quietly in the shadow of the state and benefitted from public spending while observing a safe distance from state surveillance. Suburbanisation thus both depoliticised Saudis and created new conditions for political action. Organised around Koran recitation circles, religious extracurricular activities in schools and summer camps, suburban Islamist networks became instrumental sites of political organisation and action.

One institution in particular, the summer camp, epitomised the transformation of suburbs into spaces of contention. In the early 1980s, religious activists started organising summer trips to the southern highlands of 'Asir for youth enrolled in extracurricular religious activities, in particular Koran recitation circles in mosques and Islamic awareness groups in schools. Summer camps were organised across the country, most often in the suburbs of the main cities. They would last from two weeks to two months and were occasions for physical exercise and spiritual guidance. In Riyadh today, summer camps are held in schools and sometimes comprise short trips to the countryside or the mountains (Menoret, 2015).

The newly created, vast Saudi middle class, financed by public wages and state-guaranteed consumption loans, was investing time and money in leisure practices. Holidays and the very notion of "empty time" emerged in public and expert discourse thanks to the generalisation of waged labour, the introduction of regular work schedules, and the spread of urban delinquency, the most visible manifestation of which was the ubiquitous practice of joyriding and drifting (Al-Shithry, 2001). Suburban leisure became an important site of politicisation, as Islamists created programmes that appealed to consumerist sensibilities while providing the sense of community that far flung, scattered neighbourhoods often lacked.

6. A suburban history of summer camps

In Riyadh, religious activists organised summer camps in the shadow of two institutions: the Imam Muhammad bin Sa'ud Islamic University and the Ministry of Education. The Imam University supervised a network of religious high schools (*al-ma'hid al-'ilmiyya*), which had been instrumental in fostering religious activism since the 1960s. Both the university and the Ministry of Education funded summer camps and allowed teachers to organise extracurricular religious activities in schools during summer. Suburban students would gather on a daily basis and participate in sports, cultural and religious activities under the supervision of committed teachers and older students. Lectures and cultural competitions provided them with a repertoire of ideas and actions that were drawn from history, current affairs and literature. Social programmes introduced students to the social skills – in particular public speaking and grassroots organising – that were crucial to the creation and maintenance of activist networks (Menoret, 2015).

The intellectual and organisational skills young Islamists honed in suburban religious groups became crucial during periods of crisis. During the 1990 Gulf War, the Koranic circles, religious awareness groups and summer camps provided readymade mobilisation networks to help create committees, disseminate messages, collect signatures and stage protests and marches. After contributing to the early 1990s reform movement, the summer camps were closed by the Ministry of Education in 1995. In 1995, a bombing targeted a US military facility in Riyadh and the Saudi press accused the summer camps of fostering extremism. There was another bombing in 1996, this time of a US Air Force housing facility in al-Khobar, and the public campaign against the summer camps intensified. Yet in 1997, Imam University students officially asked for the summer camps to reopen. Several institutions, including the World Association of Muslim Youth (WAMY), the Interior Ministry and the Ministry of Social Affairs, published studies that showed the camps' social and political worth. One of these studies revealed that youth delinquency dwindled in June and July, when summer camps were in operation, and rose again in August, after the summer camps closed down and before school started. Islamists had long portrayed youth and free time as crucial yet dangerous resources that needed to be carefully harvested and canalised. In 1997, Imam University students and WAMY activists used that very discourse to demand that summer camps be reopened (Menoret, 2015).

Islamist activists replied to this moral panic by explaining that summer camps did not promote violence, but actually prevented idle urban youth from engaging in crime and other violent activities. Despite their diverging opinions, the media and the Islamists shared the same assumptions: they both saw youth as a dangerous force and looked on suburban spaces and free time as potentially ripe with excesses and violence.

In 2005, the Ministry of Education officially renamed the summer camps "summer clubs". The same year, summer camps proved their critics wrong by helping mobilise voters during the first municipal elections in more than forty years. Islamist networks fostered not extremism or terrorism, but suburban electoral politics. Islamist candidates benefited from the experience accumulated by Islamist activists who had become experts at mobilising support, dodging repression and exploiting the peculiar space-time of suburbia, its tedium, empty spaces and empty time. The 2005 municipal elections showed that Islamist summer camps could become spaces of electoral apprenticeship (Menoret, 2009; Menoret, 2015).

7. Space and politics

As migrations to cities increased, creating huge metropolises in a few decades, space became a crucial political resource. Saudi institutions became highly spatialised entities, and the Al Saud ruling family actively commoditised huge swaths of land by selling or granting it to real estate investors and developers. This new spatial order empowered a new social class made of investors, developers and middlemen. It also opened space-times for activities that are considered, in the highly repressive environment of Saudi Arabia, abnormal: car delinquency such

as joyriding and drifting, political activism, and urban unrest. Thanks to suburbanisation, Saudi citizens increasingly defined their identity in reference to space, consumerism, car ownership and individual housing.

Suburbanization, while depoliticizing Saudis, also allowed for the formation of social networks that fostered political awareness and organization. Suburbs became a paradoxical site of protest through Islamist activities and armed militancy.

Islamism in Saudi Arabia grew along with suburbanisation, as more and more households left old city centres for the comfort and affordability of single-family homes connected to one another by huge highway systems. Suburban Islamism in turn developed in response to more than fifty years of crackdown on more classical forms of activism. It created the resources for Saudis to organise politically in the absence of such basic assets as political parties, independent associations or trade unions. Looking at the spatiality of Islamist groups provides interesting insights into politicisation in a repressive environment. Most Koran recitation circles are located in the suburbs of Riyadh, and most of their students also live in the suburbs. Summer camps are not only located mostly in the suburbs; they also exploit a suburban space-time made of vast spans of emptiness, and propose concrete ways of acting and organising otherwise idle students.

Urban sprawl redefined the relationship between citizens and the state: it was no longer a relation of personal dependence, but a material and immaterial web made of wages, loans, empty spaces, empty time and a new lifestyle. Geographically separated from the state, households were linked to it through financial institutions and real estate networks. Suburbanisation, in sum, while depoliticising Saudis, also allowed for the formation of social networks that fostered political awareness. Suburban sprawl became a paradoxical site of political protest through Islamist activities in schools, mosques and universities. It also became the theatre of violent encounters between security forces and fringe militants, in particular those who, inspired by Osama bin Laden, turned away from reformist activism. Saudi suburbia was born out of the globalisation of urban expertise and the capital accumulation of the Saudi elites; it became the stage on which new urbanites displayed their economic inclusion and political exclusion. No wonder protest movements originating in Saudi suburbia, this already globalised space, reached distant shores and became, in turn, global.

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THE AFTERMATH OF A MASTERPLAN FOR KUWAIT: AN EXPLORATION OF THE FORCES THAT SHAPE KUWAIT CITY

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1. The creation of the modern Kuwait City

Throughout history, cities have developed incrementally and grown at a steady pace that revolved around particular social, economic and political constructs, and spatially developed to reflect their community's building knowledge, availability of materials and particular locality. Some had walls to protect them from outside invaders, and rulers to guide their populations. The city wall had a defence and security purpose, and as a physical element it also defined the city boundaries and confined building and development within its limits. Kuwait Town, pre-oil discovery, had similar characteristics to those described here. With the first tribal settlements in this coastal town dating back to the eighteenth century, trade, fishing and pearl diving were eventually established as economic means to sustain life. Families started growing, a ruler was appointed and a wall was built in 1760 (Kuwait Municipality, 1980:14). Mud-brick buildings replaced the tribes' tents, and with that the physical characteristics of the town appeared with a coastal front, a commercial area, and residential homes. The absence of the car meant that roads did not need to be wide, resulting in the compact fabric of the city. Life on the street was vibrant as people travelled to different parts of the town for work or commerce, children played outside in the shaded alleyways, while public life happened unplanned and unaccounted for (Fig. 1).

The plan had sanitised public life and decontextualised the city from its locality and inhabitants. The lively streets and alleys of the old town were now empty.

Eventually the population grew and called for the expansion of the town beyond the wall; a second wall was built and finally a third to accommodate for this continual growth, in 1811 and 1921, respectively (Kuwait Municipality, 1980, pp.14–16). This final wall lasted for just over thirty years before it was torn down, this time, not to build a fourth wall to house further growth, but rather to clear the way for the new and advanced Kuwait. Oil had been discovered and Kuwait was to be modernised. In 1946, the first shipment of crude oil was exported and with this new-found wealth an elaborate welfare system was soon established that promised free healthcare, education and housing and guaranteed employment to all its nationals. Land acquisition schemes were established as a principal method of redistributing this wealth. Property within the existing Kuwaiti town was generously valued and

families were to be given plots of land or built homes to move outside the boundaries of the old town into modern standards of living, together with running water, air conditioning and a new urbane life ahead in the newly developed city.

This ambitious wealth redistribution doctrine called for a physical plan to serve this now modernised population. The British firm Minoprio, Spencely and Macfarlane were commissioned in 1951 to create the first masterplan for Kuwait. Working outside of the UK for the first time, they were confronted with a culture, society and climate that was alien to them. Prevailing modern planning principles of the time in the UK were imposed on a landscape that was foreign to them and were themselves the result of particular circumstances that were absent in Kuwait. Planning in Europe had evolved as a response to overcrowded and polluted industrial cities. Ebenezer Howard's Garden Cities (Mumford, 2007) imagined clean air and natural light, away from the unhealthy city. Further evolutions of these concepts were the New Town (ibid.) principals that were based on self-sufficient neighbourhoods separated from one another by a series of ring roads and radial roads and further detached from the inner city by a green belt.

Naturally, by importing those planners, Kuwait's first masterplan (Fig. 2) imported their planning principals as well. They proposed a plan based on zoning and the separation of land uses. Eight self-sufficient housing neighbourhoods were to be distributed parallel to what used to be the third wall of Kuwait, with a green belt in between. Zones for education, health and industry were allocated to the peripheries, while the old city, with its previous inhabitants relocated, would now be the centre for commercial activities and offices (Fig. 3 and 4). These various zones would be separated by a series of radial and ring roads, and the car was now the main mode of transportation to connect them back together. Such a radical shift in planning from what used to be intuitive and incremental to rigid and controlled had prevalent ramifications on city life. The plan had sanitised public life and decontextualised the city from its locality and inhabitants. The lively streets and alleys of the old town that once related to humans in their size and activities were now empty thoroughfares dictated in scale by the size of the car. Consequently, the old buildings had to be torn down to accommodate wider roads and other modern infrastructure. What used to be a vibrant coastal town has now become a commuters' city, filling with traffic during the day and almost uninhabited at night. A local planner of Palestinian origin working at Kuwait Municipality at the peak of the implementation of this first masterplan was extremely critical of what was happening. He recognised the problems that would face the city should attention not be given to climate, culture, and providing opportunities for social interaction (Shiber, 1963: 117). He was calling for the Jane Jacobs and William Whytes of Kuwait to challenge the notions of conventional planning and their effect on people's everyday life, but was confronted with the reality that this masterplan had set the groundwork for an era of top-down urban planning, neglecting the quality of life of the people, their environment and general wellbeing.

As the population grew, there was a need to constantly expand the boundaries of the city. Various planners came to Kuwait to design the second and third masterplans, and the respective reviews in between.

Complete neglect of the cultural and contextual issues raised above continued to happen. Instead, the focus was on designating separate zoned areas with defined land uses. This resulted in the need for more road network expansion to reconnect the various city components back together. The human was viewed as a statistic that needed housing, work and supporting amenities. Little attention was given to the creation of a sense of place, understanding of scale or the role of the city dwellers in shaping their own city. Kuwait continued to sprawl, with a traffic problem that ceased to be resolved and almost non-existent public life.

As more foreign planners were invited to masterplan the different parts of the city, one seemed to have a different approach early on. The 1969 Future Development of the Old City of Kuwait by the Italian firm BBPR, although never realised, was one of the few plans that studied life in this part of the world by looking at other Arab cities and Muslim societies. Not only was the architecture important to them, so were the social constructs that were specific to those cities. Their interest in the scale of the street and the buildings made their proposal more relevant to the people's experiences in the city. One of their recommendations was a proposal to bring a university into the centre of the city, and thus create a vibrant population of students, bringing in creativity and attracting business. Similar today to major cities like London or New York, where universities have been integrated into the city fabric, as opposed to isolated campuses on the periphery of town, where students commute for a single purpose, creating more traffic and energy consumption on a larger scale. It is interesting to note that the first masterplan also had a proposal for a university in the middle of the city that was similarly never built. There is no clear understanding of why certain plans get implemented while others do not.[1] And although exhaustive in their effort, many plans never see the light of day; in this case a clear policy on the prioritisation of wellbeing and liveability is non-existent.

The most recent Kuwait masterplan, completed in 2005 for the year 2030,[2] is merely an extension of the previous masterplans prepared during the second half of the twentieth century in Kuwait. Although it addresses the city, metropolitan area, sub-regional and national scales, the principal planning parameters are the same: a business centre in what used to be the old city, self-sufficient residential neighbourhoods beyond, and various zones for industrial, commercial and leisure activities. Even though it identifies areas for major satellite cities in the north and south of the state, their viability becomes very questionable as they lack the economic model which drives the survival of any city, and thus result in what are essentially large housing suburbs. In addition, a mass transit system is proposed yet again, as it was in the second masterplan in 1970 (Colin Buchanan and Partners, 1970), although neither proposals have yet been realised. Its success again becomes questionable, with such sprawl-inducing planning and the city's inability to retain density to justify the efficiency of this infrastructure meaning the most eligible option for transport continues to be the car.

The predominant themes that seem to be missing from all these plans are those relating to climate adaptation, energy-use reduction and social inclusion. This latest masterplan, for instance, although it sees poor air quality as an environmental concern, suggests reducing the state's subsidies for power and introducing car-pooling as possible

The most recent Kuwait masterplan, completed in 2005 for the year 2030, is merely an extension of the previous masterplans prepared during the second half of the twentieth century in Kuwait.

1. Another example is the *Kuwait Public Transport Masterplan 2011,* which focused on improving public transport and walkability in the city, but which to this day has not been implemented.
2. *Kuwait Third Masterplan Review 2005* prepared by Colin Buchanan and Partners for Kuwait Municipality.

The predominant themes that seem to be missing from all these plans are those relating to climate adaptation, energy-use reduction and social inclusion.

solutions. The plan, however, fails to propose an alternative physical development structure that tackles the root cause of the air-polluting built environment through design solutions such as scale, materiality and orientation solutions that address the effect of the built form on the environment instead of proposing policies to overcome its impact. In addition, it lacks efficient planning measures that guide housing clusters, typologies and building densities, and would therefore justify a mass-transit proposal as a conscious energy-reducing solution. Instead, the plan continues to propose low-density city expansion, which not only increases cooling energy demand through the type of architecture and urbanism it produces (Rode et al., 2017) but also reinforces car dependency which in turn creates more air pollution.

Reflected at the street scale, this particular type of planning results in the absence of any public life in the city. Cars have taken over not only the streets but the sidewalks also, in what has become a typical character of the local Kuwaiti street today (Fig. 5). Looking at the single-family housing neighbourhood as an example of the zoning plan for Kuwaiti families, the focus lies on housing demand and supply; building and population density and land availability. Housing needs are determined through average projected family size, land outside certain constraints mostly pertaining to oil reserves, and minor adjustments to previously set densities (Figs. 6 & 7). The city is treated as a flat landscape, where these parameters are considered universally, irrespective of location. For example, NW Sulaibikhat, a development on the western coast of the country, applies the same parameters described earlier, resulting in arbitrary plot sizes, setbacks and building heights. Consideration of being close to the water, people's spatial needs and the quality of the public space to be created there are completely absent. Involving the local community in decision-making would mean that assumptions made by the planners might be challenged by the various needs and desires of the families to be housed in different parts of the city.

2. Oil, land and housing shaping the welfare state

Perhaps the policies that most dictated the growth of the city stem from the establishment of the welfare state, which was enabled by oil rents. Swenarton, Avermaete, and Van der Heuvel (2015) made the argument that social welfare has a direct influence on the built form of a city and nowhere is this better exemplified than in the case of Kuwait. Oil, land and housing policies have had a direct effect on the physical realisation of the welfare state which was clearly implemented through the first masterplan (Minoprio & Spencely and P.W. Macfarlane, 1951). Housing was the means through which social welfare was provided, while land was the medium for its physical realisation, and that could only be made possible by the influx of oil. As such, the state established a number of programmes and state institutions to translate these specific policies into reality and continued to produce masterplans to guide their physical implementation.

Housing as a means to achieve social welfare was at the onset of the modern state and was being distributed as early as 1954. Unlike other cities that prioritise *affordable housing* as part of their social objective, in Kuwait *housing ownership* has been – and continues to be – the method

through which welfare is distributed. The state holds the responsibility for allocating land, developing and distributing it to eligible Kuwaiti families: those who do not own any real estate, irrespective of income. Depending on the type of housing they select – either a parcel of land or a state-built home – they are then provided with long-term interest free financing to either build their house or pay off their state-provided home. Ultimately, citizens are easily able to own their heavily subsidised homes, which they can then legally sell at market price. This unprecedented housing programme has created the social contract out of which housing ownership entitlement has been established and has become very difficult to turn back.[3]

In order to carry out such an ambitious project, the state not only had to establish the institutions to implement the development and financing of housing provision but also the urban planning parameters that would allow for its execution. As such, concurrent masterplans projected populations and specific densities for future development through a particular neighbourhood unit configuration that has become the blueprint for urban expansion that is replicated across the city. Based on Clarence Perry's (2007) neighbourhood units, the Kindergarten Centre Unit (KCU) was the organising basis for a neighbourhood design which can be described as a self-sufficient area with services and amenities that is separated from other neighbourhoods by highways, and which houses a pre-determined number of units (Fig. 8). The city ultimately grew through the KCU in a sprawling manner, radiating away from the central business district and into the desert.

The state maintained this type of development and set a precedent for a particular model of housing provision defined by a specific typology and tenure: villa ownership. Through time, housing provision within these parameters was established as an absolute right in the name of equality amongst citizens inter- and intra-generations (Alshalfan, 2013), irrespective of real needs. Just as the first generation of homeowners in modern Kuwait received housing both as a means of providing hygienic living conditions and a method of wealth distribution, the generations that followed believed it was the state's role to continue with the latter. What may have been a tool for social mobility has now become the status quo for all citizens. In essence, the blurring of the inherent differences between equity and equality created the social contract from which housing demands were justified. Housing has become the currency through which the state physically transfers its wealth to its citizens.

The constraints of the physical architectural type of the villa and the land-consuming development model have made this programme of housing provision not only unrealistic in its aspirations but also in having a detrimental effect on the urban fabric of the city. Focus lies on meeting demand defined by this single criterion, resulting in a number-based calculation of plot size and number of units. By failing to consider other aspects of welfare such as quality of life and the creation of sense of place, neighbourhood design becomes sanitised of the underlying principles of building communities, and instead turns into a pure exercise of maximising the number of units and their amenities within a pre-determined set of parameters. As a result, the city sprawls in the name of providing housing for all its citizens, while compromising their health

3. For further discussion on housing entitlement rights in Kuwait, refer to *The Right to Housing in Kuwait: An Urban Injustice in a Socially Just System* (Alshalfan, 2013)

and wellbeing, as witnessed through alarming environmental and health indicators, with the country boasting one of the highest levels of carbon emissions per capita (World Bank, 2014) as well as soaring obesity and diabetes rates (World Health Organisation, 2016), all contributed to by car reliance and a sedentary lifestyle.

Housing as a means to achieve social welfare was at the onset of the modern state and was being distributed as early as 1954. Unlike other cities that prioritise affordable housing as part of their social objective, in Kuwait housing ownership has been the method through which welfare is distributed.

As the population grew, pressure on the state to maintain this type of housing continued to rise. Over time, certain measures were taken to increase the supply, mostly by gradually decreasing the parcel size from 1000 to 400 square metres. However, due to limits on development including access to land and infrastructure, supply struggled to meet the rising demand. In 2015, the Public Authority for Housing Welfare had over 106,000 applications on the waitlist for housing (Public Authority for Housing Welfare, 2005a), yet from the start of the housing programme in 1954 and until 2015, the state was only able to provide 114,600 units (Public Authority for Housing Welfare, 2015b). For the state to fulfil the current demand, it would need to develop almost the same amount of housing units it had provided over the past sixty years. Yet, this rising demand is not only caused by the state's inability to provide housing at a similar rate, rather it is due to the lack of financial instruments that allow first-time homeowners to get financing from the local commercial banks to purchase their own homes. The only place to access this type of financing is the Credit Bank – a state-owned financial institution providing mortgages capped at a specific amount barely covering a quarter of the cost of the average home available in the market today (Kuwait Finance House, 2017).

The state's role in the housing market is not constrained to its limitation of mortgages, but extends to its ownership of land, as it is the largest holder in the country. Apart from the housing programme, the state does not release freehold land into the market. As the provider of welfare, control of land and oil, its two main natural resources, becomes imperative. The latter, as the single most important source of income for the state (OPEC, 2016) is prioritised over land development, hence the Kuwait Oil Company (KOC) has concession rights over undeveloped state land for oil exploitation and exploration. This policy creates scarcity in the supply of land, and fragmented growth of the city, as neighbourhoods are dispersed across the state with the pre-condition for their development being their release from the Kuwait Oil Company. Furthermore, this control over supply creates rising prices in the real estate sector, making purchasing a home for the average citizen almost impossible. This, in turn, increases demand on the state to provide housing, entering into a cycle of negotiation between land for oil and that for housing where housing cannot be developed without oil revenues, and yet land cannot be freed due to oil exploration.

Amidst this complicated climate of oil, land and housing, the physical character of the city has emerged as a haphazard reaction to these forces. Yet, these policies did not only have an effect on the city from a liveability point of view, as described earlier, rather they stifle the market from flourishing through regulations that control the role of the private sector from development in the housing market. This is reflected in the masterplan, where all the proposed new settlements are dedicated to the Public Authority for Housing Welfare. What may have been perceived as wealth distribution endeavours are now the very

policies that are creating higher land prices and dissatisfaction on the social front. This centralised approach to planning continues to produce masterplans informed by policies that frame the state as the provider and developer of the land, allowing little room for the private sector to operate, yet struggling to meet the current needs of society.

3. Looking to the future

Today, the Emir's vision for the state is different, aiming for Kuwait to be a trade and financial centre that is led by the private sector (New Kuwait, n.d.). This calls for a drastic shift in the planning paradigm from one that was based on welfare provision relying on oil rents towards a capitalist market economy varied in its sectors. However, a clear policy to connect the state's aspirations with the spatial plans is yet to be established. The existing urban policies no longer fit in the current sphere of state revenue diversification, nor are they able to cope with the inflated scale of the welfare state. The approach and processes of the previous plans, heavily compliant with the state institutions' needs and capacity to provide for citizens, can no longer sustain, nor are they aligned with, the new vision for a private sector-led economy.

In order to articulate the role of the private sector in the economy, reform within the existing regulatory framework and state institutional capacity must take place. Special attention will need to be given to the role of land and the policies related to its allocation and use. With the fourth masterplan for the year 2040 currently underway,[4] an opportunity exists for alignment with the state's economic policies to pave the way for a spatial arena through which the national development plan can be realised. The status of land, flexibility of the regulatory framework and advancements in institutional capacity are central to guiding this new plan. In addition, an economy led by the private sector would require a strong state as regulator and facilitator, identifying the exact sectors that require growth and establishing the parameters to maintain equity amongst citizens. Reconsidering the masterplan's role in recognising how and by whom land will be developed, especially in terms of its supply into the market, becomes imperative. By recognising the masterplan's impact as a physical implementation tool for the state, one can steer its strategic direction towards a re-envisioned future for the country.

Kuwait today faces a critical turning point in its income dependency on oil. With the price of crude oil dropping by more than two-thirds within a period of less than two years, the fiscal space of the government has narrowed (Oil Price, 2018). The reliance on the welfare state and in particular its current planning and spatial development principles comes into question. The current state of economic and regional instability makes it crucial to challenge the "business as usual" model. At this time of economic uncertainty, an opportunity can be found in re-evaluating the approach to the physical environment and rethinking the current unsustainable method of urban development. Housing and planning policies, although aiming at social welfare, have had a detrimental effect on the quality of life of the people, been excessive in their energy consuming effect and created an undesirable effect on the real estate market. Little attention is given to the type of sprawling city that has been created and its dependence on private car transportation. A link is

Incremental growth at a human scale can be considered not only as a more affordable means of development but can also foster alternative values in a society that has prioritised modern and expensive development schemes over the quality of life of its people.

4. Kuwait Municipality signed a contract with international consultants in November 2016 to carry out the design of the Fourth Kuwait Masterplan. http://www.worldarchitecturenews.com/project/2016/27355/perkins-will/kuwait-masterplan-in-kuwait.html

yet to be made between the current type of urban planning and energy use. Furthermore, the low population densities stipulated in the previous masterplans create excessive energy consumption at the building scale (Rode et al., 2017), while at the city scale expensive infrastructure expansion is required to serve the sprawling city, including power linkages, water supply and road expansions.

Incremental growth at a human scale can be considered not only as a more affordable means of development but can also foster alternative values in a society that has prioritised modern and expensive development schemes over the quality of life of its people and the role of the city dwellers in shaping their own cities. Masterplanning in Kuwait has long been concerned with mere numbers, dehumanising the individual by treating him/her as a simple statistic. This simplification of society's needs has led to addressing housing in the form of replicated enclosures, otherwise known as villas, detached from the creation of homes and communities. Private property has long been prioritised over public space and the vibrancy of city life has been given up for endless plots of land through a defined rational plan to accommodate certain densities. Change is long past due. By recognising the masterplan's impact as a physical implementation tool for the state, one can steer its strategic direction towards a re-envisioned future for the country.

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JEDDAH: A "WISE OLD CITY" FACING THE CHALLENGES OF URBAN REQUALIFICATION?

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1. Introduction

History, culture and architecture are strictly interrelated. Jointly they express the change in social and physical traditions, affecting the issue of continuity and crisis of people's identity in urban environments. This fact is particularly evident in the southern/eastern Mediterranean and in the Gulf. As regards the Arabian Peninsula, within the cultural-historical debate at the dawn of the new century, the "city" and its "territory" represent essential keys to the reading and re-reading of local history: thus, the field of urban studies is increasingly used as a new methodological tool to trace the roots of modern statehood, the evolution of a certain community/polity, and the socioeconomic development process. Balances and imbalances related to the dynamics and forces of a traditional *dawla* – a tribal state conceived as authority and power, but without fixed borders – intertwine with the local environment and social system. Therefore, academic studies investigating the town model in Arabia from pre-oil to oil era, as an urban tribal settlement first and as a "recipient of modernity" and then "a focal point for the reclaiming of an Arab-Islamic identity" (Fuccaro, 2001: 175), cannot ignore the existing interconnections in the processes of urban growth and transition from a traditional *dawla* into a modern state with definite territorial boundaries. A critical discourse deals with the "Gulf city model" that emerged from the transformation of the *medina* – the "traditional town" – into the "oil city". The planning of new suburbs around the old settlements throughout the region was deeply influenced by Western urban concepts and ended up being perceived as an imposition of foreign planners, ignoring local culture, lifestyle and habits, and adding to social contradictions and divisions (Al-Nakib, 2016: 5).

Within the interdisciplinary and multidisciplinary approach of historiography, it is interesting in particular to see how history and architecture increasingly meet and how they share, though with differing objectives, the analysis of settlement patterns and urban centres. The built environment and architectural solutions in historiography become clues aimed at investigating traditional political and social organisation

and structures, as well as the economic development of the oil era in the 20th century, considering the exceptionality of the phenomenon and the exponential growth of urban population that came with it. In this sense, the case of Saudi Arabia is quite significant, as the proportion of urban population rose from 10% to 77% in 40 years, due to some major factors, acting in a similar way in all the Arab Gulf countries. These major factors are represented by urban pull factors (the city as the centre of redistribution of oil-revenues in the *rentier* system of the "oil economy"), rural and Bedouin environments' push factors and the affluence of foreign labour (Al-Hathloul and Edadan, 1995). Western and global forces have undoubtedly been affecting the development of modern cities over the most recent decades in Saudi Arabia and in the rest of the Gulf, although Islam and tradition still play their own role in the post-modern "neo-patrimonial" cities as well as in the growing "industrial cities".

The first steps taken in the historical district of Jeddah are certainly important, but they are just the beginning of a process that needs more efforts to make the cultural dimension of architectural heritage a pivotal aspect.

With regard to Jeddah in particular two questions arise: can the revitalisation of its historical identity and architectural legacy contribute to the liveability of the city? Is there the necessary attention to the new patterns of behaviour of local communities and their changing identity? We are referring to the "cultural core": symbolic spaces expressing this "cultural core" can become part of a renewed discourse on the link between architectural heritage preservation and identity issues. Saudi intellectuals within the National Dialogue agree on the fact that the youth are facing an identity crisis in the country, and the solution is not in the promotion of artificial urban environments glorifying traditional culture, while archaeological and historical sites are neglected and historical buildings demolished (Al-Fassi, 2010: 22). Local identity expressions are not a static phenomenon and, as such, they should be taken into more consideration when urban structure conservation and adequate planning are concerned. The first steps taken in the historical district of Jeddah are certainly important, but they are just the beginning of a process that needs more efforts to make the cultural dimension of architectural heritage a pivotal aspect both in wider requalification of urban spaces, and in communication to the youth of a deep sense of pluralistic values and symbols in the past of their "nation" (*al-watan*).

2. Conservation of symbolic historical spaces "making identity"

The discovery of oil in the Eastern Province of Saudi Arabia in the early 1930s quite surprisingly had its first important impact on the urban growth in Jeddah, at a distance of more than 1,200 km from the oil fields. The country's sedentary population was less than 50% at that time and it was distributed in a few towns, villages and the so-called *hijar*, settlement centres established by King Abdulaziz at the beginning of the 20th century with the uneasy political objective of sedentarising the nomads, and to develop at the same time their Bedouin qualities in order to create a military force (Fabietti, 1982: 188). Political detribalisation emerged as a process soon followed in the 1950s by the first efforts to centralise the state, which led to the development of Riyadh as the new political and administrative centre of the kingdom, but Jeddah was certainly the first most important city in modern Saudi Arabia: the first ARAMCO office was opened in one

of the most beautiful houses in the town's historical district, al-Balad, while in 1947 the demolition of the wall here opened the way to the following major radical changes.

Urban spaces, transformed by the so-called "oil urbanisation" era, are certainly more and more complex nowadays in Saudi Arabia, and they are facing new serious problems imposed by development, modernity and demographic growth. Jeddah is no exception. Encouraging cultural experiences within urban spaces without borrowing from the past simply out of nostalgia can effectively create new links between civil society and political society, between new generations and old ones, while representing solid contributions to overcoming stereotypes and forging constructive understanding between the dwellers with both common and different cultural backgrounds (nationals and expatriates).

Identity is a dynamic social phenomenon: the creation of artificial recycled urban environments clashes with the new ways people find to express their preferences in their home and urban environments in modern spaces. Architects and institutions certainly have responsibility for affecting people's choices, but identity cannot be revived by mere reproduction of the traditional past in urban realities, and new factors have been emerging as crucial determinants in the eyes of some Saudi architects and planners at the beginning of the new century. Houses are less and less affordable for the younger generations in all the major cities of the kingdom, and the use of innovative and/or flexible construction materials different from concrete, such as wood, that may be more adaptable and environmentally friendly, are debated by some local architects focusing on future planning and re-planning of the existing residential settlements. A reduction of the house size and a better quality of life within the neighbourhoods might compensate for the high costs of innovative construction techniques and materials (Al-Naim, 2006: 158). Within this perspective, an accurate balance between technological development and the preservation of ancient traditions and environments can bridge the past with the present and the future in a sensible way, and build a pathway towards a new form of human security and sustainable growth. Both form the basis of order, stability and cultural development.

During the second half of the 20th century – especially since the 1970s – Saudi Arabia gradually sped up the traditional knowledge transformation process and then opened the door to the present transitional stage of the "post-oil" and globalisation era, with its ICT revolution. A modernisation process going beyond purely outward and material hypermodernity is a major challenge in the region. The urgent need to try and reconcile the positive aspects of tradition and modernity comes to the fore, as the preferred way to avoid generational conflicts and internal divisions, which can easily lead to exacerbated social problems. In this sense, tradition representing the constructive memory of the past emerges as a valuable starting point to look ahead, focusing on the building of the youth's identity and character. A debate has been emerging since the 1970s in which some Arab intellectuals, while questioning the local situation, tried to adopt "Western culture" and "Western paradigms". The conflict between tradition and modernity started attracting the attention of leaders, academics and scholars.

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The resilience of urban environments in the light of a more balanced growth within cultural and historical spaces in a city that may be able to adopt some "wise" solutions has become a more relevant topic and it has been assuming particularly interesting tones in Jeddah, with special reference to the integration of cultural, environmental, economic and social aspects as a fundamental ingredient of any sustainable development. At the beginning of the new century, such a debate in the city is considered an expression of rising cultural awareness.

Throughout history Jeddah and its port have been inherently associated both with maritime trade and the Islamic pilgrimage (*hajj*). In *The Travels of Ludovico de Varthema*, the Italian traveller who, according to his records, visited the town between 1503 and 1508, Jeddah is depicted as "a city of very extensive traffic" with "very beautiful houses, as is the custom in Italy" (Winter Jones and Badger, 2010: 52). Nowadays the old houses of the historical district are not the same ones seen by de Varthema, but they were built in the same settlement between the 18th century and early 20th century; they still represent very interesting models of the most ancient construction techniques and materials of the Hijaz, as they are built of wood and stone from the coastal region, a coral aggregate known as *hajar al-bahar/hajar al-manqabi* (madrepore). Most of them are still dilapidated, but they represent the most ancient "soul" of the city to be saved in the view of a small but determined group of Saudi intellectuals willing to "awaken" institutions and civil society at the beginning of the new century.

The focus on destroying and rebuilding that has been prevailing elsewhere in the Gulf is opposed in an effort to avoid the worst results of Mecca, where the tallest clock tower, Abraj al-Bait, rising like Big Ben in the heart of the Muslim world and towering 600 metres over Al-Haram Mosque, has become emblematic of a frenzied construction boom in the name of mega-projects in the holiest site for Muslims, sparing neither the house of Khadija, the first wife of the Prophet Muhammad, razed to build public lavatories, nor the house of Abu Bakr, destroyed to build a Hilton hotel. The need to prevent the same mistakes as other restoration projects carried out in Dubai and elsewhere in the region is emphasised too. Despite the weakness of institutional and governmental support in this direction and the people's very limited sensibility, the campaign to preserve the authenticity of al-Balad seems to be gaining further support within the state's most recent strategy aimed at promoting cultural tourism in the kingdom. Local intellectuals like Sami Angawi, well-known architect and founder of the Hajj Research Centre, and Sami Saleh Nawar, General Director for Culture and Tourism at Jeddah Municipality, contributed to enhancing the impact of the campaign aimed at sensitising people and institutions to "save al-Balad". Thus, the revitalisation of this area began to be conceived as an open space in which to live, work, pray and be entertained with high-quality infrastructure, services, museums, craft working shops in historical buildings, etc. The process has just begun and, as expressed by Sami Saleh Nawar, "the frustration comes when you perceive great indifference on urban preservation among most Saudis, and most specifically among many owners of historical houses".[1] At the least, unprecedented awareness is growing of the fact that a different model needs to be promoted for Jeddah, the model of a city where spaces in the old district should be re-evaluated as

1. Thanks to Eng. Sami Saleh Nawar for his talk with the author in Jeddah, March 2009.

"third places",[2] not only because they are well restored and full of charm: they can be both the heart of the city and bear witness to a past which, with its everyday life and most symbolic spaces, can intertwine with modernity and technology without losing authenticity. The whole design of re-evaluation is thus moving on the basis of accurate surveys, by planning the restoration of the smallest architectural details too, in order to obtain homogeneous and harmonious results, when and where possible.

All of that seemed to be mere utopia in the kingdom only a few years ago and full homologation with the "Dubai model" seemed to be unavoidable. After the inscription of Jeddah on the UNESCO World Heritage list in 2014, no doubt the "save al-Balad campaign" has become less isolated in the country, which gives some hope of changing things, although the "on-site situation continues to be worrying" due to the enduring risk of collapse of several buildings. Technical and administrative teams started working jointly to rehabilitate an area marked by degradation, but the new plans and studies to develop the district, to preserve its distinct local architecture and to promote cultural initiatives demand more funds and the intervention of the central government for an emergency budget is requested (SCTN, 2017). Huge challenges need to be addressed: local private sector involvement is still too limited in upgrading the area, where improvements clearly remain partial. Nevertheless, one cannot ignore the fact that something new has been maturing in Jeddah. Some recent initiatives, despite their fragmentation, are renewing the cultural and commercial role of al-Balad and its symbolic historical spaces. So the revitalisation process of these spaces and their architectural legacy can effectively contribute to sustainability, provided it is pursued more thoroughly, which means more active involvement of the local private sector as well.

All the same, the first steps taken to save al-Balad are well exemplified by some spaces that are worth mentioning. Coming from the Al-Alawi *souk*, the Al-Shafi'i mosque certainly stands out, being one of the most interesting mosques in the city and the oldest one. It was conceived according to the Fatimid school of architecture and the level of the mosque's courtyard is clearly lower than the street level, which has risen over time. Its single minaret (Figure 1) was built in 1251, at the time of a Rasulid ruler of Yemen, al-Malik al-Muzaffar, who is known for his patronage of the arts and monuments. Restored by an Indian merchant in the first half of the 16th century the mosque is still characterised by wooden columns and capitals in its courtyard, attesting to the Indian style of this first restoration (King, 2011: 8). In 2012 the Chief of the General Authority for Tourism and Antiquities announced the government's sponsorship of a restoration of Al-Shafi'i, which started only after careful archaeological surveys in order to avoid the mistakes made in previous restorations in the country. The discovery of an earlier *mihrab* and the unblocking of the windows in the *qibla* wall are two significant outcomes of very accurate studies (Abbas, 2014: 11). This is a positive result of coordination between the protagonists of the "Save al-Balad" campaign and institutions: the preservation of the original buildings' materials and forms is a "wise" priority supported by the work of Sami Nawar and his group, who managed to find a way to implement their ideas in this unique architectural space (Al-Abyadh, 2014).

2. The concept of "third place", conceived as a means to promote mutual knowledge and more social cohesion by networking societies, has recently been studied and emphasised within the College of Environmental Design at the King Fahd University of Petroleum and Minerals (KFUPM). Thanks to Dr Adel S. Al-Dosary, Dean of the College of Environmental Design at KFUPM, in discussion with the author in Milan, September 2016.

Figure 1.

The minaret of Al-Shafi'i mosque, external view before restoration (author, 2009).

As for the historical houses of al-Balad, a lot still needs to be done. The fact that these houses demand both careful restoration and regular upkeep, as a consequence of the climate and of corrosion by salt in the air and the soil (Vincent 2003: 411), makes things even more difficult, because most owners do not have incentives to do that and the institutional support remains very weak. Huge challenges are there, but no doubt the square in front of the Nasif House (Bayt Nasif) and the Nasif House itself are two significant examples of preservation that "make the identity": the ancient cannon in front of the Nasif House stands out as a testimony to the ancestors' resistance and success against the raid by the Portuguese in 1517 (Figure 2), and it is included within a project of beautification of the area, where the Nasif House, now a museum (Figure 3), is reconfirmed as an architectural and symbolic space crucial to the history of Jeddah in the early 20th century. Well-known urban personalities used to meet there and, under the influence of the cultural ferments of the 19th century in the Ottoman Empire, they developed their own discourse on Hijazi Arab Islamic nationalism, before the occupation of the Hijaz by Abdulaziz Al Saud in 1925. The latter made his headquarters there, while the owner of the house, Muhammad Nasif, declared his loyalty to him (Al-Rasheed, 2013: 10). The specific identity of the Hijaz comes to the fore

with its cultural distinctiveness in this home environment where history and architecture meet and merge, while linking the home environment with the surrounding urban context (Bosworth, 2007: 223).

Figure 2.

Square with the ancient cannon, symbol of resistance against the Portuguese in the 16th century (author, 2012).

The owners' willingness to collaborate and the necessary regulatory framework to enhance the social function of more historical houses are prerequisites for further architectural legacy re-evaluation: the most recent decision to convert another merchants' house, the Sharbatly House, into a museum and cultural centre for poetry seminars and art exhibitions (Al-'Isa, 2014) and the enforcement of the new Building Regulation for the historic area by the Municipality of Jeddah in 2017 are expressions of a slow but ongoing process. Historical houses with their unique style, materials and decorative elements and paintings express family and collective identity within this process, reconfirming Jeddah's special role throughout history, both as the port of Mecca and as a lively centre of commerce and cultural exchanges between Asia, Eastern Africa and the Mediterranean. Quoting William Facey, "teak for the ornate filigree screens on the *rawasheen* balconies of Jiddah's old houses symbolizes both the trade with India and the cooling breezes that once blew that trade to its harbor…" (Facey, 2005). A new process has started in al-Balad, which demands a new vision for the city as a whole.

Figure 3.

Bayt Nasif, restored façade with mahogany filigree balconies (rawashin, sing. ruwshan), decorative and symbolic elements developed both to respond to climatic needs and to express perceptual identity (author, 2012).

3. "Oil urbanisation" and present challenges to a holistic approach

Development, city growth and urbanisation financed by the oil-based economy in the kingdom since the second half of the 20th century had a clear impact on the built environments of the second largest city in the kingdom, despite its distance from the oil fields, as already hinted. Since the 1950s the city started attracting both Saudi citizens from rural and Bedouin contexts and foreign labour from Arab and non-Arab countries: Jeddah's growth was rapid, as it reached 110,000 inhabitants in 1960 (up from 24,000 in 1948), while the expansion of new areas led to the progressive establishment of both planned and unplanned settlements till the end of the century.

The regular streets of the new districts with their "villa type" houses and the modern buildings made of cement and concrete, the glittering shopping malls either in the "American style" or in a "recycled traditional style", and the new mosques built to be impressive, and yet often lacking adequate upkeep and care, like the "floating mosque" on the Northern Jeddah Corniche (Figure 4), give the city a distinctive appearance, far from the old Jeddah and the most authentic historical identity of the original settlement. The wide modern streets beautified by the enormous sculptures and compositions at the crossroads, creating an "open modern art museum", are something unique: they are the result of careful beautification projects of the new urban spaces,

supported by Muhammad Sa'id Al-Farsi, engineer, artist and mayor of the city in the 1970s. The involvement of both Saudi artists like 'Abs al-Halim Radwi, who realised 32 works over about 35 years and of other well-known Arab, Muslim and Western artists, like Darwish Salama, Hisham Punjabi and Lafuente, emphasise the original opening of the city and its inhabitants to cultural influences arriving from far across the sea (Al Resayes, 2010: 56), within an approach marked both by positive awareness of the dynamism of identity in the modernisation process and the fruitful collaboration of local artists and supportive authorities. Such an achievement in modern urban spaces is certainly no little thing when we consider in those years the contemporary proliferation of unplanned settlements, and the progressive degradation of "old Jeddah". No doubt the city expansion has been marked by the planning of new residential neighbourhoods in the "Western style", with little or no consideration for cultural, identity and environmental protection, but the most serious problems came with the uncontrolled urban growth that still severely affects sustainability issues in the city, making it far from a "wise old city". Some dysfunctions, related for instance to limited sewerage and waste collection in certain areas, need adequate solutions.

The preservation of old urban spaces and the revitalisation of cultural identity need to be conceived within a more holistic approach that cannot be decoupled from more comprehensive strategies.

Figure 4.

"Floating mosque" (author, 2012).

The initiatives in the architectural and cultural fields, like the ones considered in this study, certainly make Jeddah a positive exception in the Arab Gulf states, but the preservation of old urban spaces and the revitalisation of cultural identity need to be conceived within a more holistic approach that cannot be decoupled from more comprehensive strategies to develop a sustainable urban environment in the metropolis. Al-Balad could represent an interesting pilot project if further initiatives are supported: conservation cannot simply be aimed at creating a "museum district". The provision of renovated housing units is another aspect to be considered that can encourage young Saudis to live in a re-evaluated area with an adequate integration of hous-

ing, services and commercial activities. Novel insights, regulations and partnerships between the public and the private sectors are needed to face the major problems of all the unplanned and degraded residential areas in the metropolis, housing over a million people, according to Jeddah Municipality estimates of 2009 (Alsharif 2013: 30). The battle is between residents and owners, on the one hand, and the elite contractors and businessmen, on the other, while institutions remain weak: the case of al-Nuzlah al-Yamaniyya slum, for instance, highlights the difficult balance between the Regulations for Developing Slum Areas issued by Jeddah Municipality in 2008 and the cultural dimension of building, living and "producing space" expressed by residents and owners in this and other similar unplanned settlements in the metropolis, where people have found new ways to adapt traditional forms and localise modern forms (Difalla, 2015).

Against this backdrop, the most recent competition for the world's tallest skyscraper, with the Jeddah Tower planned to reach one kilometre in height, certainly emerges as something sterile, clashing stridently with the persistent challenges of the city in terms of sustainable redevelopment of urban spaces, where cultural needs deeply intertwine with social needs. Within this perspective, both the role of local intellectuals and the collaboration of the inhabitants and civil society represent essential elements in any future planning and requalification process aimed at a viable better future, in which the quality of life is enhanced, and at the same time the "soul" of the city is revived in the light of its dynamic identity.

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1. Introduction

Urbanisation is one of the key mega-trends that will shape the economic, social and political future of sub-Saharan Africa in the decades to come. It is closely interlinked with demographic and economic trends, and it is likely to increasingly affect politics in the region too.[1]

Historically, cities are engines of economic growth, innovation and productivity. Yet in sub-Saharan Africa rapid population growth is happening in the context of slow structural economic transformation, pervasive poverty, sharp inequalities and widespread socioeconomic and spatial exclusion, and environmental degradation. These conditions severely compromise the prospects for sustainable urban futures. In the best case, the urban transition will help surmount some of these structural hurdles. In the worst case, it will compound them. Most likely, the future will be a mixed picture reflecting the diversity of African countries, in particular their demographic and economic baselines as well as the quality of (both national and urban) governance.

Sub-Saharan Africa's urban transition is in full swing. The region is expected to account for close to a quarter of global urban population growth over the next 15 years. Sub-Saharan Africa's urban population is expanding even faster than its overall population, which grew at an annual average rate of about 2.5% during 2017. In the same year, the region's urban population grew at around 4%, a more rapid increase than anywhere else in the world (International Futures, version 7.29). Partly this is due to the low baseline. More importantly, however, families living in sub-Saharan Africa's urban areas still tend to have many children, while at the same time people today live healthier and longer lives. In other words there have been significant gains in life expectancy over the past two decades.

In fewer than 20 years from now every second person in sub-Saharan Africa is likely to live in a town or a city, matching the current global situation. It is therefore not surprising that the urban agenda has gained immense traction over the past years, both on the continent and globally (UN.org, 2015). The notion that cities cannot make positive contributions

1. This chapter draws on Bello-Schünemann and Aucoin (2016). It also draws on the chapter on urbanisation in Bello-Schünemann et al. (2017).

to development is now largely outdated. Making cities inclusive, safe, resilient and sustainable, as stipulated in the United Nation's Sustainable Development Goals, is necessary if sub-Saharan Africa is to become more prosperous. However, it is also a very ambitious task.

This chapter uses a time horizon of 2035 and explores the following questions. What are the key characteristics of urbanisation in sub-Saharan Africa, and what does the future hold? Is the urban transition likely to translate into increased prosperity? And lastly, what should urban governance look like in order to capitalise on the opportunities urbanisation brings about and mitigate the risks?

By 2035, more than 810 million people will live in sub-Saharan Africa's cities and towns of different sizes. This is close to 350 million more urban citizens than today.

All forecasts are based on the International Futures (IFs) system (version 7.29), a long-term integrated modelling system that leverages historical data (over 4000 series) to identify trends and forecasts for hundreds of variables for 186 countries for every year from 2015 to 2100.[2] All forecasts in this chapter are "Current Path" forecasts, i.e. where systems seem to be heading given current policies and environmental conditions.[3]

By 2035, more than 810 million people will live in sub-Saharan Africa's cities and towns of different sizes: megacities and large cities with more than 10 million and between 5 and 10 million inhabitants, respectively; medium-sized cities with between 1 and 5 million; as well as smaller cities and towns. This is close to 350 million more urban citizens than today, or the equivalent of adding the current combined populations of Nigeria, Ethiopia, Angola and Mali.

The current and expected level of urbanisation of Africa's regions differs considerably. Higher levels of urbanisation tend to go with lower urban population growth rates. By 2035, over 40% of sub-Saharan Africa's urban population is expected to live in West Africa. And with more than 60% of West Africans living in urban areas by then, West Africa will be Africa's most urbanised region, having surpassed North Africa, which is generally much further ahead in the demographic as well as the urban transition than the rest of the continent. Central and Southern Africa are forecast to cross the 50% urban population threshold before 2030, with Central Africa leading the transition. East Africa/the Horn is the only region in sub-Saharan Africa which will remain predominantly rural in the longer term.

A third of sub-Saharan Africa's countries, including South Africa, Nigeria and the Congo, for example, have already crossed the threshold of having more than half of their population living in urban areas. In fact, variation is great across countries. With less than 20% of their population living in urban areas in 2018, Burundi, Malawi and Uganda are the region's most rural countries, and in the future this is not going to change significantly.

2. The drivers of urbanisation in sub-Saharan Africa

Natural urban population growth or the predominance of births over deaths in urban areas is the single most important driver of sub-Saharan Africa's rapid urban population growth (AFDB, OECD and UNDP, 2016: 54). The historical evidence shows that families living

2. IFs is a free, open-source model used for thinking critically about development futures. It is hosted and developed by the Frederick S. Pardee Center for International Futures at the University of Denver (see http://pardee.du.edu/understand-interconnected-world) and was originally created by Professor Barry B. Hughes. IFs provides forward-looking, policy-relevant analysis that frames uncertainty around the future of countries (or groups of countries) and across development systems. It also helps users to think systematically about potential futures, as well as development goals and targets.
3. The IFs Current Path (CP) is a collection of historical data and trends that represent a likely scenario of how the future will unfold. The CP assumes no major paradigm shifts, policy changes or "black swan" events. Although the CP generally demonstrates continuity with historical patterns, it provides a structure that moves beyond a simple linear extrapolation of previous trends.

in urban areas have fewer children than families living in rural areas. Yet, in sub-Saharan Africa, widespread poverty in terms of income but also education and access to healthcare means that fertility rates have remained high, including in cities and towns. Over time, fertility rates in urban areas will drop, but the fact that the number of extremely poor Africans is set to increase over the coming decades suggests that this might not happen quickly.

The second-most important driver of urban population growth in sub-Saharan Africa is rural-urban migration, followed by cross-border inward migration. Rural-urban migration accounted for less than a third of urban population growth between 2010 and 2015 in Africa. That said, South Africa, Rwanda and Namibia all show higher levels of rural-to-urban migration. People tend to leave rural areas because of poor service provision, changing weather patterns, land pressures and natural disasters as well as violence and large-scale conflict. Between 2009 and 2016, the Boko Haram insurgency in northeastern Nigeria, for example, displaced an estimated 1.5 million people, and the city population of Maiduguri may have more than doubled to 2 million due to the influx of internally displaced people (World Bank, 2016: 63).

Most of sub-Saharan Africa's cities are ill-prepared for such rapid and dramatic population increases. The provision of land, finance, physical and social infrastructure and other critical services are bound to be a challenge.

With Lagos, Kinshasa, Johannesburg, Luanda and Dar es Salaam, sub-Saharan Africa will be home to five of the world's expected 41 megacities by 2035. Next in line are Ouagadougou, Addis Ababa, Bamako, Dakar, Ibadan and Kano. Megacities in sub-Saharan Africa (and in the developing world more generally) are growing at absolute rates unprecedented in history. Lagos, for example, is estimated to add an average of about 700,000 people every year, more than three times as many as New York during the 1920s and more than eight times as many as London during the 1890s, when the city experienced the fastest change in its population yet (Jedwab and Vollrath, 2015: 9). If the current trend holds, by 2035 close to 30 million people could live in Nigeria's commercial capital, turning it into the largest megacity on the entire continent, overtaking Cairo. Kinshasa could have a population of close to 24 million, followed by Dar es Salam with over 13 million.

Megacities merit attention because they tend to absorb a significant share of national populations, are key drivers of their countries' economic performance and connect Africa to the global economy. However, the majority of Africa's urban population live in relatively smaller cities and towns which are expanding incredibly fast as well.

Most of sub-Saharan Africa's cities are ill-prepared for such rapid and dramatic population increases. The provision of land, finance, physical and social infrastructure and other critical services are bound to be a challenge, not least because of the massive backlogs that exist already.

3. Urbanisation and economic development

Essentially, urbanisation in sub-Saharan Africa is not synonymous with economic development. In the Western context, urbanisation followed industrialisation and hence economic diversification. Sub-Saharan Africa is urbanising, but it is not industrialising.

Urbanisation in sub-Saharan Africa is not synonymous with economic development. The region is urbanising without industrialising.

At present, manufacturing in sub-Saharan Africa accounts for less than 16% of value-add with little change expected by 2035 under the Current Path forecast. In fact, the current value-add from manufacturing is lower than during the 1970s (an estimated 16% today versus close to 18% back then). In absolute terms the manufacturing sector is growing but much slower than the services sector, or the agricultural sector.

Urban population growth has been outpacing economic development, precisely because of the lack of employment creation in higher productivity segments of the economy (Spence, et al., 2009: 26–27; AFDB, OECD and UNDP, 2016: 163). According to the World Bank, on average, up to 60% of the urban job market in sub-Saharan Africa is estimated to be informal (World Bank, 2009). Usually that means that people work but under precarious conditions.

Most countries will see a tremendous increase in the share of their working age population (aged 15 to 65 years) over the coming decades, particularly in urban areas that typically attract the young. This is a potential booster for the economy. However, to translate into economic development, the additional workers need skills and productive jobs and both are scarce. The issue of low-wage jobs in the informal sector is directly connected to the challenge of providing services for all from a small tax base when most households are limited in their ability to pay for services.

Sharp income inequalities in many cities in sub-Saharan Africa also mean that the contribution of economic growth to poverty reduction is limited. Africa has more urban poor than any other world region, and new research from the World Bank indicates that poverty could be urbanising (Ravallion et al., 2007). Even though future improvements in urban poverty reduction are likely, the sheer number of urban poor is expected to increase. Being poor is synonymous with being exposed to multiple risks relating to health, livelihoods, external shocks from natural disasters and governance (Tacoli, 2003: 1–10). All things being equal, the number of people that will lack access to services like clean water and improved sanitation is likely to increase dramatically. The African Economic Outlook 2016 predicts that Africa could see its slum population triple by 2050 (AFDB, OECD and UNDP, 2016).

In fact, new research challenges the common narrative that slums are transitional homes for rural-urban migrants that leave again as they move up the income ladder (Fox, 2013: 6; Marx et al., 2013). Survey data from three slums in Lagos, for example, "suggests that slums are poverty traps rather than temporary living quarters for migrants incorporating into the urban economy" (World Bank, 2016).

Global climate and environmental changes, and pressure from water, food and energy insecurities, compound the challenges for human development and the complexities of contemporary urban governance on the continent (UN-Habitat, 2014: 3).

4. Violence is urbanising

Uncontrolled, rapid urbanisation in the context of pervasive poverty, inequality, large youthful populations and lack of economic opportunities does not bode well for the future sustainability of Africa's towns and cities. In fact, unplanned, overcrowded urban settlements populated with marginalised youth can be hotbeds for violence, particularly in lower-income informal areas.

The sheer number of urban poor is expected to increase. This implies that the number of people that will lack access to services such as clean water and improved sanitation is likely to increase dramatically.

Urban areas are increasingly the locus for political violence in sub-Saharan Africa. This is largely due to the relatively recent sharp rise of riots and protests across the region. Cities are also where media is most concentrated and so activity can garner the most attention.

In South Africa's Gauteng Province, for example, according to the Armed Conflict Location and Event Data Project at the University of Sussex, people took to the streets more than 1,900 times between 1 January 1997 and 1 September 2016 – more often than in any other current or emerging African megacity. That said, fewer protest incidents do not necessarily reflect more peaceful or stable cities. They can also indicate more repressive regimes that suppress citizens' right to voice discontent publicly, a case in point for Angola, for example.

On the other hand, terrorism in Africa to date is concentrated in rural rather than in urban areas. Terrorism, as defined by the Global Terrorism Database (GTD), is concentrated in large cities and often capitals in high-income countries such as the United States and Europe. Population density, the present government and state organisations as well as the media make cities ideal stages for terrorist acts. The urban nature of terrorism is part of the story behind the urbanisation of conflict or the concept of "fragile cities", which calls for greater attention to the fragility of cities facing multiple threats.

However, in Africa to date, the majority of terrorist incidents occur in rural areas. According to the GTD in the 2012–2015 period, Africa's largest cities were never host to more than 10% of their countries' total number of attacks. For example, Cairo hosted 77 incidents of terrorism out of the national total of 779. Similarly, Lagos hosted five incidents in the same period compared to the countrywide number of 1,849. That said, the continent's highest-fatality terrorist attacks have typically occurred in large cities, a trend that seems likely to consolidate in the years to come.

Another form of urban violence is criminal and hence mostly economically motivated. This includes homicide, organised criminal violence and gang violence. Cities provide much more opportunities for illicit economic activities than rural areas, and with them, greater potential for the rise of violent criminal gangs. According to an Afrobarometer survey, in four out of six of the countries that host Africa's current and emerging megacities – Nigeria, Tanzania, South Africa and Egypt – fear of crime is greater in urban areas than in rural settings.

With increasing levels of urbanisation, the urban space is quickly becoming the new arena for political competition and party politics. Urban constituencies are likely to become more and more important for political leaders.

5. Urban governance

The governance of African cities is incredibly complex, with local governments that often have responsibilities but lack power and resources, and with frequent political conflict with higher levels of government due to the fact that cities are typically the base of opposition political parties. There are also high levels of malfeasance and/or corruption and parallel traditional and civil society forms of governance. Lastly, capacity in the sense of skills and training is often a concern.

Generally, the nature of national and urban governance understood as the ability of governments to effectively formulate and implement sound policies as well as the quality of national and urban planning will influence greatly whether urbanisation contributes to transformation in sub-Saharan Africa or not. Ad hoc urban governance that serves the interests of the few who are wealthy at the expense of the many who are poor – a pattern that is widespread across the continent – will not lead to sustainable urban futures. Growth that does not benefit the poor is likely to exacerbate existing inequalities.

Urban planning needs to address the problem of slums and informal settlements, for example, but large-scale luxury projects, such as Eko Atlantic City in Lagos, are likely to compound spatial segregation and existing inequalities. In fact, global capital flows that target the construction of gated communities, walled-off condominiums and exclusivist investment hubs tend to compound fragmentation, segregation and exclusion in the urban space (Klaufus et al., 2017).

Moreover, the conflict between informal settlement location and prime economic zones often results in state-led slum clearance programmes that drive large portions of the population from their homes. Zoning laws, in a similar fashion, restrict the poor from working or trading out of their homes, as they are located in areas classified as residential. In South Africa apartheid-era spatial planning and the building of dormitory suburbs that kept people far from their place of work and with a relatively low level of access to services still affect informal settlements in today's biggest South African metros (Centre for Development and Enterprise, 2014: 14).

The countries and cities that are best placed to capitalise on the urban transition are those with healthy economic growth prospects, a reasonable regulatory environment, good planning and strategic investments in key sectors, such as physical and social infrastructure.

Nigeria, for example, requires investment in four critical areas of urban infrastructure: utilities infrastructure, including electricity, water distribution, and sewerage; housing; interregional corridors to reduce economic distance between regions and cities; and mass transport cities to relieve congestion and lower transport costs (World Bank, 2016).

After all, higher population density and economies of scale in urban areas mean that providing public services is more cost efficient than in rural areas. Investing in economic diversification, skills and providing productive employment opportunities for a growing urban workforce is key to promoting less unequal and therefore more sustainable urban futures.

Policymakers need to find approaches that combine interventions that improve peoples' lives in the short term with strategic investments that target longer-term returns and ensure sustainability. Propping up the informal sector, for example, can have short-term livelihood benefits but is unlikely to solve economies' structural problems.

Policymakers need to combine interventions that improve peoples' lives in the short-term with strategic investments that target longer-term returns and ensure sustainability.

Urbanisation can drive broader industrialisation and economic structural transformation through providing a favourable business environment where companies realise economies of scale and share knowledge more easily. Similarly, services-led growth, by encouraging innovation and developing the skills of the urban labour force, will increase the supply of modern services for the growing urban middle class. This can also help attract more foreign direct investment to African cities by incentivising investment in well-connected urban corridors.

Urbanisation is not a silver bullet for sustainable economic development, but the majority of respondents to an expert survey of country economists from the African Development Bank and the United Nations Development Programme carried out by African Economic Outlook 2016 see urbanisation as an opportunity for their country, and not as a risk (AFDB, OECD and UNDP, 2016: 178). There is momentum for countries to manage urbanisation in ways that support more inclusive and therefore more sustainable development outcomes. This should also open channels for much needed urban financing.

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Cities are home to over half the world's population, consume a majority of its resources and cause a large share of its waste. Cities are both a challenge for global sustainability and crucial for its solution. Their settlement density and networks of creativity provide the space and the ideas for improved resource management. Above all they epitomise the needs and aspirations of their citizens. They are spaces of longing and belonging with promises of social equitability, individual freedom and political participation.

Cities on the southern and northern shores of the Mediterranean are among the oldest in the world and can draw on rich traditions of architecture, urban development and municipal administration. Yet, there are fundamental differences between these cities. Mega-cities like Istanbul and Cairo grapple with different challenges than medium-sized cities along the Côte d'Azur that have higher per capita incomes and better infrastructure. Cities in the north of the Mediterranean also have stronger traditions of municipal self-governance and autonomy.

For all their differences, Mediterranean cities share some of today's most common urban challenges, such as environmental degradation, gentrification and growing inequality, climate change, provision of services, mass urbanisation, migration, and the fourth industrial revolution, to name just a few. This book seeks to contribute to a necessary debate on the social and environmental sustainability of urban growth in the Mediterranean and beyond.

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