# The London School of Economics and Political Science

*The Transfer and Mobilisation of Sustainability Concepts to Abu Dhabi: The Case of Masdar and the Urban Planning Council.*

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# Abstract

This thesis aims to understand the politics, implications and interpretations associated with the transfer and mobilisation of sustainability concepts from elsewhere into Abu Dhabi. The emirate's pursuit of sustainability encompasses opportunities and also complexities which require trade-offs and creative solutions amidst the demands of globalisation and the existing authoritarian status quo. Exploring the rationale for the transfer of sustainability concepts from elsewhere into Abu Dhabi and its subsequent mobilisation in the local context expands our understanding of the different mechanisms, processes, platforms and change agents that enable sustainability-driven assemblages to thrive.

By juxtaposing theoretical constructs from the academic literature on policy mobility, policy transfer and related governance, against empirical data in the areas of housing, transport, energy and urban design, nuanced meanings and experiences associated with the transfer and mobilisation of sustainability emerge. By situating Abu Dhabi's sustainability developments relationally within the context of the Gulf Co-operation Council (GCC) nations, exploring the historical, social and political factors that have influenced the adaptation and interpretation of foreign sustainability concepts at multiple levels including the institutional level at Masdar and the UPC, this research on Abu Dhabi adds new knowledge to studies on policy mobility. Similarly, solutions that emerge as a result of concepts and actors moving and engaging across time and space expands our understanding of policy transfer processes in an authoritarian context. The nuances of the local context cannot be underestimated, particularly around the assertion of authoritarian power, persisting inequalities, and the forms of knowledge production and governance that emerge.

**Keywords:** sustainability, mobility, policy transfer, governance, assemblages, oil wealth, authoritarianism, power, knowledge production, inequality, urban decision-making, public-private partnerships, public participation, government agencies, institutional, regional, global, housing, energy, transport, car-dependence, urban design, change agents, Gulf Co-operation Council (GCC), Gulf states, Abu Dhabi, Dubai, United Arab Emirates, Masdar, Urban Planning Council.

# Acknowledgements

I feel truly blessed to have reached the end of what has been an uphill battle balancing the demands of the PhD and motherhood inching forward one word and one day at a time. When I first embarked on this journey I wanted to more deeply understand the place where I grew up, the UAE, and the contradictions that were a part of the transformation of cities such as Dubai and Abu Dhabi, into state-of-the-art modern cities with clear societal hierarchies and divided spaces. Why were there no trains, very few buses and mainly cars on the roads? Why did a culture of transience exist in these cities for some communities? Why were there more men on the streets than women? Why were there very few shaded walkways in these cities which had such hot and harsh weather conditions? Why were some neighbourhoods protected behind high walls? These were among the many questions I pondered over, while I was growing up. The recent pursuit of sustainability by these cities, made me wonder what unique interpretation of sustainability would potentially emerge amidst the demands of globalisation, the unique history, culture and nuances of a local context steeped in authoritarianism, oil wealth and stark disparities. Indeed, it has been a fascinating learning journey framing and deconstructing complex issues in the local context of Abu Dhabi.

I am thankful for the support and guidance of my advisors Dr. Nancy Holman and Dr. Andrew Thornley who encouraged me to explore the different trajectories that emerged over the course of this research. I am particularly grateful to Dr. Holman for stressing the importance of uncovering why and how certain phenomena took place and expanding the depth and breadth of my thinking and interpretation. There were stops and starts along the way and challenges with getting back to my research and studies after breaks for health issues and pregnancy. I am especially grateful to Dr. Holman who encouraged me to keep going and for being understanding of the demands of family life. I am also indebted to Dr. Erica Pani for teaching me to write clearer, better and more succinctly. I am grateful for the opportunity to learn from the constructive critiques of my work at every stage of this process, that encouraged me to engage with theory and data more critically and analytically.

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## List of Acronyms

**ADFD**: Abu Dhabi Fund for Development

**ADFEC**: Abu Dhabi Future Energy Company

**ADGM**: Abu Dhabi Global Market

**ADHA**: Abu Dhabi Housing Authority

**ADM**: Abu Dhabi Municipality

**ADNEC**: Abu Dhabi National Exhibition Centre

**ADNOC**: Abu Dhabi National Oil Company

**ADSW**: Abu Dhabi Sustainability Week

**ADWEA**: Abu Dhabi Water and Electricity Department

**CSR**: Corporate Social Responsibility

**DEWA**: Dubai Water and Electricity Authority

**DMA**: Department of Municipal Affairs (Abu Dhabi)

**DOT**: Department of Transport (Abu Dhabi)

**EWS**: Emirates Wildlife Society

**EGBC**: Emirates Green Building Council

**FDI**: Foreign Direct Investment

**GCC**: Gulf Co-operation Council

**GE**: General Electric

**GIS**: Geographic Information Systems

**GRI**: Global Reporting Initiative

**ICMP**: Integrated Concept Master Plan

**IPIC**: International Petroleum Investment Company

**ITS**: Intelligent Transport Systems

**IRENA**: International Renewable Energy Agency

**JLL**: Jones Lang Lasalle

**KPI**: Key Performance Indicator

**LEED**: Leadership in Energy Efficiency and Design

**MC**: Masdar City

**MIST**: Masdar Institute of Science and Technology

**MIT**: Massachusetts Institute of Technology

**MOFA**: Ministry of Foreign Affairs (UAE)

**MOU**: Memorandum of Understanding

**NGO**: Non-government Organization

**OECD**: Organisation for Economic Cooperation and Development

**OPL**: One Planet Living

**PCRS**: Pearl Community Rating System

**PRS**: Pearl Rating System

**PRT**: Personal Rapid Transit

**PQP**: Pearl Qualified Professional

**RSB**: Regulation and Standards Bureau (Abu Dhabi)

**SMEs:** Small and medium-sized enterprises

**STMP**: Surface Transport Master Plan

**SVA**: Swiss Village Association

**TOD**: Transit-Oriented Development

**TRANSAD**: Integrated Transport Centre

**UAE**: United Arab Emirates

**UPC**: Urban Planning Council (Abu Dhabi)

**USGBC**: United States Green Building Council

**USDM**: Urban Street Design Manual

**WFES**: World Future Energy Summit

**WiSER**: Women in Sustainability, Environment and Renewable Energy

**WWF**: World Wildlife Fund

**YFEL**: Young Future Energy Leaders

## English Translations of Arabic Words Encountered in this Thesis

**Abu Dhabi**: father of the gazelle

**Barahaat**: small-scale, informal community spaces to serve different population segments

**Estidama**: sustainability

**Emirati**: a local citizen of the UAE

**Fareej**: small neighbourhood in a walled community that provides safety and security for Families

**Kafala**: sponsorship system (where unskilled labourers have a local sponsor who manages their visa and legal status)

**Majlis**: a place of sitting, assembly or council

**Masdar**: the source

**Mashrabiya**: projecting oriel window enclosed with carved wood latticework located on the second storey of a building or higher

**Meydeen**: formal community space for recreational, cultural, religious and/or commercial purposes

**Shura**: consultation rooted in Islamic law

**Sikkak**: pedestrian path that connects homes to the centre of the neighbourhood

**Tatweer**: development

**Tawasul**: seeking to draw close

**Wasta**: influence/clout

**Zakat**: alms-giving

# 1. The Thesis Roadmap: The Sustainability Transfer Phenomenon in Abu Dhabi

## 1.1 Introduction

Urban planning as a profession is rooted in the practical arrangement of people and places. Planning ideas are increasingly being shaped by borrowing practices from other disciplines and locales (Harris and Moore, 2013). The transfer of planning ideas opens up new avenues of exploration, particularly since new actors and arenas for collaboration emerge. Sustainability, in particular, emerges as a popular policy and knowledge transfer area since it promises multi-pronged returns across economic, environmental and social spheres of planning. In the local context of Abu Dhabi, there is increasing evidence that sustainability also has the potential to generate political returns in the form of new innovations, education, jobs, training opportunities, global conferences, media coverage and developing the emirate's external image around sustainability and economic diversification. The processes and approaches to locally adapt sustainability as an economic, social and environmental construction, connote unique meanings to different agglomerations of agents, institutions, and stakeholders. The transfer of policy ideas has the potential to empower new stakeholders and generate thriving knowledge and governance networks. However, there may also be tensions in relation to issues of power that constrain the actions of certain societal groups. This chapter sets up the rationale for this research, explains its unique contribution to the body of existing knowledge, outlines a roadmap for this thesis and presents the main research objectives.

## 1.2 Rationale for this Research

This research has been pursued at a time when Abu Dhabi's economy is continually evolving in response to external factors such as falling oil prices, the Arab Spring, the global financial crisis and other market forces. In addition, Abu Dhabi's leadership also balances the existing political structures and social contract with its constituents characterised by authoritarianism and oil wealth. Sustainability in its essence, is a mobile concept, subject to both contestation and interpretation. It encompasses complexities and overlapping goals, which in turn have proved more challenging to implement in practice, requiring difficult trade-off decisions amidst multiple competing goals (McHale et al. 2015; Hansmann et al., 2005; Seghezzo, 2009; Turcu, 2013).

Sustainability has arisen in Abu Dhabi, and other emirates in the United Arab Emirates and the wider Gulf Cooperation Countries (GCC)[1] of Saudi Arabia, Oman, Qatar, Bahrain, and Kuwait as part of a unique journey encompassing interactions between multiple global, regional and local stakeholders. Regionally, these oil rich nations have faced similar challenges such as over consumption and over-reliance on imported resources and desalinated water, subsidised fuel and energy and a lack of economic diversification. The Gulf states have increasingly applied sustainability solutions to pursue economic diversification, simultaneously solving problematic planning issues around housing, transport, energy, urban design and other areas such as environmental and cultural preservation and solidifying their national identities (Bohsali et al. 2015; Dempsey, 2014; Luomi, 2015; Sillitoe, 2014).

There is a need to understand the rationale for the transfer and mobilisation of sustainability concepts from elsewhere into Abu Dhabi. This, in turn, expands our thinking of the different mechanisms that allow for multi-level sustainability-driven networks to thrive globally and transnationally.

There are unique mechanisms of mobile sustainability concepts worthy of being conceptualised through detailed narratives. Policy adaptation, policy transfer successes and failures are part of the learning and knowledge production that emerge from mobile policies. At the same time, the economic and social gains, and political rationale for importing sustainability concepts, reflect diverse interpretations of the policies dependent on the nuances of the local context.

## 1.3 Boundaries of this Research

### 1.3.1 Time Period and Regional Boundaries

The ten-year time period 2007 and 2017 within which this research is framed, allowed for an opportunity to analyse the changes experienced in Abu Dhabi during a period characterised by the continuous evolution of government sponsored institutions influenced by external factors such as the global financial crisis, the fall in oil prices and the Arab Spring, that prompted both

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[1] The UAE, Saudi Arabia, Kuwait, Qatar, Oman and Bahrain signed a charter of co-operation toward the formation of the Gulf Cooperation Council on 25th May 1981 in Abu Dhabi recognizing the special relations, common characteristics and similar systems founded on Islam toward cooperation and coordination across several areas in support of Arab and Islamic causes (International Relations and Security Network, 2009).

economic diversification, the embrace of sustainability and the evolving legitimisation of the leadership power amongst other State priorities. This was also the period during which Masdar and the UPC were created. Content was focussed around four major planning and sustainability themes – housing, transport, energy and urban design that emerged from the data.

The analysis is also focussed on Abu Dhabi, and situated in relation to parallel developments in neighbouring Dubai and the other GCC states of Saudi Arabia, Oman, Qatar, Bahrain, and Kuwait, from which examples have been considered in order to situate sustainability trends in Abu Dhabi, in response to calls from policy transfer mobility theorists, on the importance of relational factors (Berry and Berry, 2007, McCann, 2011, Peck and Theodore, 2012). The terms Gulf states, or Gulf region that are encountered in this thesis pertain to this set of nations. The regional boundaries around the GCC states were purposefully chosen given the political differences elsewhere in the Middle East [2] whilst the GCC states shared a common rentier and authoritarian background. My exclusion of positive sustainability initiatives elsewhere in countries such as Lebanon, Jordan and elsewhere in the Middle East is not meant to undermine or dilute their importance. However, situating Abu Dhabi amidst comparable nations with economic, political and cultural affinity and geographical proximity, made the GCC states a viable choice. The GCC states, are Arab countries, and also considered a part of the Middle East. The term Middle East has different definitions, which often overlap and change according to the perspective of those defining its boundaries. Some definitions of Middle-Eastern countries include those that are Arabic-speaking countries, however, this can be problematic since Turkey, Israel and Iran are not Arabic-speaking countries. The term Arab is an ethno-linguistic category, identifying people for whom Arabic is their mother tongue. In this thesis, we are concerned primarily with Abu Dhabi, the UAE, and the regional context of the GCC states. When the wider Middle East is mentioned, this thesis follows the Middle East Policy Council's conception of the Middle East that groups nations based on historical, linguistic and cultural factors (Teach Mideast, 2018).

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[2] The Middle East Map used on the Middle East Policy Council's Teach Mid East website includes: Algeria, Bahrain, Egypt, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Palestine, Qatar, Saudi Arabia, Sudan, Syria, Tunisia, Turkey, United Arab Emirates, Yemen (Teach Mid East, 2018). This thesis follows this conception of Middle East boundaries.

**1.4 My Contribution: Expanding Concepts in Policy Transfer and Mobility Research**

Benson and Jordan (2011), Dolowitz and Marsh (1996) and Page (2000) note a gap in the literature on policy transfer in new locales. My contribution to the existing knowledge around mobility, policy transfer and related governance is applying these concepts to the local context of Abu Dhabi. By situating sustainability developments relationally within the context of the GCC, exploring the historical, social and political factors that have influenced the adaptation and interpretation of foreign sustainability concepts, this research on Abu Dhabi adds new knowledge to studies on policy mobility that are focussed on understanding factors that contribute to mobility through new patterns, combinations and configurations of governance. Similarly, unique hybrid solutions that emerge as a result of actors and policies moving beyond territorial limits expands our understanding of concepts from policy transfer and mobility.

By juxtaposing the theoretical constructs from policy mobility, policy transfer and related governance, against empirical data across four major sustainability and planning themes, nuanced meanings and experiences associated with the transfer and mobilisation of sustainability concepts emerge (Sheller and Urry, 2006).

Exploring the processes, platforms and mechanisms, change agents, and rationale for how and why policies are transferred and further mobilised through consensus building among diverse stakeholders, and also the failure to do so, highlights the opportunities and tensions that abound when sustainability is increasingly being mobilised at multiple levels – globally, regionally within the GCC, nationally in the UAE, at the emirate-level of Abu Dhabi, and the institutional level of Masdar and the UPC.

In exploring solutions that fail to be mobilised in some cases due to complex social, economic and political relationships, this research further builds on the work of mobility theorists such as McCann and Ward (2013); McFarlane (2009; 2011) Prince (2012; 2016) and others who placed value in understanding the factors that promote or hinder the formation of assemblages.

Given that theorists such as Healey (2013; 2015b) and Peck and Theodore (2015) place emphasis on contextualising policies and processes locally, understanding the nuances of the local context, will contribute to our understanding of differentials, tensions, nuances of power and inequalities that accompany the transfer and mobilisation of sustainability concepts and

why they persist. This research also seeks to uncover new forms of knowledge production, learning, collaboration, and assemblages of stakeholders that emerge from sustainability solutions. By uncovering historic and modern mechanisms of transfer and mobilisation we also learn which combinations of agents and institutions in the local context wield power over mobilising sustainability. Finally, this research contributes to new modes of thinking that consider relational notions of mobility in Abu Dhabi, that are rooted in comparable regional developments in the GCC and neighbouring Dubai, and particular shared histories, politics and geography as similarly proposed by Cresswell (2011), McCann (2011) and Peck (2011) and planning theorists Harris and Moore (2013) and Healey (2013).

Dolowitz and Marsh (2000), Evans (2013), Newmark (2002), and other policy transfer theorists have espoused the value of learning from the failure of implemented policies, whilst Evans and Davies (1999) have called for identifying cases of 'non-transfer', which also provide instances of learning. Dolowitz and Marsh (2000, p.17) noted instances of '*uninformed transfer*', '*incomplete transfer*' and '*inappropriate transfer*' that eventually lead to policy transfer failure. In some respects, these differentiations have drawn attention to vital policy aspects, institutional structures, the importance of adequate information to adapt transferred policies in the importing jurisdiction and political, ideological, social and economic differences between jurisdictions. However, James and Lodge (2003) have critiqued this as an incomplete conception of policy failure in the light of wider transfer processes, where a range of factors impact policy making beyond just transfer. Thus, understanding nuances of authoritarianism and vast oil wealth and their unique application in the context of Abu Dhabi, become a key site for analysis within the process of transfer, in order to situate the transfer of sustainability concepts amidst wider forms of policy making in the local context.

This research also takes the work of Healey (1997; 2003; 2010; 2013; 2015a; 2015b) further by identifying new and emerging knowledge circuits, understanding where existing hegemonies prevail in the context of Abu Dhabi and where new collectively developed policy discourses can emerge on multiple levels. Further, this research fills a gap in the planning literature on Abu Dhabi surrounding knowledge related to evolving power structures to accommodate late rentier initiatives, political legitimisation, increasingly diverse sets of change agents and stakeholders, the need to plan for different population segments, and the role of governance in achieving integrated solutions across planning issues that overlap, such as energy and housing, or housing and transport, or transport and urban design.

## 1.5 Rationale for this Research: A Complex Local Context

This research delves into the complexities of planning in Abu Dhabi posed by its climate, paradoxes of vast oil wealth and authoritarianism, the imbalanced population demographics of citizens being outnumbered by expats, quests for soft power and economic diversification, political legitimisation, and the social exclusion of some segments in contrast with the generous benefits and subsidies provided to others. Thus, this research has the potential to expand our understanding of power and inequality as they relate to implementing sustainability in Abu Dhabi. The institutional contexts of Masdar and the Abu Dhabi Urban Planning Council (UPC) and the other government agencies they partner with, have inherited problematic planning legacies which, in turn, are impacted by the complex nuances of the political context. They have been at the helm of creating sustainability solutions in collaboration with diverse local and international networks of stakeholders and offer complementary, yet contrasting approaches to transferring and mobilising sustainability locally in Abu Dhabi and beyond.

This research takes place during the late rentier era with Abu Dhabi and other GCC states embarking on similar economic diversification trajectories, soft power and sustainability initiatives in the face of falling oil prices globally. Abu Dhabi has focussed on improving its global competitiveness, environmental track record, reducing its carbon footprint, creating jobs for local citizens (Emiratis) and reaping economic gains from energy efficiency as part of its 2030 Economic Vision (Abu Dhabi Department for Economic Development et al., 2008). In addition, the bridging of territorial limits by Abu Dhabi's stakeholders through various mechanisms such as technology transfers, education and training opportunities and increased flows of public and private investment related to sustainability are taking place (DED, 2016) with local, regional and global implications. Mobility scholars such as Larner and Laurie (2010), Peck and Theodore (2012), McCann and Ward (2011) and others have deemed such interactions to be a vital area of exploration.

The UPC is the government agency response for planning and regulating Abu Dhabi's built environment. It strives to locally adapt successful planning practices from abroad to the local context. Its flagship sustainability program, Estidama (Arabic for sustainability) applies foreign and locally-developed tools, procedures and resources across a variety of sectors across the Abu Dhabi emirate. While the UPC has jurisdiction over the entire emirate, most of the emirate's development occurs in the city where the majority of the population lives. Out of the

2.6 million total population residing in Abu Dhabi emirate in 2014, 1.6 million live within the boundaries of Abu Dhabi city (Statistics Centre Abu Dhabi, 2015). There is therefore, a heightened focus on the issues that impact the city through the course of the thesis. Given the unique trajectories for pursuing sustainability in each institutional context set against authoritarianism and oil wealth, the two cases provide a fertile ground for analysing the phenomenon of transferring and mobilising sustainability by juxtaposing the theoretical framework of policy mobility, transfer and related governance.

Masdar (Arabic for source) is a government-owned renewable energy company at the forefront of commercial and research-focussed sustainability initiatives. Masdar City (MC) is an eco-city and a core business unit of Masdar. Masdar has strategically pursued a global agenda particularly around commercializing renewable energy. Masdar's sustainability agenda comprises the business of renewable energy, sustainable design, resource efficiency and strategic international collaborations (Mandel, 2010).

Evans et al. (2016) note the importance of understanding sustainability initiatives within their broader urban context, if they are to drive widespread change. By situating Abu Dhabi's sustainability initiatives in relation to GCC-wide trends, this research uncovers relational aspects of mobile sustainability concepts. The mobilisation of sustainability in the local context includes knowledge-sharing and governance processes that align people, agencies and processes across overlapping planning solutions. However, nuances of the local context can challenge and complicate governance processes. Thus, the thesis seeks to answer the following research question:

**What politics, interpretations and implications emerge from the transfer and mobilisation of sustainability concepts from elsewhere into the local context of Abu Dhabi and the sustainability-driven institutions of Masdar and the UPC?**

### 1.6 Thesis Roadmap

The chapters on relationality at the GCC level (Chapter 4), historical and political factors impacting policy transfer (Chapter 5), and institutional governance at Masdar and the UPC (Chapter 6) reflect not just contextual background, but seek to highlight critical elements

related to the four research hypotheses. Chapter 7 and Chapter 8 also address the research hypotheses around the issues of power, inequality, knowledge production and governance across housing, transport, urban design and energy. Finally, Chapter 9, the conclusion chapter summarizes the main findings, answers the research question and considers each of the four interrelated and interdependent hypotheses.

### 1.6.1 Chapter 2: Theoretical Argument - Juxtaposing the Transfer and Mobilisation Phenomenon against Policy Mobility, Transfer and Related Governance

The purpose of this chapter is to outline the precepts and ideas that have led to the development of my core research question and to build a theoretically richer account of the transfer and mobilisation phenomena. The policy transfer literature with its focus on the descriptive narrative of transfer processes offers a logical starting point for understanding the journey taken by mobile sustainability concepts. The policy transfer literature lays emphasis on the processes, rationale, motivations, degrees, scales, and change agents (see Stone 2004; 2012), but to a lesser extent considers ideas beyond the State as a primary influence on the perceptions and behaviour of stakeholders. Various theorists have discussed the link between policy transfer and governance at multiple levels and through diverse networks (Bache and Flinders, 2005; Bulkeley and Betsill, 2005; Evans and Davies, 1999; Wolman and Page, 2002).

Mobility theorists have moved beyond the focus on emulation and adaptation often found in the writings by policy transfer theorists; instead, they explore the role of global policy networks in creating local responses to adapt globalised policies. From their perspective, policies are no longer static, rather, fluid constructs of global networks of experts and consultants Mobility scholars have also linked policy mobility to the production of new institutional structures that aid urban governance (Brenner and Theodore, 2002; Brenner et al., 2010; McCann and Ward, 2011). Exchanges of expertise, knowledge and skills can result in unique assemblages in space, place and time among an expanding range of actors operating transnationally across socio-spatial scales (McCann, 2011; McFarlane, 2011). Agglomerations of both local and global power relations in innovative knowledge sharing and knowledge production processes in Abu Dhabi reflect these interactions across multiple temporalities and scales. However, mobility processes are also subject to nuances of power and contestation, short-term assemblages and the exclusion of some stakeholders (Sheller, 2016).

Healey's (2004; 2010; 2013; 2015b) discussion on travelling planning ideas and subsequent collaborative governance moves both the transfer and the mobility discussion further in its consideration of structure and agency within collaborations and networks. Healey (2013; 2015a; 2015b) contends these aspects are also experienced within the field of planning. Building on experiences noted by McCann (2008) and McCann and Ward (2010), Healey (2013, p.1520) contends that tracing the paths of actors and exploring knowledge circuits uncover the "*travelling histories*" that shape how planning knowledge is "*co-produced by the travelling experience*" (ibid). The chapter recognizes that concepts from policy transfer, mobility, and related governance collectively place value around factors that contribute to the transfer process including diverse aspects such as culture, history, social actions, politics and institutions, leading us to the main research question around these aspects.

### *1.6.2 Chapter 3: The Methodological Approach - Case Studies and Thematic Analysis*

Chapter 3 of the thesis is dedicated to outlining the primary methods used to gather data and their implications on the research. I employed qualitative methods, featuring a mixed- methods approach to analyse the transfer and mobilisation of sustainability concepts from elsewhere to Abu Dhabi. I consciously embraced a case study approach and thematic analysis, both methods that required a combination of data sources. At the outset, the theoretical lens generated in the argument chapter provided a framework against which to interpret various alternatives associated with the transfer and mobilisation of sustainability concepts. A qualitative approach allowed for the flexibility to incorporate new goals and issues that emerged over time, as further connections between data and theory emerged. This is in line with Lincoln and Guba's (1985) proposition that qualitative enquiry maximizes information.

The ten-year time period between 2007 and 2017 represented critical moments of transformation and strategy alignment for Abu Dhabi, Masdar, the UPC and their collaborative partners. Four major planning themes emerged from the data around sustainability initiatives in Abu Dhabi, including housing, transport, urban design and energy.

The chapter outlines data collection processes that included personal interviews, on-site observations and documentary evidence. The combination of data sources and retrieval techniques sought to minimize the particular limitation of a single method and allowed for forms of triangulation to take place. I outline the steps taken to reduce potential biases that

accompanied the data, and reflexively checked my own attitudes and responses to the data I gathered to maintain a neutral stance. By reflecting and reanalysing the data from multiple perspectives I have attempted to provide a balanced and objective account of the phenomenon in line with Lewis' and Grimes' (1999) recommendation.

My thematic analysis sought to gather both theory-driven and data-driven codes. The juxtaposition of theory and data yielded considerable overlap between the codes I extracted and represented clusters of data relevant to the aim of the research.

Four research hypotheses emerged from an iterative process of coding. They focussed on evolving power, persistent inequalities, and the efficacy of knowledge production and governance. These four hypotheses allowed for critical introspection of the empirical data against theoretical concepts. The construction of analytical narratives and interpretations from multiple perspectives allowed me to understand the politics, interpretations and implications of the transfer process.

### 1.6.3 Chapter 4: Situating Abu Dhabi within the Politics of the Gulf States: A Relational Perspective

This chapter helps to situate the particular policy decisions and practices in Abu Dhabi within a wider regional context, given that policy movement takes place at multiple scales (Luomi, 2015; Reiche, 2010). This chapter focusses on understanding the nuances of Abu Dhabi's local context, within the wider regional context of the GCC states and also neighbouring Dubai. With similar authoritarian backgrounds and dependence on oil wealth, looking at dominant concepts of power, evolving notions of authoritarian power, and positive and negative manifestations of power, are important avenues of exploration to understand the rationale for policy transfer regionally.

The chapter is in one aspect contextual since it highlights the nuances of the local context of Abu Dhabi within the framework of regional trends. This chapter also presents some findings around the unique set of factors that have propelled Abu Dhabi to consistently lead a number of sustainability initiatives regionally.

The second part of this chapter considers relationality in a more global sense, by understanding four policy-transfer spurring mechanisms that Gulf states engage in with local, regional and

global implications. The proliferation of free zones, global conferences, reforms to sovereign wealth fund (SWF) investment strategies, and the rise of CSR increase opportunities for regional and global assemblages around sustainability. Traditional ideas of territoriality in the Gulf states are evolving with the creation of global and regional networks of actors and institutions interacting at multiple scales facilitating multi-scalar investments.

### 1.6.4 Chapter 5: Historical, Geographical and Cultural Factors Influencing the Sustainability Transfer and Mobilisation Phenomenon in Abu Dhabi

This chapter gives a brief history of Abu Dhabi's evolution as a modern city and its existing planning problems. It uncovers deeper meanings associated with the sustainability and mobilisation transfer phenomenon from the perspectives of diverse stakeholders. Issues of power, cultural identity, knowledge creation, opportunities for governance and inequalities faced by certain stakeholders reveal the importance of understanding nuances of the local context.

Although the seeds of governance have gradually been sown over the course of Abu Dhabi's planning and sustainability history, collaborations between the public and private sectors have not been seamless, due to nuances of the local context. With passage of time, Abu Dhabi's planners began to increasingly operate within wider global systems, whilst simultaneously contending with rentier and authoritarian power structures and the inequalities that accompanied it (Dempsey, 2014; Ouis, 2011; Tatchell, 2009).

The chapter also juxtaposes the empirical data against themes related to post-colonialism, critical regionalism, authoritarianism and rentierism as part of analysing the mobilisation of sustainability concepts from elsewhere into the local planning context. Temporalities, territories and the bridging of time and place, and vital areas of focus for mobility theorists, are explored in the chapter.

Factors such as globalisation and modernisation also prompted the mobility of actors including planners, advisers, architects, engineers particularly experienced experts and consultants. The chapter also traces the creation of knowledge circuits and forms of governance amidst the local political context of rentierism and authoritarianism. Finally, this chapter considers the impact of neighbouring Dubai, whose parallel sustainability path has been both competitive and collaborative with respect to Abu Dhabi.

### 1.6.5 Chapter 6: Institutional Empowerment: The Case of Masdar and the UPC as Institutional Vehicles of Policy Transfer

This chapter considers the sustainability-driven institutions of Masdar and the UPC, the kind of sustainability policies adopted by each institution, internal governance processes, and change agents to further reveal nuances of the local context. Given that Masdar, the UPC and other Abu Dhabi government agencies they partner with, are all implementing the 2030 Vision simultaneously, policy transfer related to internal governance, external reporting and developing human capital have proliferated at the institutional level in Abu Dhabi. Policy transfer and mobility theorists give importance to the institutional agents at the heart of transferring and mobilizing sustainability policies. As discussed in Chapter 2, Dolowitz and Marsh (1996; 2000) note the constraints to policy transfer that arise from a lack of internal resources and capacity of the importing jurisdiction to implement policies. Improvements within institutions internally can better equip them to mobilize sustainability externally with relevant stakeholders. Mobility theorists and some policy transfer theorists such as Evans and Davies (1999) further expanded the concept of change agents by coupling them with governance-supportive attributes. Masdar and the UPC in Abu Dhabi, are at the forefront of interactions that involve both internal institutional building, improving internal capability, skills development, integration of teams and departments, stakeholder involvement and improved CSR reporting. Reflecting Martinez's (2005) conceptualisation of institutionalisation, Masdar and the UPC are also actively engaged in knowledge management, harnessing technology and external collaborations with local and global stakeholders. The chapter considers the lessons that emerge from Masdar and the UPC's unique institutional contexts that prepare them for more nuanced exchanges with their external stakeholders.

### 1.6.6 Chapter 7: Dualities of Power and Inequality in Mobilising Sustainability Concepts in Abu Dhabi, Masdar and the UPC

In Chapter 7 we uncover manifestations of power that persist, addressing power and inequality – two of the research hypothesis. This chapter uncovers the politics that accompany the narratives around transfer and mobility of sustainability principles in the local institutional context of Abu Dhabi, more specifically Masdar and the UPC, and their respective partners in the areas of energy, housing, transport and urban design. Through critically evaluating changing notions of power and persistent equalities we uncover different meanings and

experiences associated with the transfer and mobility of sustainability principles by Masdar, the UPC and their partners across various planning issues.

Inspired by Stone's (2005, p.325) conceptualization of power relationships including that of "*power to*" and "*power over*" in coalition formation; power in the local context of Abu Dhabi can be potentially exercised in a variety of forms. There are increasing instances of new stakeholders being empowered as part of the transnational flow of sustainability concepts, while Abu Dhabi's authoritarian leadership still makes top-down decisions. Massey (1993; 1995) has referred to the uneven nature of power within networks that allowed powerful stakeholders to retain their power. The chapter also considers tensions, unequal outcomes and competing values that accompany the transfer and mobilisation of sustainability policies. By uncovering differentials and inequalities and more importantly why they persist we uncover the implications of mobile sustainability amidst nuances of the local context. By following the ideas put forward by post-colonial thinkers we can gain valuable insight into the experiences of societal groups whose views tend to be underrepresented, and who are subject to contemporary forms of suppression. Finally, on a more macro level, the chapter considers similar frictions and tensions that exist in neighbouring Dubai, and other GCC nations in the region with similar political contexts to Abu Dhabi, to establish a relational perspective on some of the inequalities that accompany transferring and implementing sustainability policies.

### 1.6.7 Chapter 8: The Politics of Adapting Knowledge and Nuances of Governance in Mobilising Sustainability Concepts in Abu Dhabi

The chapter explores the politics associated with the production and adaptation of knowledge, and nuances of subsequent governance processes that accompany the mobilisation of sustainability concepts in Abu Dhabi. It considers whether co-produced knowledge has had a positive impact on solving local planning problems for diverse stakeholders in Abu Dhabi. The production and adaptation of knowledge is impacted by unique mechanisms and patterns of transfer that vary across diverse planning issues and existing power hierarchies. The scale of transfer (global, regional, national, emirate, institutional-level), the unique political, social and economic importance of the sustainability issue, the timing and speed of transfer and implementation are factors at play in knowledge creation and governance. The chapter explores why certain ideas are strategically chosen to be transferred, local adaptations of global best practice, and the creation of hybrid policies. At the institutional level of Masdar and the UPC, it considers the role of newly formed local, regional and international assemblages. The chapter

also examines how and why such multi-level knowledge-based assemblages have thrived over time and subsequently looks at factors that challenge the mobilisation of adapted sustainability knowhow, given that governance can be contested as a result of a number of factors inherent to the local context. In addition, instances of non-transfer of policy knowhow and policy transfer failure are explored as integral parts of policy learning. Finally, instances of reverse transfer of knowhow from Abu Dhabi to other parts of the world are explored.

### *1.6.8 Chapter 9: Conclusion*

This chapter presents the findings related to the politics, interpretations and implications that emerge from the transfer and mobilisation of sustainability concepts, which are summarized across four major sections. Each section is dedicated to one of the four research hypotheses that the thesis has considered. The chapter considers the issue of evolving power, followed by persisting inequalities, the efficacy of knowledge produced and finally, the issue of contested governance, and goes on to confirm or refute the hypotheses. The chapter situates the findings in Abu Dhabi in relation to parallel developments in the GCC and Dubai, and institutional developments in Masdar and the UPC in relation to housing, energy, transport and urban design. It highlights particular nuances inherent in the local context that play out differently across the different planning and sustainability issues. The chapter also juxtaposes the findings against parallel theoretical ideas from the literature on policy mobility, policy transfer and related governance in order to draw out critical elements as part of the analysis.

## 1.7 Conclusion: New Interpretations of Sustainability in Abu Dhabi

Having traversed the thesis in a macro-manner through the stepping stone on the road map above, it is my hope that the value of this research on the politics, implications and interpretations associated with the transfer and mobilisation of sustainability has been conveyed. The multi-scaled mobilisation of sustainability concepts among diverse stakeholders will be game changers on Abu Dhabi's sustainability journey. The importance of the nuances of the local context cannot be underestimated, given that they influence the unique form that sustainability concepts assume in the local context.

## 2. Applying Concepts from Mobility, Policy Transfer and Related Governance by Planning Theorists to the Transfer and Mobilisation of Sustainability within Abu Dhabi.

### 2.1 Introduction

Processes and approaches to locally adapt sustainability as an economic, social and environmental construction, connote unique meanings to different agglomerations of agents, institutions, and stakeholders. The purpose of this chapter is to outline the precepts and ideas that have led to the development of this research's core questions focussed on the politics, interpretations and implications that emerge from the transfer and mobilisation of sustainability concepts from elsewhere into Abu Dhabi. I attempt to build a theoretically rich account of the transfer and mobilisation phenomenon, by juxtaposing key ideas from the literature on policy transfer, policy mobility and transfer-related governance and from the perspective of planning theorists to understand how each of the ideas, provide a vital lens with which to critically introspect the local context.

One of the fascinating aspects that emerges from the political science-based literature on policy transfer is that it is individual and institution-driven, putting the spotlight on the roles people and institutions play (see Dolowitz and Marsh, 1996, 2000; Rose 1991, 1993).

The policy transfer literature with its focus on the descriptive narrative of transfer processes offers a logical starting point for understanding the journey taken by mobile sustainability concepts. The policy transfer literature lays emphasis on the processes, rationale, motivations, degrees, scales, and change agents (Stone 2004, 2012), but to a lesser extent considers ideas beyond the state as a primary influence on the perceptions and behaviour of stakeholders, which theorists of policy mobility emphasise considerably (see Peck and Theodore, 2012, 2015).

Building further on policy transfer in the field of planning, Patsy Healey (2013, 2015b) has discussed travelling planning practices between jurisdictions and institutions, and their roots in discourses on how knowledge is constructed and adapted in different places. Healey (2015a)

and Sandercock (2015) emphasize the link between policy discourse formation and governance.

The lens of policy mobility also opens the doors for new ways of thinking on a socio-spatial scale in the global, regional and local context. Exchanges of expertise, knowledge and skills through evolving mechanisms can result in unique assemblages in space, place and time among an expanding range of actors operating transnationally across socio-spatial scales (McCann, 2011; McFarlane, 2011). Sheller (2016) notes that the mobility approach recognizes the relation between human encounters, urban space, transport, infrastructure, territoriality and global relations of power amidst multiple temporalities and scales.

The policy mobility literature helps conceptualize the social constructs of movement where social interaction and tension pervade policy transfer processes; with relational factors at play. Healey (2013, 2015b) contends these aspects are also experienced within the field of planning. Building on experiences noted by McCann (2008) and McCann and Ward (2011), Healey (2013, p.1520) contends that tracing the paths of actors and exploring knowledge circuits uncover the "*travelling histories*" that shape how planning knowledge is "*co-produced by the travelling experience*" (ibid). Importantly, Healey (2013) upholds the importance of understanding the local context and its role in the institutionalization of policies.

Healey's (2004, 2010, 2013, 2015b) discussion on travelling planning ideas and subsequent governance moves both the planning transfer and the mobility discussion further in its consideration of structure and agency within collaborations and networks. Capturing the complexities that arise between agents, institutional and system structures and the dynamics that ensue, Healey's (ibid) thought process is useful in developing critical and diverse perspectives on the mobility of sustainability concepts that intersect with planning issues.

At the outset, there are parallels between the concept of the assemblage offered by mobility theorists (see McFarlane, 2009, 2011; Prince, 2010, 2016) and the focus on governance, strategic partnerships, diverse sets of stakeholders, improvements in human capacity, learning, knowledge-sharing networks and institutional changes explored by planning theorists such as Healey (2013); Healey and Upton (2010), Harris and Moore (2013) and other critical geography scholars such as Jessop (1998), Peck and Tickell (1995), Ward (2000) and others who have examined urban and regional governance and urban politics. Relational notions of

mobility proposed by Cresswell (2010), McCann (2011) and Peck (2011) argue that mobility is also rooted in particular histories, politics and geographical contexts that impact its current practice. Assemblages and networks of strategic stakeholders are vital to embedding sustainability in Abu Dhabi and the other GCC nations in the surrounding region, as more new voices adapt and respond to transferred and translated sustainability concepts.

As we attempt to move beyond just a narrative description of transfer processes to apply a critical analytical lens of enquiry, new modes of thinking are needed in order to consider wider forms of policy making, beyond the transfer process as called for by James and Lodge (2003) in their critique of policy transfer. By locally contextualising aspects of mobility and policy transfer to understand tensions, nuances of power and inequalities that accompany the transfer and mobilisation of sustainability concepts in Abu Dhabi at varying scales and degrees, as well as aspects of learning, knowledge production, collaboration, and assemblages of stakeholders that emerge from diverse sustainability solutions, we are developing a richer theoretical account of the phenomena.

## 2.2 Expanding Policy Transfer and Mobility Thinking from a Planning Perspective

The literature review that follows takes primarily the policy transfer and mobility literature, and expands them further by combining ideas on the transnational transfer of planning practices put forward by Harris and Moore (2013); Healey (2010, 2013) and other planning theorists who offer perspectives that link existing urban policy circuits with historical and institutional legacies and governance processes from the perspectives of diverse stakeholders. Healey (2010, p.31-32) describes '*a collision of worlds*' where the continuous flow of planning practices eventually leads to multi-level governance and increasing instances of bottom up initiatives with greater emphasis on community values. She calls for critical stories looking at in-depth cases which have utility in their exploration of agency and institutions. As sustainability ideas are translated and institutionalised in authoritarian Abu Dhabi they could potentially provide new insights on implementing key elements of planning in a new local context.

Harris and Moore (2013) note the interface between the literature on planning and mobility to be of utility given that the movement of urban plans and policies has potential to generate new

and novel solutions. Adey and Bissell (2010) urge scholars of mobility to encapsulate different meanings, values and representations from the perspectives of different people, which sits in parallel with notions by planners concerned with sustainability (see Campbell, 1996; Jepson, 2001). Similarly, Sheller (2016) notes that mobility research focusses not simply on movement, but also on the lack of movement iterating that mobility can be accompanied by inequality and division. Cresswell (2010) also contends that the symbiotic intertwining of physical and social mobility empowers some and disregards others. The politics of mobility are ripe with political and social sensitivities and power within networks stakeholders and institutions that shape meanings and experiences of movement, and stagnation (Cresswell, 2011). Thus, mobility systems are inherently complex as a result of factors that determine the conditions under which mobility can or cannot take place.

This literature review attempts to move beyond the initial State-centric conceptualizations popularised by policy transfer theorists from the political science domain toward the consideration of relational aspects put forward by mobility theorists. This research thus situates the phenomenon of mobile sustainability policies in Abu Dhabi in relation to similar developments within the GCC. In addition, it addresses the opportunities and tensions associated with transferring and mobilising sustainability policies in Abu Dhabi.

We now discuss the nexus between sustainability, planning and mobility, and the struggles faced by planners balancing multiple considerations.

### 2.2.1 The Sustainability-Planning-Mobility Nexus

Mobility theory has the ability to capture the impacts of sustainability on diverse sets of people, institutions and networks over time and space with its focus on multiple scales and patterns of movement of people, ideas and objects, and its focus on what is mobile or not, what elements move with speed, and its consideration of the unique political and historical context (Cresswell, 2006; Adey and Bisell, 2010; Sheller, 2014). Making sustainable planning practices a reality in new local contexts can be conceptualised from a mobility framework since the literature around mobility considers the risks and rights associated with the movement of people and objects. The focus on process and rationale for transfer, change agents and instances of transfer success and failure by policy transfer theorists such as Dolowitz and Marsh (2000), plays an

important role in setting up the fundamental narrative behind the transfer of sustainable planning policies.

Given that planners are most often concerned with balancing multiple perspectives and local community needs (Briassoulis, 1999), they are well-equipped to adapt sustainability concepts to the individual locale's context and problems. Jepson (2001) considered the concept of sustainability to be descriptive and expansive, needing to therefore be contextualised within the planning process in order to lend it a more concrete reality. Planning toward sustainability requires value judgements to achieve a balance between the economic, environmental and social aspects of sustainable development. Given the focus on sustainability policies that intersect with planning issues in this research the writings by Healey (1997, 2004, 2010, 2013, 2015b) are particularly relevant since she has an interest in identifying new and emerging knowledge circuits as part of probing and situating planning ideas in specific contexts. Interestingly, in the case of Abu Dhabi, and regionally within the GCC nations, elements such as knowledge creation, institutional capacity, and authoritarian power are continuously evolving, along with various national policies (Kinninmont, 2015; Luomi, 2015). Thus, lessons can emerge in relation to change agents involved, the nuances of the local context, and their interactions at multiple scales.

Ney (2009, p.27) argues that planning issues are part of bargaining processes between different institutions and policy actors which can become "*messy*" due to competing values and technical complexities. Healey (1997, p.38) also broaches issues around power, values, and different meanings of place for different *cultural communities* (author's emphasis), arguing that diverse communities have the ability to influence institutional practice through formulating and sharing locally derived knowledge from particular networks. Healey (1997) recognizes the need for more inclusive planning that considers historically and geographically rooted inequalities, cultural values and individual biases.

It is possible that Healey's ideas around inclusive planning and the consideration of diverse communities may run into conflict with the local culture of authoritarianism. However, Healey (2013) has argued that systemic power can co-exist with capacity building and learning, therefore, a unique culture of sustainability-related governance could be possible in Abu Dhabi.

We now consider key elements from the literature on mobility that add further nuance and clarity to our understanding of mobile sustainability policies.

## 2.3 Key Ideas by Mobility Thinkers

### 2.3.1 Mobility Occurs at Multiple Socio-Spatial Scales

Mobility thinking takes into account socio-spatial elements, and notes elements that are fixed compared with those that are mobile. It considers elements at different scales and how space is transformed as a result of particular interests of individuals and institutions mobilising policy (Bauman, 2000; Sheller and Urry, 2006). Cochrane (2011) describes urban policies being continuous processes that evolve over time and space. Mobility theorists are concerned with relational aspects of knowledge gained reflexively through social interaction, networks, and innovation, given the trend of global institutions operating at multiple scales (Sheller and Urry, 2006). Moving beyond territorial limits to encompass complex social, economic and political relations is a vital part of understanding mobility (Brenner 2001, 2004; McCann and Ward, 2013; Peck, 2001).

With the onset of globalisation, policies have been able to move with greater speed linked to inputs from increasingly transnational stakeholder networks who have the ability to influence those with political authority beyond territorial limits. This phenomenon has been referred to as "*fast policy transfer*" (Peck and Theodore 2015, p. xv) and has been made possible by both human actors including consultants, experts etc. and non-human mechanisms such as web-sites, conferences, blogs etc. However, there are pressures associated with adopting fast policy transfers particularly when local factors are not adequately taken into consideration. In addition, the influence of some stakeholders and the scale of transfer also play a role (Peck and Theodore, 2012; Peck, 2001). In defence of "*fast policy*" Peck and Theodore (2015, p.223) argue that "*fast policy cannot be reduced to a measure of mere velocity*" and the threat of the *one size fits all* approach can be countered through intensified connectivity over time between sites of policy development. In the case of Abu Dhabi, for example, while Abu Dhabi and Dubai are both pursuing parallel sustainability initiatives, there could be greater room for such connectivity between the emirates, depending on the scale of the particular initiative, to accompany the fast pace of sustainability-related transfer. However, given the pressures

discussed above it is vital that policies be adapted to the unique political norms of the UAE and the perspectives of multiple stakeholders are considered.

In particular alignments of power, knowledge and actors are key factors in understanding mobility, to which our attention turns.

### 2.3.2 Evolving Mechanisms of Power, Knowledge and People

McCann (2011) is concerned with how policies are framed and translated through ideological alignments and power relations and how knowledge is shaped by both local histories and current experiences. When a policy touches down in a particular territory, Prince (2016) similarly argues that the territory itself is reproduced and pre-existing historical, economic and political conditions in the territory become important contextual factors. In this regard, issues such as post colonialism, oil wealth and authoritarianism are contextual factors impacting the transfer and implementation of sustainability in Abu Dhabi.

There is also a diversity of mechanisms prompted by globalization and technological advancements including conferences, seminars workshops and informal and unusual spaces such as cafes, buses, cars, elevators which are also mediums for policy mobility (McCann, 2011). McCann (2011, p.109) considers non-linear policy travel to be part of the "*connective tissue*" of urban policy mobility. He cites blogs, conferences, brochures, networks, historical relationships, travels, site-visits and even in-person conversations as mechanisms of transfer. Prince (2010) and McFarlane (2011) also direct us to the importance of similar mechanisms which shape mobility processes.

Another key tenet of mobility discussed by theorists involves assemblages that arise in time, space and place in association with circulating policies.

### 2.3.3 Assemblages in Time and Place: "Parts of Everywhere"

Exchanges of expertise, knowledge and skills through evolving mechanisms discussed above have resulted in unique assemblages among an expanding range of actors operating transnationally across socio-spatial scales. Larner and Le Heron (2002, p.765) note the role of "*globalizing micro-spaces*" in fostering assemblages and policy circulation. McCann (2011, p.144) uses the phrase "*parts of everywhere*" to describe how assemblages are not just limited

to actors, but can span discourses, ideologies and materials that are assembled together to create a policy, a view echoed by McFarlane (2011). Sheller and Urry (2006) and Massey (2005) embrace the fluid nature of globalization where social, spatial and scalar elements are interspersed. The question arises as to whether sustainability-driven assemblages that bring together "*parts of everywhere*" (ibid) into the local context of Abu Dhabi have the ability to transcend scales and potentially culminate in locally customised policies with regional and global implications.

In this regard, the relational nature of assemblages is an important aspect to consider in greater detail.

### 2.3.4 Relational Aspects of Assemblages Expand the Concept of State Territoriality

McCann and Ward (2012) cite the global impact of the movement of consultants, international travel and political and actor networks around urban policies and programs as a factor promoting mobility. Importantly, mobility theorists concur that despite globalization the concept of borders and territories are not completely de-territorialised (McCann and Ward, 2015). Increasingly, new forms of urban and regional governance driven by capitalism and economic development are expanding existing conceptualizations of state territoriality (Brenner and Theodore, 2002; Harvey, 1989).

McCann and Ward (2010, p.175) aptly use the phrase "*local globalness*" in relation to urban policy to inform wider urban relations on an international scale. Tadros (2015) who writes in the context of the GCC, similarly notes the need to create local and regional knowledge networks and platforms toward solving region-wide sustainability issues. In the area of sustainability in the GCC for example, the pursuit of green growth agendas, long term economic visions and the creation of institutions that prioritise sustainability could signal the widespread diffusion of sustainability principles and policies from abroad. Conversely, sustainability principles may not mobilise with ease within Abu Dhabi or the wider regional context of the GCC due to nuances in the local context. This research will attempt to understand the opportunities and more importantly, the constraints that face circulating sustainability policies in the local and wider regional context of the GCC.

In particular, power emerges as an important factor impacting the mobilisation of sustainability.

### 2.3.5 Power Dynamics That Shape Assemblages

Some aspects of mobility are even, while others are uneven, leading us to consider some inherent dualities and stakeholder biases. Adey and Bissell (2010) note that elites who hold power can often alter both institutional capacity and social norms by de-mobilising certain marginal groups. Elite and expert-led actor networks, epistemic groups often share information within trusted inner circles that influence policy circulation (Newman, 2017; Peck and Theodore, 2015; Wolman and Page, 2002). If only certain elite circles are being continually tapped toward the creation of assemblages, over time the policy discourses that emerge from these assemblages, can potentially retain the particular biases and elements of the power dynamics that shape the assemblage. A criticism of policy mobility is put across by Ward (1999) who asks why only certain lessons are borrowed while others are not in mobility processes. It is possible that politically and economically-driven assemblages and policies could emerge in Abu Dhabi as a result of political power dynamics.

Peck and Theodore (2010) also describe the role of politically influenced institutional contexts where an institution's capability to adopt and implement policy is dependent on existing power structures and relations. A manifestation of power exists in learning from transfer being restricted to privileged stakeholders resulting in learning gaps (Evans, 2009). Thus, theorists are increasingly pointing to the cracks that exist when power struggles, biases and inequities emanate within assemblages over time. Lovell (2017, p.319) describes actor networks that are prone to breakdowns and are inherently fragile in nature where "*fragments of the original assemblage have splintered off*" as opposed to being a coherent assemblage.

One explanation for the fragmentation that Lovell (2017) discusses is offered by Peck and Theodore (2015, p.223) who contend that speed with which policy is codified has to do with powerful interests within "*dense networks of hierarchical and lateral relations*". They recognize that policies that get mobilised at a rapid pace often occur within a narrow set of ideologies. The theorists point to the importance of moving beyond powerful strategic interests to consider multiple perspectives from a wider lens.

McCann and Ward (2015) argue that accelerated mobility can also potentially challenge conventional political authority given that avenues exist for activists to contest imported policies and the hiring of experts or best practices. In an authoritarian context such as Abu Dhabi, where contestation is limited, mobile policies could have the opposite impact, where political authority is legitimised through the policy circulation process instead of being challenged. However, in light of regional developments such as the 2011 Arab Spring, passive resistance from certain groups of stakeholders is possible, and could result in tensions, friction and the immobility of some policies and actors.

Having illustrated that power is often distributed unevenly across assemblages we will now turn to understanding the inequalities that accompany these imbalances.

### 2.3.6 Inequalities that Accompany Mobility Processes

McFarlane (2010) identifies issues of social justice that are embedded in policy transfer and mobility processes. Sheller and Urry (2006) argue that the mobility of people and objects is complex because in its path it leaves both connected and empowered areas as well as disconnected and excluded ones. Sheller (2016) notes that injustices and struggles associated with mobility are relevant concerns going forward given that with increased mobility challenges to state sovereignty and governance are possible. Building on arguments by Urry (2010), Adey and Bissell (2010, p.7) note that "*it is sometimes those with more network capital who are immobile, who can summon the mobile to wherever they are. Who is moving? Who is moving whom? Who has to move? Who can stay put?*"

Abu Dhabi with its skewed population dynamics, where expats outnumber local citizens, and priority is given to Emiratis, becomes a valuable geography within which to explore the politics of who has the flexibility to move, or to stay put, whose existence is transient and the impact this has on sustainability concepts. Understanding the friction and immobility of some groups of people, institutions, knowledge and policies is a crucial part of the narrative.

Finally, we consider pre-existing institutional structures and political norms inherent to the local context as part of the discussion on the dualities of mobility.

### 2.3.7 Pre-existing Institutional Structures and Political Norms

Peck and Theodore (2001) and Cochrane and Ward (2012) concur that pre-existing institutional structures and political norms, social norms and discourses can play a role in hindering policy

circulation in some instances. Conversely, considering the local context steeped in oil wealth, Levins (2013) has argued that some political aspects linked to oil wealth and authoritarianism have allowed some Gulf states to adopt policies at a quicker pace, given that consensus from constituents is not always guaranteed. Peck and Theodore (2015) argue that adaptation processes are inherently complex given the challenge of equating global best practices with local policies, noting that some mobility processes have pre-empted endogenous policies and locally derived policy knowhow.

Thus, adaptation to the local context when implementing mobile policies becomes imperative if the gap between pre-existing institutional structures and political norms is to be overcome.

### 2.3.8 Summing up the Opportunities and Dualities Mobility-Related Thinking Brings to the Research

Above, we have discussed both opportunities and problematic outcomes such as power dynamics, biases and inequalities that accompany mobile sustainability policies.

Mobility theorists espouse the consideration of mobility from the perspective of who is able to be mobile, or immobile and the rationale that accompanies it. McCann and Ward (2015) argue that the diversity of transfer mechanisms situate policies amidst territorial and relational issues that can increase tensions between them. A vital point considered by mobility theorists is the exercise of power and its impact on either causing or mitigating inequalities, given that power can be contested or carry on uncontested among actors in a network (McFarlane, 2009).

Assemblages encompass both the physical and temporal aspects associated with a particular local context. Mobility theorists concur that an informality of exchanges across time and space and at multiple socio-spatial scales is taking place. While the concept of State territoriality is expanding in new ways, states are not completely de-territorialised and territorial norms can impact the fragility of assemblages (Brenner, 2001, 2004; Lovell, 2017).

We also learned that assemblages may sit physically within a territory, but can simultaneously be a part of wider national, regional, transnational or global assemblages (Prince, 2016). Assemblages open up multiple narratives around how diverse actors navigate learning over networks and scales and go beyond just connections between places to focus on historical, material and other trans-local factors (McFarlane, 2009).

Planners and other change agents in Abu Dhabi may pursue global relations and flows at certain points in time while at other times they may reject them in favour of territorial priorities. It will be vital to understand when and where McCann's (2011, p.144) *"parts of everywhere"* are embraced across particular planning issues in Abu Dhabi, and when they are not.

In order to understand how theorists of policy transfer concur with those writing on mobility, it is vital to explore the central tenets put forward by these theorists on the process, rationale, opportunities and constraints of policy transfer.

## 2.4 Fundamentals of Policy Transfer

The literature on policy transfer tells us about people, processes, rationale, degrees and mechanisms related to the phenomenon of transfer. This literature originated around State-focussed studies oriented toward goals, targets and policy instruments with a focus on government to government transfers around specific policy areas (Benson and Jordan, 2011). Newmark (2002) considers a gamut of innovations, ideas, programs and knowledge within the banner of policy transfer, beyond just policies in the literal sense.

In its simplistic form, policy transfer involved direct emulation of ideas from one jurisdiction to another (Dolowitz and Marsh, 1996). Stone (2004) noted policy transfer traditionally occurred among actors at the State or central government level in the form of formal decisions, regulations and legislation. Such transfer mechanisms were particularly prevalent among like-minded governments. Theorists from political science backgrounds such as Dolowitz (1998), Dolowitz and Marsh (1996, 2000); Evans and Davies (1999); Rose (1991,1993, 2005) and others recognized the nation State as a primary agent in the production of policies and places. In the case of Abu Dhabi and also in neighbouring Dubai and in other oil rich nations in the GCC, there is a unique combination of both formal and informal transfers taking place, that when explored in greater depth will provide valuable insights into the unique economic, political and social factors that directly impact sustainability-related policy transfer (Al Ghanim, 2014; Gunel, 2011, 2016; Koch, 2014; Luomi, 2015; Reiche, 2010; Sillitoe, 2014; Tan et al., 2014).

The writings on policy transfer began to generate narrative checklists around transfer processes, and the efficacy of these checklists is worthy of exploration.

### 2.4.1 Pros and Cons of Existing Checklists Related to Policy Transfer

Dolowitz and Marsh (1996, p.344) offer process-driven questions which can be applied to understanding the sustainability policy transfer phenomenon in Abu Dhabi. The process-centric checklist entails questions such as: Why is there policy transfer? Who transfers policy? What is being transferred? Are there different degrees of transfer? From where are lessons drawn? And finally, they ask what factors inhibit policy transfer?

These questions are valuable because they are a good starting point for assembling a descriptive narrative around policy transfer processes. By employing the running checklist suggested by Dolowitz and Marsh (1996) and Rose (1991, 1993, 2005) we discern the essential who, what, why, when and where of the policy transfer process.

### 2.4.2 Opportunities Related to Policy Transfer

Let us now consider some of the opportunities associated with policy transfer related to local adaptation of policies, problem solving capacity and resultant policy innovation.

#### 2.4.2.1 Flexibility and Adaptability of Policies toward Policy Innovation

Policy transfer theorists concurred that local adaptability of borrowed policy ideas was a crucial determinant of success. The local context encompasses the particular period, political culture, respective social cultures, economics and geographic location (Dolowitz, 2003; Dolowitz and Marsh, 1996; Evans and Davies, 1999; Jones and Newburn, 2006; and Smith, 2004). Given such nuances, an inevitable transfer process, adaptation and modification of policy at various scales and degrees emerge.

Political science based policy transfer theorists such as Rose (1991, p.22) were particularly concerned with the outcomes of merging two components from different places, which Rose (ibid) termed as "*hybridization*" whilst he termed the process of combining three or more ideas from different places into a new setting "*synthesis*". "*Inspiration*", in his view encompassed the development of a creative *new* program that did not exist elsewhere (ibid). The adaptability of policy transfer has contributed to its evolution and popularity as a concept. One can however, question the positive stance taken by policy transfer theorists such as Rose (1991, 1993) around merging policies, which may not necessarily generate positive or expected outcomes in every

instance of transfer. The policy transfer literature has discussed the flexibility and adaptability of policies extensively, yet we cannot assume that all hybrid policies that result from policy transfer are integrated seamlessly across diverse policy areas over the long term. In the context of Abu Dhabi, despite instances of innovative transfer, their impact can be limited if they are unable to withstand the ongoing constraints posed by the local political system, culture, traditions and uncertainties of external markets.

Policy transfer theorists such as Dolowitz and Marsh (1996; 2000), Dolowitz (2003), Rose (1991;1993; 2005) and Jones and Newburn (2006) focus on the importance of local adaptation and modification that can lead to policy innovation given the participation of diverse groups of actors in the process. Exploring the basis upon which a policy is deemed innovative, and who has deemed a policy to be innovative, whilst recognizing their accompanying biases and points of view becomes vital.

The creation of the UPC's Estidama (sustainability) policy and the building of Masdar City from scratch present a fascinating amalgamation of internal political ideologies, climate, geography, culture and the creation of local and transnational networks that are worthy of exploration.

Another opportunity derived from transfer processes that we now turn our attention to, is the ability of policy transfer to solve local problems and generate income.

*2.4.2.2 Problem-Solving and Income-Generating Capacity of Policy Transfer*

Bennett (1991), Dolowitz and Marsh (1996) and Rose (1991) have noted the need to solve problematic domestic issues, as a driver of policy transfer. Tadros (2015) who writes in the context of the GCC put forward the problematic reality of the lack of technical skills and expertise in a variety of knowledge sectors, particularly outside the dominant realm of oil and gas. In addition, the lack of research centres and local research capabilities in these nations further prompted their embrace of knowledge transfers from abroad across diverse economic and industrial sectors. Policy transfer theorists concurred on the fact that no policy transfer process is the same, each reflecting its own particularities impacted by a range of factors.

Transfer theorists have focussed more on the solutions-driven nature of transfer (Dolowitz and Marsh, 2000; Rose, 1993). Rose (1993) notes that if the link between the policy and the

outcome or solution is directly attainable, or is easily predictable, along with few associated negative impacts, the likelihood of policy transfer increases. Conversely, such trends can also mean that many unsuitable experimental policies that serve political gain can also be pursued if portrayed as having few related negative impacts. Newmark (2002) also cited the perceived ability for policies to solve relevant problems in the local context as an opportunity and rationale for transfer.

Rose (1993) has suggested that local networks are critical to ensuring that place and context-specific elements are employed. Another argument in favour of policy transfer is provided by Reiche (2010) who sheds light on returns on investment from policy transfer readily embraced among Gulf states. For example, the quantifiable and measurable nature of several sustainability indicators, such as carbon footprints, green jobs, renewable energy targets, greener buildings and communities, allow the Gulf states to justify their pursuit of sustainability.  Sustainability principles and policies can reflect elements such as eco-city building, instituting specialist universities, green building codes, urban design norms, transit strategies, energy targets, and affordable housing in the local context made possible through stakeholder networks that reflect elements of governance.

Having considered opportunities related to policy transfer, theorists also considered the rationale for transfer, to which our attention now turns.


## 2.5 The Rationale for Policy Transfer

Dolowitz and Marsh (1996) argued that policy transfer either took place voluntarily or stakeholders were indirectly coerced into emulating policy solutions for political or economic reasons. Modernizing and domestic factors are increasingly driving policy transfer (Newman, 2002). For policy transfer theorists, the political context and time period can have profound effects on policy transfer and mobility. Thus, Abu Dhabi's authoritarian, oil-rich context can hinder some transfer and mobilisation efforts around sustainability, however, internal and external market forces that evolve over time also play a role in Abu Dhabi's policy transfer narrative. The emphasis on current issues that impact policy transfer is propagated by Rose (2005) who notes that the policy-making environment is never static particularly given the

impact of globalization and resultant material flows between jurisdictions. We thus note overlaps in arguments by mobility theorists.

Let us consider the role of globalization and cities in particular, as spaces that encourage the flow of ideas as rationales for the transfer of sustainability concepts into Abu Dhabi.

### 2.5.1 Globalization as a Rationale for Transfer of Sustainability Knowhow

Increasingly, more transfer processes involve soft transfers prompted by globalisation, dispersed citizens, multi-national corporations, multilateral organizations and civil society increasingly becoming inter-connected. Benson (2009), Benson and Jordan (2011) and Newmark (2002) have noted that often the jurisdictions involved in the transfer do not necessarily share similar political values or geographic proximity presenting their own set of opportunities and challenges. Thus, Abu Dhabi's transfer of sustainability and planning knowhow from Europe and North America or from Asia to its local context is not unusual in the era of globalization despite differences in political structures. In the context of Abu Dhabi, we are increasingly witnessing a diversification of mobile sustainability-centred networks that are orienting themselves along a global agenda, particularly through Masdar, the UPC and their partners. The importance of multi-scale platforms particularly those at the regional level, play a vital role in enabling policies to transfer.

### 2.5.2 Regional and Multi-Scale Platforms as Opportunities for Policy Transfer

Berry and Berry (1999) and Rose (1993) assert the importance of the regional effect on the likelihood of policies crossing borders. They argue that regional platforms provide opportunities for greater transparency on how programs are implemented. A number of policy transfer theorists make the case for the impact of regional developments on policy transfer including Berry and Berry (1999, 2007), Hagerstand (1983), Mintrom (1997) and Mooney (2001). These thinkers adopt overlapping roles of knowledge sharing, competition and catch up development existing among neighbouring states that emulate one another for a variety of primarily political and economic reasons. In the context of the GCC, Reiche (2010) notes a trend of specialist, purpose-driven cities that emerged. In addition to Abu Dhabi's Masdar city, Qatar's energy city, Saudi Arabia's King Abdullah University for Science and Technology (KAUST) and Kuwait's eco-friendly city South Saad Al-Abdullah (built in collaboration with the South Korean Government) are examples of regional diffusion of purpose-driven urban

agglomerations, each with their own individual interpretation of sustainability intertwined with technological innovation (Kirk, 2016; Reiche, 2010).

Policy transfer across a number of sectors in the GCC has been possible through publicizing regional and national policy commitments and at a local level through city economic plans and urban master plans (Darwish, 2014; Dempsey, 2014; Gardner, 2014; Luomi, 2015; Rizzo, 2014). Luomi (2015) concurs that regional cooperation opportunities could be further expanded to a much larger extent. She notes the need for finance, technology, institutional and human capacity to build networks and increase investment capacity toward regional green growth strategies including energy security, private sector participation, sustainable infrastructure and jobs, employment for locals, economic diversification and boosting the knowledge economy regionally (Luomi, 2015). The lack of regional cooperation around sustainability signals individual GCC states' each charting their individual path and progress toward sustainability.

Wehage (2013) who writes in the context of planning processes around sustainability contends that transfer of new knowhow must be contextualised regionally and locally in order to generate sustainable planning results that meet the various requirements of different scales and issues. Thus, there is value attached to situating sustainability in Abu Dhabi relationally in the context of neighbouring Dubai and the other GCC states. Having discussed the importance of regional platforms as part of the rationale for policy transfer, I now consider the role of people and institutions at the heart of policy transfer that cannot be underestimated. It is to their unique role that the discussion now turns.

## 2.6 Change Agents as Conduits of Policy Transfer

Stone (2001, 2004) considers the proactive role played by change agents in facilitating idea exchanges. Haas' (1992) concept of epistemic communities helps hone in on the positive attributes of change agents including their expertise, competence and experience around policy related knowledge. These experts were empowered to solve relevant problems by articulating stakeholder interests, and framing issues for collective debate and negotiation. Haas (1992) noted that actors in elite decision-making circles often shared normative principles, beliefs, values and worldviews and simultaneously controlled knowledge and information. On one hand, this allows for greater agreement among collaborating actors, but is also problematic given that solutions may be homogenous and unchallenged since all the actors share similar views. Given the authoritarian context in Abu Dhabi we can assume that existing power

hierarchies and differing ethics and value systems between nations impact the actions of change agents. In an authoritarian context such as Abu Dhabi, control over knowledge and information is also unequal among change agents and other stakeholders and is largely top-down (Dempsey, 2014). Thus, the melting pot of change agents from elsewhere and local change agents may not always be a level playing field within which to navigate sustainability policies.

Stone (2003) critiqued the policy transfer literature for its focus on elite bureaucrats, State agencies, and politicians. She shed light on the importance of looking at how actors or change agents operate in a multilateral setting ridden with complexity, compared with bilateral importer-exporter jurisdiction relationships. Stone (2012) classifies change agents as actors, both local and international, who are engaged in policy and knowledge transfer processes and can include international organizations, states and non-state actors engaging collectively in transnational networks. Dolowitz and Marsh (1996, p.345) have also used the term "*policy transfer entrepreneurs*" with reference to non-State actors. Thus, we see some overlap between ideas posed by policy transfer and mobility theorists.

Thus, we are led to the understanding that there are hierarchies among change agents. The different motivating factors that influence change agents to participate in transfer processes will ultimately have some bearing on the sustainability policy outcomes that emerge.

## 2.7 Expanded Roles and Identities of Change Agents suggested by Mobility and Planning Theorists

Both schools of thought, including policy transfer and mobility theorists give importance to the individual and institutional agents at the heart of transferring and mobilising sustainability policies. Mobility theorists and some policy transfer theorists such as Evans and Davies (1999) further extended the concept of change agents by coupling them with governance-supportive attributes considering network exchanges at multiple levels and paths of spatiality including the transnational, international, national, regional and local levels (see McCann and Ward, 2011; Prince, 2010, 2016). Healey (2013, p.1517) contends that amidst transnational policy flows, concepts circulate in "*messy worlds*" steeped in political struggles between agencies and institutions determined by complex historical and cultural factors.

Mobility theorists expanded the concept of change agents from the initial importer-exporter conceptualization by policy transfer theorists, with their focus on assemblages of experts,

networks, socio-spatial forms, noting that at times these heterogeneous arrangements of individuals, institutions and spaces were often unpredictable (Allen and Cochrane, 2010; Anderson and McFarlane, 2011; Collier and Ong, 2005; Prince, 2010, 2016). Such assemblages and networks of change agents can potentially counter institutional hierarchies given that they allow for more information sharing and increased transparency among actors in the network. Conversely, multi-level networks can also be increasingly complex to maintain over time, particularly if they grow exponentially making it difficult to balance multiple interests. Heatherington (2002, p.182) describes the "*figural presence of absence*", that can cause tensions amidst mobilised experiences. Picking up on this theme, we are pointed toward considering multiple realities of diverse sets of stakeholders, including those who are less recognized as obvious change agents.

Mobility theorists expanded the conceptualization of face to face transfers popularised by policy transfer theorists considering interactions among think tanks, professional associations, international consultancy firms, transnational institutions, international conferences among other mechanisms that have proliferated with increasing globalization (McCann and Ward, 2011; Peck, 2004). Robinson and Parnell (2012, p.599) also discuss the existence of wider "*transnational rule regimes*" (authors' emphasis) which are overseen by governance entities and serve as mechanisms for policy circulation. Other mobility theorists such as Larner and Laurie (2010, p.218) refer to change agents as "*travelling technocrat*s" who come from elite multilateral institutions as well as groups of employees, contracts, consultants, NGOs and social movements.

Mobility theorists such as Roy (2009, 2012) follow the building of new networks and knowledge circuits impacted by global forces, witnessed by the migration of actors and experts engaged in social interactions such as architects, planners who borrow and interpret ideas, and simultaneously negotiate and also practice policy in settings where informal relations and poverty exist. In relation to Abu Dhabi, Khirfan and Jaffer (2014) also describe the import of highly skilled architects, planners, engineers, environmentalists, researchers etc. that allowed the emirate to catch up globally, but whose impact was limited to a particular period.

In a similar vein, Healey (2010) contends that very often non-planners without formal training can be an integral part of adapting emerging planning practices, opening up the field for more diverse stakeholders to help make planning decisions. With a particular focus on planners and

associated stakeholders who also participate in planning processes, Healey (2015b) observed that planners possess an innate ability to act strategically and in a timely manner to address the dynamics of local problems. Yet, she also noted that the focus on planners should not be limited to only those with formal planning training and experience. By considering who is promoting the transfer of ideas, their rationale for doing so, and considering who may be harmed by the transfer of ideas, with an emphasis on the "*rationalities or mentalities wrapped in such stories* (related to the flow of planning ideas) *and the forces which project them into movement*" (Healey 2013, p.1520), Healey expands the dialogue around understanding more critically, the dynamics of transfer processes beyond descriptive narratives. Depending on the nuances of the particular planning issue, we can expect varying characteristics of assemblages in Abu Dhabi's local context.

### 2.7.1 Notion of Cities as Change Agents

Further expanding the notion of change agents, McCann and Ward (2011) concurred on the idea of cities as change agents given that cities are assemblages of policies, knowhow and individuals that are continually intersecting and evolving with policy mobilisation often being inter-urban in nature. In this regard, Vancouver served as a powerful change agent within Abu Dhabi's policy transfer history with varying degrees of success (Cormier, 2010; Dempsey, 2014).

This can be attributed to the ubiquitous hunt for evidence of successful solutions, policies and practices to common urban problems. Abu Dhabi as a city has unique assemblages in place among the leadership, business elite, government agencies and private sector, aimed at bolstering its position as a global city to attract the international private sector, global educational institutions, and other international institutions along with making strategic investments abroad (Tatchell, 2009; Davidson, 2012a). One can argue, Abu Dhabi's rationale for attracting and incentivising diverse change agents and forming transnational assemblages is rooted in soft power experiments aimed at global recognition. McCann and Ward (2011) noted how travelling and transferring agents were instrumental in connecting diverse cities, but simultaneously made them competitive. Their assertions echo the dualities of fast forming knowledge circuits. It is possible, that the policy transfers between Abu Dhabi and Vancouver could have been altered over time as each pursued their own goals. Abu Dhabi's pursuit of global relationships opened up new conversations and policy flows that cement the Emirate's

position as a political and economic leader internationally, but conversely Abu Dhabi is also competing with cities in other GCC states and neighbouring Dubai on the global stage in the race for soft power, thus in some ways pushing itself further apart from these cities as it competes with them.

Cities in particular become stages for policy mobilisation and the exertion of power in often unanticipated or unintended forms. As part of the process of cities around the world becoming increasingly aligned Jacobs (2012, p.419) notes a trend of "*traceable association*" among policies and stakeholders. The C40 Cities Climate Leadership Group and the UN Habitat Cities and Climate Change Initiative are examples of such associations where cities are joining purpose-driven networks to collaborate and exchange knowledge (Widmer, 2017). Despite these positive developments, Widmer (ibid) notes that some cities in the Gulf do not actively advance sustainability independent of national policies. However, the city-states of Dubai and Abu Dhabi have pushed individual sustainability agendas whilst also supporting national UAE goals such as the UAE's Energy Plan 2050 (El Katiri, 2017). The oil wealth of these two cities plays a role in their ability to do so.

Thus, these ideas by some policy transfer theorists such as Stone (2003; 2012) and Evans and Davies (1999) and to a larger degree the work planning theorists such as Harris and Moore (2013) and Healey (2013) and the mobility theorists discussed above expanded the ways in which change agents were perceived beyond the initial limited focus in the policy transfer literature.

Having discussed an increasingly diverse range of change agents above, we are drawn to their ability to play a key role in the transfer of sustainability-related policies amidst the challenges of navigating institutional practices, historical, geographical, climatic, social and political factors inherent to the local context.

Let us understand another key stage in the policy transfer and mobility process, instances of policy learning and the creation of learning networks espoused by policy transfer, mobility and planning theorists.

**2.8 Policy Learning and Learning Networks as Outcomes of Policy Transfer and Mobility**

On their journey, mobile policies display instances of policy learning as policies are continually created, tested and adapted. The incidence of hybrids, emulation and innovation have taken place as a result of balancing political, physical, economic, social, technological and other market factors within global multi-level governance networks that contribute to policy learning (Evans, 2013).

Harris and Moore (2013) argue that advancements in technology and improved communication networks have continued to spur learning from mobile planning policies. Learning that takes place across different time periods and in the context of different planning issues in Abu Dhabi is an important outcome of policy transfer and the mobilisation of sustainability. Policy transfer theorists have acknowledged the importance and utility of information-driven networks that share common goals and values across jurisdictions; the creation of learning platforms, multi-level governance networks with policy innovation emerging as a positive outcome (Bennett, 1991; Benson and Jordan, 2011; Dolowitz and Marsh, 1996, 2000; Rose, 1991,1993; Evans, 2009; Stone, 2003).

Stone (2003) has argued that lessons have emerged not only from smooth running governance processes, but also from governance processes that are fraught with tensions. In particular, Stone (2003) argues that lessons emerge from negotiations, consultation, capacity building and experiential knowledge that arise from adapting policies. Dolowitz and Marsh (2000, p.17) echo the importance of learning from conflicts and tensions in their recognition of '*inappropriate*', '*incomplete*' and '*uninformed*' transfer of policies and lessons. However, James and Lodge (2003) have critiqued this as an incomplete conception of policy failure in light of wider processes of transfer, where a range of factors impact policy making beyond just transfer. Thus, understanding nuances of authoritarianism and vast oil wealth and their application in the context of Abu Dhabi, become a site of analysis within the transfer process.

Rose (1991) envisaged that learning was possible through transnational epistemic communities. Beyond local institutions, learning through regional and global networks potentially allow for greater transparency on how a program/policy is managed and operated. Evans (2013) has argued that institutional learning allows us to move from expert and elite-centred knowhow to experience-based knowhow. The latter in particular is vital to

understanding how the values and concerns of diverse stakeholders are articulated and created. In a similar vein, Stone (2003, p.6) is a proponent of the "*shared experience of learning*" among State, non-State and international actors simultaneously. Wood (2016) notes that most learning processes develop through interactions among key actors and experts by participating in networks. Similarly, Healey and Upton's (2010) concept of "*communities of practice*" as well as Haas's (1992) concept of "*epistemic communities*" also point to the importance of learning that emanates from networks of key stakeholders involved in conducting policy analysis. Some participatory activities around policy implementation such as public participation in decision-making and the creation of opportunities for various forms of public feedback could represent new avenues for policy-learning and a departure from elite-centred policy transfer.

Beyond traditional transfer mechanisms of conferences and in-person visits, Harris and Moore (2013, p.1502) cite "*ongoing forms of imagination, persuasion, passive learning and informal interactions*" as alternative learning mechanisms. Thus, a focus on learning and knowledge creation that arises from adapting policies, evolving institutions, outreach mechanisms and diverse stakeholders become important issues to consider in Abu Dhabi's local context.

However, it is important to consider that learning may not always take place on a neutral platform particularly when particular ideologies, biases and rationales held by local and international elite actors influence the process. Given that a plurality of change agents may not always be guaranteed, the lessons learned may be from the perspectives of only certain experts and actors in a network. These theoretical underpinnings suggest that a form of policy learning reflective of the unique political and oil-rich context could feature as a part of the process of adapting policies in Abu Dhabi.

Having considered the importance of learning espoused by planning, policy transfer and mobility theorists, we must consider the constraints that may accompany the transfer and mobility of sustainability principles to Abu Dhabi.

## 2.9 Lessons and Constraints Associated with Policy Transfer

Benson (2009) and Stone (2003) espouse that valuable learning can emerge from the conflicts and struggles in decision-making, and the failure of policy transfer. In addition, the non-transfer of policies can also contribute to our understanding of the challenges of implementing policies in a foreign jurisdiction. Page (2001), Newman (2017) and Stone (2003) encourage

consideration of whether policies are worth emulating in the first place. This thinking is vital in avoiding lengthy and expensive transfer and mobility processes. Let us now consider constraints to policy transfer and mobility and subsequent learning.

*2.9.1 Barriers to Successful Policy Transfer*

Constraints to policy transfer arise from a lack of information due to institutional network hierarchies, existing restrictive policies, many competing goals, insufficient internal resources and capacity to implement policies (Benson and Jordan, 2011; Dolowitz and Marsh, 1996, 2000; Rose, 1993 and Wolman and Page, 2002). Gulf states such as the UAE and Qatar implementing sustainability have prioritised institutional changes and resource allocation at the national level (Sillitoe, 2014). However, institutional adjustments can be expensive and bureaucracy in the importing jurisdiction can impede all the good intentions of the transfer process (Benson and Jordan, 2011). Dolowitz and Marsh (1996, 2000) and Evans (2013) cite numerous obstacles to policy adaptation, implementation and learning in the form of differences in policy beliefs, value systems and ideologies between importer and exporter jurisdictions, a lack of technical, administrative, economic and political infrastructure that could result in inappropriate transfers and uninformed actors confronting constraints in a new institutional context.

In addition, short-term and incomplete implementation also pose issues to the success of transfer processes (Bache and Taylor, 2003; Dolowitz and Marsh, 2000). Rose (2005) notes instances where flexibility and adaptability of policies are initially achieved, but not necessarily carried forward. These constraints provide a lens with which to critically introspect the circulation of sustainability policies in Abu Dhabi.

From a planning perspective, Harris and Moore (2013) draw our attention to unpredictable knowledge exchange and learning processes that do not achieve their intended goal. Healey (2010) also asks if ideas transferred from another context-will necessarily work, and whether they should be imported given different conceptions of best practice.

Over the course of the research, it became increasingly important to question the legitimacy of what is considered best practice and the rationale for the policy choices.

In particular, the dilemma around best practice poses a challenge to the transfer of sustainability policies, which I will now discuss.

### 2.9.2 The Dilemma Around What Constitutes Best Practice

By thinking about best practice as a concept or a vision, and not an assumed reality, we are aware of inherent biases that can creep into transfer processes. Robinson (2006) notes what is seemingly considered best practice from the viewpoint of some stakeholders, does not always translate effectively when implemented in other geographies. Peck and Theodore (2015, p.224) similarly contend that the deference paid to global best practices and policies has culminated in "*technocratically-stylized models*" backed by powerful agencies and interests that are working to demonstrate the validity of the policies, even when they are often experimental when implemented in a geographically and ideologically distant locale. For example, the Vancouver model of planning rooted in new urbanism, would seem foreign in many respects to the geography, climate and culture of Abu Dhabi. Yet powerful interests in the form of global liveability indexes, international investment from Asian investors into Vancouver, a progressive planning council, global media attention paid to Vancouver's planners, and the heightened role played by global private architecture and planning firms are reflective of factors that propelled the international export of planning practices to a number of global cities (Cormier, 2010). Therefore, it is possible for importing jurisdictions to perceive practices rooted in globalised, universalised and technologically centric models as being 'best' practices.

Robinson (2006) is in favour of doing away with the assumed gap that urban development theorists have placed between the global North and South where assumptions around best practices moving from the former to the latter are clearly not always the norm. Robinson (2006) argues that while Western cities and policies are considered role models, they themselves are comprised of ideas borrowed from other jurisdictions. Sanyal (1990, 2005), Roy (2008), Roy and Ong (2011) also challenge the assumption that best practices move primarily from the West to the global South.

Healey (2010) similarly acknowledges the inherent flaws in narratives that are solely focussed on summarizing best practice, which she argues is incomplete and contested. Healey (2015) contends there is nothing absolute about best planning practices, technology or good ideas,

rather, she contends that planning practices develop and flourish amidst local interpretation and practice.

Thus, we acknowledge that the concept of best practice is in itself flawed. What is best practice can often be politically motivated and unrealistic. Instead, an ongoing discourse on better practices and policies adapted to evolving local needs could ensue. A potential solution to addressing the biases and contestations that accompany best practice, is to delve deeper into what is considered best practice from the perspective of diverse stakeholders and in what context practices and policy knowhow could be transferred appropriately.

Finally, in the discussion related to constraints associated with policy transfer, let us consider the dualities of the historical context in the form of post-colonial factors.

### 2.9.3 Dualities of Post-Colonialism Pose Constraints to Sustainability-Related Policy Transfer

Dolowitz and Marsh (1996) put forward the importance of the historical precedent set by past policies that impact the way new policies are shaped and the degree to which they are transferred. Therefore, policy transfer is inherently influenced by the precedent set by existing policies and norms in the local context which could either help or hinder implementation.

The transfer of sustainability policies should, in theory, be value driven with a focus on human agency, human relations, and values such as equity, justice, fairness, gender equality, and the right to civic participation (Schultz and Siriwardane, 2015). However, historical legacies shaped by oil wealth and colonialism in Abu Dhabi have left divided societies in their wake, particularly when certain sectors and stakeholders were prioritised (Tatchell, 2009). This poses a continued challenge to implementing sustainability policies. Imperial constructs of the relationship between colonizers and the colonized put forward by Fanon (1986) and Said (1978) focussed on the hierarchies and tensions between the two camps as a result of divisive policies, can impact existing interpretations of sustainability, particularly related to social equity. One view point is that imported sustainability practices could potentially challenge power hierarchies embedded in colonialism, but on the other hand existing and historic post-colonial power alignments could constrain their efficacy.

Post-colonial theorists encourage the consideration of the relationship between the historical and contemporary instances of planning policies and practices. Robinson (2006) contends that a post-colonial stream of understanding urban development must take into consideration the interdependence between modernity and tradition. Similarly, Harris and Moore (2013) note historical roots of contemporary planning are steeped in the transnational transfer of ideas that has been linked to countries with histories of colonialism.

Sustainability-related policy transfer being implemented in the Gulf states noted by Luomi (2015) and Reiche (2011) can be challenged by what Allmendinger (2017, p.274) refers to as the danger of moving to a *one-size fits all* approach which can suppress indigenous planning knowhow. These issues will be considered over the course of this research.

Having discussed constraints related to policy transfer, it is important to summarise how concepts from the mobility literature have helped overcome some of the limitations from the initial conceptualizations around policy transfer and expands the notion of transfer.

## 2.10 Mobility Thinking as a Means to Overcome Some Policy Transfer Limitations

The descriptive set of who-what-why-where-how questions pursued by policy transfer theorists did not adequately delve into diverse spatial and social processes that are often trans-global. Policy transfer studies placed limited focus on simultaneously occurring attributes of power, equality, capacity building, or stakeholder and institutional learning that occur within trans-global networks. Peck (2012), McCann (2011), Prince (2016) and other mobility scholars placed emphasis on understanding the interactions of multi-level networks.

Mobility theorists such as McFarlane (2011), Prince (2010), McCann and Ward (2010, 2011), Peck et al. (2010), Larner and Laurie (2010) offer critiques of the political science perspective based on the former's focus on territorialism, they instead argue that increasingly, policy transfer has become more relational. Theorists on policy transfer such as Stone (2003) and Evans and Davies (1999) have sought to increasingly address key relational and territorial elements that form a parallel to the arguments by mobility theorists who focus on tensions between local and global forces (McFarlane, 2009; Peck and Theodore, 2015).

One of the issues that mobility theorists sought to move beyond was the normative stance taken by most of the political science theorists who had focussed extensively on emulation, lessons learnt, hybridity, innovative, voluntary and coercive elements of policy transfer such as those explored by Dolowitz and Marsh (1996, 2000), Evans (2009), Marsh and Sharman (2009) and Rose (1991, 1993). Stone (2003) noted that policy transfer studies tended to focus on investigating directly observable hard transfers and phenomena such as people or policy instruments in motion.

Brenner and Theodore (2002) and Harvey (1989) focus on new forms of urban and regional governance driven by capitalism and economic development that expand conceptualizations on State territoriality. Mobility theorists have placed emphasis on forging new relationships, developing shared understanding and mutual commitments among change agents that can be both formal and informal (Larner and Laurie, 2010). Peck and Theodore (2015, p.225) describe the proliferation of "*soft infrastructure*" in global policy development in the form of online resource banks, conferences, learning networks, and case-study manuals. These mediums allow new intermediaries and a wider global audience including connections between the global North and South moving beyond nation-to-nation transfers (Benson and Jordan, 2011).

Policy transfer research laid emphasis on transfers taking place among elites in formal institutions between bounded and national territories (Peck and Theodore, 2001). Evans (2013) questions the over-reliance on expert and elite based networks, arguing in favour of experiential learning networks from diverse groups of stakeholders at multiple levels and scales. This research heeds this argument and examines different groups of stakeholders in Abu Dhabi toward charting out where power lies, and how it impacts learning and sustainability outcomes. The multi-scalar lens proposed by mobility theorists can thus overcome some limitations of exclusion of certain stakeholder groups, given its consideration of the needs and values of a broader set of stakeholders.

## 2.11 The Overlaps between Policy Transfer, Mobility and the Focus of Planning Theorists on Governance

The link between policy transfer and governance at multiple levels and through diverse networks has been discussed by numerous theorists (Bache and Flinders, 2005; Bulkeley and Betsill, 2005; Evans and Davies, 1999; Stone, 2004; Wolman and Page, 2002). Benson (2009) and Benson and Jordan (2011) cite that globalization has in particular, increased the presence

of soft transfers among informational networks and learning platforms that cut across multiple domains, involving multi-level governance and policy networks.

Healey (2004) argues in favour of mobilising like-minded actors around mutual discourses, knowledge diffusion, mending broken relations and breaking away from problematic structures. Jessop (2003) notes reflexive aspects of horizontal self-organization among mutually interdependent actors on collaborative projects. The solutions driven approach adopted by Healey (2004) and Jessop (2003) help take the notion of assemblages beyond just the formation stage toward understanding key elements that either increase the scope and longevity of the assemblage, or conversely, the factors that contribute to the failure and demise of the assemblage. Jessop (2003) notes a trend of states shaping governance to their political advantage, and argues that opportunism can be reduced and problems can be avoided through negotiation, co-ordination and dialogue.

If we understand the explicit impact that the local political context and power structures have on resource mobilisation, accountability and legitimacy of governance processes, we may be able to differentiate between individual one-off instances of governance and long-term processes of governance toward adapting sustainability processes in Abu Dhabi. In particular, factors such as oil wealth, authoritarianism, nepotism, *wasta* (Arabic for clout or influence) and Islamic culture will also be considered for their role in mobilising sustainability policy in Abu Dhabi.

Building further on ideas around governance, Stone (2003) argues that the creation of new ideas, new attempts at institutional capacity building, and experiential knowledge gained from testing new policies in a new domain are particularly valuable aspects related to policy transfer.

We also see overlaps between governance and the concept of assemblages. Mobility theorists also address governance through their focus on debates around assemblage, territoriality, relationality, and actors within networks. Wood (2016) is in favour of tracing the origins and context of assemblages and the globalising forces that impact them, whilst Healey (2013) is in favour of situating planning ideas in specific contexts, bringing localised, collective capacity building to the fore. Though, she is cognisant that a combination of internal and external criteria can influence governance processes (Healey, 2004).

The purpose-driven assemblages that emerge and sustained over time, are dependent on several factors - the kind of change agents or actors that are involved, and the internal and external political, social and economic forces at play are factors that all three sets of theorists agree on to varying degrees.

Looking more critically at the concept of governance in relation to the transnational flow of planning ideas, one can question whether it truly has the ability to help balance the tensions of overlapping social, economic and political relations across time and space? I address this in more detail in the discussion that follows.

Healey (2004, p.16) calls for moving beyond "*usual suspects*" toward considering new forms of interaction among actors and resorting to new arenas such as neighbourhood councils, formal and informal partnerships, and centres of innovation. She sees value in loosely connected, fluid, inclusive, open and transparent networks and coalitions. Healey (2013) is in favour of examining contextual changes, the institutional landscape, existing and evolving institutional nodes and networks. These elements are part of the generative and transformative potential Healey (2015b) regards as normative prescriptions of governance.

It can be argued that Healey is somewhat positively biased in her propositions around governance, the application of transparent negotiation, collective decision-making, inclusion, and consideration of cultural values and ethics, which may not be practiced effectively in an authoritarian political context. It is possible for some mechanisms of governance to challenge existing political conceptions and traditional political relationships which would conflict with authoritarianism. Based on these arguments governance processes can potentially help understand not just the strengths, but, more vitally, the fragility of the assemblages with a view to stabilising them in the future.

**2.12 Conclusion**

Despite coming from diverse theoretical backgrounds, there is some consensus among the theorists from the policy transfer, mobility and related governance discussed by planning theorists around new patterns and combinations of governance. The theorists also collectively placed value around understanding factors that contribute to the transfer process including diverse aspects such as culture, social actions, history, politics and institutional background. Theorists such as Healey (2013) and Peck and Theodore (2015) concur that mobile concepts

must be locally contextualised. It is, however, important to consider that planning theorists rooted in sociological thinking around institutionalism, political scientists and human geographers are looking at processes through the lens of their subject focus and experiences, and some discipline-related biases can impact their perspective of the transfer phenomenon.

Policy mobility is based on a variety of themes constructed by actors situated both in specific places and within increasingly global networks of experts and consultants. Key concepts that mobility theorists link include, space, power, history, time and speed of movement, politics and social relations. Reiterating Sheller and Urry's (2006) focus on divided spaces, spatial arrangement and distribution, and new social and global networks, we gain an understanding of more nuanced meanings that can accompany mobile sustainability policies within the local context of Abu Dhabi including complex interactions and material flows at multiple scales.

Mobility thinking moves beyond policy metamorphosis and adaptation to include wider issues such as the overlaps between relational and territorial space often driven by political rationale (Massey, 2006; McCann and Ward, 2011). McCann and Ward (2011) advocate a conceptualization of urban policy making that is both territorial and relational in a balance that takes into account the associated opportunities and tensions.

The focus on short time frames differentiates the work of mobility theorists from other transfer theorists including the opportunities and challenges associated with such speed of movement (Peck and Theodore, 2015).

Sheller and Urry (2006) urge us to expand our thinking around complex interactions and material flows at multiple scales and in multiple places, as well as our thinking around who has power to be mobile or immobile, and who and where new assemblages of people, objects and processes arise (Adey and Bissell, 2010). Applied to GCC nations, the views of mobility theorists can help further our understanding of new regional assemblages of people, institutions and policies.

Diverse factors that pervade the import of sustainability policies from elsewhere to Abu Dhabi, lead us to move beyond a linear policy transfer path, and consider various relational factors including politics, economics, social factors, inequality, power, learning, history, environment, religion, and culture. Factors related to post-colonial history in the context of the Gulf states and Abu Dhabi also play a part in the narrative on policy transfer, particularly related to societal

hierarchies and persisting inequalities. In addition, this research will consider relational factors, globalization and a widening set of network actors for their role in implementing mobile sustainability policies at multiple scales. These aspects take the initial ideas around policy transfer further, with opportunities for governance around sustainability policies to emerge among diverse stakeholders in Abu Dhabi, Masdar and the UPC.

We witness how mobility theorists move beyond the focus on emulation and adaptation often found in the writings by policy transfer theorists; instead, mobility theorists explore the role of global policy networks in creating local responses that adapt globalised policies in a localised form. In essence, these are agglomerations of both local and global power relations in innovative knowledge sharing and knowledge production processes. Mobility scholars have also linked policy mobility to the production of new institutional structures that aid urban governance (Brenner and Theodore, 2002; McCann and Ward, 2011). We could witness a movement away from practices that are historically and geographically rooted in unequal relations, cultural values and individual biases.

Mobility theorists direct our attention to cities' relationships with other places and global processes, yet they also recognize that urban problems and accompanying solutions are unique to certain locales, local elements and resources and local actors. Therefore, understanding the role of oil wealth, Islam, culture, social, political, economic and historical factors as they relate to policy transfer mechanisms in Abu Dhabi and also the wider set of Gulf states is vital.

Healey (2015b) has noted that factors in the local context can encourage and constrain the implementation of policies. The manner in which sustainability is interpreted and re-politicized in the authoritarian, oil-rich context can contribute to our understanding and learning on the impacts of power, inequality, locally adapted knowledge and experimental governance. In essence, we are moving away from normative prescriptions of what mobile sustainability policies should be, to what policy translations are in practice, given a host of complex interacting internal and external factors.

The UPC's adoption and implementation of Estidama across energy, housing, transport and urban design, and Masdar's evolution as an eco-city in oil-rich Abu Dhabi with its past and future inextricably linked to highs and lows of global oil prices, can be fertile ground for understanding the struggles, friction and practices that McCann and Ward (2011), Cresswell (2006, 2011) and other mobility theorists hail as vital elements.

This theoretical discussion on mobility, policy transfer and related governance leads us to an understanding of how sustainability principles from elsewhere were intertwined with the local context in Abu Dhabi focussing on the main research question and six sub-questions listed below.

**Overarching Research Question: What politics, interpretations and implications emerge from the transfer and mobilisation of sustainability concepts from elsewhere into the local context of Abu Dhabi and the sustainability-driven institutions of Masdar and the UPC?**

1. What historical, political, economic, geographical and social factors prompted the transfer and mobilisation of sustainability concepts from elsewhere into Abu Dhabi, and the institutions of Masdar and the UPC?

2. Who are the stakeholders involved in and impacted by the transfer of sustainability principles into Abu Dhabi, and the institutions of Masdar and the UPC? What mechanisms of transfer and mobilisation have they employed toward mobilising sustainability in Abu Dhabi, Masdar and the UPC?

3. How do the different meanings and experiences associated with the transfer and mobilisation of sustainability concepts at multiple levels i.e. internationally, GCC-level, UAE-federal level, emirate-level, and institutional-level differ among diverse stakeholders?

4. What differentials and tensions accompany the transfer and mobilisation of sustainability concepts? Why do these tensions persist and what implications do they have?

5. How are sustainability developments in Abu Dhabi situated in relation to parallel developments in Dubai and the wider GCC?

6. What opportunities emerge from sustainability solutions across problematic planning and sustainability issues, and what are the implications of these opportunities?

# 3. Methodological Approach: Case Studies & Thematic Analysis

## 3.1 Introduction

The theoretical ideas presented in the literature review offer a set of well-grounded stepping stones upon which to pursue an analysis of the phenomenon of sustainability policy transfer and its subsequent implementation in the context of Abu Dhabi. Rowley (2002) views research design as an action plan that allows the researcher to move from questions to conclusions. The aim of this chapter is to outline the research design, in particular the rationale for the choice of methods, and processes of data collection and analysis that led me to the findings.

Let us consider the overarching question posed by the research, which is a "what" question, namely: What politics, interpretations and implications emerge from the transfer and mobilisation of sustainability concepts from elsewhere into the local context of Abu Dhabi? The study employs qualitative methods, featuring a mixed-methods approach to analyse the transfer of external sustainability concepts to Abu Dhabi. In particular, I consciously embrace a case study approach and thematic analysis. Both methods require a combination of data sources that best allow me to juxtapose the rich descriptive narratives that emerged from the local context of Abu Dhabi against well-established theories around the transfer and mobilisation of sustainability concepts from other countries.

## 3.2 Rationale for Abu Dhabi and Case Studies of Masdar and the UPC

Abu Dhabi, the capital of the United Arab Emirates, has long engaged in sustainability-related policy transfer. The emirate has been a frontrunner among the Gulf states in its embrace of a green growth agenda, eco-city development, and a record number of green buildings (Luomi, 2014; Long, 2015). The emirate's leadership has undertaken long-term investments in sustainability-related policy and knowledge transfer within Abu Dhabi. The case studies of Masdar and the UPC, in particular, reveal considerable insight into this phenomenon. The cases offer complementary, yet contrasting, approaches to sustainability in the local context, making them worthy of study.

Masdar City (MC), is a unique business unit of Masdar, a subsidiary company of the Mubadala Development Company. Mubadala is in turn owned by the Abu Dhabi government. This unique ownership structure means Masdar is a quasi-government entity with a for-profit mandate. Each of Masdar's business units including MC focus on different aspects of the clean energy value chain. MC is the local embodiment of an eco-city and an economic free zone. In the case of Masdar, the government-backed leadership, researchers and the international private sector primarily influence the adoption of sustainability concepts from other countries, and their subsequent implementation. This is related to Masdar strategically pursuing a global policy agenda (Masdar Sustainability Report, 2015).

The UPC is the government agency responsible for regulating the emirate's built environment. It adapts global planning best practices to local conditions and represents a form of local incentive-driven sustainability with policies that include a green building rating system. The UPC's sustainability initiative, Estidama, is applied across various sectors and developments within the emirate and in other parts of the UAE (Abu Dhabi Urban Planning Council, 2013b). The prioritisation of a local development perspective by the UPC differentiates it from Masdar's agenda which has prioritized the business of renewable energy on a global scale. MC has emerged as a thriving research and income-driven development hub while the UPC has prioritized housing diversity, urban design, resource efficiency and environmental risk mitigation. Both institutions have encouraged the use of multimodal transport and incorporated infrastructure, cultural and social dimensions in different ways.

Given the unique trajectories for pursuing sustainability in each institutional context, the two cases provide a fertile testing ground for applying my theoretical framework. Through the focus on policy transfer, mobility and related governance noted in the argument chapter, the phenomenon can be further probed through a thematic analysis based on a mixed methods approach.

**3.3 Opportunities and Challenges of Employing a Case Study Approach and Thematic Analysis**

Yardley (2000) suggests that effective qualitative research should be sensitive to the theoretical and socio-cultural context, without compromising data collection and analysis to complement

its rigor. Large bodies of data can be broken down in a number of ways through deriving similarities and differences within the data, establishing patterns and themes across facts and figures, and creating summaries to reveal new, unanticipated interpretations (Braun and Clark, 2006). Healey (2013) argues in favour of case study research informed by history and ethnographic methods, with a focus on micro-level activities as a vital part of interpretive policy analysis. In Healey's (2013, p.1517) view, interpretive policy analysis is focussed on the "*construction and mobilisation of meaning*" (author's emphasis) producing policy frameworks that then become institutionalised into practice by focussing on the "*rationalities and mentalities of different political or policy communities*". Beyond the interpretive approach championed by Healey (2013), Burawoy (1998) favours the extended case method that links particularities of the data to wider historical contexts.

Newmark (2002) notes that case studies have traditionally been used in policy transfer research. Case studies at the institutional level are valuable sites for analysing the specifics of policy transfer. Unique transfer mechanisms in the local context of Abu Dhabi are worthy of being conceptualized, as limited research on the subject is to be found. The literature around policy transfer, mobility and related governance provided me with cues to interpret various perspectives associated with the transfer of sustainability to Abu Dhabi and its subsequent implementation. The scope of policy transfer and mobility theoretical concepts can be further expanded by applying them in the local context of Abu Dhabi. The literature on policy transfer informed us about the people, rationale and processes involved in the transfer of sustainability concepts whilst mobility thinking on multiple socio-spatial scales has potential to pinpoint areas of tension in transfer processes as a result of relational factors. Mobility theorists such as Peck and Theodore (2010, 2015) are in favour of following policies and their impact on new and existing networks. Related governance concepts can generate new insights into transfer processes juxtaposed against an authoritarian, oil-rich local context, particularly when complexities arise between agents, institutional and system structures.

While there is considerable value in exploring two complementary, yet unique, approaches to importing and implementing sustainability concepts from elsewhere into Abu Dhabi, analyses of the institutional contexts of Masdar and the UPC as case studies will suffer from certain constraints. The first is the difficulty to generalize and predict since the findings are deeply embedded in the institutional cases within which they were developed. While the international

applicability of the research is limited, the study has applicability in the immediate surrounding region given that other GCC countries share common political, social and economic norms, and are also embarking on various sustainability-driven initiatives (Luomi 2015; Sillitoe, 2014). This research has potential to be useful to the wider community of academics, planners and practitioners interested in understanding the phenomenon of policy transfer in an authoritarian local context and more generally within the GCC. Moreover, the Masdar City experiment and application of Estidama across diverse planning and sustainability issues is unique and worthy of much wider study as a role model for replicability, particularly among the Gulf states.

Rowley (2002) strengthens the need for qualitative case studies by directing us to analytical generalizations that can emerge from the process. When empirical findings from a case study are juxtaposed against a theoretical framework, richer and deeper forms of analysis take place. This is also noted by Wilson (1979) and Swanborn (2010) in their exploration of the utility of case studies. Lincoln and Guba (1985) offer an insightful proposition about qualitative enquiry that it is not intended to facilitate generalization, rather to maximize information for learning.

Qualitative enquiry assists my journey toward maximizing information by generating heterogeneous and strategic perspectives around the phenomenon of sustainability policy transfer in an authoritarian context. I have explored diverse perspectives of sustainability institutions, government agencies, the private sector, and end-users impacted by the transfer of sustainability concepts in Abu Dhabi. However, I was also guided by the work of researchers such as Cassell and Symon (1998) who encourage continuous reflexivity, critical introspection and alternative interpretations of data toward producing more convincing accounts of the phenomena being researched.

Whilst reflexivity is clearly important, it is also vital to set distinct research boundaries.

## 3.4 Boundaries of the Research

Yin (1994) and Stake (1994) have noted the value in setting explicit boundaries as part of conceptualizing and clarifying the research goals. My study is set within distinct time and

content boundaries over a ten-year period 2007-2017. The timeframe spans the conception of both institutions, Masdar and the UPC through the present. The period between 2009 and 2012 was crucial in Masdar's case given that the project was forced to scale back dramatically, as a result of the global financial crisis and ambitious project goals. The period between 2012 and the present marks a distinct focus on internal institutional governance, and in particular, the embrace of institution-wide corporate social responsibility within Masdar, and an increase in collaboration with the private sector and research partners (Masdar, 2012-2016a). The research on the UPC covers the launch of the organization in 2007 through the issue of the Estidama mandatory policy in 2010 and through its implementation in 2017. The UPC has undergone dramatic changes organizationally, and expanded its purview over master planned communities, the launch and implementation of the Pearl Rating System, design manuals and digital planning tools. More recent collaboration between Masdar, the UPC and other government agencies and the private sector that took place between 2010 and 2017 are examples of nascent governance processes that followed the initial policy transfer process. As a result, the time period between 2007 and 2017 represents a ten-year period of crucial and continuous evolution in the sustainability scene of Abu Dhabi.

The research mainly deals with sustainability being transferred and mobilised in the institutional contexts of Masdar and the UPC, and related developments across sustainability and planning issues such as energy, housing, transport and urban design. These issues are situated and analysed within the historical, cultural, social, economic and political context of oil rich Abu Dhabi. In order to further situate Abu Dhabi relationally in the context of regional sustainability developments in the GCC, complementary initiatives in the surrounding Gulf countries are also considered as a secondary focus in relation to Abu Dhabi. In particular, the political nuances and implications of authoritarianism and oil wealth are explored, as part of providing a contextual background to characterise Abu Dhabi's political and socio-economic systems.

### 3.5 Data Collection: An Iterative Process

My field work in Abu Dhabi between 2010 and 2012 and subsequent fact checking and follow up between 2012 and the present yielded detailed accounts of local activities, processes and actors involved in transferring and implementing sustainability ideas from other countries to

Abu Dhabi. I employed a mix of primary data collection methods including personal interviews, field observations as well as secondary data collection of documentary evidence across the ten-year period, 2007-2017. The latter was particularly useful to keep up with developments in the time period that lapsed between fieldwork and the write-up. Thus, the purposeful sampling of interviewees as suggested by Clifford and Valentine (2003), Patton (2002), and Miles and Huberman (1994) was also supplemented by in-person fieldwork observations and data from a range of documentary sources. An iterative process was at play since feedback loops from initial data collection and interviews influenced further interviews, documentary evidence and observations. The qualitative nature of the study allowed for flexibility to accommodate new goals and issues over time, since new connections between data and theory emerged over the course of the research.

### 3.5.1 Documentary Evidence

Multiple data sources were examined, including the websites of Masdar and the UPC, Masdar sustainability reports, UPC policy documents, master plans, related media releases, interviews with Masdar and UPC stakeholders on specific elements of sustainability-related policy transfer and implementation. The most useful secondary source documents included master plans, sustainability reports, and official media releases from 2009 to the present. About 500 secondary data sources that included news articles, official project documents, industry conference summaries, books and journal articles pertaining to Masdar and the UPC's sustainability initiatives, were reviewed.

The majority of documentary evidence was available in electronic format and in English with a minority of sources in German. The English content mirrored the Arabic content since the institutions themselves strove to provide much project data in both languages. Masdar and the UPC both provided bi-lingual content (Arabic and English) as part of outreach to their range of diverse multinational stakeholders. In addition, the dominance of English as the working language between stakeholders from different nations in the local context, allowed most of the data to be accessible in English (Mascarenhas, 2012).

I collected news articles and documentary evidence that showcased both positive and negative implications of the initiatives. Amassing critiques of the institutions and their projects did prove to be a challenge since the majority of documentary evidence, particularly the vast quantity put

out by the institutions themselves, tended to portray Masdar and the UPC in a positive light. I realized the data suffered from selective presentation of facts with issues being framed often with positive biases. In a number of cases, an author would mention that Masdar had paid for their visit to Abu Dhabi, which alerted me to look for any clues of positive bias in a piece of data. Deference was usually given to the top-down decision-making framework and authoritarian control at the helm of the institutions, and changes that impacted the institutions, however negative, were often framed with a positive spin by the powerful media machines in charge of disseminating press releases on various project milestones. Accounts by Alusi et al. (2011), Caprotti (2014), Crot (2013), Dempsey (2014), Dessibourg (2015), Jensen (2016), Khirfan & Jaffer (2014), Kingsley (2013), Laylin (2014), Prior (2010), among others, offered valuable critiques of Masdar and the UPC. These sources helped develop crucial project insights on the chronology of Masdar and the UPC's sustainability agendas, key individual and organizational stakeholders, and activities and processes of various departments at Masdar and the UPC. Press releases and project literature issued by private sector partners and other partnering government agencies also described the rationale for policy transfer into Masdar and the UPC. In the case of the UPC, research work by Khater (2013) and Khirfan and Jaffer (2014) and the UPC's '*In Focus*' video presentations were particularly useful repositories of information that allowed me to triangulate my findings, particularly since these sources covered the time period post-2012 when I had returned from my fieldwork in Abu Dhabi.

I was aware of the fact that my choices of documentary evidence and interviews contained potential biases, in line with the thoughts of Edwards and Holland (2013). I attempted to remedy this by searching for data that involved the multiple interests of partnering institutions and other government agencies. Whilst I purposefully focussed on the strategic roles of Masdar and the UPC during fieldwork, I later expanded my data collection sources to include press interviews, annual reports and documentary evidence from a wider set of external stakeholders including developers and other government agencies such as the Department of Transport (DOT), Department of Municipal Affairs (DMA), Abu Dhabi Municipality (ADM), and Masdar's private sector partners who, over the course of my research, emerged as increasingly important players in the sustainability journey Abu Dhabi had begun. Subsequent phases of my research used data that emerged from the perspectives of partnering institutions and agencies which was crucial to constructing a more complete understanding of the process of policy transfer and its implementation in problem-solving urban issues on the ground, beyond just the

perspectives of Masdar and the UPC. From a wider relational perspective, such as those suggested by mobility theorists, these external partners played a crucial role in the long-term implementation of sustainability concepts.

As part of this process, I collected summaries of testimony and presentations from other industry conferences available online, particularly between 2012 and the present, which widened my pool of data sources. Conference documents proved to be a vital data source for understanding the importance of external stakeholders working in relation to Masdar and the UPC.

Documents that emanated from conference presentations by Masdar and the UPC's external partners and stakeholders allowed me to gain additional perspectives from this wider group of stakeholders. Beyond the World Future Energy Summit, local conferences such as Cityscape Abu Dhabi, the Annual Emirates Green Building Council Congresses, the Eco City World Summit, the Gulf Municipal Work Conference, and the Big Five Construction conference featured evidence of a wide stakeholder base of architects, engineers, contractors, government agencies, private sector partners and suppliers, all implementing a range of sustainability initiatives in Abu Dhabi.

A number of these conferences also generated media coverage, newsletters, video interviews and summaries of key stakeholders and discussions that were useful sources of information. This allowed me to considerably expand my knowledge and understanding of stakeholders involved with Masdar and the UPC and their initiatives. Khater's (2013) research on Estidama was useful in determining developers' reactions to Estidama, whilst Cormier (2010; 2015), Dempsey's (2014), Khirfan and Jaffer's (2014), Larry Beasley and Associates Inc. (2015) and Madden's (2010, 2011, 2016) accounts yielded detail on the subtleties of policy transfer at the UPC and the role of planners. Twenty additional full-length media interviews relevant to the research were amassed through searches for content featuring a range of government and private sector sustainability-related stakeholders in Abu Dhabi, which allowed me to better validate and diversify my initial data collection. What emerged was evidence that the sustainability field in Abu Dhabi was continuously evolving with new stakeholders connected through expanding networks, increasingly collaborating with Masdar and the UPC.

Motives behind policy transfer, the impact of nuances of the local context, mechanisms of policy transfer and their implementation emerged from the personal interviews as well as online interviews and documentary evidence. I created summaries and conceptual maps from the documentary evidence and in-person interviews noting arguments relevant to the research question. In addition, the inclusion of documentary evidence through the present helped improve the quality of the data and findings given the passage of time that passed between fieldwork and the write up. I now discuss my approach to the interview process.

### 3.5.2 Semi-Structured Interviews

Kvale (1983) explains that qualitative interviews allow us to *"gather descriptions of the live world of the interviewee with respect to the interpretation of the meaning of the described phenomena"* (1983, p.174). Compelling details of actions or situations beyond general opinions can therefore be gathered from interviews.

Prior to conducting interviews, I began with collecting documentary evidence to understand the institutional structures and change agents at Masdar and the UPC. I studied existing institutional documents, newspaper articles, press releases and conference materials that featured experienced and knowledgeable individuals across sustainability areas such as energy efficiency, corporate responsibility, research partnerships, Estidama, and development review related to the work of Masdar and the UPC. My interviewees were a heterogeneous group of change agents working on different aspects of sustainability, including private sector partners of the institutions, planners, private sector consultants, professors, senior level managers working on corporate responsibility, design, green building criteria, with unique knowledge, experience and perspectives.

#### 3.5.2.1 My Approach and Experiences with the Interview Process

I introduced myself and shared my contact information with potential interviewees, explaining my role as a PhD candidate in the Department of Geography at the London School of Economics and Political Science, conducting research for my PhD dissertation on the subject of sustainability initiatives being implemented in Abu Dhabi. I requested their permission to interview them in relation to the particular knowledge, experience and expertise they could contribute to understanding a particular strand of my research. I customised my outreach to

potential interviewees in line with their particular work and organizational background. When a potential interviewee reverted back with a positive response agreeing to be interviewed I would proceed with coordinating when and where the interview would take place.

In some instances, an interviewee put me in contact with another contact with an interesting perspective, as well as, directed me to documentary evidence around the phenomena. This enabled me to gain a wider perspective of the issues that came up in the interviews. Given that the interviewees were managerial level professionals that would otherwise be difficult to access, an introduction by a known colleague helped my chances of securing an interview. I also networked in-person with potential interviewees in a conference setting at the World Future Energy Summit when I attended in 2011 and 2012, and was able to interview private sector consultants with experience in Abu Dhabi's public and private sector. Patton (2002) emphasizes the value in being able to gain in-depth information from a smaller number of informants. Patton (2002) refers to this as "*snowball sampling*" (Patton, 2002, p.237), where the network of people the researcher engages with gets larger as newer "*information-rich*" cases are unearthed. However, snowball sampling has been critiqued for the selection bias that accompanies it. This in turn impacts the quality of the data since participants are often in the same network (Griffiths et al., 1993). A lot of snowball sampling is based on the assumption that a social network being studied consists of groups with relatively homogeneous traits. In the case of my research, the various change agents involved in sustainability in Abu Dhabi were not a homogenous group. I used the snowball sampling strategy as one of the methods of gaining access to a potential interviewee. I also used documentary research, conference agendas, media accounts and in-person networking to direct me to other potential interviewees who I contacted and interviewed. This helped me to avoid the risk of getting interviewees with similar backgrounds who belonged to familiar professional networks, which may have been the case if I had only used the recommendation of interviewees to gain other potential interviewees known to them. In hindsight, I may not have realised the full potential of the snowballing sampling methodology that would have been useful in amassing perspectives of marginalised groups who are not as easily accessible as professionals who have access to emails and telephones. Nevertheless, it was worthwhile exploring aspects of snowballing, that allowed me to gain trust and a better rapport with some interviewees. On balance, it was important not to rely on a single technique for gathering interviewees.

During the initial fieldwork period between 2010 and 2012, I conducted 13 semi-structured interviews with Masdar and UPC stakeholders including related private sector partners, academics and consultants with the goal of amassing a range of perspectives on a variety of issues such as renewable energy, public-private partnerships, research partnerships, Estidama criteria, institutional governance, housing, transport and design initiatives based on areas that the interviewees specialized in.

The views of interviewees were reflective of their engagement with aspects of sustainability in Abu Dhabi, Masdar and the UPC at that period in time (2010-2012). The interviewees shed light on the rationale for the pursuit of sustainability as well as explicit and sometimes implicit goals of key stakeholders in the local context. Given the passage of time between the fieldwork and the write up, I followed up with my interviewees prior to the final write-up to request follow up interviews. Some interviewees had completed their engagements with Masdar and the UPC and did not have new material to add to the discussion. I was able to get updates from five of my interviewees via telephone and email in 2017 that add to the existing interview data, which helps to situate the initiatives at Masdar and the UPC in the longitudinal timeframe. Those interviewees that could not give updates were fine for the existing interview data to be used, given its relevance to understanding aspects of sustainability in the local context in the aftermath of the global financial crisis.

My interviewees were strategically picked for the multiple perspectives they brought on the import and implementation of sustainability concepts in Abu Dhabi. Prior to beginning each interview, I sought the permission of each interviewee. I asked if they preferred to be named or instead preferred to be attributed with a generic title and organisational affiliation in connection with the interviews. In keeping with the preferences of the majority of my interviewees I used the latter option. I let them know their participation was voluntary and that the data from the interview would be used for academic and research purposes toward my PhD dissertation at the London School of Economics and Political Science. I also provided my interviewees with my contact information and a written consent form that they returned to me. I have included a sample of the form in Appendix 4.

The interviews were semi-structured and data was gathered on a template that reflected elements related to the theoretical ideas around transfer rationale, processes, mechanisms, change agents, strengths and opportunities related to the interviewee's work, nuances of the

local context, as well as their views on addressing existing sustainability problems in the local context. On average, the interviews lasted around thirty minutes. I used a flexible approach to phrasing questions during the interviews which often did not match the exact sequence of my interview guide. The majority of interviewees preferred not being tape recorded, which is understandable given the nuances of disclosing information that may be considered confidential in the local context. Some interviews also took place at the World Future Energy Summit on the side lines of a relatively busy conference space which was not conducive to recording because of background noise.

I made a decision in favour of using handwritten notes during the interviews applying shorthand, which I transcribed soon afterwards. I also took note of points during the interview when an interviewee hesitated to answer a particular question. In that event I would ask other questions, and try to address the question again. I also personalized the template in line with the particular background of the interviewees. I have included a sample template of interview questions in Appendix 1 of this thesis.

During the interview, I would ask the easier, more direct questions first and made the interviews as conversational as possible to allow the interviewee to open up, and to develop a rapport with the interviewee. I would gauge the direction of the conversation as I went along and adjust the order of questions accordingly. In some cases, instead of directly asking about tensions or challenges I would modify the language by asking how a process could be improved, or how current solutions/policies were working. I tried to use appropriate language in line with the sensitivities of the interviewee. Some interviewees had a sense of authority linked to their senior positions and were guarded in their responses, whilst other interviewees also in senior positions were more approachable and spontaneous in their responses. Interviewees found it easier to go into detail on familiar issues that were part of their direct purview. I recognize that as an interviewer I also played a role in shaping the flow of the interview by choosing particular elements to focus on, and in this manner, I contributed to the production of data. In order to minimize my impact on the data, I utilised the interview template (see Appendix 1) to generate relevant responses across the interviews. I attempted to understand past events and future aspirations related to the projects through the interview process, whilst getting a sense of existing initiatives and practices. The interviews were useful in generating insight on the distinct roles of various units and departments of the institutions, nuances of the local context and existing societal hierarchies. It was interesting to see how issues of importance differed

among the stakeholders depending on their nationality, cultural, age, gender or academic orientations. For example, female interviewees discussed issues related to women, youth or social issues without being probed; interviewees with an academic background placed importance on the value of research collaborations in the transfer and implementation of sustainability. The social and cultural context and intent and motivations of the interviewee also became evident in an interview. In some cases, the interviewee had a genuine interest in participating in the research, whilst in some cases the interviewee viewed the interview as a platform to market an initiative. This was reflected in them not directly answering questions and moving the conversation in a direction that they felt comfortable with. When this happened, I made a note of it, as part of the cultural factors that accompanied the interview process.

Some interviews yielded examples relevant to this research. The success of such interviews was often linked to the descriptive ability of the interviewee and their comfort level with speaking on a range of issues. The interviewees gave me indicators of what aspects I could quote them or not. At the end of the interview I thanked the interviewee for their contribution to my research and noted that I would follow up with them with a transcript of the interview notes via email.

I shared the summary notes from the interviews back with my interviewees to give them an opportunity to reflect on our discussion and to make any additions or amendments. I created this feedback loop with my interviewees by sending them a thank you message and a copy of the interview notes via email to give them the opportunity to reflect on our discussion, add new information, correct any discrepancies and clarify any issues. This feedback loop helped fill gaps in information and ensured a greater degree of accuracy of the data. I understand that while recorded interviews would have provided a detailed version of the interview, and eased the pressure of taking detailed notes during the interview, I wanted to adhere to the preferences of my interviewees.

My hope was that the absence of a recording device would allow the interviews to progress more spontaneously, as opposed to more staged responses and hopefully lead me to richer data. However, I found that while interviewees spoke freely about the positive attributes of the project, they were more reluctant to make outward critiques of the initiatives. As such, none of the interviewees explicitly criticized either institution, given their association with the institutions as employees, consultants or business partners. In the local context, criticizing the

projects or institutions amounts to criticizing the government, particularly since both Masdar and the UPC are government-owned/directed. It is therefore understandable why the interviewees preferred to avoid making any controversial statements given the authoritarian political context. I tried to remedy this by reaching out to former employees of the institutions to see if I could gain more critical insights from them, however, former employees from the institutions and partner institutions I spoke to also refrained from directly critiquing aspects of the projects. I attributed this to the fact that former employees also had ties to the organizations and network of industry stakeholders that they did not want to alter by saying anything negative. Thus, getting valuable critiques was a particular challenge I encountered in the local context. In this respect, documentary evidence proved valuable in accessing critiques that did not emerge from the interviews.

Overall, the interviews allowed me to gain first hand insights from individuals in the local context, which would be useful toward adding meaning and nuance to the analysis.

Given the limitations of the interviews, I simultaneously embarked upon collecting field observations in Abu Dhabi.

### 3.5.3 Field Observations: Valuable Local Debates and Discussion at the Masdar Theatre and Visits to Abu Dhabi

Observations at the World Future Energy Summit (WFES) provided a first-hand perspective into the way networks of stakeholders involved in sustainability interacted in a conference setting. Conferences emerged as an important mechanism for transferring and mobilising sustainability concepts (Mascarenhas, 2012). Proponents of first hand observation including DeWalt and DeWalt (2011), Given (2008), Jorgensen (1989) and Spradley (1980) cite the value of learning from visually observing people's interaction with one another. Nuances such as power structures that determine social groupings, subsequent norms, behaviour and agenda issues can be better understood through observation. Although laborious in some respects due to the large volumes of data it generates, first hand observations also capture immense detail and insight into contextual nuances. I gained unique insight into the institutional context of Masdar in particular as I listened to the discussions among a number of the change agents at the WFES in 2011 and 2012, where diverse government and private sector stakeholders came together to debate and discuss local perceptions and applications of sustainability.

The Masdar theatre sessions were an active learning and knowledge exchange hub throughout the conference. These sessions provided further clarity on the interviews I was conducting concurrently. This allowed me to minimize research bias that may have crept into my interviews. I also fact checked issues discussed at the Masdar Theatre sessions with documentary evidence from online press releases, sustainability reports and news articles. The sessions featured intimate groups of twenty or less participants that proved to be a valuable source of knowledge sharing, education and in-person interaction with a range of stakeholders interested in various aspects of sustainability. I recorded field notes from watching stakeholders, including architects, clean technology investors, private sector partners, suppliers, non- profit groups, government agency employees and academics who engaged with Masdar staff and other guest speakers including planners from the UPC and private sector partners of Masdar.

At one of the UPC-led sessions, the question and answer session was particularly interesting given the interaction between planners and developers. The developers in the audience were particularly concerned about how to meet the Estidama mandate. Some raised issues such as being in the midst of lengthy projects and negotiations that would further get delayed with having to meet Estidama regulations. Another developer asked about the costs related to having to hire staff trained in sustainability criteria. The planner making the presentation re-iterated the training sessions which the UPC provided at no charge and the UPC's open-door approach to advising anyone with concerns on the mandate and the associated costs.

The presentations and more importantly, the question and answer sessions post presentations allowed me to understand the industry culture in Abu Dhabi. Participants wanted to know how the projects pertained to them, as private sector partners, as government agencies, developers, academics, students, and residents. The WFES summit was key to my understanding the role of conferences as a policy transfer and governance platform in the local context, given the potential for network formation among like-minded groups of experts.

In general, I observed a healthy curiosity from the external stakeholders about the initiatives of Masdar and its partners, with a tendency of minimal criticism of aspects of the presentations in these public sessions. This could potentially be attributed to the fact that Masdar hosted the event, and raising criticisms in a public setting seemed untoward in the local authoritarian

context. Rather, the audience was focused on networking, asking questions from their industry perspectives in a bid to understand how business opportunities and collaborations could grow in the future.

Informal conversations with attendees from the general public, as well as conversations with Masdar Institute students, and staff in attendance from other Abu Dhabi government agencies and local non-profit representatives, gave me a glimpse of the varied perspectives and concurrent sustainability initiatives in the local context (Mascarenhas, 2012).

### 3.5.4 Field Observations at Masdar City and Around Abu Dhabi

I took notes on three separate visits to MC charting the changes I noticed when I visited. From being a construction site with air-conditioned portable cabins in 2010, by 2012 MC had grown into a central plaza with fully constructed MIST buildings featuring student housing, research labs and other research spaces catering to a vibrant community of students and staff. Along with experiencing the eco-city's efficient design features, open spaces, use of traditional wind towers, mixed-use buildings and closely placed buildings that provided shade and encouraged walking, I also rode Masdar's futuristic personal rapid transit system and the electric cars developed by Masdar in collaboration with Mitsubishi. The on-site visits were useful toward getting a sense of the development on the ground. Informal conversations with students at MIST were also insightful in terms of understanding the perspectives of students on the futuristic environ they called home.

I also took notes on aspects of urban development on my visits to downtown Abu Dhabi and surrounding neighbourhoods in 2011 and 2012, noting the continuous blending of traditional and modern aspects of architecture, and also aspects of housing and travel patterns. The field observations opened my eyes to how Abu Dhabi was sub-divided across class, ethnicity, income and nationality with separate neighbourhoods catering to Emiratis and expat residents. I observed gender imbalance in Abu Dhabi, the strong sense of community among expat groups in certain spaces, the trend of lower and middle-income expat groups using public transport and engaging more in walking, which gave me first-hand exposure to the dualities that exist in Abu Dhabi. Again, informal interactions in the field such as conversations with expat commuters on local bus rides gave me insight into people's daily issues such as the high cost of living, transport and uncertainty of expat life in Abu Dhabi (Mascarenhas, 2012). Excerpts

from my observations in Abu Dhabi can be found in Appendix 2.

The combination of data sources and retrieval techniques sought to minimize the particular limitation of a single method and allowed for forms of triangulation to take place.

Let us now consider the efforts toward attaining objectivity and validity.

**3.6 Efforts to Attain Objectivity and Validity**

Lincoln and Guba (1985, p. 289-331) discuss four aspects to enhance the trustworthiness of studies. They include credibility, transferability, dependability and confirmability. The credibility of the official Masdar and UPC data is subject to debate given the inherent positive biases. Recognizing this limitation, I sought to balance these accounts with documentary research for articles and documents written by authors without direct links to Masdar and the UPC. My experience amassing data from local dailies such as The National, Gulf News and Khaleej Times showed evidence that the newspapers attempted to report on positive and negative aspects of development, with a tendency to emphasize the positives. These dailies proved to be a valuable source of data on sustainability initiatives and stakeholders. I placed value on recurring themes in the coverage of issues, the chronology of events and initiatives, crucial stakeholders, timelines for unveiling of policies, to get a better understanding of the significance of problematic sustainability-related issues. Patton (2002, p.230) argues in favour of the value of "*information-rich*" cases (author's emphasis) that guide us toward issues central and vital to the purpose of the research.

Beyond the basic description of events, people and policies, I attempted to uncover the underlying, less transparent meanings from the data, particularly as influenced by the local authoritarian context. In some cases, what was not said, carried as much value as what was reported in the local press articles. Pompeo (2013) for example noted that although the Abu Dhabi daily paper The National attempted to serve as a Western-inspired model of journalism, over the course of its existence since 2008, self-censorship at the newspaper has been prevalent. It has also been known to report subjectively around sensitive issues within the local context (Pompeo, 2013). In light of this, I sourced alternative data and views from Western newspapers and publications to triangulate reports on Masdar, as well as energy, transport and housing

reports on Abu Dhabi and elsewhere in the GCC from both government and non-government sources including non-profit groups and the private sector.

Whilst the authoritarian politics in Abu Dhabi prevented any direct criticisms of the government and its initiatives in the local press, foreign publications possessed greater freedom to report on initiatives not going as well as expected. For the same reasons, interviewees were hesitant to make outright criticisms of the government or divulge any project information not already approved for public dissemination. Despite these challenges and lack of transparency around sensitive information, I made attempts to triangulate the data from a range of sources and used neutral questions in my interviews, to delve into the unique professional role played by the interviewee, to make the findings as realistic as possible.

Rowley (2002, p.16) notes that case studies have been criticized for lacking rigor and objectivity, particularly when compared to other research methods. At all times, efforts were made to try to be objective and avoid research bias by taking a neutral stance devoid of personal perceptions and biases. Burawoy (1998) draws our attention to power as an avenue that impacts data, both the power that the researcher has over the situation as an observer and creator of knowledge. Reeves (1994, p.107) refers to the researcher's own *"surreptitious agenda"* which researchers must be conscious of and bring under control. In my own way, I also wielded power over the research in assimilating and interpreting the knowledge through my chosen theoretical lens. I also recognize the interviewees and authors of the data I consulted, held power over the research given their individual biases that indirectly impacted the data. In order to bring under control tendencies for bias it was important to follow Fine's (1998, p.135) advice on the importance of describing what is or what is not *"happening between"* (author's emphasis), *within the negotiated relations of whose story is being told, why, to whom, with what interpretation, and whose story is being shadowed, why, for whom, and with what consequence."* By discussing elements of authoritarian power, governance, networks of change agents and associated opportunities and tensions related to sustainability, by considering the issues at hand from diverse perspectives, beyond just the clues that theoretical concepts provided was vital toward bringing out the nuances and deeper meanings associated with the transfer of sustainability concepts.

Factors such as gender, race, nationality etc. can also impact the power of the researcher, and

the subjects. Having grown up in the UAE as part of the expatriate community, I had to be constantly aware of any existing assumptions I may have had toward the policy transfer phenomenon and reflexively monitor my attitudes and responses to the information that I gathered. Although I could identify with the inequities that exist between citizens and non-citizens based on my experiences living in the UAE, I tried my best not to allow this to impact my interpretation of inequalities faced by expat groups. I would rely on data from diverse perspectives including Emirati and expat related data to guide my understanding and construction of embedded meanings on the issues, thus confronting potential researcher bias, which is accompanied by the danger of placing greater importance of one voice over another. The politics of the local context gave me answers as to why certain issues and groups are prioritized and why inequalities exist in certain areas. Every attempt was made to reduce research bias by identifying the different perspectives of stakeholders, particularly casting the net wider to include Masdar and the UPC's external partners over the course of the research. This was essential to being able to reflect on the data and re-analyse it over time from diverse perspectives to provide a balanced, rounded account of the phenomenon, as proposed by Lewis and Grimes (1999).

Similarly, my own identity as a female, former expat (from my childhood in the UAE) was reinforced in a pre-dominantly male-dominated culture. In some cases, given the gender imbalance that existed in Abu Dhabi, I felt I had to be aware of my surroundings whilst engaging in observations of street life and the built environment in downtown Abu Dhabi; whilst in professional interview settings my gender did not play a significant role.

Cassell and Symon (2004) recognize that the disciplinary background of the researcher can impact the knowledge being produced leading her to pursue some issues over others and investigate the voices and roles of some groups whilst ignoring others. I might be accused of this predilection in my orientation toward emphasizing the roles of architects and planners in the local context. Their assertions forced me to recognize these leanings and discipline myself to remedy them by considering the roles of other change agents. Healey's (2010) suggestion that very often non-planners without formal training can be an integral part of adapting emerging planning practices is perhaps a way to move away from such biases.

Rowley (2002) notes a potential positive outcome of case studies in that analytical

generalization can emerge from case studies where previously developed theories are used as a framework with which to compare and contrast empirical findings of case studies. This, she explains helps to contribute to its external validity. In my research, I attempted to construct validity in each of the case studies by linking my interview and data collection questions to the research question and theoretical concepts. In terms of transferability, the study is limited to the immediate geography. Yet Yin (2003) highlights the theoretical generalization afforded by case studies that can connect with larger concepts. In this case, globalization, modernization, multi-level transfers and resultant networks are wider concepts that pertain to the research beyond the nuances of the immediate geography. In addition, I have attempted to explain the qualitative methods and methodological choices, research design, data collection and analysis process as clearly as possible to ensure dependability and reliability of the research. The analysis involved making purposeful decisions (see Cresswell, 2007; Miles and Huberman, 1994; Patton, 2002) on the relevance of the data for each case study.

### 3.6.1 The Impact of Time Away from this Research

I had to take time off from this research due to health issues and family commitments, resulting in a time gap between when the fieldwork was conducted in 2010-2012 and the final write-up. I understand this passage of time has implications for the originality of the research, which I have attempted to remedy by contacting my interviewees for updates to make the interview data more current. The updates allowed me to triangulate the documentary evidence I had researched in the interim. One of the challenges I encountered, is linked to the transience of interviewees, some of my interviewees had left the institutions and did not have new information to share. They were happy for me to use the existing interview data, particularly given its relevance from a contextual and historical perspective.

There is value in being able to reflect retrospectively on the transfer and implementation phenomenon, which the time away from the research allowed me to do. It was important to analyse data related to the initiatives through the present to be able to situate the phenomenon of transfer and implementation around sustainability, not just from a historical perspective, but also over the 10-year time frame (2007-2017) charting how the institutions have progressed from multiple and diverse perspectives.

In thinking over and evaluating the positive aspects but also the constraining aspects of the

local context encountered during fieldwork, and pondering over my role in developing the research, I realized I had chosen to primarily focus on the group of stakeholders directly engaged with transferring and implementing sustainability. However, by choosing to focus on a limited group of professional stakeholders related to Masdar and UPC who were involved in policy transfer and implementation, I had unintentionally not considered the end-users of the policies, the residents and everyday citizens as part of my initial set of interview subjects. These groups are also impacted by sustainability policies although they do not have a role in decision-making.

The time I spent away from the program made me realize it was also important to include the perspectives of residents impacted by policies as part of critically introspecting the policy transfer phenomenon, so as not to lose out on their perspective. I thus utilised documentary evidence from existing research and media accounts that captured the perspectives of everyday residents, including Emiratis, high income, middle and low-income expats since it was difficult to access these groups after I left Abu Dhabi.

Despite not having actively targeted lower-income expats during fieldwork as interview subjects, I had observed them and made notes on how these groups interacted in expat dominated spaces, whilst in Abu Dhabi. I observed different expat groups demonstrating a strong sense of community in public spaces such as malls, the Corniche, the grounds of St. Joseph's church, expat-centric community centres, etc. In particular, observations such as how low and middle-income expat groups frequently used shared taxis going in the direction of high-density neighbourhoods, how pedestrians in downtown Abu Dhabi were also predominantly from these groups, and how these groups were also the main segments utilizing the local bus system, opened my eyes first hand to the dualities of Abu Dhabi, that I was able to validate further with existing documentary evidence.

As I look back on the interview experience, whilst I was able to get Emirati representation among my interviewees from Masdar (which I attribute to Masdar staff being experienced with receiving interview requests from foreign journalists and academics and being predisposed to speaking about the initiative), it was more challenging to gain interviews with Emirati planners from the UPC who seemed more reticent in their willingness to be interviewed. Not being able to engage with more Emirati planners at the UPC despite attempts to reach out to them, in retrospect, made me ponder over whether having fluency in Arabic may have helped more in

this aspect. Beyond language, gaining trust within what is a generally more difficult-to-penetrate network of Emirati professionals would require more in-person engagement over time and personal introduction through a known connection. I tried to remedy this by searching for Emirati experiences in documentary evidence which I utilized to describe the perspectives of Emirati planners. The UPC has translated Arabic presentations by Emirati planners in English which they have made available online in their '*In Focus'* video series which was useful in understanding development issues from an Emirati perspective.

On reflecting further on these observations in the period after I had returned from Abu Dhabi, I gained an understanding of ways in which sustainability policies impacted wider population segments in positive and negative ways beyond the institutions and their partnering stakeholders. It was important to understand the politics of inclusion and exclusion further as part of critically analysing the transfer phenomenon.

Once the data was collected, I moved to the process of analysis that I now discuss.

**3.7 Data Analysis: Applying Codes and Overarching Themes**

In attempting to gain a deeper understanding of the politics, interpretations and implications that emerged from the transfer and mobilisation of sustainability concepts to Abu Dhabi from other jurisdictions, the theoretical framework around policy transfer, mobility and related governance informed both the development of codes and the themes that emerged.

By comparing the overlap between codes that emerged from the literature review with the codes from interview data, documentary analysis, in-person observations during fieldwork, and documentary analysis, I identified and analysed interrelationships, processes, patterns and degrees of how sustainability policies are transferred and mobilised in relation to Abu Dhabi.

In debating my choice of methods, thematic analysis with its focus on overlaps between theory and data, pattern discernment, use of quotes to support conclusions and the predominance of over-arching themes, was a valuable tool. It also offered the flexibility to juxtapose data over the 10-year period (2007-2017) against theoretical concepts. Given that thematic analysis is not tied to any pre-existing framework, this increased its adaptability to allow for new meanings to be derived from the data.

However, thematic analysis is not without its limitations. Dixon-Woods (2006) critiqued thematic analysis for offering little by way of theoretical structure from which to develop higher order thematic categories. To address this critique, it was important to ensure a continuous interweaving of theoretical themes across the research over time. It was also important to seek areas where data and theory contradicted each other, so something new and context-relevant could emerge. Burawoy (1998) argues that the anomalies that emerge that refute theoretical predictions allow researchers to reconstruct existing theories and improve them. The extended case method is proposed as a potential means to link data and theory reflexively, bringing forth the internal and external forces shaping social worlds. Thus, by integrating and synthesizing points from different literature, we move toward reconstructing aspects of theory. Burawoy et. al (1991, p.10-11) describes "*running exchanges*" or a back and forth interaction between literature review and data analysis and between data analysis and collection. Building cumulative knowhow about Abu Dhabi and the wider region operating in an authoritarian political context that can sometimes pose challenges and tensions to the free-flowing forces of globalization, also helps expand on the writings of policy transfer and mobility theorists. Thematic analysis coupled with choosing the two case-studies – Masdar and the UPC allowed for interesting outcomes at the institutional level related to the wider sustainability transfer phenomenon.

### 3.7.1 Coding: Amalgamating 'Theory-Driven' and 'Data-Driven' Codes

The coding I employed involved assigning a concise label to sections of text. Codes were organized according to a relevant issue that was deemed important to interpreting the data. The codes identified specific features within the data that either pertained to my theoretical framework or had emerged as interesting elements from the local context that were pertinent to my research question. Patton (1990, p. 381) considers processes of coding, identifying, and grouping patterns in the data as valuable qualitative techniques. This stage is potentially controversial since themes are subject to research biases stemming not only from my own judgements as a researcher but also from those of the authors of the documentary evidence and the accounts of interviewees. I have attempted to mitigate the potential research bias by including a multiplicity of sources and perspectives in the analysis process. Braun and Clark (2006, p.36) direct qualitative researchers to ensure that codes have not just been derived from a few "*vivid examples*". The coding process should instead, be as thorough and complete as possible, the outcome of giving data equal attention in the coding process.

My codes covered both the data sets I had gathered on Masdar and the UPC as well as the wider context of Abu Dhabi. The codes were initially listed in free form without a hierarchical structure and later progressed to examine a hierarchy of impact of some codes over others. Although the early codes emerged from theory, as the research progressed a number of additional codes emerged from the data. The overlaps between codes that arose from theory and data contributed to the richness of the narrative.

Eight principal codes emerged from theory (see Table 1 below) and ten principal codes emerged from data (see Table 2 below) that I have listed separately. I also identified six codes where theory and data codes overlapped (see Table 3 below). The initial codes were reflective of closer reading of the theoretical literature. Further codes were arranged around different aspects of the research question and the sub-questions as I developed patterns and associations across the data. The three tables below (Table 1 - 3) showcase the main theory-driven, data-driven and subsequent code-overlaps. These are followed by detailed tables (Table 4 - 6) listing all codes and corresponding sub-codes across theory, data and the overlaps between theory and data, that informed the 4 research hypotheses this research focusses on.

Table 1:Main Theory-Driven Codes

| No. | Code Label |
|-----|------------|
| 1. | Mobility/Immobility |
| 2. | Policy Transfer Processes |
| 3. | Policy Transfer Rationale |
| 4. | Governance/Assemblages |
| 5. | Power |
| 6. | Local Context |
| 7. | Spatial Aspects |
| 8. | Multi-Scale Relationality |

Table 2:Main Data-Driven Codes

| No. | Code Label |
|-----|------------|
| 1. | Policy Transfer Processes |

| 2. | Policy Transfer Rationale (Abu Dhabi Level) |
|---|---|
| 3. | Masdar's Policy Transfer Rationale |
| 4. | UPC's Policy Transfer Rationale |
| 5. | Power |
| 6. | Resource Efficiency |
| 7. | Social Sustainability |
| 8. | Economic Sustainability |
| 9. | Multi-Scale Relationality |
| 10. | Governance/Assemblages |

Table 3:Overlaps Between Data-Driven and Theory-Driven Codes

| No. | Code Label |
|---|---|
| 1. | Local Context |
| 2. | Multi-Scale Relationality |
| 3. | Policy Transfer Processes |
| 4. | Policy Transfer Rationale |
| 5. | Power |
| 6. | Governance/Assemblages |

Table 4:Detailed Table of Main Theory-Driven Codes and Sub-Codes

| No. | Main Theory Driven Code | Sub-Code Labels |
|---|---|---|
| 1. | Mobility/Immobility | physical mobility/immobility, social mobility/immobility (of people, objects, institutions) |
| 2. | Policy Transfer Process | change agents (policy entrepreneurs/consultants/experts, elite change agents, non-elite change agents) mediums of mobility/transfer (conferences, change agents, institutions, governments, globalizing private sector, |

| | | | multilateral institutions, international standards/best practice, policy material manuals, conferences, technology, networks, capitalism, globalization, media, documentaries, books, films, seminars, internet and websites, blogs, buildings, infrastructure, cars, buses, elevators, cafes), formal transfer, informal transfer, voluntary transfer, coerced transfer, institutional capacity, human capacity, resource mobilization (technology, communication, infrastructure), trade-offs, policy adaptation, best practice exchanges, hybrid policies, knowledge production, learning gaps, innovation, diverse stakeholder inclusion, mechanisms of transfer, patterns of transfer (social patterns, relational patterns), timing of transfer, speed of transfer, place of transfer, scale of transfer (global, regional local, city, district, neighbourhood, street), policy institutionalization, selective policy transfer, politics of transfer, policy transfer success (emulation, diffusion, convergence, policy/knowledge creation, policy learning, institutional learning, reverse transfer, innovation), policy transfer failure (non-transfer, incomplete transfer, conflicts/tensions) |
| --- | --- | --- | --- |

| 3. | **Policy Transfer Rationale** | globalization, modernization, urban competiveness, urban development, lack of prior policy experience, desire to attract expert change agents, income generating capacity of policy, problem solving ability of policy, desire to create multi-scaled knowledge networks, economic development, regional competition |
|----|----|----|
| 4. | **Governance/Assemblages** | institutional governance (institutional networks and knowledge circuits, institutional resources, institutional behaviour, institutional values, institutional capacity building, transparency and accountability), governance rationale (capitalism, economic development, political interests, social development), multi-level governance (epistemic communities, multi-scale policy networks/flows/knowledge circuits, relational assemblages, interdependencies, joint decision-making, collaborations, consensus-driven initiatives, policy discourse, self-organized governance, organized global governance) |
| 5. | **Power** | elite networks, local-global power networks, local-regional power relations, power hierarchies, politically-controlled institutions, dilution of power, stakeholder biases, disempowerment of marginalised groups |

| No. | Code Label | Sub-Code Labels |
|---|---|---|
| 6. | **Local Context** | local knowledge, local societal values (public participation/citizen dialogue toward policy creation, constituent accountability, civil society, equity, justice, fairness, gender equality, community marginalization, prioritization of elites, social cohesion, local culture and heritage preservation), historical values (colonial legacies, historic societal hierarchies), local community needs, local economic conditions (economic growth, economic development, economic values, economic marginalization), local political context (inclusive politics, elitist politics, political marginalization), local geographic situation |
| 7. | **Spatial Aspects** | territories, borders, spatial distribution (inclusive and divided spaces), tangible aspects (people, Institutions, knowledge, objects), intangible aspects (imaginative/virtual/utopian/futuristic aspects of policy mobility). |
| 8. | **Multi-Scale Relationality** | globalization, multi-scale global institutions, regional interaction, local-regional networks, local-global networks, temporal aspects (past events, present realities, future goals, timings of policy import and implementation) |

Table 5:Detailed Table of Main Data-Driven Codes and Sub-Codes

| No. | Code Label | Sub-Code Labels |
|---|---|---|
|  |  |  |

| 1. | **Policy Transfer Processes** | sustainability driven-institutions, stakeholder mapping, hiring expert foreign change agents, global and transnational collaborations, hosting conferences, regional collaborations, public participation, government agency empowerment, national visons and planning frameworks, timing of financial crisis, institutional budget scale-backs, institutional governance, change agents (institutions (respected architecture and planning firms, financial institutions, civil society, universities, sustainability-driven institutions, local private sector, global private sector, local government institutions) individuals (celebrity architects/planners, foreign planners, local planners, Sheikh Zayed, Crown Prince Mohammed, Larry Beasley, Dr. Makhlouf, Sir Norman Foster, Sultan Al Jaber), knowledge transfer mechanisms (policy-related learning; hybrid practices (regionally-inspired neighbourhood planning, renewable energy initiatives; community *majlis*/town hall meeting); research collaboration (MIST partnerships, local university partnerships), conferences (World Future Energy Summit, Cityscape,) collective capacity building (institutional empowerment at Masdar and UPC), |
|---|---|---|

| | | | public private collaboration (UPC developer outreach, Swiss Village, GE/Siemens/Bio Fuels/Mitsubishi collaboration;), public-public collaboration (Taxi Village, UPC-DOT collaboration on Transport Plans; Abu Dhabi Housing Authority partnership); government-community partnerships. |
|---|---|---|---|
| 2. | **Policy Transfer Rationale** | | globalization, purchasing soft power, economic diversification, building knowledge economy, energy security, job creation, modernisation (master planning, modern transport, modern housing, modern cities, modern infrastructure, access to modern technology), regional factors (competition with Dubai, competition with GCC, regional political crisis); SWF investments and government owned entities (high tech heavy industries, real estate, infrastructure, renewable alternative energy, cultural tourism, economic free zones), |
| 3. | **Masdar's Policy Transfer Rationale** | | soft power (Masdar global brand: futuristic transport, Zayed prize, regional role model; institutional empowerment (CSR, sustainability reporting, stakeholder mapping of active, inactive partners, employee efficiencies); societal benefits (housing: high end eco-villas, mid-priced housing, university housing); (education: research centres, |

| | | universities, schools); (community infrastructure: parks, retail shopping malls; religious centres); (employment: Emiratization, employment of women, youth); (environmental protection: carbon capture, emissions reduction, energy efficient design). |
|---|---|---|
| 4. | **UPC's Policy Transfer Rationale** | social benefits (job creation, Emiratization, preservation of tribal culture, social housing for Emiratis, affordable housing for Emiratis and expats); modernization (energy efficient buildings and communities, retrofits in collaboration with partners); urban design efficiencies (efficient land use, preservation of local architecture, heritage and historic neighbourhoods; safer roads); increased sustainability awareness in the built environment; globalization, legitimization of UPC regulatory powers; regional role model through Plan 2030; soft power in global planning circles; knowledge production (hybrid concepts); institutional empowerment (Emiratization, leadership development, new vision and mission, focus on technology); environmental preservation (mangrove protection, biodiversity protection, development mitigation) |
| 5. | **Power** | authoritarianism, oil-wealth/rentierism, |

| | | late rentierism, subsidies, purchasing soft power, legitimization strategies, transparency, accountability (government agency reporting, government agency excellence awards, regulations and standards e.g. Estidama, LEED), top-down decisions, censorship, co-opting certain groups/power blocs (sovereign wealth funds, executive council, local private sector, royal family); marginalised groups; visionary plans, sponsored conferences; power-sharing processes (creation of new institutions, empowering local private sector, free zones); limited power groups (civil society, global private sector). |
|---|---|---|
| 6. | **Resource Efficiency** | energy efficiency (Masdar's renewable energy projects, pearl rating system), energy security (nuclear energy initiatives, renewables investment abroad), water efficiency, supply chain, waste reduction, environmental protection, risk mitigation, innovation, public transport, electric cars, bike-sharing, technological advancements, car-dependence, energy subsidies, fuel subsidies, climate implications |
| 7. | **Social Sustainability** | human rights (migrant housing conditions), civil society, employment (Emiratization, women and youth programs, inter-generational equity), knowledge transfer, education, |

| | | learning and development, liveable communities (housing (affordable housing issues, Emirati housing, expat housing, housing finance), transport (transit-oriented development, class-centric transport), urban design (infrastructure provision, spatial planning, spatial divisions), public participation, societal benefits (subsidized fuel, public parks, community infrastructure, social housing, education, healthcare for citizens) societal divisions/tensions (access to affordable housing, transport and energy, fair employment, safer streets), societal hierarchies, social stability, new voices (Masdar youth and women's programs, UPC youth, women and schools outreach); civil society; sustainability awareness; culture and heritage (urban branding, architecture preservation, demolition of traditional housing/neighbourhoods, Zayed legacy, tribal allegiance, community preservation); role of Islam (mosque regulations) |
|---|---|---|
| 8. | **Economic Sustainability** | economic diversification, venture capital, free trade zones, economic growth, economic stagnation, economic stability, corporate social responsibility, international investments, sovereign wealth funds |
| 9. | **Multi-Scale Relationality** | regional competition in GCC, |

| | | competition with Dubai, global soft power |
|---|---|---|
| 10. | **Governance/Assemblages** | citizen consultation (majlis), limited participation, institutional structures; governing structures; aligning competing interests, strategic collaboration, empowerment of institutions, human capacity institutional capacity, governance success, governance failure |

Table 6:Detailed Table Showing Overlaps Between Data-Driven and Theory-Driven Codes with Sub-Codes

| No. | Code Label | Sub-Code Labels |
|---|---|---|
| 1. | **Local Context** | historical/political/social/cultural/economic/ background |
| 2. | **Multi-Scale Relationality** | local-global, local-regional relations/interactions |
| 3. | **Policy Transfer Processes** | stakeholder perceptions/values, knowledge production, learning gaps, trade-offs, conflicts/tensions, knowledge adaptation, hybrid policies, mechanisms of transfer, timing of transfer, patterns of transfer, speed of transfer, innovation, best practice exchanges, innovation, policy institutionalization, politics of transfer, change agents (elite and non-elite stakeholders), multi-scalar transfer mechanisms (conferences, workshops, media, public-private collaborations, government agency collaborations, joint decision-making, policy-related learning; hybrid practices; research collaboration, conferences; sustainability- |

| | | driven institutions; collective capacity building (institutional empowerment at Masdar and UPC), public private collaboration; government-community partnership; technology; built environment; satellite enclaves; expert change agents. |
|---|---|---|
| **4.** | **Policy Transfer Rationale** | Globalization, modernisation, urban competiveness, urban development, desire to attract expert change agents, income generating capacity of policy, problem solving ability of policy, desire to create multi-scaled knowledge networks, economic development |
| **5.** | **Power** | elite networks, local-global power networks, local-regional power relations, power hierarchies, politically-controlled institutions, dilution of power, stakeholder biases, disempowerment of marginalised groups |
| **6.** | **Governance/Assemblages** | institutional governance (institutional networks and knowledge circuits, institutional resources, institutional behaviour, institutional values, institutional capacity building, transparency and accountability), governance rationale (capitalism, economic development, political interests, social development), multi-level governance (epistemic communities, multi-scale policy networks/flows/knowledge circuits, relational assemblages, interdependencies, joint decision-making, collaborations, consensus-driven initiatives, produced policy discourse). |

There were instances where data and some aspects of theory did not align, such as in the area of multi-level transfers at Masdar and the UPC involving new stakeholders from the global

private sector and government agencies, which moved beyond the focus by policy transfer theorists on state-centric conceptualizations of transfer. These multi-level transfers of knowledge fit better with ideas posed by mobility theorists.

The codes were essential to the next phase of analysis which involved developing themes. As part of data reduction collating related concepts across the data, was derived by framing the data against a theoretical perspective and simultaneously answering the relevant research questions. Reading the content several times, highlighting codes, their overlaps and potential overall themes by comparing and contrasting different parts of the data e.g. housing and transport, energy and transport, change agents and governance, political culture and transfer, allowed me to validate my thematic understanding over early and later stages of analysis. Miles and Huberman (1994) and Patton (2002) suggest different ways to showcase data patterns including through the use of thematic maps. I created analytical conceptual maps in response to my research question and sub-questions by organizing families of codes spanning the unique rationale, transfer mechanisms and outcomes of transfer at the emirate and institutional level which are included in Appendix 3. In addition to conceptual maps, I also analysed code frequencies to further determine patterns and connections across the data.

### 3.7.1.2. Quantitative Analysis Using Python

I utilised the Python program to generate code frequencies across my various data sources, the results of which are displayed below.
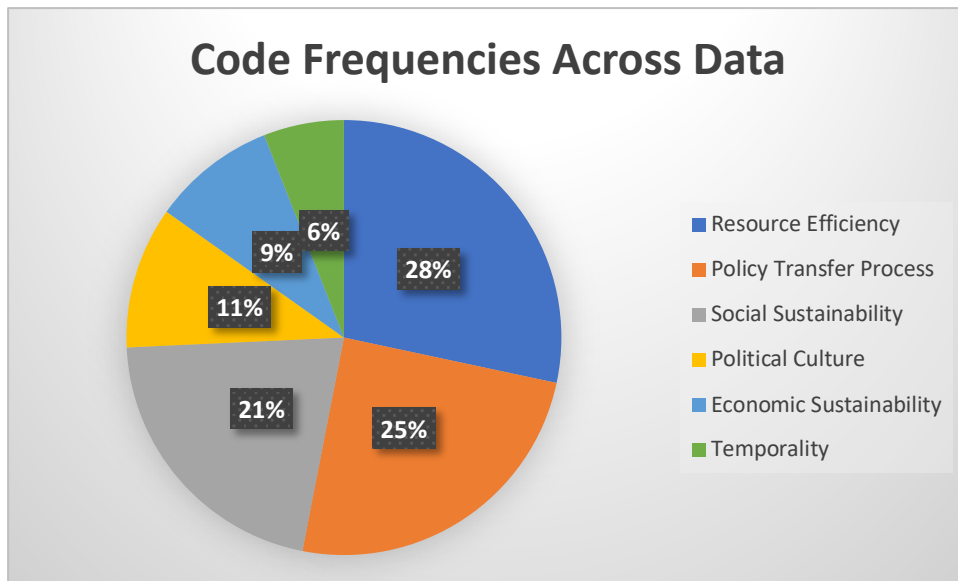
*Figure 1:Code Frequencies across Data using Python*

The above pie chart shows that the codes resource efficiency (28%), policy transfer process (25%) and social sustainability (21%) have a high impact followed by political culture (11%) and economic sustainability (9%) which have a medium impact, while, temporality (6%) had low impact. Looking deeper at each of the above codes and their related sub-codes, the observations are as follows:

**Resource Efficiency**: The code resource efficiency had the highest appearing frequency across the data, with energy as the highest appearing sub-code in terms of sub-code frequency having a sub-code frequency of 26% within resource efficiency.

**Policy Transfer Process**: The code policy transfer process had the second highest appearing frequency across the data, with multi-level governance as the highest appearing sub-code in terms of sub-code frequency, having a sub-code frequency of 30.9% within policy transfer process; and multi-level transfer as the second highest appearing sub-code with a sub-code frequency of 11.4% within the policy transfer process code.

**Social Sustainability**: The code social sustainability had the third highest appearing frequency across the data, with the following frequencies of sub-codes:

Housing – 47%

Urban Design – 21%

Human Capital- 17%

Transport – 15%

**Political Culture**: The code political culture had the fourth highest appearing frequency across the data with top-down government as the highest appearing sub-code in terms of sub-code frequency, having a sub-code frequency of 70% within political culture; and subsidies as the second highest appearing sub-code with a sub-code frequency of 28% within the political culture code.

**Economic Sustainability**: The code economic sustainability had the fifth highest appearing frequency across the data with economic growth as the highest appearing sub-code in terms of sub-code frequency, having a sub-code frequency of 31% followed closely by corporations which had the second highest sub-code of 30% within the economic sustainability code.

The quantitative exercise of charting code frequencies helped determine which codes had considerable impact in telling the overall story of the transfer and mobilisation of sustainability concepts in Abu Dhabi. Taking into consideration, the code overlaps between theory and data, and the quantitative analysis of code frequencies across the data, patterns began to emerge. In relation to developments at the GCC level, and within Abu Dhabi, the work of Masdar and the UPC in the field of energy, instances of power sharing with new stakeholders, the pursuit of soft power, economic gain around energy and related governance processes around energy became evident. Thus, power and multi-level governance were a vital part of Abu Dhabi's sustainability story. Similarly, authoritarian power often overlapped with policy transfer process including knowledge production, learning and governance processes, with potentially positive implications for some stakeholders such as local citizens and the global private sector, whilst patterns of inequalities and the marginalisation of some societal groups were also evident. Thus, a focus on knowledge production and inequality became another focal point of the research. Finally based on the frequency of the code social sustainability and the high frequency of the sub-codes across housing, transport, urban design and human capital, this impacted the particular choice of planning issues and the evolving role of people and institutions engaged in ongoing transfer and governance processes related to sustainability in authoritarian Abu Dhabi. These aspects overlapped with concepts discussed by mobility, policy transfer and transfer-related governance, and led to the development of relevant themes.

### 3.7.2 From Codes to Themes: The Back and Forth Process of Theme Development

The data derived from the exercise in analysing word frequencies was combined with my inductive conceptualization of how data I collected answered the research questions and deductive conceptualization of theory-driven codes on policy transfer, mobility and related governance described earlier, toward theme development. The field notes I kept were particularly helpful in bringing the in-person insights and interpretations to the thought process particularly related to societal divisions which I witnessed in person. This process was important to reflect on the complexity of the data over time.

The development of themes was an iterative exercise that involved combining themes, and disregarding some. I needed to ensure that the themes clearly answered the research question and revisited my codes a number of times to refine the themes that arose.

Eventually, the themes, much like the codes before them, were guided, in part, by existing theoretical ideas and concepts and also interpretations and frequency of terms that arose from the data I had collected. Braun and Clark (2006, p. 36) advise researchers to check themes against the original data collected and urge researchers to build themes that are "*internally coherent, consistent and distinctive*". The combination of deductive approaches including the formation of theoretically-driven research questions, theoretically driven coding of data, and considering inductively the groupings and patterns that emerged from data, as well as running the data through the Python program allowed me to check that the themes were internally consistent with the original data.

The following conceptual map gives a conceptual framework for how the data flows across four wide themes.

```
                    ┌─────────────────┐
                    │ Main Research   │
                    │ Themes          │
                    └─────────────────┘
        ┌───────────┬──────┴──────┬───────────┐
┌──────────┐ ┌──────────┐ ┌──────────┐ ┌──────────┐
│ Evolving │ │Persistent│ │Knowledge │ │Contested │
│ Power    │ │Inequali- │ │Production│ │Governance│
│          │ │ties      │ │          │ │          │
└──────────┘ └──────────┘ └──────────┘ └──────────┘
```
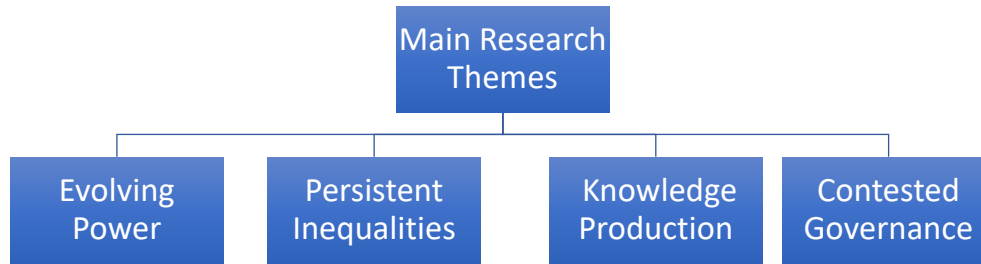
*Figure 2:Conceptual Map of Main Thematic Ideas Consistently Emerging from Theory and Data*

As noted in the diagram, evolving power, persistent inequalities, knowledge production and contested governance were thematic ideas rooted in the local context and policy transfer and governance processes that evolved from the analysis process discussed above. I have used these themes to form four research hypotheses, that I will either defend or refute with my findings on the politics and implications of transferring sustainability policies to Abu Dhabi in the contextual and empirical chapters that follow. These thematic areas shed light on the tensions, opportunities and deeper meanings associated with the phenomenon of sustainability transfer and implementation in Abu Dhabi.

**3.8 Four Research Hypotheses**

Four research hypotheses emerged from the analysis of codes. They included:

***3.8.1 Research Hypothesis 1: Strategic power sharing and network formation among Abu Dhabi's diverse sustainability-related stakeholders in the wake of globalization is diversifying the rentier, authoritarian status quo in its traditional form.***

In the wake of multi-level transfers of sustainability concepts and increasing local-global interfaces around sustainability, power structures in Abu Dhabi particularly within its sustainability-driven institutions, Masdar and the UPC are evolving as new networks are being formed. These developments are occurring whilst authoritarianism still prevails. Evidence of strategic power sharing among transnational assemblages of local and global actors, sustainability-driven institutions, cities and nations are increasingly prevalent (Masdar, 2012-2016a; Abu Dhabi Urban Planning Council, 2017d).

By understanding where power lies, why and how aspects of power are in flux across housing, transport, urban design and energy through a policy transfer, mobility, and related governance lens, the notion of evolving power as it relates to local planning issues amidst global and regional factors has the potential to reveal whether the authoritarian status quo in Abu Dhabi is in flux.

Inspired by Stone's (2005, p.325) conceptualization of power relationships including that of "*power to*" and "*power over*" in coalition formation; thus concepts of power in the local context of Abu Dhabi can be exercised in different ways: power over right to participate, power to implement equity, justice, fairness, gender equality, the disempowerment/marginalization of some groups, power in favour of elites, strategic distribution/sharing of power, and power over citizen dialogue that are witnessing change. The conceptual map below depicts the distribution of power in relation to sustainability transfer and mobilisation, in Abu Dhabi.
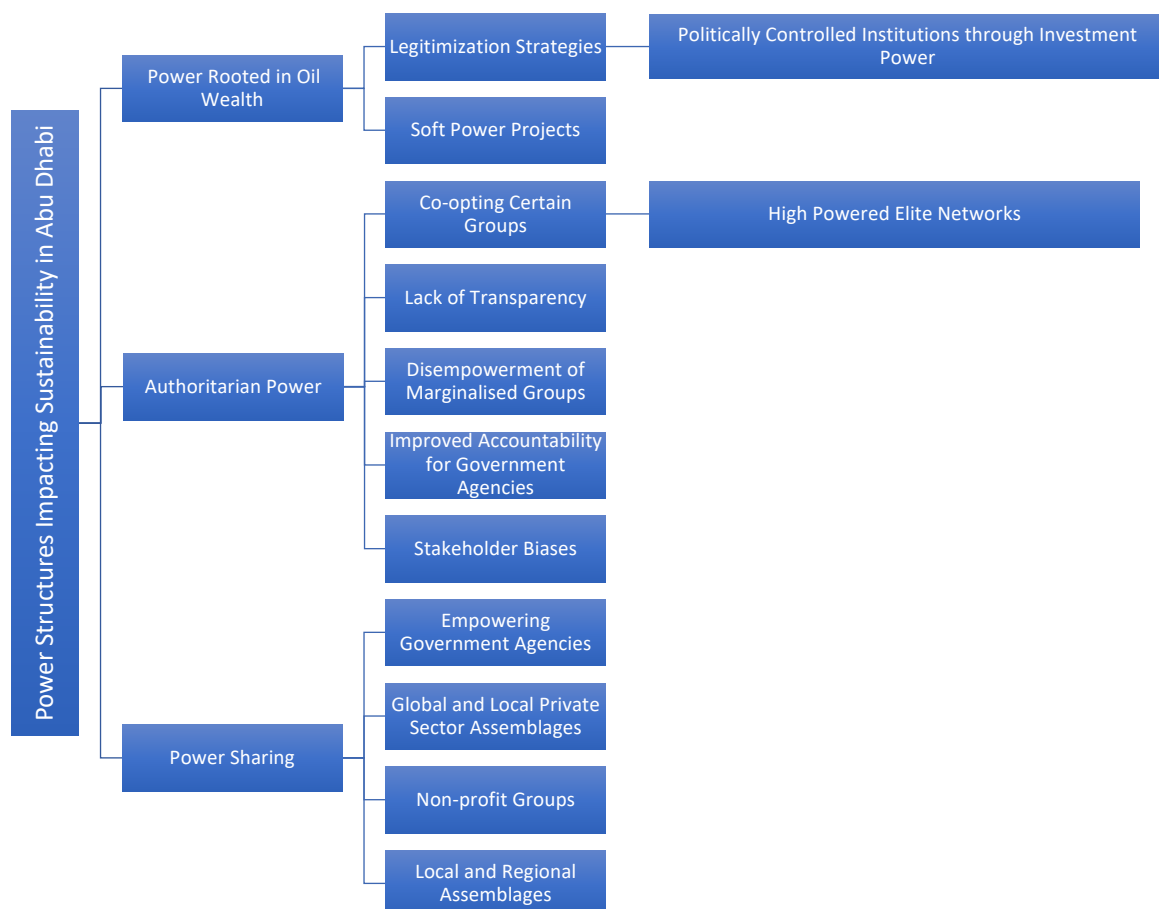


*Figure 3:Conceptual Map of Power Structures in Abu Dhabi in relation to Sustainability Transfer*

### 3.8.2 Research Hypothesis 2: Inequalities, friction and tension that pervade the transfer and implementation of sustainability concepts from elsewhere into Abu Dhabi still persist despite sustainability solutions.

Under this research theme, I will explore specific moments of friction and tension related to the transfer and implementation of sustainability concepts. Using theoretical ideas from policy transfer, mobility and related governance, I examine unequal outcomes, competing values and goals of diverse stakeholders. Through the case-studies of the UPC, Masdar and their collaborating partners working together on solutions within the specific issues of energy, housing, transport, and urban design, I will consider aspects of oil wealth, Islam, institutional capacity, post colonialism, inclusion and exclusion in the local context that influence the transfer and mobilisation of people and policies, and the related tensions and conflicts that continue to persist particularly given the absence and exclusion of certain groups. I will also explore the extent to which tensions in these domains are being resolved as sustainability policies are being adapted and implemented on the ground. Finally, on a more macro level, I will also consider similar frictions and tensions that exist in neighbouring Dubai, and other GCC nations in the region with similar political contexts to Abu Dhabi, to establish a relational perspective on some of the inequalities that accompany transferring and implementing sustainability policies. This helps us understand whether the particular tensions and frictions as a factor of societal inequalities experienced in Abu Dhabi are unique to the emirate, or do they also exist in Dubai, and elsewhere in the GCC. The conceptual map below considers the factors that contribute to persistent inequalities in Abu Dhabi.
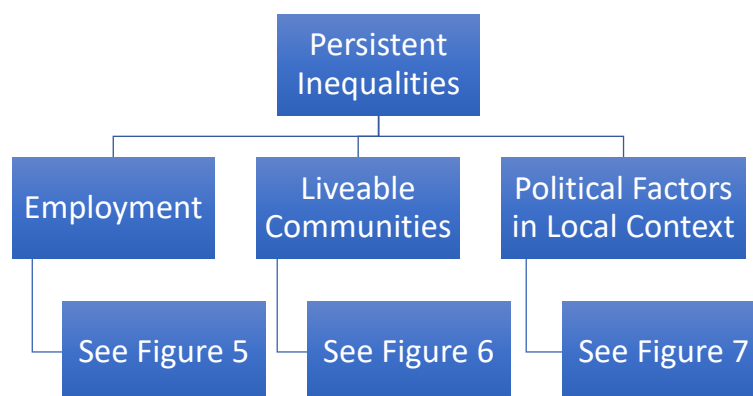


*Figure 4:Conceptual Map of Factors Related to Persistent Inequalities in Abu Dhabi*
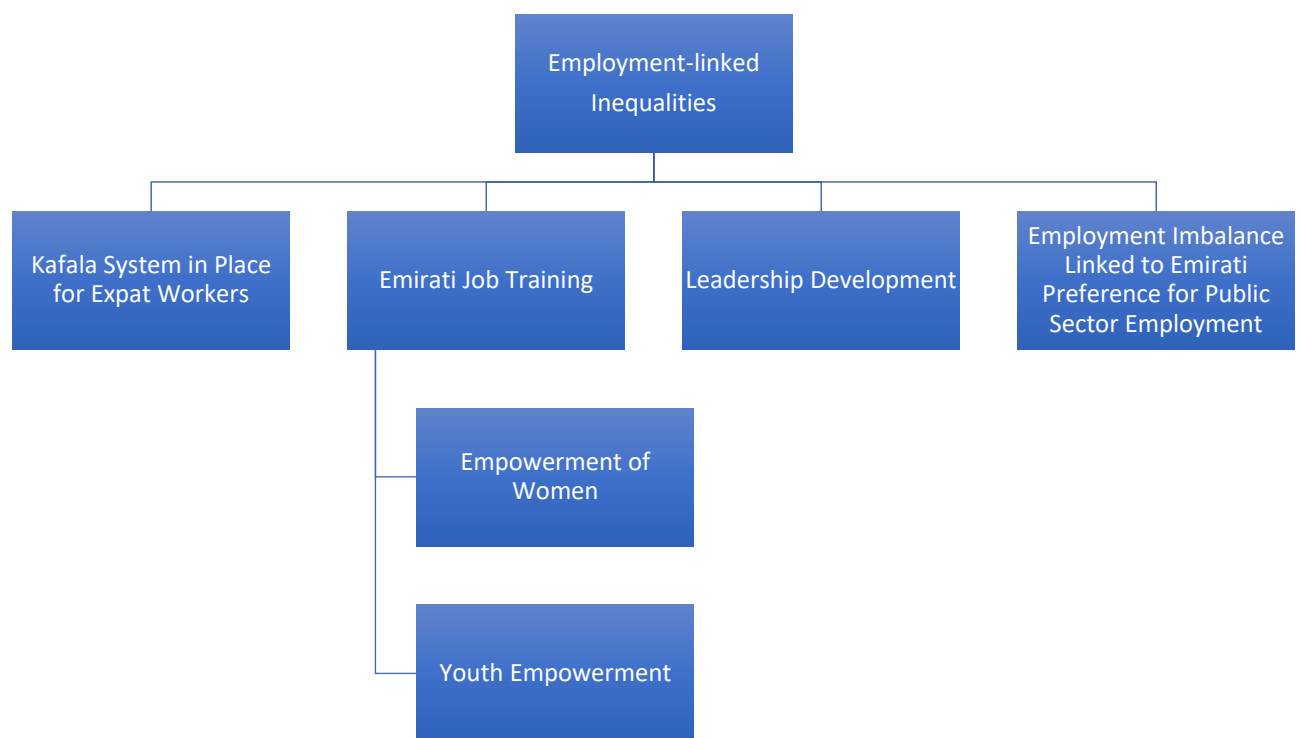
*Figure 5:Employment-linked Inequalities*

Inequalities that Impact Liveable Communties /Divided Spaces

Housing
- Government funded social housing for Emiratis
- Limited accessibility to affordable housing for expats
- Camp housing for migrant workers on outskirts of city

Transport
- Higher pedestrian numbers among low-income expats
- Greater use of public transport by expats
- Reduction in fuel subsidies are absorbed by high income residents
- Increases in bus and taxi fares disporportionately impact low-income residents

Community Amenities/Infrastructure
- Government funded neighbourhoods and amenities for Emirati communities
- Urban problems in low-income expat neighbourhoods

Culture and Heritage
- Redevelopment of older areas populated by low income expats
- Preservation of local urban forms in Emirati housing
- Mosque re-development to benefit some communities

*Figure 6:Inequalities Related to Liveable Communities in Abu Dhabi*

Political Factors in Local Context
- Top-Down Decision-making
  - Limited Role for Civil Society outside of philanthropy and awareness
  - Limited public participation
  - Co-opting of Elites
- Rentier-based Inequalities
  - Subsidies for Citizens rooted in Social Contract
  - Lack of Subsidies for Non-Citizens

*Figure 7:Political Factors in Local Context*

***3.8.3 Research Hypothesis 3: Knowledge production and hybrid adaptations of policies or "parts of everywhere" (McCann, 2011, p.144) have positive impacts on mobilising sustainability in Abu Dhabi.***

Under this theme I will explore factors such as institutional capacity, human capacity, resource mobilisation (including technology, communication, infrastructure), that propelled Masdar and the UPC to create new knowledge from the transfer of sustainability concepts.

Aspects such as globalization, modernization, urban competiveness, urban development, expert change agents, transfer mechanisms, income-generating, soft power generating and problem-solving capacity of sustainability knowhow, amidst trade-offs related to knowledge production will reveal whether policy adaptation, policy learning, best practice exchanges, hybrid policies and other forms of knowledge have indeed been positive developments.

Knowledge production is also impacted by the timing of transfer, speed of transfer, place and scale of transfer. The final outcomes related to sustainability-related knowledge production may not have consistently successful impacts given that transfer processes and resultant networks are steeped in politics and historical, political, cultural and social nuances of the local context, refuting the research hypothesis.

The conceptual maps that follow showcase diverse stakeholders, mechanisms and factors impacting knowledge production processes.

110
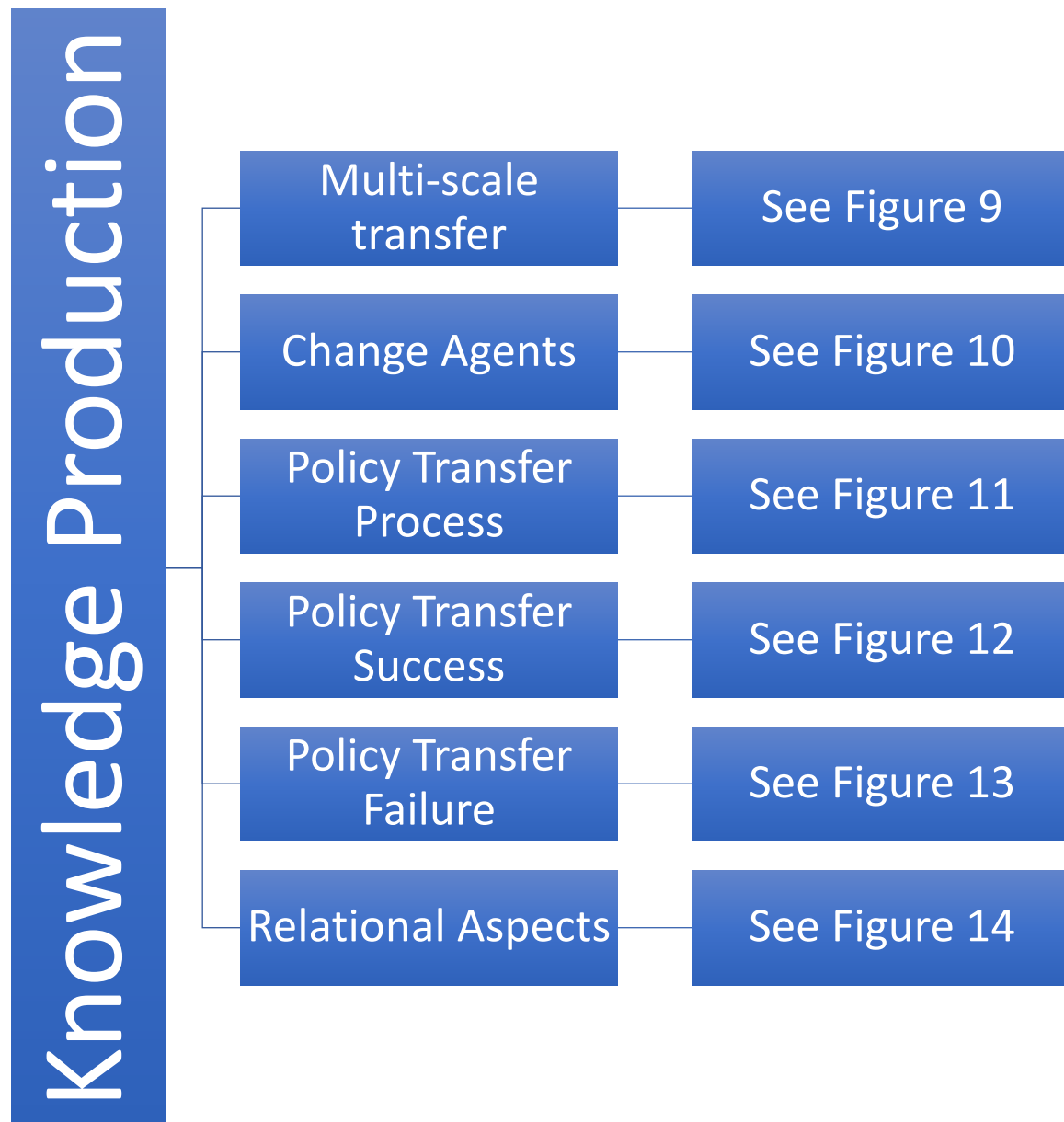
*Figure 8:Conceptual Map of Knowledge Production Processes around Sustainability in Abu Dhabi*
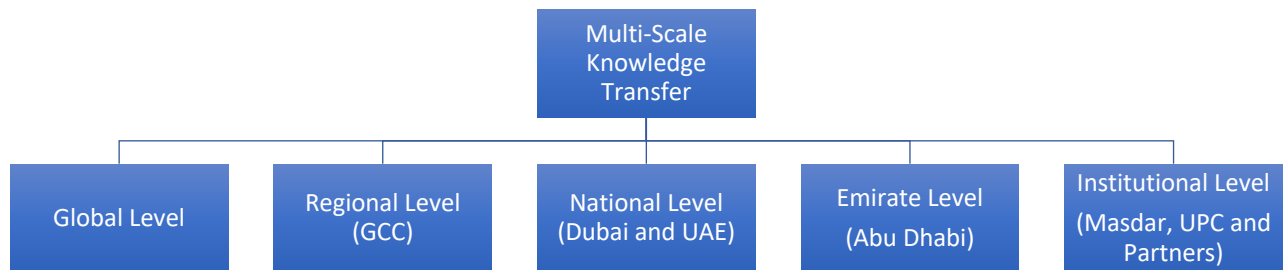
*Figure 9:Multi-Scale Transfer as Part of Knowledge Production*
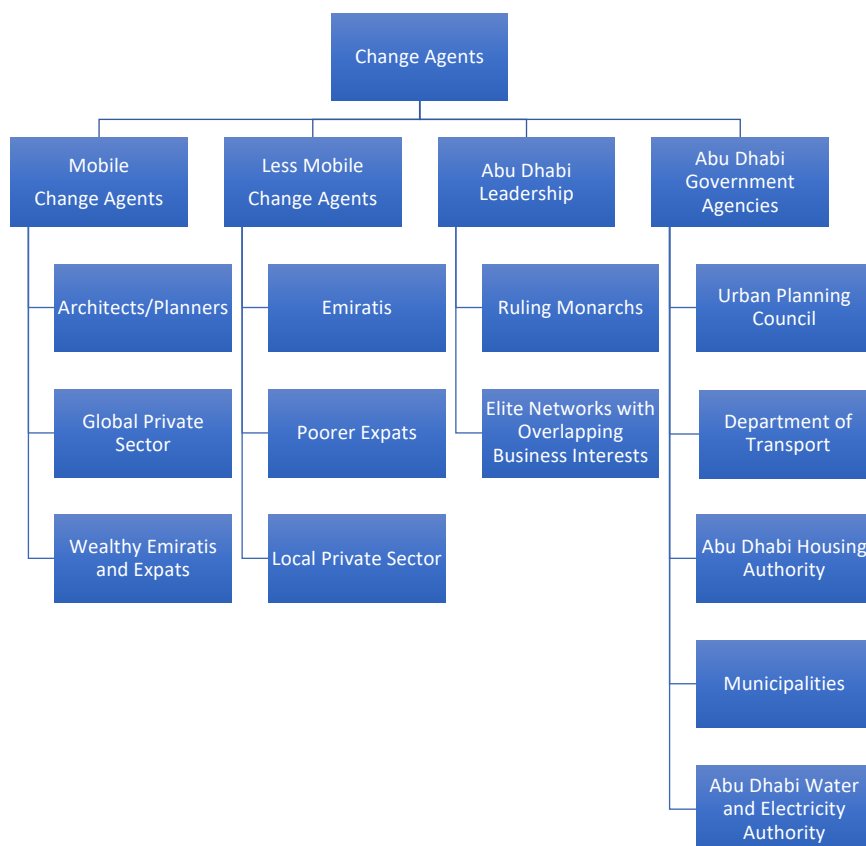


*Figure 10:Change Agents as Part of Sustainability-Related Knowledge Production (in this research)*
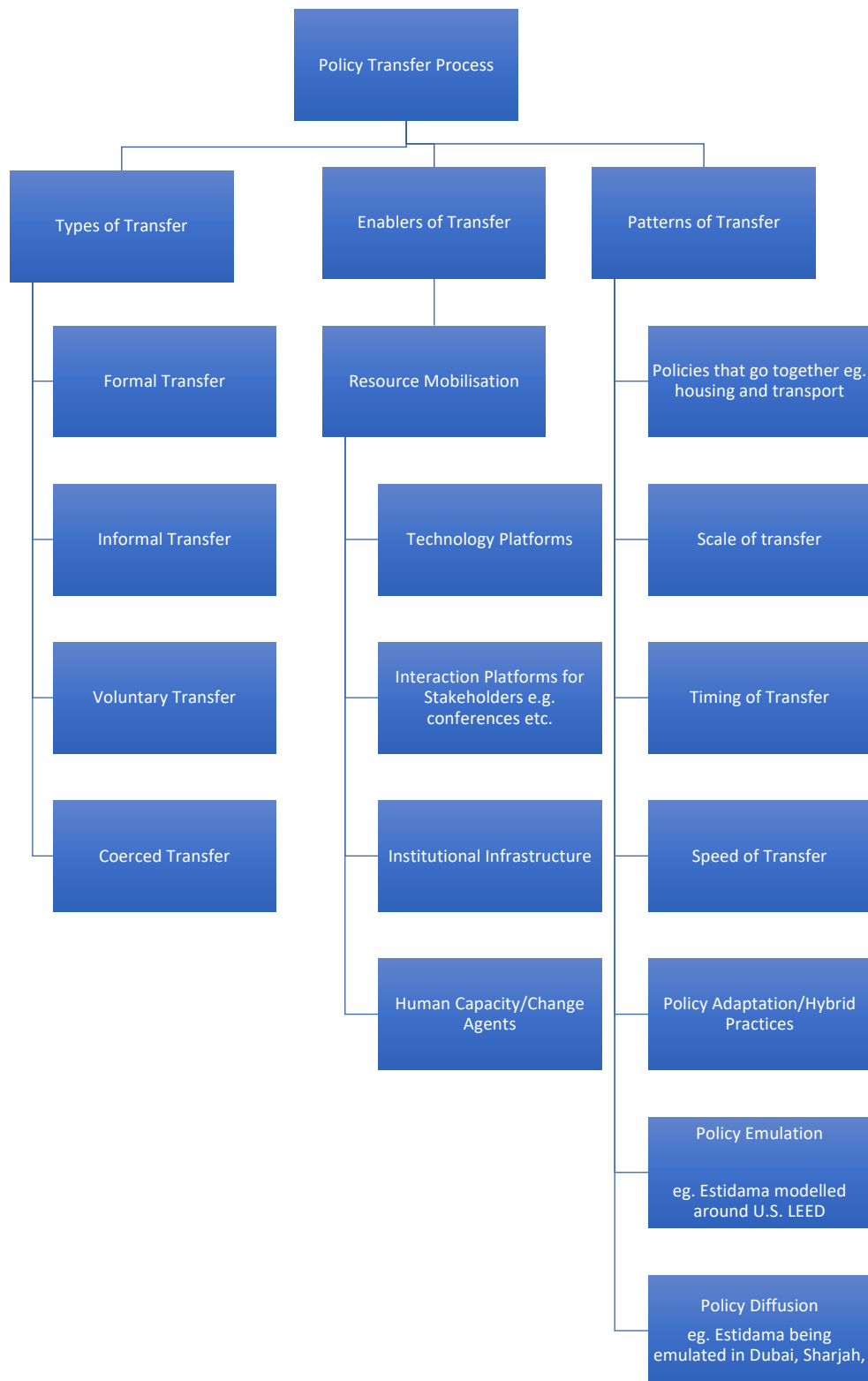
*Figure 11:Policy Transfer Process Related to Knowledge Production*
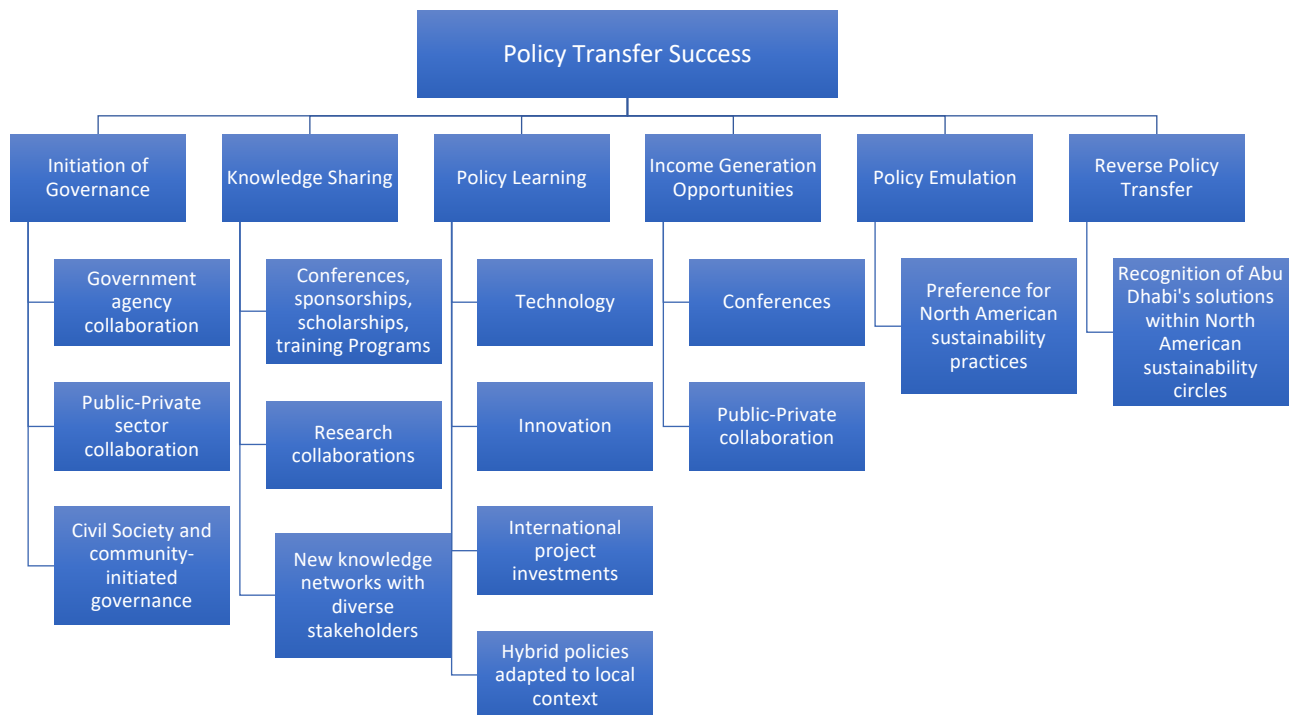
*Figure 12:Policy Transfer Success as a Contributor to Knowledge Production*
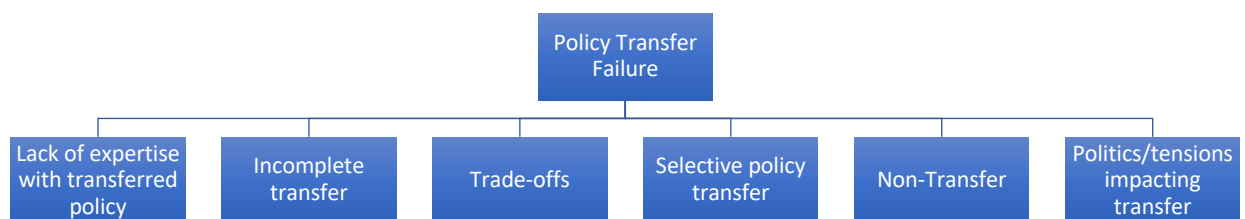


*Figure 13:Policy Transfer Failure as a Contributor to Knowledge Production*
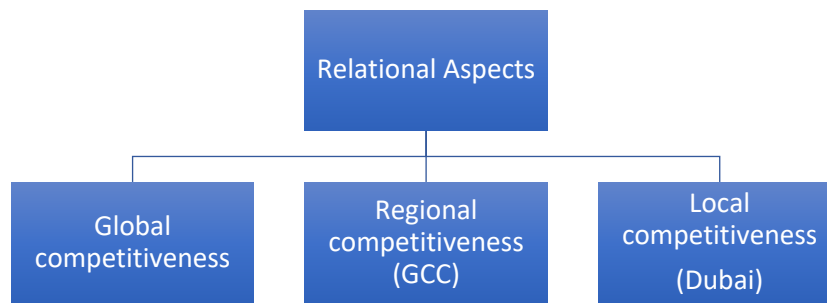
*Figure 14:Relational Aspects as a Contributor to Knowledge Production*

### 3.8.4 Research Hypothesis 4: Solutions-driven assemblages of institutions and individuals are contested governance processes as an outcome of nuances of the local context.

Governance processes rooted in collaboration are a potential solution to navigating the complex interactions among global, regional and local actors engaged in transferring and mobilising sustainability in the local context of Abu Dhabi. However, governance can be contested as a result of competing stakeholder interests, lack of diverse stakeholders within assemblages, lack of accountability and transparency in monitoring systems and stakeholders and other local contextual factors related to authoritarianism and oil wealth that can hamper attempts at collaborative governance among assemblages of actors and institutions working across diverse and complex political contexts.

Based on whose notions of governance prevail in the local context, neutral and inclusive governance practices or conversely, exclusionary processes that empower some stakeholders, and marginalise others, can reveal the impact of nuances of the local context on sustainability-related governance processes.

Taking an institutional perspective considering the cases of Masdar and the UPC, their institutional networks and knowledge circuits, institutional resources, behaviour, values, and capacity building, as well as external focussed multi-level governance encompassing epistemic communities, multi-scale policy networks, relational assemblages that combine participating agents' interdependencies, joint decision-making opportunities, collaborations and consensus-driven initiatives spanning energy, housing, transport and urban design, has potential to uncover how certain arenas are more conducive to governance, while others are less so. The

conceptual maps below consider some of the factors that impact governance processes in Abu Dhabi.
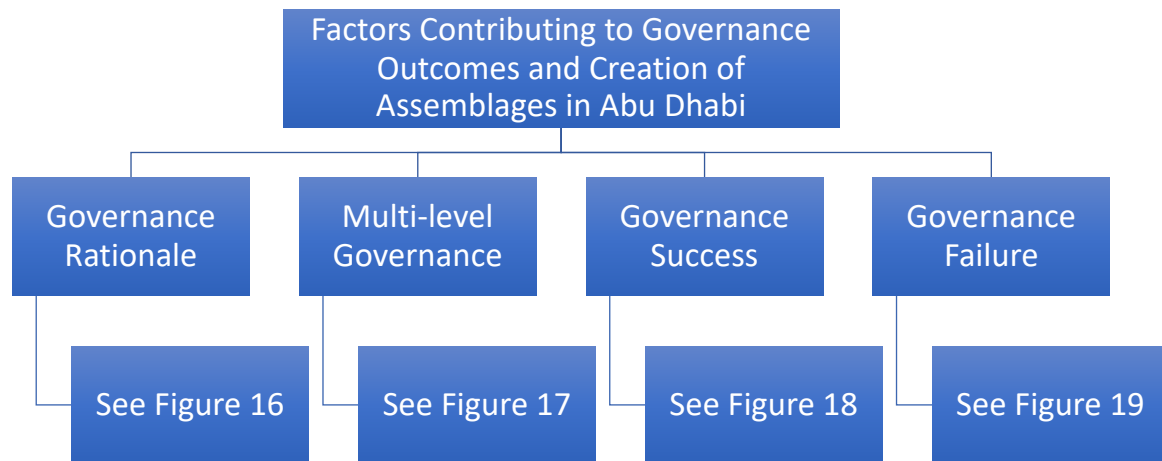


*Figure 15:Conceptual Map of Factors Contributing to Governance Outcomes in Abu Dhabi*
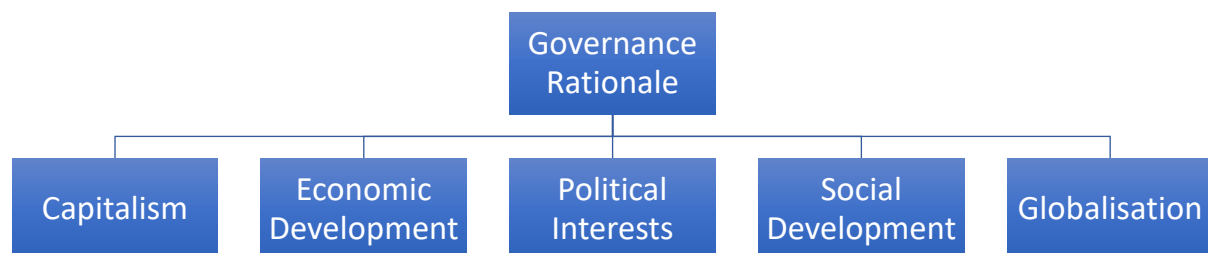


*Figure 16:Rationale to Pursue Governance as a Contributor to Governance Outcomes*
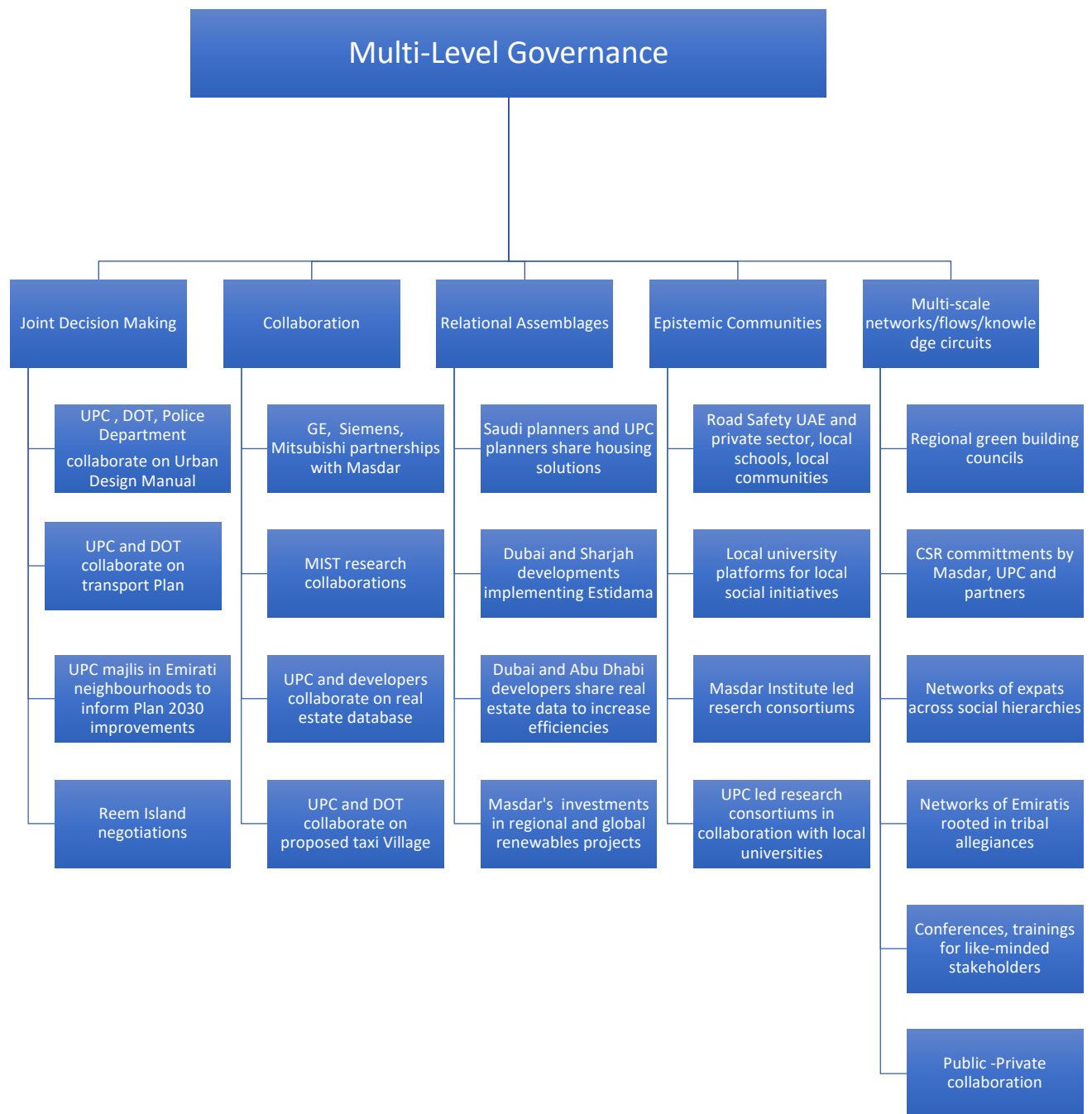
*Figure 17:Multi-Level Governance as a Contributor to Sustainability-Related Governance Outcomes with selected examples from data*

*Figure 18:Governance Success as a Contributor to Sustainability-Related Governance Outcomes*
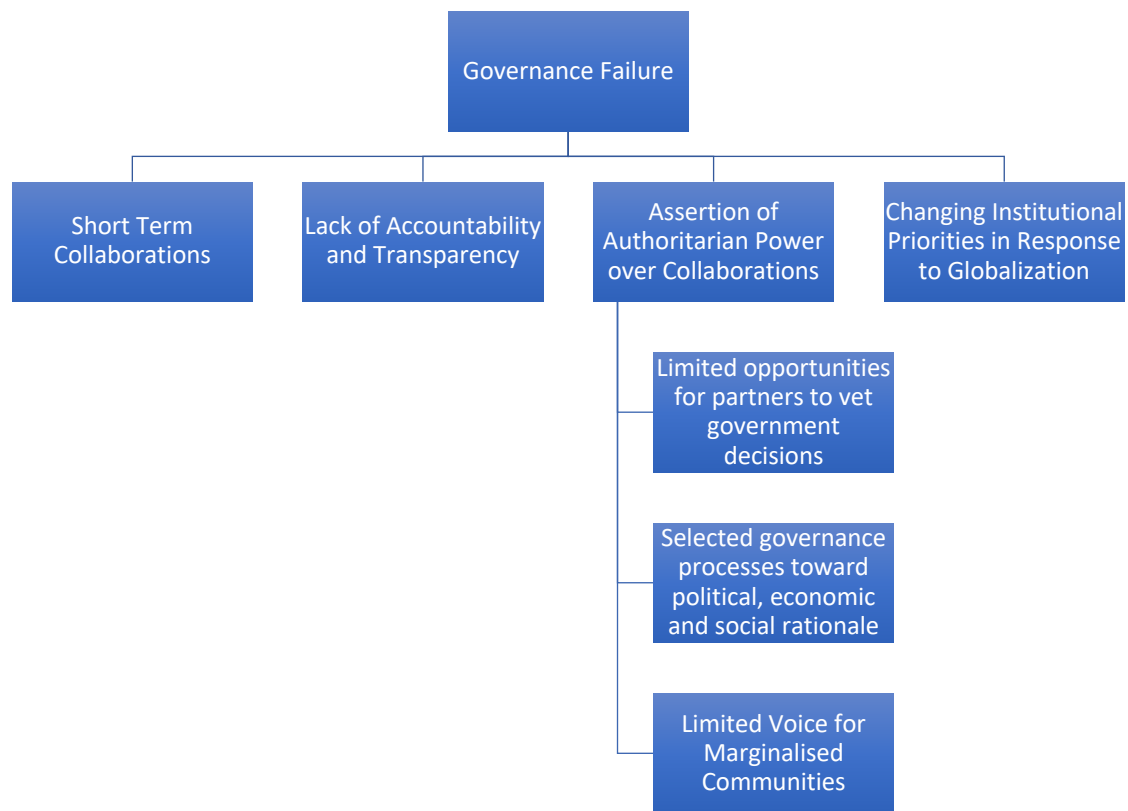
*Figure 19:Governance Failure as a Contributor to Sustainability-Related Governance Outcomes*

The conceptual maps above show the interrelated and interdependent nature of the four research hypotheses. The maps above point to factors such as the local political context, globalization and the subsequent formation of new sustainability-driven networks playing a vital role in mobilising transferred sustainability policies locally, regionally and globally. It became imperative to understand how these factors related to my theoretical framework, in order to move beyond the narrative. It was also vital to introspect contradictions between the theory and the data, and, finally, to also consider alternative interpretations of the data in line with suggestions by Braun and Clark (1996). Rowley (2002) and Yin (1994) also advise that good case study analysis considers alternative interpretations of the data and explores each of them in turn. It is my hope that in my empirical chapters and the conclusion that sums up the relevant analytical contributions showcase Masdar and the UPC's complementary, yet contrasting, approaches to sustainability through coherent, critical arguments.

**3.9 Conclusion: Embedding Theory, Constructing Analytical Narratives, and Alternative Interpretations**

As Yardley (2000) proposes, a careful description of the research process and the coherence of arguments presented through the research are hallmarks of good qualitative research. Braun and Clark (2006, p.36) offer valuable advice with regard to embedding the themes in the write-up of findings. They direct the researcher to choose "*vivid examples*" and move beyond just providing data. This is in line with advice from Boyatzis (1998, p. vii) who posits that such embedding of theory into the analysis adds rigor to it and brings the researcher closer to the existing data. The analysis I embarked on, evolved into an iterative process that intertwined data extracts (for example: quotes, project facts and statistics, examples, timelines etc.) along with analytical narratives constructed across the four research hypotheses pertinent to the research questions. The overlap of ideas around power, inequality, knowledge production and governance that emerged from both theory and data in a coherent progression emphasized nuances of the local context. The themes were embedded in the existing theoretical framework set out in my review of the policy transfer, mobility and related governance literature in the argument chapter preceding this.

Now, let us situate Abu Dhabi relationally in the context of the GCC (chapter 4), bringing to the fore the political backdrop of authoritarianism coupled with oil wealth that impact the rationale for the transfer and implementation of sustainability. This is followed by a chapter analysing the historical and cultural context that impact the planning scene in Abu Dhabi (chapter 5), and then a chapter analysing the unique characteristics of Masdar and the UPC (chapter 6) before proceeding to chapter 7 dedicated to the research hypotheses around power and inequality, and chapter 8 which is focused on exploring the research hypotheses around knowledge production and governance.

# 4. Situating Abu Dhabi Within the Politics of the Gulf States: A Relational Perspective

## 4.1 Introduction

GCC states are building capacity, developing infrastructure, transport, housing and diversifying their economies, but must balance these economic goals with complexities rooted in historical, political and cultural norms. In line with relational thinking proposed by mobility theorists, this chapter focusses on understanding the nuances of Abu Dhabi's local context, within the wider regional context of the GCC states and also neighbouring Dubai. With similar authoritarian backgrounds and dependence on oil wealth, looking at dominant concepts of power, evolving notions of authoritarian power, and positive and negative manifestations of power, are important avenues of exploration to understand the rationale for policy transfer regionally. Martinez (2005) considers the importance of understanding the differences in the political, economic, social and ideological contexts between where policies come from and to what extent they develop, since discrepancies result in inappropriate policy transfers. In this regard, issues such as tribal allegiances, the role of Islam, informal power-bases among elite stakeholders, a culture of patronage and brokerage, subsidies, societal imbalances and inequities that persist are nuances of the local context that create both a need for Gulf governments to import sustainability practices and policies but also present distinct challenges in implementation. The chapter helps to situate the particular policy decisions and practices in Abu Dhabi within a wider regional context, given that policy movement takes place at multiple scales (Luomi, 2015; Reiche, 2010).

The chapter is in one aspect contextual since it highlights the nuances of the local context of Abu Dhabi within the context of regional trends. This chapter also presents some findings around the unique set of factors that have propelled Abu Dhabi to consistently lead a number of sustainability initiatives regionally. The second part of this chapter considers relationality in a more global sense, by understanding four policy-transfer spurring mechanisms that Gulf states engage in with local, regional and global implications. The proliferation of free zones, global conferences, reforms to sovereign wealth fund (SWF) investment strategies, and the rise of CSR increase opportunities for regional and global assemblages around sustainability.

Traditional ideas of territoriality in the Gulf states are evolving with the creation of global and regional networks of actors and institutions interacting at multiple scales facilitating multi-scalar investments.

### *4.1.1 The Formation of 'Messy Worlds' Steeped in Political, Historical and Cultural Factors*

As discussed in Chapter 2, mobility theorists urge us to examine the unpredictability of actors and networks in the context of the historical and political factors that make policy movement possible (Prince, 2016; Allen and Cochrane 2010; Anderson and McFarlane 2011). In this regard, the local context can impact the adaptation of foreign best practices, particularly when they conflict with local norms and conditions. We are increasingly drawn to the nuances of the unique local context of Abu Dhabi, which when set against regional trends in the Gulf states, can reveal cases where Abu Dhabi's ideologies and values reflect wider trends, and where Abu Dhabi is unique. It is possible that an authoritarian context in Abu Dhabi and elsewhere in the GCC states can propel the *fast transfer* (Peck and Theodore 2015, p.xv) of sustainability policies and learning that ensues, whilst in other cases, the transfer and longevity of networks of stakeholders can be constrained. The monarchs in Gulf states occupying strategic leadership positions across various government agencies and government-backed initiatives (see Davidson, 2012a; Dempsey, 2014), are high-level agents of change involved in implementing sustainability. The respective governments in these states, are mechanisms through which state power is exercised. While the state as a concept has been seen as an intangible social object, governments comprise of groups of individuals and agencies with centralised decision-making and regulatory power, thus the concepts of state and government must be differentiated (Robinson, 2013). However, the nuances of the local context in the oil rich Gulf states are characterised by the complex intertwining of the monarchical-run state, government, and business interests (see Levins, 2013) adding further complexity to the exercise of state power. The concept of the state in the local context is thus a complex and contested one. In a similar manner, Healey (2013) contends that concepts circulate in "*messy worlds*" steeped in political struggles between agencies and institutions determined by complex historical and cultural factors (Healey 2013, p.1517).

The manner in which sustainability is interpreted and re-politicised in the authoritarian context can be complex because of globalization and modernisation factors that conflict with the state legitimizing its power. Schultz and Siriwardane (2015) note that notions such as sustainability

are contested when they do not meaningfully engage with political dynamics contributing to their application being "*normatively ambiguous*" and "*vague*" (ibid, p.13). Toward overcoming these challenges, it is useful to understand how authoritarianism emerges as a catalyst for and a challenge for policy transfer.

## 4.2 Authoritarianism as a Rationale and a Challenge for Sustainability-related Policy Transfer in Gulf States

Linz (2000) describes characteristics of authoritarianism that entail a form of politics where the government is not constitutionally accountable, and where it retains its central power. Constituents have limited political freedom, press freedom and social mobilisation due to limits on political opposition. Nathan (2003) further notes that authoritarian regimes are legitimately weak and rely largely on coercion. Decision-making is top-down and centred among a powerful few who dominate institutional norms. The main concept upon which rentierism is based is that the state's natural resource-related financial wealth facilitates political stability (Beblawi and Luciani, 1987; Mahdavy, 1970). In addition, state legitimacy in a rentier model is often bought through the allocation of revenues, including subsidies, sponsorship opportunities, education and employment opportunities (Luciani, 1990). Authoritarianism and rentierism often exist in tandem, however, there are cases where they do not exist together. For example, there are other authoritarian states in the wider region such as Jordan that are not rentier, but under the rule of a monarchy, whilst countries in Latin America are rentier and democratic. I have thus addressed aspects of authoritarianism and rentierism separately in the discussion, commenting on the particular challenges and opportunities associated with each of them, that play a role in the import of sustainability among the Gulf states.

The GCC states are authoritarian and also rentier states given their considerable oil wealth. I will address the rentier aspects further in the chapter and initially will focus my attention on authoritarian attributes that impact sustainability. Hertog (2010) notes the covert character of power blocs in Gulf states, the large size of ruling families and the lack of formal mechanisms for outsiders to access the brokering elite. Authoritarian power in oil-rich Gulf states is mainly concentrated in the hands of a few at the top of the power hierarchy who manage and distribute the state's wealth with few opportunities for political participation (Kamrava et al., 2016; Kinninmont, 2015). Levins (2013) further notes the breeding of a culture where authority is not questioned, where loyalty to the government is prioritized and systems of education are heavily controlled. Beyond education, censorship and controls on the media around issues that

conflicted with political agendas have been exercised by GCC states (Bukhari, 2017). If websites, policy material, manuals and documents prioritized by Prince (2010) and McFarlane (2011) as a part of the mobility process are subject to censorship and controls, this could further impact local perceptions and adaptations of sustainability concepts. Given the controls discussed above, the Gulf states emerge as controllers of knowledge, research and ideas around sustainability, shaping knowledge and influencing public opinion (Davidson, 2012a).

The top down nature of political control in authoritarian states in the Gulf are characterised by a lack of transparency and accountability of budgets. For example, citizens of Qatar, the UAE and Oman do not publicly scrutinize their sovereign wealth funds despite funds being set up to manage national wealth in their interest (Kinninmont, 2015). Beyond budgets and funds, Beblawi (1990) has also pointed out that in authoritarian states, policies that have failed or have had limited impact are never really publicly scrutinized. This points to the lack of wider government accountability to citizens linked with authoritarianism.

Similarly, in the context of Gulf states, Sillitoe (2014) and Tadros (2015) assert that certain aspects of sustainability are strategically pursued that the leadership deems beneficial to economy and society. Similar patterns have been evident in the actions of change agents engaged in policy mobility who have been subject to elite-driven political rhetoric (Prince, 2014). Based on experiences in Qatar, El Guindi (2014) notes that sustainability-related advocacy campaigns originating from the state often constitute public relations projects that reinforce top-down decision making. However, this is evolving with limited scope for discussion and vetting of issues among government officials and local populations on what constitutes development (Sillitoe, 2014). Let us understand how delicate power negotiations elsewhere in the GCC are in process, situating similar developments in Abu Dhabi in relation to them.

### 4.2.1 Authoritarian Power is Evolving in Gulf States

Over time, authoritarian Gulf states have responded to demands for '*representative institutions*' and '*responsive government*' as well as political accountability (Gause, 1994, p.42). Gulf states are experimenting with popularly elected advisory councils and representative legislatures which signify positive developments.  Bahrain and Kuwait, for example have fully elected parliaments. Oman's ruler granted greater power to the elected *Majlis Al Shura* around legislative decision-making whilst members of the UAE's Federal National Council (FNC) are

vetted first by authorities who are then elected to office. However, many such opportunities for representation are in fact controlled by ruling families, holding on to the majority of seats and retaining the top-down decision-making structure (Nonneman, 2008).

There is evidence that authoritarianism is being challenged through the emergence of new avenues such as technology advancements, social media, smart phones, satellite television. These platforms have made it increasingly difficult for governments to co-opt knowledge on these platforms that have become new avenues for increasingly educated and socially aware citizens to voice their opinions and critiques of existing policies (Davidson, 2012b; Levins, 2013; Saif, 2016). A greater '*democratization of information*' as described by Kinninmont (2015, p.32) has grown in the region altering the power balance between social groups, and creating room for access to information, reform and consultation. In Abu Dhabi, this is taking the form of positive subsidies awarded to consumers, an increase in awareness campaigns, levying of taxes on environmental harm, setting growth limits, use of green materials, green building codes, Estidama regulations and sustainability-related collaborations among multiple public and private stakeholders (Dempsey, 2014; Reiche, 2010; Tan et al. 2014).

In addition, the increase in the branch campuses of foreign universities in the Gulf (Al Torki, 2013) opens up opportunities for academic critiques of social and economic issues to create and disseminate knowhow on local planning and sustainability issues. These avenues can potentially increase the accountability of the government and encourage wider transparency around government initiatives in response to a greater number informed citizens. The role of civil society is also evolving in the Gulf states.

### 4.2.2 Authoritarianism and the Role of Civil Society

Ordinarily, civil society would be a natural arena to engage multiple stakeholders from diverse segments of the population to achieve what Kazemi (2002, p.154) describes as "*a voice in the system of governance*". Hertog (2010) however, argues that even if Gulf states are wealthy in absolute terms, state institutions and resources in relation to society can be relatively weak. In the case of NGOs in the UAE, these organizations face challenges since they are not legally recognized and unable to raise funds directly from individuals (Al Mubarak and Alam, 2012). An instructor at a prominent local UAE university who also manages a community initiative also described funding issues as a concern for local NGOs, but noted the importance of human

capacity in expanding non-profit networks in the UAE, *"My experience with non-profits has been the unique leadership and skills sets brought by the program managers and staff who have nurtured the programs. This element is key to growing non-profit networks locally. Workshops run in collaboration with schools and universities is one way for non-profit networks to grow." (Interviewee A, Program Manager, Local Community Initiative, 2017).* From a policy transfer and mobility perspective, the focus on quality change agents is a crucial determinant of success according to the interviewee.

A growing number of religious-based, knowledge, education and training, and socially- driven initiatives have sprung in the UAE (Shaaban, 2015). Such initiatives do not conflict with state values, although civil society groups engaged in sustainability continue to need funding and the support of government entities and educational institutions. Non-profit and membership-driven associations such as regional green building councils have been instrumental in building a green economy at a regional level. This is witnessed in collaborations among green building council experts that have identified common policy agendas and share research contributions on sustainable cities and buildings and regional awards for best practice in the region (Emirates Green Building Council, 2016).

### *4.2.3 Opportunities and Challenges for Governance at GCC-level*

While regional assemblages reinforce separate territories, they can also join them together through a common policy agenda as noted by Prince (2016). The increasing engagement of Gulf states around the common policy agenda related to green building led by NGO's such as the Emirates Green Building Council supports Prince's (2016) assertions above.

Sustainability and green growth models have varied across the GCC in line with varying national circumstances (Al Sarihi, 2016; Luomi, 2015). The Gulf states have a record of conflicting strategies toward sustainability which decreases their ability to implement various aspects of sustainability. Although security concerns and natural resources unite the Gulf states, clear political blocs divide them. Hassan (2015) notes that the lack of a clear system of regional laws, institutions, policies, joint mechanisms and regulations among the GCC states. Thus, over the course of this thesis, less emphasis is placed on joint regional efforts; instead, trends that are common the GCC states are analysed in relation to Abu Dhabi.

I now turn my attention to understanding the impact of rentierism on sustainability-related transfer.

## 4.3 Rentierism and the Transfer of Sustainability Concepts

The over dependence on external rents from oil, has been explored by a number of theorists who concur that resource abundance has negative economic implications (Auty, 1993; Karl; 1997, Meissner, 2010; Ross, 2001; Yates, 2009). The uncertainty in global oil markets has also helped the GCC to develop knowledge economies, engage in manufacturing, tourism, real estate and widespread urban infrastructure investments that overlap with sustainability and planning (Kinninmont, 2015; Tadros, 2015). The proliferation of vision statements and development plans with sustainability-based goals are reflective of shifts in thinking away from oil dependence (Gardner, 2014; Rizzo, 2014) taking place within elite and professional circles of advisors. These plans have supported wider national and political agendas (Sillitoe, 2014; Saif, 2016). Different growth plans around the region are evident in Saudi Arabia's Vision 2030, the UAE's Vision 2021, Abu Dhabi's 2030 Economic Vision among others (Al Sarihi, 2016). Many of these visions were created with teams of foreign consultants that were not always well-versed with nuances of the local region, yet various Gulf states were politically motivated to retain these consultants (Saif, 2016). This is in parallel with ideas proposed by mobility theorists such as McCann and Ward (2010) and Peck and Theodore (2010) who describe the import of external policy models and practices to support politically-rooted agendas. On one hand, the governments of authoritarian rentier states like Abu Dhabi and elsewhere in the GCC have a relatively new policy making environment with few prior policy commitments and the freedom to embark on new pathways toward sustainability. However, on the other hand, the lack of local precedents on several sustainability policies signals that the policy making is experimental in nature, and thus not without risks.

The oil wealth within the Gulf states is characterised by blurred boundaries among the elite, with implications on the import and implementation of sustainability concepts.

### 4.3.1 Blurred Boundaries between the Political and Business Elite

A blurring of boundaries particularly around economic interests in the Gulf states. Gulf monarchs are faced with appeasing various factions of the royal families either through income

generating business opportunities or leadership opportunities across state administration (Davidson 2012a; Sillitoe, 2016). The royal families in Abu Dhabi and Qatar have dominated the economy either through personal ownership and sovereign wealth funds (Kamrava et al., 2016). In Abu Dhabi, the Crown Prince is also the patron of Abu Dhabi's largest state company Mubadala with tentacles that stretch across myriad sectors of Abu Dhabi's economy. The entity enjoys benefits such as land grants and exclusive government contracts (Hertog, 2017). Power in these states is the result of both external and internal alliances rooted in family lineage, marriage, business and tribal allegiances (Davidson 2009a, 2012a). This in turn feeds a large degree of informal social contracts among the elite, locally referred to as *wasta* (Arabic for influence) as noted by Barnet et al. (2013) who contend that *wasta* is the invisible hand resolving conflicts and enhancing individual interests in the local context. Davidson (2012b, para 2) lays emphasis on how Gulf monarchies have applied a "*mosaic model*" of traditional loyalties alongside modernization. Thus, regionally, there is evidence that power structures in their traditional form are evolving as part of the cementing of new and traditional alliances. Held and Ulrichsen (2012) note that the Gulf states face a potentially contradictory development path given the delicate balance between the internal patronage system, and the preservation of local identity and social cohesion amidst globalisation.

Our attention turns now to the complicity of the private sector with the governments in Gulf states that render them politically non-autonomous (Kamrava et al., 2016), which have implications for the power imbalance that pervades the import and mobilisation of sustainability.

### 4.3.2 Government-dependent Local Private Sector

The local private sector in all the GCC countries has been primarily state dependent, most notably through state contracts and government bailouts. One of the problems of having a weak private sector is that local private sector interests and small and medium-sized enterprises are not actively encouraged or incentivised, leaving the government to fill these gaps. We are increasingly drawn to the power of oil wealth in maintaining the lop-sided balance of power among the Gulf states. However, the UAE was the only GCC nation whose share of public sector involvement in gross capital formation declined, pointing to greater maturity of private sector in the country and encouragement to become more self-sufficient (Kamrava et al., 2016). The UAE has created dedicated investment zones or free zones, and increased levels of

adoption of corporate responsibility which further supports public-private collaborations built around sustainability (Rettab et al., 2009; Cernigoi, 2015; Goodwin, 2016). The expansion of the foreign private sector in the GCC across several large infrastructure and development projects spanning areas such as renewable energy, green building and transport are evidence that the foreign private sector also plays a critical role both in knowledge and skills transfer. The foreign private sector also serves as a role model around global best practice and a collaborator to the local private sector (Deloitte, 2015). However, despite these developments, as the research unfolds, we note instances where both the local and global private sector are subject to authoritarian controls in Abu Dhabi.

Furthering the discussion on rentier-related impacts on mobile sustainability policies among the Gulf states is the issue of soft power.

### *4.3.3 Rentier-Related Quests for Soft Power in the GCC States*

Several theorists have linked state legitimacy to the pursuit of soft power which simultaneously preserves regional ties and create a benevolent identity of the GCC states abroad (Davidson 2012a; Khoday el al., 2015; Luciani 1990). The quest for soft power through regional and foreign alliances and strategic investments is also a driver of policy transfer. More importantly soft power initiatives attract tourists, financial institutions, and draws in the international private sector that boost the local economy. Elsheshtawy (2012) notes that the pursuit of urban projects by Abu Dhabi and other cities in the region are embedded in a global capitalist agenda and are accompanied by inequities, particularly since power wielded by large multinational corporations and local elites has a dominant influence. In the quest for soft power, Saif (2017, para 25) notes that mega real estate projects and foreign ownership ventures promoting the Gulf as a '*global brand*' proliferated across the UAE, Bahrain, Qatar and Oman. Abu Dhabi worked strategically to build its reputation globally as the regional leader in renewable energy, nuclear energy and sustainability, and also a tourism and cultural hub (Dempsey, 2014; El-Katiri, 2017).  Capitalist driven international ownership opportunities however, challenge local notions of identity, culture and tradition given that locals in these states (with the exception of Saudi Arabia) were often outnumbered by foreigners (Saif, 2017).

The pursuit of soft power is not without consequences, since many Gulf states have pursued overambitious projects at tremendous financial and human capital cost, in a bid to build

extravagant, one of a kind projects (Jensen, 2016; Sillitoe, 2014). Regionally, there is evidence of similar pursuits, for example, Saudi Arabia announced the construction of six new economic cities in 2006, which by 2012, were still in early construction facing financial difficulties (Smith, 2012). One of the cities, the King Abdullah Financial District is still facing funding challenges with just a fifth of the site complete in 2017 (Paul and Torchia, 2017). Abu Dhabi and the other Gulf countries faced similar construction booms and downswings. (Dempsey, 2014). We will explore Abu Dhabi's foray into excessive development further in the research, however, what has occurred in Abu Dhabi mirrors wider trends in the GCC states.

Beyond soft power, another nuance of the regional context is the over-reliance on foreign expertise and labour, which also shapes the kind of sustainability that emerges.

### 4.3.4 Over-reliance on Foreign Expertise and Nationalization

The skills shortage in the GCC states results in governments' over-reliance on foreign expertise and also migrant labour (Tadros, 2015; Tharoor, 2015). A further trend noted by Saif (2016) is the hiring of consultants in several Gulf states as part of developing large real estate projects and new urban centres, some of which never materialised as planned. While economic visions of the Gulf states share a striking similarity in that they feature references to knowledge economies, economic diversification and becoming globally competitive, they have also been created with lack of citizen participation. Thus, it is not only elites, but also international consultants, who have an input in decision-making, as opposed to the end-users impacted by policies. These trends in Abu Dhabi are reminiscent of Haas's (1992) arguments that actors in elite decision-making circles shared normative principle beliefs, values and worldviews. Despite shared beliefs around problem solving in their domain of expertise, solutions also risk being homogenous and unchallenged given that the actors share similar views.

Another aspect that is problematic is the transience of global consultants, leaving local teams to follow through on implementing plans (Interviewee Z, Sustainability Professional, 2017). Without the training and changes made to institutions to implement the changes introduced by expert consultants, many initiatives risk remaining short term endeavours. Nationalization plans across the Gulf states promote local employment and are simultaneously a legitimization strategy. However, they must be accompanied by training and leadership programs to support longer term implementation goals. Privileges associated with nationalisation programs are also

problematic given the sense of entitlement that persists (Levins, 2013). Hertog (2014) notes two fundamental political challenges that limit the nationalisation programs of the Gulf states: access to cheap and easily controlled international migrant labour and the preference of citizens for public sector employment noted for job security and high pay scales. Still, despite these challenges, the announcements and arguments in favour of nationalization are still part of the government agenda, given that the public sector cannot absorb all the nationals seeking employment in the long term. However, in contrast, Levins (2013) highlights a positive trend witnessed regionally among a growing number of highly educated and skilled Gulf rentier citizens.

Abu Dhabi is experiencing similar nationalisation trends that mirror wider regional trends (Hertog, 2014). The role of nationalisation at the UPC and Masdar will be explored further in the research to understand how institutional-level initiatives are impacting local human capacity to implement sustainability initiatives. Beyond the dualities of nationalisation, subsidies pose a real challenge to implementing sustainability to which our attention now turns.

### 4.3.5 The Subsidy Distribution Phenomenon and Sustainability

As discussed earlier, subsidies are an inherent part of the rentier social contract ensuring the loyalty of constituents. Subsidies include concessions for housing, food, healthcare, jobs and education and other benefits such as low-cost fuel, access to stable public-sector jobs, subsidised utilities, zero taxation, and income generating opportunities that contribute to unsustainable lifestyles (Crot, 2013; Gray, 2011; Sillitoe, 2014).

In examining power hierarchies in rentier states, Jamal (2007) found high levels of social trust between citizens and the state in rentier-driven societies. However, Davidson (2012b) argues that levels of trust particularly from those outside elite circles of power and wealth are on the decrease in the Gulf states, as evidenced from the Arab Spring. Hertog and Luciani (2009) note subsidies as a major obstacle to sustainability in the Gulf states. This is particularly evident in the manner subsidies negatively impact the work ethic of local citizens, leading to complacency in society. Levins (2013, p.393) refers to it as "*the rentier mentality*" since citizens gain wealth without earning it.

Regionally, with respect to subsidies, Kamrava et al. (2016) note differences in Gulf government's ability to maintain the existing plethora of subsidies they offer their constituents, with the UAE and Qatar still offering roughly the same levels of welfare, whilst Saudi Arabia

with its larger population and Oman and Bahrain with fewer resources as well as Kuwait, also face challenges around the subsidies dilemma. Despite awareness of the challenges subsidies pose to state budgets, in the wake of the Arab Spring, all the GCC nations embarked on various short-term solutions in the form of bolstering subsidies toward maintaining regional stability, however, critics of the move cite the need for more serious economic reforms to strengthen the private sector and spur private sector job creation (Knowledge@Wharton, 2011).

It is therefore vital to understand the impact of the culture of subsidies and how it shapes sustainability-related knowledge transfer, community mobilisation and participation and the implementation of sustainability concepts. One of the areas the research will explore further is the extent to which these subsidy related challenges are either perpetuated or overcome in Abu Dhabi.

While subsidies are a political legitimisation tool on the one hand, on the other hand they are also applied unequally, mostly directed to local citizens and not all residents. Thus, in addition to societal stagnation that accompanies subsidies as noted by Levins (2013), inequalities are an inherent part of the transfer and mobilisation of sustainability in the Gulf states.

### 4.3.6 Inequalities Challenges the Transfer and Mobilisation of Sustainability

Gulf states are not planned to cater equally to all population segments (Al Raouf and Clarke, 2014). Beblawi and Luciani (1987, p.53) describe a *"hierarchy of beneficiaries"* in rentier states. Policies of national privilege that originated in the post-colonial period in the Gulf states create room for excessive numbers of brokers amidst relatively small national populations. The societal incentives to the local population were also designed to boost economic opportunities for nationals, however, they have morphed into new forms of inequality with passage of time (Hertog, 2017).

Gardner (2008) contends that historical genealogies of power are reflected in the order and discipline exercised in Gulf societies on the basis of nationality. Contradictions arise between Gulf states' desire to project themselves as progressive global centres whilst daily interactions between citizens and foreigners reflect societal and spatial divisions (Gardner, 2008; Tatchell, 2009). At the extreme end of the spectrum, Khan (2014) and Tharoor (2015) assert that low-skilled change agents on the ground in the form of migrant labour are also implementing the sustainability agendas of Gulf governments, but with little hope for any share in the cities and

infrastructure they help build. Thus, one of the challenges going forward in implementing sustainability is rooted in inequality embedded in the societal framework. Hertog (2017, p.9) notes that across the Gulf states, fragmented societies operate within their own separate '*enclaves*' subject to different sets of social rules and sometimes laws. Local citizens have increasingly pursued individual and informal access to state privileges. Thus, they have become power brokers around a range of services including visas, business licenses, jobs, etc. with long term consequences for state-society relations (Hertog, 2010).

Gardner (2008) writing in the context of Bahrain, Tatchell (2009) and Dempsey (2014) in the context of Abu Dhabi and Vora (2013) in the context of Dubai describe modern forms of governance which have proliferated within communities, where internal affairs are managed informally through networks and bonds of trust. Vora (2013) describes informal civil society organizations among the Indian expat community who source community donations to provide relief with social issues such as labour force infringements, prisoners, repatriation of house maids and hospital expenses. Tatchell (2009) described assemblages in Abu Dhabi among the poorest migrants, where the community collects funds to repatriate an injured community member, or for the body to be sent home in the case of death. Such community-driven initiatives are not supported by either the Indian or UAE governments but represent the potential for community-driven assemblages among Gulf Indian citizens to help other less fortunate citizens amidst the reigning societal inequalities. Healey (1997) argued that diverse cultural communities possess the ability to formulate and share locally derived knowledge from particular networks. Thus, the expats themselves have developed networks and local knowledge unique to their cultural communities, forming a parallel concept of the '*majlis*' – the traditional local assembly for sharing information and problem solving. These assemblages of cultural communities often evolved as an outcome of having to operate in social enclaves of their own.

Beyond the fragmented groups of expats, it cannot be assumed that the citizens are a homogenous population, Kinninmont (2015) describes the divisions prevalent in Gulf states such as Saudi Arabia and Bahrain, urban-tribal divisions in Kuwait and regional differences in Saudi Arabia, Oman and the UAE. In addition, a large number of stateless population locally referred to as the "*bidoon*" (Arabic for 'without') exist in the UAE and elsewhere in the Gulf, who although born in these nations, have no access to public services, jobs, education or healthcare on account of their statelessness. Over time although these issues have gained media

attention, the divisions are still a contested issue (Reuters, 2012; Zacharias, 2012). These persisting inequalities shape the way sustainability policies are interpreted and implemented regionally with evolving assemblages among diverse cultural groups despite the lop-sided balance of power.

The issues of inequality are further reflected in unequal sponsorship norms that impact groups at the margins.

### 4.3.7 Sponsorship Opportunities for Locals and Resulting Inequalities

Governments in Gulf states have abetted the ongoing *kafala* (Arabic for sponsorship) system whereby locals in these states earn sponsorship incomes for sponsoring migrants. Despite the ethical issues it involves, such as the exploitation of workers and restrictions on their mobility, the system is increasingly difficult to dismantle since it generates income for the local citizens of Gulf states (Khan, 2014). Tatchell (2009) describes wages and passports being routinely withheld by sponsors to prevent workers from absconding. Despite reforms to labour laws and the *kafala* system, Human Rights Watch has noted the failure of authorities in Abu Dhabi to investigate labour violations and workers' rights (Human Rights Watch, 2015).

Foreign expats in Gulf states do not have a path to citizenship perpetuating the transient nature of their existence despite their critical contributions to the conversion of the UAE's flagship cities into global cities without recourse to a life of permanence (Vora, 2013; Unnikrishnan, 2017). When employment contracts are terminated in Dubai or Abu Dhabi, for example, expats regardless of education or income must leave and are subject to the bureaucracy of labour bans in the UAE before they can return (Dempsey, 2014; Vora, 2013). In this manner, even those local citizens lower down in the social hierarchy possess greater rights than educated, financially successful expats who are also subject to the sponsorship system. Leonard (2003) describes the continuous changes in employment rules in the Gulf states that impact the state of impermanence of expat workers accompanied by attitudes of ambivalence and uncertainty. The values of different cultural communities take a back seat in this local context, further cementing societal divisions in Gulf states (Gardner, 2008; Vora, 2013).

The region's colonial past emerges as a factor that brings to the fore the historical background that also impacts societal hierarchies that pervade the implementation of sustainability policies.

### 4.3.8 The Role of Colonialism in Creating Inequalities

Most GCC states with the exception of Saudi Arabia were colonized at one point of time and emulated the West in developing and modernizing their economies building basic infrastructure and services. Saif (2017) notes the regional societal divisions that existed when the American and British companies extended forms of colonization by creating gated communities for their employees in the region. In the UAE, deep-seated social hierarchies persist within the Emirati and the expat community that have been influenced by tribal and colonial factors (Khalaf, 2001). Kinninmont (2015) notes for example that the legacy of British imperial power across cultural, education, diplomatic and personal interactions is evident in the Gulf monarchs' and elites' leverage of colonial connections. In Abu Dhabi, the particular power structures and societal values, long term dependence on labour from the Indian subcontinent are inherited from the UAE's colonial past as a British out-post that relied on migrant labour from the Indian subcontinent (Tatchell, 2009).

Despite the Gulf states' colonial or historic business ties, Kinninmont (2015) argues, nations such as the UK or US cannot assume trade and investment partnerships to be necessarily preserved over time, nor Western models of government or business being viewed as best practice in the long term by Gulf nations.

Coupled with the consideration of historical factors such as colonialism, the influence of Islam on interpretations of sustainability among GCC states is important to consider.

### 4.3.9 Islam Promotes and Challenges Sustainability-Related Policy Transfer

The states in the Gulf have been historically aligned with the dominant role of Islam in society (Bellin, 2004). Islam has historically served as the fuel for the acquisition of power and preservation of culture in the Middle East (Kazemi, 2002). For example, Gulf monarchs used Islamic teaching to quell discord and promote regional stability in the aftermath of the Arab Spring (Davidson, 2012b). Despite leaders of the Gulf states being monarchs and not religious clergy, no clear separation exists between the state and religion in rentier states (Levins, 2013). Thus, as we consider notions of power and inequality, Islam has the potential to impact the adoption of sustainability in interesting ways related to civic values through the concept of

*shura* that promotes consultation among stakeholders (Al Raysumi, 2012). Islam also impacts aspects of gender equality that determine how men and women live and travel in society, secular tolerance and personal freedoms. Norms in the Gulf states related to women, religious and ethnic minorities have roots in traditional Islam and Islamic culture (Kazemi, 2002). In addition, narratives around the Sunni-Shia and Islamist-secular divisions are telling of the ways in which Islam impacts societal divisions in Gulf states (Kinninmont, 2015).

Some Gulf monarchs have applied their unique interpretations of Islam, with potential consequences particularly when groups within Islam disagree with these interpretations. All Gulf states are not aligned to Islam in the same way: some are more rigid in their adoption of the tenets of Islam (such as Saudi Arabia), whilst others such as the UAE, Qatar, Oman and Bahrain are moderate to progressive adopters of Islam's tenets. The wealth of the respective GCC governments has allowed them the power to co-opt other groups such as mosques, schools, and scholarly associations by absorbing them under state control (Levins, 2013).

The politicising of faith and sectarian tensions have become problematic issues where aspects of each GCC state's territoriality come to the fore (Chatham House, 2012). For example, the UAE's foreign policy stance on fighting political Islam, puts it at logger heads with other GCC states (Cher-Leparrin, 2017). Thus, Islam serves as both a factor that binds the Gulf states together in some ways (Davidson 2012b; Levins, 2013) but it can be increasingly contested based on the sectarian tensions and political rifts that abound based on differing interpretations. Thus, in aspects such as the built environment which are culturally and socially relevant, but less political in nature, Islam thrives as a mobile concept, versus ideologically-driven aspects of Islam.

Dempsey (2014) offers evidence of further sectarian divisions in Abu Dhabi's built environment where Sunni mosques were granted state-funding whilst Shia mosques were considered private, in the eyes of the Sunni-majority Abu Dhabi government. Cultural and religious institutions focussed on Islam, whether mosques, Islamic art or educational institutions are a crucial part of the urban fabric of Gulf cities, and perform multiple roles, contributing to soft power, cultural preservation and political stability (Gierlichs, 2016; Harrell, 2014; Levins, 2013). A modern interpretation of Islam is witnessed in Abu Dhabi where the leadership lies with the monarchies rather than the religious clergy. Like other Gulf cities, Abu Dhabi continues to embrace Islamic values, in the built environment (Bromber et al. 2016;

Tatchell, 2009; Davidson, 2010). Local adaptations of sustainability concepts are evident in the form of Islamic and culturally specific, gender-segregated spaces and communities, and iconic mosques (Bromber et al., 2016). Islam proves to add complexities to the political and societal landscape in the Gulf states given that it is a fragmented concept, very much subject to interpretation by those with the power to adapt it toward special interests.

One area of special interest economically that overlaps well with Islam is corporate social responsibility. Sillitoe (2014) directs us to Islam's compatibility with corporate social responsibility, socially responsible investing and environmentally responsible practices such as trading carbon credits. Other Islamic interpretations that can encourage adoption of sustainability concepts include the concept of '*zakat*' (Arabic for alms-giving). While it promotes corporate social responsibility, it also lends to a relatively limited form of charity-driven CSR, while there is considerable scope for CSR in line with the business case of the corporations in the GCC (Cernigoi, 2015). Wilson (2009, 2014) further asserts Islam and its *Sharia* practices rooted in cautious decision-making and the custodianship of natural resources have positive implications for sustainable development.

Islam, therefore, presents both opportunities and challenges in being able to achieve widespread equity across multiple communities both within and outside it. Finally, we consider the issue of late-rentierism as an enabler of mobile sustainability concepts.

## 4.4 Late Rentierism and Global Circuits of Knowledge Networks

Rentierism in its current guise is evolving as a result of external glofbal forces. Gray (2011, p.1) has focussed on these elements in the period of 'late-rentierism' where investment in conferences, research projects, policy consultants and changes under the broad umbrella of economic diversification have occurred, particularly in the UAE and Qatar. In these nations and elsewhere in the GCC assemblages of actors, policies and practices shaped by historical, political and geographical elements, are experimenting with new income generational strategies, particularly in the aftermath of global financial crisis. These developments reflect ideas proposed by mobility theorists who focus on interconnections and networks that are often trans-global.

However, this era of late-rentierism has implications for the local community since economically-driven sustainability policies can also result in marginalization of some social groups while others are empowered simultaneously.

### 4.4.1 Internal and External Stimuli Prompting Sustainability in the Era of Late Rentierism

Late rentierism puts a focus on a stronger productive domestic sector and wealth generation outside of oil and gas. It is characterized by increased reliance on market-based mechanisms, privatization, the creation of diverse quasi-government entities and economic diversification (Gray, 2011).

Gray (2011) describes the erosion of rentierism in its traditional form as a result of external and internal stimuli. This includes a number of factors such as increased domestic demand for natural resources, increasing unemployment, increasing numbers of well-educated younger citizens expressing disillusionment with the 'status quo' and contested political succession that are propelling the Gulf states toward economic diversification (Davidson, 2012a; 2012b). Gray (2011) also describes internal reforms such as the embrace of fiscal and monetary reforms, labour market policies and trade policies.

There have been subsidy cuts across the GCC with the UAE taking a lead role through the introduction of Value Added Tax (VAT) effective from 2018, road tolls (*Salik*) and parking fees toward reducing the state's reliance on oil revenue (Graves, 2017b; Kerr and Omran, 2018). Other GCC countries have contemplated similar reforms without significant achievements on this front with Kuwait having to reverse its diesel price increases in the face of consumer complaints (Arabian Business, 2016; Rahman, 2015). We are drawn to the fact that although there is a common rationale across the GCC countries to cut subsidies to balance state budgets, each countries' individual situation will determine how and when these reforms are best implemented.

The onset of late rentierism signals Gulf nationals being incentivised to seek employment opportunities beyond the public sector, in the local private sector, and being given preference in employment processes as part of nationalization drives (Gardner, 2008; Ronnegard, 2013). At a regional level within the GCC in the late-rentier period, Kinninmont (2015) notes that increasing number of citizens from Gulf states are studying abroad, and more women are

joining the workforce than in the past. These opportunities point to improved internal mobility among youth and women. However, the benefits and subsidies related to oil wealth also create a wider degree of immobility for those citizens who prefer to stay and receive these entitlements in the long run (Levins, 2013). Having to contend with labour bans when changing employment renders some expats immobile and tied to their employers, whilst migrant workers are rendered immobile through the *kafala* system (Gardner, 2008; Khan, 2014; Vora, 2103). We note varying degrees of mobility and immobility of people as a result of varying social and employment-related policies in the Gulf states.

Late rentierism involves a slow process of the diversification away from traditional rentierism whilst preserving authoritarian power. For example, in 2017 the Executive Council of Abu Dhabi was re-structured to preserve existing power blocs and simultaneously ensure that the heads of various critical sectors such as energy, economic development, urban planning and municipalities, transport, tourism and culture, police, finance, education, health, knowledge and other strategic affairs were also involved in the highest level of decision-making (Gulf News, 2017a).

Hashem (2013) also points to a wider trend of institutional structure of state-sponsored institutions being re-defined in Abu Dhabi. Similarly, changes to UAE company law have allowed a foreign company to increase investments in local companies (Armitage, 2016). Thus, increased avenues of raising capital and investment are being pursued outside of state funding.

In response to internal and external regional and global stimuli, Gulf states are compelled to evolve. Four areas of interest stand out in the period of late-rentierism. They include sovereign wealth funds (SWFs), hosting global conferences, the embrace of corporate social responsibility (CSR) and economic free zones. These areas allow for multi-scalar transfers of sustainability policies that I turn my attention to.

### *4.4.2 Sovereign Wealth Funds, Corporate Social Responsibility (CSR), Economic Free zones and Global Conferences as Late Rentier Mobile Policy Mechanisms*

Strategies in the domain of sovereign wealth investments by Gulf states, the incorporation of CSR among companies in the region, and the free zone model are proving to be key transfer media around primarily economic-related sustainability policies.

*4.4.2.1 The Role of Gulf Nations' SWFs in Promoting Sustainability Assemblages*

A look into the impact of the SWFs of the GCC nations whose behaviour has been impacted simultaneously by local, regional and global factors provides insights into the way the power of Gulf governments has evolved, with trickle down effects on sustainability-related decisions and investments across the GCC including Abu Dhabi where large SWFs have been merged (McAuley, 2016). SWFs have been mostly controlled by the respective ruling governments or royal families in the Gulf states. As part of cementing state legitimacy and protecting national interests, the Gulf states' SWFs have played a strategic role in making international investments and engaging in foreign collaborations to diversify income generation (Widdershoven, 2016). However, the aftermath of the global financial downturn and falling oil prices had a detrimental effect on Gulf states facing increasing domestic debt. This in turn limited their ability to engage in foreign investments with the same vigour as in the past and their overall risk-taking appetite. Gulf governments changed their outlook on investments, focussing more strategically on local markets (Setser and Ziemba, 2009). For example, SWFs from states such as Qatar and Saudi Arabia sold their foreign investments and moved toward investments in local private equity funds, infrastructure and real estate projects (Widdershoven, 2016). The increased willingness of Gulf SWFs to fund infrastructure finance bodes well for local projects in need of funding (Goodwin, 2016).

*4.4.2.2 The Regional Phenomenon of Free Zones Promoting Policy Transfer*

Another mechanism that will allow sustainability to thrive in the GCC is rooted in the regional phenomenon of free zones. Regionally, the Gulf states have embraced the creation of specialised trade and logistics hubs in the form of economic free zones. This mechanism has already proved to be economically viable, simultaneously attracting global, regional and local stakeholders in these zones. Masdar is an economic free zone among a larger trend of free zones in the region, that are a catalyst for foreign investment, innovation and public-private partnerships attempting to move beyond traditional foreign investment restrictions in these authoritarian states (Goodwin, 2016). Despite the economic rationale of free zones, Hertog (2017, p.13) argues they are also *'soft power'* enclaves (author's emphasis) catering to a more international, rather than domestic population.

Traditionally, free zones have been either large industrial zones or dedicated clusters focussed on specific issues with specific economic and tax incentives and an enabling environment for

businesses. Access to shared technology, industry-specific networks and experts are part of the incentives these zones provide, which are conducive to policy transfer. However, these free zones in the Gulf states face heavy regional competition with the countries vying with each other to attract foreign investments (Goodwin, 2016). This competition could be positive for encouraging sustainability projects to increasingly feature more private sector investment. Given that sustainability is primarily government driven in the region, the incentives in free zones are catalysts for bringing together assemblages of actors from both the private and public sectors around mutual economic interests.

*4.4.2.3 Role of Conferences as Policy Transfer Media in GCC States*

The GCC states, and in particular, the UAE and Qatar, have also positioned themselves as conference hubs as part of wider soft power goals (Hertog, 2017). Conferences in the GCC become what Larner and Le Heron (2002, p.765) refer to as "*globalizing micro-spaces*" with the power to foster assemblages and encourage policy circulation. Conferences are spaces that encourage mutual learning and collaboration among industry networks and experts to advance local and international agendas (McCann, 2011; Newmark, 2002). By their very nature, conferences become magnets for the "*travelling technocrats*" that Larner and Laurie (2010, p.218) describe who often hail from elite groups. The harnessing of policy transfer through conferences is not uniform across the GCC. Modern Abu Dhabi has marketed itself as a global conference hub and created dedicated government programs dedicated to attracting business and conference events (Al Dhaheri, 2017). Such externally focussed events Hertog (2017, p.5) notes are attempts by Gulf monarchs to "*make their small countries leaders in the cultural, scientific and normative lens.*" In Abu Dhabi, a former academic at the Masdar Institute described the World Future Energy Summit as a platform for thinking globally and acting locally, noting that "*WFES brings diverse international stakeholders to the table to discuss how renewable energy can be developed and distributed and an opportunity to disseminate knowledge and research, not just in the UAE but also globally*" (Interviewee J, Former Assistant Professor, Masdar Institute, 2011). The comments reflect parallel arguments by mobility theorists who note the transnational movement of knowledge beyond territories given that multiple change agents are operating relationally at multiple scales (McCann and Ward 2010, 2011; Prince, 2010).

WFES, sponsored by Masdar the Abu Dhabi Government has expanded into an expansive sustainability policy transfer mechanism. Philanthropic awards have also been instituted and

showcased in the UAE, which simultaneously build soft power for the countries and organizations funding the awards. The awards involve generous prize money, high profile dignitaries, and opportunities for social and economic advancement for diverse stakeholders including those from developing countries and youth (Emirates Green Building Council, 2016; Masdar, 2015). Hertog (2017, p.5) questions whether such displays of wealth usually positioned toward '*good citizenship*' and '*progressiveness*' (author's emphasis) are a financially lucrative utilization of oil wealth. Given the lack of transparency in the local context, it is challenging to pinpoint whether conferences are indeed financially lucrative, particularly in those Gulf countries that do not have existing conference infrastructure. The business travel statistics across the GCC between 2009 and 2012 grew by only 5% pointing to some countries lagging behind. Low accessibility to venues due to poor public transport systems and restrictive visa processes, particularly outside the UAE, are deterring factors to attendees (Strategy&, 2013).

Following Larner and Laurie's (2010) assertion that change agents attending conferences often hail from elite groups, I noted attempts in Abu Dhabi to open larger exhibition spaces as part of conferences to the public, whilst high-level conference debates are private and come at a cost (Mascarenhas, 2012). Thus, by limiting the discussion to certain elite stakeholders at conferences, the strategic nature of the discussion gets shaped by these groups, leaving out other voices. While GCC nations are lavish conference hosts on the one hand, Hertog (2017) argues that GCC nations such as the UAE and Qatar have human rights infringements associated with them that put them at loggerheads with global political, civil and human rights norms.

We shift our attention to the final arena for multi-scale interaction among diverse stakeholders – corporate social responsibility (CSR).

*4.4.2.4 Corporate Social Responsibility (CSR) as a Medium of Policy Transfer among the Gulf States*

Corporate Social Responsibility (CSR) is a mechanism being employed by the private sector across the Gulf states to counter economic stagnation in different ways. Ronnegard (2013) notes that although CSR has traditionally been conceived through a philanthropic/charity-driven model in the Gulf states, increasing pressures from globalization have prompted firms in the UAE and Saudi Arabia, in particular, to incorporate CSR as an integral part of corporate governance. A consultant with experience in public-sector adoption of CSR in the UAE noted,

that in Abu Dhabi at the UPC and other government entities social goals were prioritised along with organizational mandates and internal and external stakeholders were being aligned toward corporate governance goals. The interviewee noted that parallel governance processes taking place within an organization and externally were crucial to wider goals such as training, leadership development, managing risk, accountability and implementing organizational directives (Interviewee B, Former UPC Consultant, 2012). Further afield in Dubai, small and medium sized enterprises have begun to define board responsibilities and have exhibited increased transparency and accountability in response to top down directives related to corporate governance (Diazreus, 2017). Thus, CSR embodied multi-scale networks, and was being adopted at multiple levels across the public and private sectors in the UAE.

At the regional level, corporate accountability, internal governance and transparency have been embraced by an assemblage called the Pearl Initiative that includes a network of 41 businesses across the Gulf states and was founded in 2010 by a group of business leaders aiming to share experiences and practices around CSR. Beyond the Gulf states, Jordan has been particularly successful in engaging both the private sector and the non-profit sector to engage in sustainability reporting (Katkhuda, 2017). One of the major challenges the GCC states face in general is the lack of reporting and lack of awareness of expanding CSR strategies (Cernigoi, 2015). However, Avlonas (2017) points out that with stakeholders in Gulf states increasingly having more access to data, this increases their ability to put pressure on both the public and private sectors to align decision-making with sustainability. There are regional challenges rooted in the political, cultural and religious nuances such as organizations being rooted in philanthropic giving that prevent larger numbers of companies engaging in wider CSR initiatives (Rettab et al., 2009).

Technological advancements have increased the potential for real time sustainability-related reporting. In addition, a top-down push to increasingly share both financial data and sustainability data with stakeholders from senior leadership in the private sector in the region has positively impacted CSR regionally in the GCC (Avlonas, 2017). Abu Dhabi and the UAE are among the front runners in the Gulf states particularly in relation to the embrace of CSR and corporate governance. This success is linked to the UAE government's intent to embark on economic diversification and income generation initiatives.

**4.5 Conclusion**

In attempting to situate Abu Dhabi against regional developments, we see at the outset, immense similarities between Abu Dhabi and its GCC counterparts, particularly in relation to oil dependence, power concentrated in the hands of the government and ruling elite, expensive quests for soft power and rentier-related inequalities. The mobilisation of sustainability in this context is not an easy endeavour for any of the GCC nations. Power lies with the monarchs and their trusted circle of elites who have manipulated rentier-related subsidies, welfare packages and social spending to legitimize the political agenda. By placing control over sustainability policies and their implementation within a handful of elites, quasi-government organizations and government agencies, the Abu Dhabi leadership exhibits its preference for a controlled and economically-strategic form of sustainability. However, we also see power evolving as the GCC states respond to the global fall in oil prices. There is evidence of changing strategies of SWFs, the rise in economic free zones, hosting international conferences and the adoption of CSR, whilst the social, cultural and religious status quo are placed precariously in balance.

Abu Dhabi has increasingly been at the forefront of a number of initiatives with its leaders pursuing the "mosaic" model described by Davidson (2012b, para 2) where modernization and traditional loyalties are upheld in a delicate balance. Abu Dhabi has taken bolder steps in comparison to other Gulf states in encouraging the local private sector to become more self-sufficient, which has implications on the long term influence the state has on the sector. It also followed through on subsidy cuts and instituted economic taxes such as VAT. Thus, we witness global economic forces playing a role in shifting former rigid power alignments.

Whilst civil society and community participation are currently top-down and government driven in Abu Dhabi, increasing education levels of women and youth across the GCC with access to state-of-the-art educational institutions encourage these constituents to voice their desire for greater participation in the decisions that impact them. A diminishing of former levels of social trust is inevitable, as groups of new stakeholders are increasingly voicing their opinions through new media such as social media and the internet.

Similarly, alignment with Islam has also been interpreted strategically in line with wider political and economic agendas, particularly in Abu Dhabi where moderate Islam is practiced.

Circles of power are increasingly encompassing stakeholders such as state-sponsored entities, SWFs and elites. The preferential treatment given to some key stakeholders in the form of tax breaks, land grants or exclusive government contracts could be barriers that hamper transfer processes since other stakeholders are not privy to the same entitlements, but on the other hand, entities such as the large SWFs being empowered to make strategic and investments across the economy are the powerful kind of stakeholders that make sustainability a reality in the local context. The merging of SWFs as witnessed recently in Abu Dhabi, prioritizes global competitiveness, access to new markets, increased collaboration and risk-sharing opportunities (McAuley, 2016). Thus, there is increased power-sharing over investment decisions by SWFs particularly with other public and private companies.

While GCC nations have increasingly divided political agendas with clear political blocs (Hassan, 2015), common cultural, religious, authoritarian and rentier tendencies also link these states. Abu Dhabi has emerged as a front runner, and early mover in the space, along with neighbouring Dubai, Qatar and Saudi Arabia close at its heels. In particular, Abu Dhabi's high GDP and soft power-driven initiatives to convert itself into a global city and sustainability hub in the region have propelled its foray into the transfer of sustainability concepts.

Authoritarianism and rentierism are very much alive, however, they are accompanied by subsidy cuts, incentives to the local and global private sector, the embrace of CSR, and corporate governance. However, along with increasing global-local interactions, many communities particularly those who are non-citizens have been rendered immobile. The blurred boundaries across state leadership and sectors of the economy have allowed for continuous movement of elites across government-owned agencies and board positions of government-owned corporations in Abu Dhabi (Gulf News, 2017). This ensures the continued blurring of boundaries between the public and private sectors (Davidson, 2012a).

As Abu Dhabi continues to seek profitable and viable paths toward economic diversification, we see the boundaries of power being eroded in the current form through the legal changes in company law including corporate governance requirements, protection for shareholders, and the continued promotion of social responsibility in the UAE (Armitage, 2016).

The Abu Dhabi Accountability Authority was set up to conduct audits of government agencies, companies and projects in which the government owns a 50% stake and investigate corruption

and oversee anti-fraud programmes (The National, 2013). The agency creates accountability among the emirate's government agencies tasked with housing, transport, planning and other government bodies around the efficient use of funds and resources. On the non-profit front, the Abu Dhabi Sustainability Group (ADSG), a membership-based organisation provides sustainability-related policy support, learning and knowledge sharing opportunities to government, private companies and non-profit organisations (Katkhuda, 2017). Thus, we are increasingly drawn to the creation of speciality institutions that are designed to respond to and adapt sustainability policies. The state both controls and engages in degrees of power-sharing toward its political and economic agendas.

The transfer and implementation of sustainability policies potentially allow new forms of state legitimacy in the environmental, economic and social arenas to emerge, and the creation of global and regional networks of actors and institutions interacting at multiple scales expand prior notions of territoriality. However, given the remnants of colonialism evident in the social hierarchies that persist, separate social worlds persist in these states each with their own social rules to govern the various groups.

Abu Dhabi's sustainability path though clearly situated among similar regional challenges, is increasingly impacted by global forces. Amidst a bubbling regional cauldron of complexities associated with implementing sustainability policies, we witness at play the "*multiple rationalities*", "*social formations*", "*particular histories and geographies*" and "*situated contingencies*" that Healey (2013, p.1521) has alluded to. The late rentier period has been a catalyst for facilitating multi-scalar sustainability-related investments across the GCC and notably in Abu Dhabi where politics drives the transfer of sustainability.

# Chapter 5: Historical, Geographical and Cultural Factors Influencing the Sustainability Transfer and Mobilisation Phenomenon in Abu Dhabi

## 5.1 Introduction

This chapter gives a brief history of Abu Dhabi's evolution as a modern city and its existing planning problems. It uncovers deeper meanings associated with the transfer and mobilisation of sustainability concepts from the perspectives of diverse stakeholders. Issues of power, cultural identity, knowledge creation, opportunities for governance and inequalities faced by certain stakeholders reveal the importance of understanding nuances of the local context. Although the seeds of governance have gradually been sown over the course of Abu Dhabi's planning and sustainability history, collaborations between the public and private sectors have not been seamless due to nuances of the local context. Increasingly over time Abu Dhabi's planners began to operate within wider global systems, whilst simultaneously contending with rentier and authoritarian power structures and the inequalities that accompanied it (Dempsey, 2014; Ouis, 2011; Tatchell, 2009).

This chapter also juxtaposes the empirical data against themes related to post-colonialism, critical regionalism, authoritarianism and rentierism as part of analysing the mobilisation of sustainability concepts from elsewhere into the local planning context. Temporalities, territories and the bridging of time and place are vital areas of focus for mobility theorists, that are explored in the chapter.

Factors such as globalisation and modernisation also prompted the mobility of actors including planners, advisers, architects, engineers particularly experienced experts and consultants. By focussing on sustainability concepts across distinct planning issues in the local context we can gain an understanding of not only these concepts but also the individuals, objects, technology and institutions involved in the transfer process. These tend to be complex processes given that actors increasingly operate in a multilateral setting compared with bilateral importer-exporter jurisdiction relationships that previously dominated the policy transfer process (Stone, 2003). Abu Dhabi's import of sustainability principles from elsewhere in the world is a part of the emirate's embrace of economic diversification, internal political rationale legitimizing authoritarian rule and externally-focussed soft power-related goals.

This chapter also traces the creation of knowledge circuits and forms of governance amidst the local political context of rentierism and authoritarianism. Finally, the chapter considers the impact of neighbouring Dubai, whose parallel sustainability path has been both competitive and collaborative with respect to Abu Dhabi.

We begin by considering a unique set of paradoxes that exist in Abu Dhabi.

**5.2 City of Paradoxes: Inclusion and Exclusion Mechanisms that Persist**

Abu Dhabi is a city of paradoxes, extreme wealth co-exists with extreme poverty (Ahmad, 2015a). Oil and gas dependence is countered by economic diversification (Reiche, 2010). A closed traditional society replete with economic, religious, and social segregation is countered by a modern, globalized society (Ouis, 2011). Some of Abu Dhabi's paradoxes are captured by Gruttadaro (2015, para 4) an American journalist who describes Abu Dhabi noting, "*It's a city clearly entranced by modern pop culture, and yet its legal system is still largely influenced by Sharia law.*" His comments draw attention to the opposing forces of tradition, culture and Islam on the one hand and with modernization and globalization on the other.

The city's indigenous Emirati population is outnumbered by foreign expat workers that account for over 81% of the city's residents (Al Remeithi, 2015; Statistics Centre Abu Dhabi, 2016). The paradox of the imbalance is that the expat workforce has no real claim to the city they inhabit, despite making significant economic contributions (Harell, 2014).

Factors such as a culture of dominance among a small population of local citizens and the transience of the majority population of expats, feature planning outcomes that favour local citizens in Abu Dhabi. Tatchell (2009) describes the societal hierarchy aptly, "*a system in which people were valued differently by race as well as profession. The hierarchy was unspoken but ritually observed*" (p. 16). The government has promoted a cohesive Emirati society and a distinct cultural identity through various policies to make up for the small number of Emiratis. Greater efforts have been invested in the purposeful positioning of religion and culture in the built environment and Emiratization drives to encourage employment for citizens across various industries including the built environment (Davidson, 2009a; Abu Dhabi Urban Planning Council, 2015b). Elsheshtawy (2011) argues in favour of considering the

disenfranchised groups that are engaged in informal activities in public spaces in Abu Dhabi. However, many real estate developments in Abu Dhabi are focussed on the luxury market and generating economic returns. Dempsey (2014, p. 119), a former planner at the UPC asks a poignant question - *Did Abu Dhabi want to become a sanitized playground for the rich?"*

Imbalanced power structures that favour elite circles of professionals and institutions have historically dominated Abu Dhabi's local context (Davidson, 2009b; Tatchell, 2009). The favouring of the rich and elite has been part of unbridled urban expansion in the Gulf states noted by Saif (2017) who questions development that takes place with limited public participation from constituents including those who are displaced and resettled against their will. Katodritis and Mitchell (2015) note that there are important aspects related to rights, responsibilities and belonging that plague Gulf states. Although the heterogeneous expat population in Gulf states has contributed significantly to growing Gulf economies, the built environment has struggled to incorporate the needs of the majority (Gardner, 2008). Let us consider Abu Dhabi's humble tribal beginnings and its ascendance on the global stage in a relatively short time frame.

**5.3 From Tribal Roots to Mega Metropolis: Abu Dhabi's Remarkable Journey**

Abu Dhabi has a rich history dating back to the Bani Yas tribe from whom the present rulers have descended. The tribe's search for an urban base in close proximity to the sea yielded the discovery of modern day Abu Dhabi. Abu Dhabi became the official seat of government and in 1793, it welcomed its first formal building structure, the Al Hosn Palace where the ruler lived, which served as an outward sign of power (Tatchell, 2009). Thus, a tradition of exerting power through architecture in the built environment began.

Sheikh Zayed, the former ruler of Abu Dhabi promoted consultation and consensus among tribes as a mechanism to ward off other enemies (Tatchell, 2009). Applied to present day Abu Dhabi, the 'other' could take various shapes and forms – the influx of foreigners in large numbers or the influx of foreign multi-national firms taking business away from state-enterprises and the local private sector. Davidson (2009b, p.94) describes the challenge that Abu Dhabi faces in the form of '*tribal capitalism*' at play in Abu Dhabi, encompassing the dual opposing forces of tribal traditions and modern business enterprise. Abu Dhabi has continued to evolve with its population growing steadily from 10,000 inhabitants in the late

fifties to 2.7 million by 2015 (Statistics Centre Abu Dhabi, 2016; Tatchell, 2009). The UPC anticipated the population to reach 3 million by 2030 (Urban Planning Council, 2010a).

The rise of Abu Dhabi is in no small measure credited to Sheikh Zayed, the leader of the Al-Nahyan clan who ruled Abu Dhabi from 1966 through his passing in 2004. He was both the President of the UAE as well as the Emir of Abu Dhabi.

## 5.4 Sheikh Zayed: Visions of Modernization

Sheikh Zayed was perceived as a benevolent ruler, whilst in the same vein, the autocracy demanded complete loyalty to him. He ruled Abu Dhabi in the crucial period after the discovery of oil as well as oversaw the unification of the emirates. Elements of Sheikh Zayed's vision to transform the desert into a modern, Islamic metropolis whilst preserving tribal allegiances, local culture and traditions are manifested in modern Abu Dhabi (Tatchell, 2009; Wilson, 2013).

Dempsey (2014) notes a series of complex dynamics that underlie the relationship between Zayed's sons who rule the emirate today. His eldest son, Sheikh Khalifa succeeded him, and his third son Mohammed became the Crown Prince (Kamrava et al. 2016). Crown Prince Mohammed and his brothers from the Bani Fatima play a vital role in controlling various aspects of the state's political and economic functions. For example, with regards to sustainability, Sheikh Mohammed chairs both the Abu Dhabi Executive Council, and Mubadala, the state-owned entity that makes strategic investments for Abu Dhabi's economy, as well as the UPC, and his brothers also took up key positions together leading Abu Dhabi into the post-Zayed era (Dempsey, 2014).

As discussed above and also pointed out in the preceding chapter on nuances of the political context, self-serving hierarchies that preserve the legitimacy of the state whilst meeting the needs of constituents continue to be part of modern day interpretations of governance in Abu Dhabi.

On the other hand, the blurring of boundaries between the ruling elite can also be problematic particularly in the areas of real estate, transport, housing, urban design and energy, which will be explored further in the research.

We now consider Abu Dhabi's colonial history and the emergence of oil as vital factors shaping the emirate's planning context and related policy transfer.

**5.5 Impact of Colonial Past and Oil Wealth on Abu Dhabi's Planning History**

Abu Dhabi's discovery of oil put it on a path of rapid modernization. Hari (2009, para 18) calls the oil discovery in the UAE "*a remarkable dilemma*" describing the paradox of the nomadic tribesmen bestowed with unforeseen resources that they needed to find ways and means to spend. The British occupied Abu Dhabi, and focussed their interests on maritime activities in the era before oil. They did not build education, health or other related infrastructure to improve the living conditions of the UAE Nationals. Sheikh Zayed noted these deficiencies and prioritised state welfare and the creation of brand new community amenities and infrastructure given the lack of provision in the past (Tatchell, 2009). The legacy continues today as planners and developers in modern Abu Dhabi proactively include schools, hospitals, mosques and related infrastructure in the planning stages of new communities (Abu Dhabi Urban Planning Council, 2010b).

Despite efforts to emulate the colonizers among Gulf states, the British planners, who developed Abu Dhabi's early plans were replaced by other international experts from Japan and Egypt. The changes signified the ruler's intent to move away from the colonial past and collaborate with new change agents (Dempsey, 2014; Saif, 2017). Sheikh Zayed envisioned a modern, international city abandoning its ties to its impoverished past. He chose a rectilinear grid plan that was overseen by a Japanese planner, Katsuhiko Takahashi, who worked with the international consultancy firm Halcrow.

A steady stream of foreign change agents was involved in modernizing the emirate since the sixties. The colonial past that did not create conditions to educate the local population meant that they could not undertake the demands of modernisation by themselves. The import of foreign planning and architectural expertise was coupled with a dependence on both foreign professionals and labourers is a continuing trend (Dempsey, 2014; Statistics Centre Abu Dhabi, 2016).

The benefits of relying on experts has been noted by Healey (2015) who observed that planners possess the ability to act strategically and in a timely manner to address the dynamics of local

problems, whilst Saif (2016) notes the dangers of over-relying on foreign consultants who impose one-size-fits-all solutions. One of the challenges for Abu Dhabi was to find change agents with local and global experience.

### 5.5.1 Adapting Planning Practices through Key Change Agents with Local and Global Experience

An Egyptian architect, Dr. Abdel-Rahman Makhlouf became the city's principal planner (Ghazal, 2013). With European training and qualifications, fluency in Arabic, cultural affinity and experience in Germany, Egypt and Saudi Arabia, he brought global and regional experiences to Abu Dhabi (Hassan, 2001). The hiring of planners such as Dr. Makhlouf and other foreign planners that followed represented early waves of policy transfers around foreign planning practices in Abu Dhabi through the planners' training and experience.

The transfer and production of planning knowledge in Abu Dhabi began with discussions on how to adapt international planning knowhow to Abu Dhabi's local problems. The city's urban form became a linear plan in line with Sheikh Zayed's wish (Ghazal, 2013). Efforts to move away from the backward, undeveloped nature of Abu Dhabi's colonial past are reflected in the elimination of older land use, street patterns and traditional housing settlements in favour of North American planning imports including dense inner-city housing, wide boulevards and car-centric city design with long term consequences that are still being experienced at present (Nelder, 2014).

The speed with which Abu Dhabi embraced modernisation in some ways reflects aspects of "*fast policy transfer*" (Peck and Theodore 2015, p. xv) related to planning and development. The traditional *majlis* (local equivalent of a town hall meeting) allowed for dialogue between small groups of planning experts, the Sheikh and his advisors (Ghazal, 2013). The cultural concept of the local *majlis* (town hall meeting) has parallels to the Islamic concept of *shura* that promotes consultation among stakeholders (Al Raysumi, 2012). Sheikh Zayed played an active role in development by personally attending meetings with planners, architects and engineers in charge of building major projects. This personal involvement allowed initiatives that fit with the Sheikh's vision to gain momentum, such as his passion for nature and his interest in urban design that benefitted community life (Ghazal, 2013; Wilson, 2013). Planners were faced with balancing the needs of diverse communities since the emirate has been subject

to high levels of migration and in particular expat transience that continues to persist (Dempsey, 2014; Kerr, 2017). Given the focus on developing and preserving local culture and identity particularly in light of the population imbalance, plans to transform parts of Abu Dhabi continue to emerge with a distinct cultural focus, on a much wider scale and rapid pace (Larry Beasley and Associates Inc., 2015; Abu Dhabi Urban Planning Council, 2017d). Thus, the production of knowledge that was culturally or identity related, or related to modernising the built environment has historically had a higher propensity for being mobilised given their importance to the leadership.

Another aspect of the colonial past that continues to be a factor in modern Abu Dhabi is the distinct composition of the labour force.

### 5.5.2 Distinct Composition of Abu Dhabi's Labour Force

Historic ties with the Indian sub-continent, and Asia, continue to influence the way housing, transport and urban design policies are implemented given that these communities form the largest groups amongst the diverse population base of expats in Abu Dhabi, many of whom are marginalised groups and disproportionately male (Statistics Centre Abu Dhabi, 2016; Tatchell, 2009). Hari (2009) quotes an Emirati on the issue of expat dominance – "*But we see the expats as the price we had to pay for this development. How else could we do it*?" (Hari, 2009, para.46). The divided social groups each have a rationale for the others' existence, the Emiratis are in need of expats to help run the economy, and the expats are dependent on Emiratis for the provision of jobs that incentivise them to leave their home countries.

The particular division of public and private space in Abu Dhabi's post-colonial built environment is characterised by divided public and private spaces (Hertog, 2017). For example, Emiratis for the most part tend to prefer interacting amongst themselves in gated communities, which Tatchell (2009) attributes to a self-protection mechanism since the country has been flooded with so many foreigners. State-of-the-art complexes for higher income expat professionals have emerged, as well as middle and low-income neighbourhoods whilst spaces for migrant camps are relegated outside the city limits in keeping with societal hierarchies (Dempsey, 2014; Mascarenhas, 2012). Promoting societal mixing through planning solutions is challenged due to persisting societal divisions that date back to the colonial past. Colonial attitudes are particularly difficult to uproot, as noted by Allmendinger (2017, p.272) who refers to the need for "*decolonizing the mind*" to move beyond colonial legacies that persist.

Sustainability policies are a potential starting point toward creating attitude change, that break away from long held inequities rooted in colonialism. However, the actual task of changing attitudes set within the diverse communities of Abu Dhabi is by far a challenging process. Learning from the mistakes of the local past has been asserted by Dolowitz (1998). The second vital criteria offered by Rose (1991), Rogers (1995) and other policy transfer theorists is that time periods for policy transfer are vital. The first quest for modernization in the sixties thus represented a distinct focus on overcoming the limitations that colonialism had placed in Abu Dhabi in the form of under-development, however, as noted above rapid modernization was not without its challenges and risks.

## 5.6. The Dual Implications of Fast Policy Transfer in Abu Dhabi

The city's urban form was dominated by a linear plan in line with Sheikh Zayed's vision, with its main artery being the Airport Road. In the upper part of the island, which is wider, the pattern retained its grid form. Sheikh Zayed envisioned a modern capital city that encompassed social, economic and cultural functions. However, given that population growth outpaced the initial 600,000 inhabitants the plan had been designed for, identical looking super blocks emerged with low-rise residential buildings lining the interior and high rises around the exterior (Dempsey, 2014).

A defining characteristic of the super block design is that it was surrounded by multi-lane arterial roads. The superblocks also had complex interior roadways, which did not function as proper thoroughfares, since they had limited access and exit routes (Gale, 2009). The authoritarian power of Sheikh Zayed allowed for swift policy making to combat the development boom of the period. Authoritarian power allowed for the hiring of architects and planners, and made it possible for policies to be implemented at great speed. However, authoritarian power could also halt development in its tracks. This was evident in the moratorium on the construction of new residential and commercial buildings mandated by Sheikh Zayed as a safeguard mechanism to protect the local culture and traditions from modernization. The 80s and 90s achieved moderate growth adding only about 200 buildings a year (Dempsey, 2014). The population however, continued to grow and with it the residents' obsession for cars, propelled by generous fuel subsidies.

*5.6.1 Persistent Planning Problems in Abu Dhabi*

Over time, the rationalist planning legacy of Abu Dhabi's early planners left wide thoroughfares spanning 10 lanes of highway, making walking extremely unsafe (Gale, 2009). While walking in downtown Abu Dhabi during my fieldwork, I also noticed the lack of architectural variation and homogeneous character of older structures that did not truly reflect the local culture (Mascarenhas, 2012). Critics of the modern movement such as Venturi (1966) and Jacobs (1964) critiqued modernism for failing to include culture in the emerging built environment. Abu Dhabi's buildings extended infinitely with heavily congested footpaths and pavements. I observed a shortage of parking during my time in Abu Dhabi, evidence that the city has faced challenges in keeping pace with the rapid increase of cars and drivers (Mascarenhas, 2012).

Abu Dhabi's street design with multi-lane roads encouraged speeding and resulted in jaywalking by pedestrians to shorten walking journeys, particularly in the summer when it was often unbearably hot to be walking about (Hammoudi et al., 2013). Enormous wealth that made expensive cars easily attainable, the lack of adequate policing, and in particular, an attitude among drivers of being above the law, contribute to the emirate's dangerous roads (Fisher, 2011). Cases of speed rules being violated were common (Gruttadaro, 2015; Nelder, 2014) making a strong case for pursuing better design and alternative transport options.

Cultural factors have influenced the road scenes common to Abu Dhabi. Examples of this are evident in one-upmanship and a male-dominated culture on roads. In addition, poor seat belt use and increasing instances of texting while driving are part of the culture of unsafe driving. A positive development has occurred among local citizens, with Emirati women becoming more aware and speaking out about the troubles on the roads. Fisher (2011) also describes the merging of different driving habits and road cultures, given the tremendous diversity of drivers on the city's roads. Thus, a problematic combination of city planning and cultural attitudes on roads continues to plague modern Abu Dhabi.

With the embrace of modernisation many of the old low-rise buildings were torn down since they did not conform with modern building standards. Demolition and replacement of existing buildings in Abu Dhabi are common and a number of architectural treasures including mosques have been lost (Leech, 2012). Instead, Abu Dhabi has focussed on building new resource

efficient structures as witnessed in the UPC's Estidama program which is focused on new buildings and communities as well as the construction of MC from scratch. The trade-off between pursuing resource efficiency in new builds versus preserving and retrofitting existing structures, is one of the planning dilemmas that face Abu Dhabi today.

The rapid development taking place in Abu Dhabi poses threats to heritage structures and old landmarks. The tearing down of older structures has for the most part taken place as part of the continuous quest for modern state-of-the-art architecture and addressing safety issues posed by older structures. Dempsey (2014) noted that even after the first wave of modernization in the 1970s, Abu Dhabi lacked the presence of cultural institutions, public spaces, and a unique defining character. Cultural architectural and design elements are increasingly being incorporated by the UPC and MC in their development plans (Abu Dhabi Urban Planning Council, 2010b; Kingsley, 2013).

This top-down trend continued into the next era of planning, when Abu Dhabi embraced the Vancouver model.

*5.6.2 A New Era in Planning: Import of Planning Practices from Vancouver*

After Sheikh Zayed passed away in 2004, his sons adopted an ambitious vision to transform Abu Dhabi into a global and economic powerhouse. Within a year of the Sheikh's passing, new development companies embarked on a number of real estate projects across the city that did not prioritize sustainable design, durable materials or the suitability of locations. Abu Dhabi had also set up 99 year leases for limited property ownership by foreign nationals to boost economic returns from real estate, a move away from its traditional closed society that only permitted land ownership by citizens (Davidson 2009a; Dempsey, 2014). Power-sharing through these progressive policies signalled liberal economic policies associated with the period of late-rentierism.

Prior to the UPC's creation, the Abu Dhabi Municipality (ADM) was in charge of development approval. At the time, it was not adequately equipped or experienced to examine the long-term effects of continuous development (Dempsey, 2014). However, the Crown Prince recognized the danger of pursuing unchecked development without an underlying development framework and appointed Larry Beasley the former head of the Vancouver City Planning Commission to

play the special role of advisor toward his vision for Abu Dhabi's transformation (Larry Beasley and Associates Inc., 2015).

Cormier (2010) notes the critical moment Abu Dhabi's Crown Prince contacted Beasley coincided with Vancouver's top position on the liveability index for cities. These indices gave Vancouver credibility and legitimacy. Beasley had been instrumental in leading the revitalization of downtown Vancouver incorporating new urbanist principles and creating a visionary model described as – '*The Vancouver model*' (Van Egdom, 2009, para. 1). Vancouver's planners with Beasley at the helm were proponents of the discourse around new urbanism and the benefits of high density downtown living. Vancouver had a number of positive attributes that appealed to a global audience of planners, government leaders and members of the public. The city benefitted from a group of talented leaders, a history of high density planning laws, and attracted foreign investments from Asian investors (Cormier, 2010). Vancouver's planners sought extensive public feedback to understand how to make high-density spaces work for families with children and other consumers who favoured suburban living (Reardon, 2015). With growing interest from cities such as Portland, San Diego, Dallas, Dubai, Shanghai and Beijing it was inevitable that other city leaders would follow suit. Beasley and other Vancouver planners received a number of advisory and consultancy opportunities that were opportunities to legitimize Vancouver's practices globally. In addition, Vancouver's popularity in academic circles and the local and foreign media created opportunities for Vancouver's planners to receive speaking and lectureship opportunities further spreading the Vancouver model (Cormier, 2010). Thus, the views of Canadian planners at the UPC in its initial years carried weight given the context of the popularity of the Vancouver planning model globally, often being referred to within the UPC as the '*Vancouver Mafia*' (Dempsey 2014, p.30).

The halo effect around the Vancouver model has been noted, since in reality some of the planning initiatives in Vancouver raised the cost of living and ended up pushing out segments who could not afford it. Little attention was paid to the negative side of Vancouver's growth including the high real estate prices, property crime, the drug scene, lack of street life, and lack of adequate office space that often resulted in reverse commutes for city residents to the suburbs. Vancouver was also critiqued for the lack of a traditional architectural identity, where planners by-passed architectural debates and engaged with developers directly (Cormier, 2010; Dempsey, 2014; Vancouver Magazine, 2008).

Beasley described Abu Dhabi as an *"accidental place – developing randomly, in a totally unsustainable way; water hungry, car-obsessed; with the most rudimentary public realm"* (Larry Beasley and Associates Inc., 2015, para 22). Indeed, these were long term problems that plagued Abu Dhabi's planning scene. However, these comments also reflect some North American dominance and superiority over perceptions of planning in the local context. While North American planners focussed on improving what they considered to be problematic factors within Abu Dhabi's planning scene (Cormier, 2015; Larry Beasley and Associates Inc., 2015), there was limited recognition of the strengths of the former Abu Dhabi plan by North American planners. While North American planners focussed on creating a new social reality, Abu Dhabi's former plan despite its set of problems, responded to the burning planning issues of its own time and reflected the distinct perspective of Sheikh Zayed and Dr. Mahklouf who were strategic in their attempts to modernize Abu Dhabi in the 70s and overcome the pitfalls of colonialism (Ghazal, 2013; Hassan, 2001; Tatchell, 2009). The former plans were made outside of formal government agencies, and instead conversations between Dr. Makhlouf and Sheikh Zayed dominated the early visions for Abu Dhabi (Ghazal, 2013). Thus, a historical version of *"fast policy transfer"* (Peck and Theodore 2015, p. xv) that was in line with acceptable norms in the local context took place.

*5.6.2.1 Planners Exerting Power over Development*

By being handed the power to plan Abu Dhabi's development future, throughout Abu Dhabi's short planning history, a series of international planners each produced a unique representation of the city that reflected their perspective and ideas of what the city would look like, how it would grow and who would live there. In founding the UPC, North American planners had dominion over establishing new administrative systems, which in a way, represented new internal governance reforms that would strengthen the organization going forward. However, once again, through a post-colonial lens we can also pinpoint the North American planners control over various departments in the early days of the institution's creation. This is most notably evident in the placing of Canadian planners strategically across leadership positions at the UPC (Cormier, 2010).

The initial timeframe for delivery of the 2030 masterplan for the Emirate was a 4-month window, a feat that even experienced North American planners, considered a challenge, given the complexities of understanding the nuances of the local context. The Canadian planners

negotiated a six-month timeline for completing the new planning framework (Larry Beasley and Associates Inc., 2015). Planners did not have time to formally consult masses of constituents as they did in their home jurisdictions, nor were they bound to cater to the needs of the marginalised communities unless it was a government priority. In Abu Dhabi, meeting the demands of the leadership was top priority for planners of the UPC, irrespective of nationality, training and outlook (Dempsey, 2014).

While many design improvements and aspects of contemporary urbanism transferred to Abu Dhabi, the experiences of North American planners in working with local government to co-operatively balance public and private objectives (Pricetags, 2007) was not applicable in a locale where the boundaries between business and government were blurred. The North American planners were for the most part disconnected from the conditions of low-income expats who lived in crowded settlements and those local citizens living on the outskirts of the emirate (Dempsey, 2014).

Learning was a two-way process, for example the foreign planning team learned gradually through the planning process how Abu Dhabi differed from other regional neighbours by straddling liberalism and traditional Islamic culture, the exclusion of migrant labour from the national discourse and how these aspects would impact planning decisions (Larry Beasley and Associates Inc., 2015). Despite the lack of ideological or geographic proximity between Abu Dhabi and North America, Beasley noted inter-linkages between the jurisdictions and lessons for North America in the area of contemporary city building, in a lecture in Chicago, "*You know, this is not a one-way street. I have found my work in Abu Dhabi useful for our efforts to build better communities here in North America.*" (Larry Beasley and Associates Inc., 2015, para 54).

Beasley and his team of experts embraced pristine, modern renderings of what streets and neighbourhoods would look like. The images in the 2030 Framework plan reflect the North American planners' attempts to incorporate the leadership's vision for the future into the built environment. The framework aimed to represent contemporary Abu Dhabi, its Arab identity, its role as a capital city and the city's diverse mix of people, as well as planned for the city's growth in a measured manner. The completed plan was also a testament to the emirate's quest for soft power. The urban framework plan served as a guideline for future Estidama policy and other design manuals (Larry Beasley and Associates Inc., 2015). Plan Abu Dhabi 2030 was

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based on a comprehensive set of environmental protection principles protecting both coastal and desert ecology, encouraging mixed use developments, Emirati and expat neighbourhoods, new mass transit provisions and made attempts to create a pedestrian-friendly realm (Abu Dhabi Urban Planning Council, 2010a).

The marketing of best practices from the home jurisdictions of planners to other cities with the promise of problem-solving, whilst these planners simultaneously benefit from contracts and consultancy opportunities reflects planning biases. Cormier (2010) notes certain groups of stakeholders benefitted from the transfer processes such as Vancouver-based architects and developers whose projects extended as far as Cuba, Mexico, China, Dubai and Abu Dhabi.

In the case of Abu Dhabi, Cormier (2010) notes a number of Vancouver consultancies were hired by Larry Beasley to work on several Abu Dhabi projects including noted Vancouver firms such as Busby Perkins and Will and Civitas. Thus, there were blurred boundaries evident among the North American planners as well. Sheikh Mohammed, the Crown Prince, instructed Larry Beasley to spare no costs in the search to hire the brightest and the best. Beasley went on to bring in over 40 influential planning thinkers and practitioners from North America and Europe into the process (Pricetags, 2007).

For example, Otak International, a consultancy firm from the Pacific Northwest of the United States expanded its staff in Abu Dhabi from 2 to 150 at the height of the development boom, evidence of the lucrative environment for foreign consultants (Weinstein, 2010). Ben Bortolazzo an urban designer with Otak International who has worked on over 40 local projects including Abu Dhabi's North Wathba and Khalifa City B plan, noted the lucrative built environment in Abu Dhabi explaining that what could be shown to the leadership as a rendering one week, could be in construction the next. Comparing his experience in North America he noted, "*The public realm is usually the hardest place to carry forward money and ideals. The scale of this place (Abu Dhabi), and the speed at which it's moving, once you're exposed to it, is life-changing.*" (Weinstein, 2010, para. 16).

From a mobility perspective, powerful interests within familiar networks of North American planners allowed for planning concepts to transfer with greater speed, mirroring what Peck and Theodore (2015, p.223) have noted with regard to the existence of powerful interests within "*dense networks of hierarchical and lateral relations*". Similarly, McFarlane (2009) described

how power also travels across space and time, and Prince (2014) also alluded to the role of power in policy making given the strategic interests of elites in the process. Thus, having strength in numbers among foreign planners and consultants allowed them some sway in decision-making, opportunities to acquire new profitable contracts and brought new perspectives on how planning decisions could be made, however Abu Dhabi's leadership held clear decision-making power over the initiatives and strategies the institution would pursue (Cormier, 2010; Interviewee X, Former Planner UPC, 2017).

*5.6.2.2 Production of Knowledge through Local Influences*

The presence of local Emirati planners who were selected from the upper ranks of existing Abu Dhabi government agencies such as the Municipality and the DOT made it possible for the infusion of local ideas and experiences in addition to the North American influences (Bouyamourn, 2015a; Dempsey (2014). With successive waves of Emiratization, the proportion of Emirati planners at the agency grew substantially, with the UPC boasting an Emiratisation figure of 70%, thus shifting the balance of power (Interviewee X, Former UPC Planner, 2017; Abu Dhabi Urban Planning Council, 2017d).

The production of planning knowhow was also a step toward territorializing policies which mobility theorists such as Brenner (2004) noted were possible given that territorial boundaries, cultures and societies have not been completely de-territorialised in the face of globalisation. We witness local-global assemblages based on a two-way learning process between local and foreign planners that helped bridge the cultural divide and differing value systems (Clarion Associates, 2008).

Abu Dhabi's leadership used its financial power to attract expert North American planners to the UPC who often had to submit to the nuances of authoritarianism in certain aspects of decision-making. In some instances, the decisions conflicted with their own values, as in the placement of labour camps outside the city limits. Often unsustainable developments were allowed to reach fruition due to difficulties posed by the local context in enforcing development regulations (Dempsey, 2014).

The rationale for creating an organization like the UPC, met both the political goals of the leadership to initiate change, and also, the rationale of change agents from North America looking to secure generous contracts and employment opportunities. These foreign planners

could take advantage of a number of timely factors that worked in their favour such as Abu Dhabi's immense wealth, top-down political structure and desire to transform the city into a global city that allowed the leadership to implement changes to the built environment in a relatively short period. The global popularity of the Vancouver model that emphasized new urbanism, and Larry Beasley's long list of accolades. Beasley was armed with decades of experience, qualifications and awards, including the Massachusetts Institute of Technology's prestigious Kevin Lynch Prize, the most coveted prize in American planning (University of British Columbia, 2018). These attributes enhanced his credibility and made him an ideal transfer agent from the perspective of the leadership. A former planner at the UPC noted the strengths of the early change agents who shaped the UPC, "*The staff in the UPC were world class professionals from cities such as Vancouver and Portland with experience in best practice planning regulations. They created a strong system that has evolved and become more efficient*" (Interviewee X, Former UPC Planner, 2017). The planner's comments focus on the contributions by these planners to Abu Dhabi's planning system given their experiences in planning contexts with proven successes. However, foreign planners that came to Abu Dhabi played a vital yet limited role in the overall planning story of the emirate since their work was focussed on design and development of plans at the beginning of the process. Even if these planners had stayed on long enough to implement the plan, the existing social contract with local citizens and persisting inequalities pose challenges to ensuring that plans and housing, zoning, transport and design solutions benefit residents more equitably.

Despite, the early influence of North American planners, over a period of time Emiratis, in particular, have increased their presence across the organization in leadership roles, in effect creating an Emirati-centric identity for the organization (Abu Dhabi Urban Planning Council, 2015b). By the end of 2016 over 70% of the staff were Emirati with 34% of the staff being Emirati women (Abu Dhabi Urban Planning Council, 2017d). In this respect, a former UPC Planner, described changes at the UPC over time "*With the Emiratization drive, some of the founding members moved on. The organization has evolved and re-configured over time. If anything changed the profile of the UPC, it was Emiratization*" (Interviewee X, Former UPC Planner, 2017).

As we have uncovered from the discussion above, the transfer of planning ideas was taking place well before the creation of the UPC. The flux of planning change agents into and out of Abu Dhabi, is probably the most defining element of its planning story - that of transient foreign

experts who were accompanied by the halo effect of the Vancouver model and the international acclaim it had received. Interestingly, whilst other planners came and went Dr. Makhlouf was awarded UAE citizenship, and he stayed on and retired in the city (Ghazal, 2013; Hassan, 2001). The deeper meanings embedded in Abu Dhabi's planning history reveal a distinct focus on modernization, quests for soft power and the pursuit of development projects toward economic gain. However, this sometimes took place at the expense of localised practices and culturally relevant design.

## 5.7 Critical Regionalism plays Role in Sustainability Policy Transfer and Identity Building

Increasingly, culturally relevant elements and urban patterns of traditional Islamic cities are being incorporated by international architects and planners in the modern built environment in Abu Dhabi (Elsheshtawy, 2012; Katodrytis and Mitchell, 2015). The UPC's consultants Clarion Associates incorporated culturally-aligned design elements into the Estidama framework while Norman Foster's architects engaged in similar research whilst designing MC (Clarion Associates, 2008; Kingsley, 2013). These elements reflect ideas put forward by Frampton (1983) who conceptualised the theory of critical regionalism in response to the tensions between the local and the global. Frampton (1983) envisioned architecture to be critically conscious relating universal and global concepts to the specificities of the local context. By merging space-specific elements with modern elements, Frampton (ibid) argued that universalism could be mediated and called for architecture that challenged universal design principles and reflected a regional and local identity. His ideas connected design to culture and nature in the local context.

Aspects of critical regionalism allowed Abu Dhabi to solidify its own urban brand around the preservation of cultural heritage and sustainable development Abu Dhabi's leadership in particular wanted to overcome the pitfalls of neighbouring Dubai and its polycentric model of development. Through Plan 2030 Abu Dhabi's disparate developments were ordered and connected through the Estidama framework which prioritised culture, heritage, tradition and religion (Dempsey, 2014; Larry Beasley and Associates Inc., 2015). The architecture and planning in Dubai had placed limited focus on historical and cultural notions of space. Dubai also emerged from diverse stakeholders producing multiple representations of the city all at

once (Bagaeen, 2007). Thus, Dubai was the anti-thesis to Frampton's (1983) reflection of local identity in architecture and design, whilst Abu Dhabi's development path mirrored ideas related to critical regionalism.

While foreign planners found ways to incorporate culture, heritage and religious elements, they faced challenges in balancing existing social hierarchies and understanding the exclusions of some societal groups from certain public spaces. Contradictions arise when global trends and cultural identity in the built environment clash. For example, the notion of what constitutes public and private space in Abu Dhabi differed between foreign interpretations and local reality (Dempsey, 2014). Tatchell (2009) provides an explanation for contested spaces evident in the population imbalance with Emiratis being outnumbered, creating the need for outward statements of identity by the leadership in the built environment to unite the community, and preserve cultural ties.

Critics of regionalism such as Lim (2004) and Tzonis and Lefaivre (2003) have pointed out that multiple identities can persist as opposed to having one unified local identity. While a unified Emirati and Islamic identity are evident in some aspects of the built environment, the embrace of liberal and modern ideals in some gated communities and island developments reveal dualities between cultural traditions and globalisation (Ouis, 2011). The preservation of culture, religious identity and homage to Islam is state-led in Abu Dhabi reflective of while Islam is a religious belief, it also takes on political, culture and heritage-related importance in this research.

Over a period of forty years, rapid modernization impacted land development, infrastructure and buildings, the existing culture, natural bio-diversity and marine life. This did not go unnoticed by the astute Sheikh Zayed who embarked on several environmental initiatives during his reign (Wilson, 2013). Thus, the import of sustainability ideas to Abu Dhabi took place well before the creation of Masdar and the UPC.

## 5.8 Sheikh Zayed's Environmental Legacy

The seeds of sustainability had been sown under the strategic guidance of Sheikh Zayed and continue on through the present. Sheikh Zayed began experimenting with agriculture projects

and increasing the number of farms in the area. He established and distributed hundreds of farms to UAE nationals and banned hunting and fishing to counter the over-exploitation of natural species which had repercussions on the interconnected biodiversity and marine eco-system. Sheikh Zayed's fishing ban legacy and breeding programs for endangered local animal species are still in operation (Nayeem, 2008). In the Zayed era, problematic trade-offs were balanced through efforts to compensate local fishermen for the loss of livelihood when they were impacted by the fishing ban. Trees were a particular passion of Sheikh Zayed's and he ordered the planting of forest trees and other plant species that were specially chosen to survive the harsh climate. Government funding was allocated toward reclamation projects aimed at increasing agriculture and forested areas. A tree planting project he began in the sixties is still visible today in the form of 100 million trees running into the interiors of Abu Dhabi (Al Hameli, 2015; Salloum, 1995).

Whilst efforts to green the desert were achieved in large part due to the Sheikh's vision, the initiative has also been resource intensive. For example, the 33 million trees in Abu Dhabi that are part of Sheikh Zayed's legacy, use up significant amounts of water (Dempsey, 2014). These are examples of the trade-offs that the UPC currently faces, demonstrating a need for the review of developments, on a case by case basis, to weigh which sustainability principles to pursue and when to do so. For example, Abu Dhabi also relies extensively on desalination plants that are energy intensive. Saif (2017) and Tan et al. (2014) in particular, have critiqued the Gulf states for the environmental damage the oil industry and excessive development has inflicted on the surrounding environment in pursuit of lucrative waterfront developments leaving polluted air, waters and aquifers with decreasing bio-diversity in its wake. The ecological injustices have not received the same priority that urban mega-projects have, mainly due to the economic and income generating potential of the latter (Dempsey, 2014).

A turning point on Abu Dhabi's sustainability journey took place in the period post-2012 as the UAE embraced a green growth agenda.

## 5.9 The UAE's Embrace of a Green Growth Agenda

The need to embark on a sustainability-driven agenda at the federal and emirate level reached an all-time high post 2012, with the official launch of the UAE's green growth strategy

(Luomi, 2015). This political development increased the rationale for policy transfer, and the creation of global assemblages around sustainability. The UAE joined 190 nations at the United Nations Rio+20 Summit committing itself to sustainable development and poverty eradication and became a founding member of the Global Sustainable Cities Network along with China, Sweden and Denmark. (United Arab Emirates Ministry of Environment and Water, 2014). It is interesting that in a short time Abu Dhabi gradually climbed into the ranks of nations that have had long standing histories of sustainability. In no small measure was this due to its oil-backed wealth, in which the government continued to invest strategically. At all times, the global actions were mirrored strategically with internal sustainability-related agenda items, evidence that the government did not lose sight of its internal priorities. Abu Dhabi's leaders followed Sheikh Zayed's example and included the other emirates in strategic federal level environment initiatives. The various initiatives, conferences and signatory opportunities reveal the intent of the government to create enabling conditions toward a green economy.

It is oil wealth that has given Abu Dhabi the ability to reinvent itself as a sustainable city with an increasingly diversified economy. However, a shift in both public and private investment are expected to support the transition going forward (UAE Ministry of Climate Change and Environment, 2016; UAE Ministry of Water and Environment, 2014).

Finally, the discussion of Abu Dhabi's path toward planning for sustainability is not complete without considering the impact of developments in Dubai.

**5.10 Impact of Dubai on Abu Dhabi's Sustainability Journey**

In Sheikh Zayed's era, development in Abu Dhabi was centred in the hands of a few government agencies that embarked on moderate growth in stark contrast to Dubai, which undertook rapid development. However, after Sheikh Zayed's passing, his sons sought to develop Abu Dhabi into a global city. Dempsey (2014) notes the rivalry between Dubai and Abu Dhabi in conversation with another UPC planner who describes how average Abu Dhabi citizens react to Dubai noting, "*Abu Dhabi is the real UAE. The power and culture are here.*" (Dempsey 2014, p. 20).

Plan 2030 was an attempt for Abu Dhabi to chart a more strategic and long-term future, after it witnessed the excesses of over development in neighbouring Dubai. The frenetic pace of urban development in Dubai had a profound impact on the urban development that was to take place in Abu Dhabi. Dubai's speculative real estate bubble was the result of excessive development. The different approaches to development stood out to the foreign planners – whilst Abu Dhabi prioritized culture, tradition and sustainability, Dubai had followed a more global approach. It harnessed land development and the sale of land to foreigners on a wide scale as part of its wealth-building strategy (Bagaeen, 2007; Jensen, 2007).

Abu Dhabi's Crown Prince, in particular led the charge to embrace wide scale economic development across a range of sectors including energy, transport and real estate (Sinclair, 2013). Abu Dhabi held on to Islamic and cultural traditions and pursued widespread economic diversification. An example of the Dubai effect at play are development plans submitted to the UPC with the purpose of competing with Dubai as noted by John Madden, a former UPC planner, "*Each project is trying to maximize its own individual profit on a particular site. But sometimes they are so focused on what that one site is, in terms of maximizing profit, that it might be the exact same program two blocks down the road*" (Cormier, 2015, para. 29). Much like Dubai, Abu Dhabi has also pursued diversification in areas such as tourism, luxury real estate, construction, financial services, heavy industry, manufacturing, media, culture, arts, defence, aviation, utilities, etc. As of the second quarter of 2017, Abu Dhabi's non-oil sector made a contribution of 70.2% to the emirate's GDP, while the oil sector accounted for 29.8% of the GDP (Emirates News Agency, 2017). The statistics point to the success of economic diversification initiatives in the emirate.

The two emirates have both embraced sustainability as part of the nation's green growth Agenda. Dubai's 2030 integrated energy strategy aims to generate 71% of its total power from natural gas, 7% from clean coal, 15% from renewable energy and 7% from nuclear power (Society and Environment, 2015d). Dubai also launched green building regulations, a metro system, and its own carbon excellence centre and a dedicated 1000 MW solar park, the largest of its kind. The Dubai Electricity and Water Authority (DEWA) launched *Shams* Dubai – its first smart metering initiative, and an economic initiative toward building a local green economy (Dubai Water and Electricity Authority, 2017b). The agency has continued to partner with international private sector companies such as Honeywell on telecommunication linked smart meters, (also a Masdar partner) toward making Dubai a smart city connected through

smart grids aimed at demand management (Dubai Water and Electricity Authority, 2017a). Thus, we note parallel initiatives in Dubai where multiple sustainability knowledge transfers are taking place. The regional diffusion of technology becomes a policy area with greater transfer traction given the demand from government agencies in Dubai and Abu Dhabi toward meeting their emirate's energy management goals, and the wider UAE Vision 2021. The documented Vision statements become an important part of the rhetoric and rationale for pursuing sustainability, yet at the same time, each emirate is pursuing its separate path toward sustainability.

Dubai has launched its own green zone that mirrors Masdar providing an enabling business environment to start-up companies to develop and market green technologies. In addition, Dubai's Diamond developers have recently launched a development called '*The Sustainable City*' a five million square feet project comprised of five residential clusters of 100 villas, each conceived to be a model of sustainability. It features initiatives to both conserve resources and associated costs, prioritizes energy efficient home design, use of eco-friendly building materials and solar panels placed on the roofs of residential units (Diamond Developers, 2016a and 2016b). A number of Dubai's sustainability initiatives are income driven, and represent a middle ground between being able to meet sustainability criteria as well as will generate future income, key priorities in the era of late rentierism.

In this regard, these newly created Dubai zones will perform both a complementary and competitive role in relation to Masdar, while Dubai's Water-Energy-Technology-Environment (WETEX) conference and the Dubai Solar Show perform a similar role to the World Future Energy Summit (WFES) (Society and Environment, (2016d, 2016e). Whilst the two cities are competitive, and want to differentiate themselves on the sustainability stage, they must be aware of the threats of over-duplication of initiatives. The seeds for future inter-emirate governance around collaborations that allow resources, knowledge transfer and data-sharing toward an integrated strategy have been limited to a few collaborations with room to expand further.

In this regard, a partnership between Abu Dhabi's Aldar and Dubai's EMAAR, two of the largest property developers, has the potential to further inter-emirate collaboration. The sharing of land-use data, enhanced funding opportunities for projects, shared expertise, reductions in

the duplication of resources and administration costs could potentially promote greater efficiency in the real estate sector as other developers adopt similar collaborations (Nair, 2018).

There is limited evidence that government agencies from Dubai and Abu Dhabi have discovered mutual benefits from collaboration with one another and the private sector. A sustainability professional working on initiatives across both Dubai and Abu Dhabi noted that the two Emirates continue to draw foreign talent, noting "*It is a much more competitive market both in Dubai and in Abu Dhabi. Entities (government agencies and the private sector) are much more efficient and most importantly, there is a lot of international talent and professionals involved in sustainability*" (Interviewee X, Sustainability Professional, 2017). The sea of change agents in flux is a constant in the local context, where despite one set of actors leaving as witnessed in the UPC's case, other regional projects come up in Dubai and elsewhere in the Gulf that attract both new and former foreign actors all over again (Saif, 2017).

The increasingly important role of the private sector is witnessed in the selection of a Masdar-led consortium of private companies by the Dubai Water and Electricity Department for the third phase of Dubai's solar park (Society and Environment, 2016c). Dubai's ruler also visited Masdar City to review its development (Society and Environment, 2016a). Such examples of knowledge sharing can be harnessed effectively when others lower down the decision-making hierarchy also engage in similar site visits and information-sharing opportunities. In March 2016, the UPC collaborated with the Dubai government entity, the Mohammed Bin Rashid Housing Establishment, to build 72 villas in line with Estidama requirements. The collaboration facilitated a knowledge exchange between the partners to jointly meet the UAE's wider sustainability goals (Abu Dhabi Urban Planning Council, 2016a).

Dubai, therefore, plays a role in expanding the future sustainability initiatives that unfold in Abu Dhabi. It is a hub for complementary but also competitive initiatives that Abu Dhabi and its various government agencies must monitor going forward given the additional inter-emirate collaborations around sustainability that can potentially abound in future.

## 5.11 Conclusion

The seeds of Abu Dhabi's planning problems of excessive development and energy

inefficiency were sown in those crucial years since oil was first struck in Abu Dhabi. Planning has played a major role in shaping the built environment in Abu Dhabi. Having traced Abu Dhabi's planning history and evolution over a thirty-year span, the historical accounts have much to offer modern Abu Dhabi on its ongoing path toward sustainability. The city's history of rentier-backed wealth is most certainly a factor that made it possible for diverse foreign planning perspectives to be emulated and adapted to the local context.

We note that ultimate power over planning lies with the leadership in Abu Dhabi. Whilst various change agents were empowered over time, this took place for limited periods. Nevertheless, both Abu Dhabi and Dubai continue to attract a steady stream of change agents, due to the extraordinary pace of development made possible by oil wealth.

We note how aspects of colonialism impacted the swift transfer of planning practices in the sixties witnessed in Abu Dhabi's departure away from traditional land use and street patterns toward modernization and making a statement globally about the emirate's wealth and vision. The *fast transfer* of policies is thus possible, when policies fit the wider political agenda. The same rationale was valid in the Beasley era and the transfer of the Vancouver model which also fit the leadership's rationale to transform Abu Dhabi into a global city over a short period. Thus time-periods of transfer were crucial in the case of Abu Dhabi, when distinct messages of state power and the desire to achieve social and economic transformation were evident in each wave of transfer over the course of Abu Dhabi's history.

We note how the seeds of governance were manifested in the emirate's early planning days through *majlis*-style dialogues between Sheikh Zayed and his planners, whilst in modern Abu Dhabi governance opportunities, particularly with Dubai, have considerable scope for being realised on a much larger scale.

Abu Dhabi has channelled its economic diversification, and political legitimacy-related resource efficiency goals into a host of strategic initiatives that have culminated in the UAE's green growth agenda. However, beyond these strategic initiatives lie the reality of the paradoxes of inequality, the imbalance in the population with Emiratis being significantly outnumbered by expat workers, the over dependence on cars, generous subsidies, coupled with the pursuit of globalization and modernization often, at the expense of social cohesion, tradition and local norms.

Much like planners globally who contend with social issues such as burgeoning populations, unbridled consumption, and the neglect of vulnerable communities at the margins (Campbell, 2006; Hopwood et al., 2005), so also Abu Dhabi's planning history reveals that local planners have been faced with their own bubbling cocktail of troublesome trade-offs.

The presence of problematic urban issues is not necessarily negative, because out of these issues a locally adapted culture of planning has emerged, particularly as Emirati planners grow in numbers and influence change in the emirate.  At the outset, the most crucial individual agents of change throughout Abu Dhabi's foray into sustainability have come from the highest level, from Sheikh Zayed and more recently, from his successors, who have spearheaded massive investment and guided the institutions under their watch, manifesting their authoritarian power whilst simultaneously balancing the tensions between the local requirements and the global trends and advancements in planning.

## 6. Institutional Empowerment: The Case of Masdar and the UPC as Institutional Mediums of Policy Transfer

### 6.1 Introduction to Two Institutional Case-Studies

This chapter considers the sustainability-driven institutions of Masdar and the UPC, the kind of sustainability policies adopted by each institution, internal governance processes, and change agents to further reveal nuances of the local context. Policy transfer and mobility theorists give importance to the institutional agents at the heart of transferring and mobilising sustainability policies. As discussed in Chapter 2, Dolowitz and Marsh (1996; 2000) note the constraints to policy transfer that arise from a lack of internal resources and capacity of the importing jurisdiction to implement policies. Improvements within institutions internally can better equip them to mobilise sustainability externally with relevant stakeholders. Mobility theorists and some policy transfer theorists such as Evans and Davies (1999) further expanded the concept of change agents by coupling them with governance-supportive attributes considering network exchanges at multiple levels and paths of spatiality including the transnational, international, national, regional and local levels (see McCann and Ward, 2011; Prince, 2010; 2016). The institutional case studies used in this research, Masdar and the UPC in Abu Dhabi, are at the forefront of interactions that involve both internal institutional building, improving internal capacity and skills development, integration of teams and departments, stakeholder involvement and improved CSR reporting. Reflecting Martinez's (2005) conceptualisation of institutionalisation, they are also actively engaged in knowledge management, harnessing technology and external collaborations with local and global stakeholders, making them ideal cases within which to explore the transfer phenomenon. We now explore the case studies of Masdar and the UPC and consider the lessons that emerge from their unique institutional contexts that prepare them for more nuanced exchanges with their external stakeholders. The external stakeholders' interactions will be addressed in the empirical chapters that follow.

### 6.2 The Two Institutional Case Studies: Masdar and the UPC

Both Masdar's and the UPC's conception took place at approximately the same time (2006/2007) when Abu Dhabi's economy benefitted from surges in global oil prices. Both institutions drew on policy lessons from external precedents. Masdar was incorporating design

and clean technology solutions from global corporations (Kingsley, 2013; Interviewee D, Manager, Mitsubishi, 2012), and the UPC was importing planning best practices primarily from North America and Europe (Abu Dhabi Urban Planning Council, 2010a; Clarion Associates, 2008). The UPC had carefully plotted every aspect of economy, culture, population, environment and leisure in a series of real estate projects (Dempsey, 2014). MC also embodied a number of efficient design elements that the UPC also sought to expand in Abu Dhabi (Clarion Associates, 2008). Therefore, an innate overlap existed from the very beginning between the sustainability agendas of both Masdar and the UPC which empowered foreign change agents in particular amidst the rentier and authoritarian power structures. Larry Beasley, the UPC's founding planner noted that Masdar was a role model for the work of the UPC around issues of sustainability (Larry Beasley and Associates Inc., 2015). There are however, key differences in the institutional structures and the institutional responses of Masdar and the UPC in implementing sustainability principles in the local context. These differences reveal how power is manifested in unique ways, with implications for the governance that arises between the institutions and their partners. We first explore the case of Masdar, and its commercial-centric approach to sustainability.

### 6.2.1 Introduction to Masdar and its Institutional Structure

Masdar is a commercially-driven, profit seeking renewable energy company based in Abu Dhabi, and is a fully-owned subsidiary of the Mudabala Development Company, the investment arm of the Abu Dhabi government, making Masdar a quasi-government institution (Masdar, 2015). The institutional make up is reflective of blurred lines that exist between the public and private sectors (Davidson, 2009a). Whilst Masdar has benefitted from its quasi-government status receiving its seed investment of $22 million, going forward its direct ties to Mubadala also make it vulnerable to external market fluctuations that have impacted Mubadala's investment strategies (McAuley, 2016).

Masdar has emerged as a platform for expanding many of the environmental and renewable energy initiatives (see the sustainability timeline above) across the emirate and indeed the UAE. Masdar is comprised of four business units, including MC, Masdar Capital, Masdar Clean Energy and Masdar Special Projects. It is complemented by the Masdar Institute of Science and Technology (MIST), an independent, not-for-profit research-driven graduate university established by the government of Abu Dhabi to develop indigenous research and

development renewable energy projects. MIST has an ongoing collaboration with the US-based Massachusetts Institute of Technology (MIT).

Dr. Sultan Al Jaber who chaired Masdar, also chaired the Executive Committee of the Masdar Institute Board of Trustees, linking Masdar and MIST with shared leadership and common goals toward advancing renewable energy initiatives in Abu Dhabi and the region (Bloomberg, 2018). The work of MIST is vital to Masdar's key objectives related to knowledge creation and innovation. MIST is also one of MC's development pillars, a thriving policy transfer mechanism and a hub for community activity, research and development, housing and technology solutions given its focus on developing human capital. The role of MIST reflects values centred around "*place-based conditions*" as noted by Healey and Upton, 2010 (p.20) since it serves a focal point for learning that emanates from certain networks of key stakeholders involved in adapting perceived best practice policies. MIST plays an advisory role to Masdar when required, however, it is still an outcome of elite-centred policy transfer. Masdar (the corporate entity also known as the Abu Dhabi Future Energy Company or ADFEC), MC, and the independent research institute, the Masdar Institute (MIST) are interrelated and interdependent given that the city provides an opportunity to test solutions to existing real-life problems (Massachusetts Institute of Technology, 2014). However, the learning that emanates from MIST may not always take place on a neutral platform particularly when it is shaped by specific experiences of elite local and international actors who are part of existing networks shaped by particular ideologies, biases and rationales given the unique power dynamics at play.

Mubadala (the parent company) has steered Masdar toward behaving as a sustainable corporate entity amidst other income generating initiatives (Masdar, 2015). MC remains the physical embodiment of sustainability that the Abu Dhabi government wants to showcase internationally, equipped to handle both inward and outward international knowledge transfers related to commercializing renewable energy. Over the course of the research we note that the decision-making impacting MC is undertaken by Masdar (the company), particularly the response to internal and external stimuli that shape the city's embrace of WSPs.

Let us consider Masdar's journey toward sustainability and the agenda it embraced in this regard.

### 6.2.2 Masdar's Corporate Values and Sustainability Culture

Masdar displayed strong commitment to corporate responsibility internally and consequently increased transparency and accountability. Masdar has engaged in Global Reporting Initiative (GRI) reporting since 2012, and re-defined its social priorities in line with Western concepts of corporate social responsibility (CSR) (Masdar, 2013). The Global Reporting Initiative is an international independent standards organization that works with governments, the private sector and other organizations to provide a common standard for reporting on climate change, human rights and corruption (Global Reporting Initiative, 2016). This was rooted in its commitment to its local, regional and international partners. In this regard, a Senior Director at Masdar noted the importance of collaboration and knowledge sharing to the organization – "*Collaboration is essential for taking our industry forward, leading to closer ties, investment and value creation*" (Interviewee Y, Senior Director, Masdar, 2017).

While the overall decision to commit to GRI came from the senior leadership in line with internal CSR goals, the entire Masdar staff contributed to data collection and analysis across a range of sustainability indicators aimed at Masdar's wide range of external stakeholders. Unique internal assemblages of experts and employees are reflective of heterogeneous arrangements of individuals, institutions and spaces that allow for increased information sharing and transparency. However, these circles of employees and experts are very much part of an elite group of educated professionals very much rooted in a corporate mentality as evident from the focus on profits and investment opportunities (Mascarenhas, 2012).

Masdar's GRI reporting supports the global perception of Masdar as a progressive institution, and another example of an '*internationalised mode*l' (Rapoport and Hult 2017, p.1781). Masdar's commitment to GRI reporting enable it to become a role model to the local private sector who are being incentivised by the government to become more transparent in their reporting (Rettab et al., 2009). While, Masdar has been critiqued for developing specific knowhow and engaging in high level research collaborations limited primarily to the educated elite (Caprotti, 2014; Jensen, 2016), it also uses sustainability-related events to bring in local businesses in Abu Dhabi, as well as schools, researchers, government agencies and the general public as part of widening its stakeholder base beyond just business partners and employees (Dubai Eye, 2017). Masdar is challenged with meeting the expectations of diverse stakeholders, which over time have varied in their priority status to the institution.

*6.2.2.1 The Role of External Stakeholders, Employees and Emiratization in Masdar's Internal Governance*

Masdar has several governance committees in place to allow information sharing between the senior leadership and the heads of each business unit around operations and actions and decisions around the organization's sustainability performance. By integrating its various business units, Masdar has prioritized the portrayal of a cohesive organization, where all the financial and operational data is collected in the form of a scorecard (Masdar, 2015).

A sense of ownership of GRI reporting outcomes brought together multiple Masdar departments' perspectives in the reporting process. Masdar's leadership and departmental teams coordinated groups of planners, engineers, architects, environmental experts and supply chain managers as part of the ongoing annual reporting process. The GRI commitment allowed for further fine-tuning of internal governing processes that were shared externally with clients and stakeholders (Masdar, 2012, 2013, 2014, 2015, 2016a). Such increased transparency in Masdar is also a facet of late rentierism and the ongoing acquisition of soft power (Davidson, 2009a; Gray, 2011). Similarly, Stone (2003) has argued that lessons emerge from the subsequent negotiations, consultation, capacity building and experiential knowledge that arise from adapting policies. These aspects are visible in Masdar's annual sustainability reporting and internal alignment of departments which allows external stakeholders a glimpse into evolving priorities of the organization on a consistent basis.

Mobility scholars are concerned with the interconnections and interaction between people, institutions, policies and places (McCann, 2010, 2011; Peck and Theodore, 2010). In engaging in sustainability reporting, Masdar is working to strengthen linkages with its stakeholders which are divided into three groups, internal stakeholders (shareholders and employees), relational stakeholders (academic institutions, financial institutions, regulatory and government bodies, NGO's, local community and individuals) and commercial stakeholders (partners, service providers, tenants and customers). Various aspects of sustainability are mobilised externally by managing the needs of these different groups.

The issue of Emiratization is also a priority for the organization, in addition to encouraging female employment. Currently, Masdar has an Emiratization figure of 45%, displaying a balance between Emirati and expat employees. The creation of Emirati-centric training and

leadership programs such as "*Emerging Leaders – Inspiring Young Energy*" have contributed to the increasing Emirati presence at Masdar. Between 2012 and 2015 for example, the average training hours for Emiratis was consistently higher than expats indicative of efforts to boost the career development of Emiratis (Masdar, 2016a). The statistics also point to the specific desire for training among this employee group in comparison to others, hence the organizations' priority of Emirati-focussed training.

A Senior Director at Masdar explained the corporate responsibility processes Masdar engaged in and the focus on operations and human capital- "*We have put sustainability at the heart of the organisation. This includes how we drive innovation and operational efficiency; how we support the wellbeing and growth of our people; how we invest in communities; and how we engage with our stakeholders across the world*" (Interviewee Y, Senior Director, Masdar, 2017). The interviewee's perspective reveals the global nature of Masdar's work, globalization has become a vital factor impacting the way the organization conducts its internal operations, as well as its external investments and relationships with global partners.

The organization uses both print media and speaking platforms regularly to engage its external stakeholders, judging by the number of renewable energy partnerships that have been created. Market presence is considered an issue of high materiality to the company and this is reflected in its focus on developing a global brand (Masdar, 2016a). The media machine at Masdar is particularly powerful and there is evidence it is working continuously to portray the brand of the organization externally as Abu Dhabi's premier sustainability hub, particularly around business and research. In particular, the marketing activities have embraced technology and social media to support their aims.  For example, between 2013 and 2016, Masdar was able to achieve an average of around 20% increase in its followers on the social media platforms on Twitter and LinkedIn (Masdar, 2016a). The origins of social media followers are not reported thus, we are not given a sense of whether followers are located globally, regionally or locally, however, the use of technology to feed wider soft power intentions of the state, signals the growing appetite for Masdar's particular brand of economically-driven sustainability among social media users (Masdar, 2016a). In addition, publicity around international foreign delegations and important figures, such as the March 2016 visit by former U.S. Vice-President Joe Biden, and the November 2016 visit by the Prince of Wales are used to increase the legitimacy of the project globally and also cement Abu Dhabi's foreign relations on a wider level (Masdar, 2016c).

The exercise of GRI reporting helped Masdar identify gaps in commercial relationships and chart out strategic new stakeholders, as well as identify inactive partnerships that had run their course. In 2015, out of 118 memorandums of agreement signed by Masdar with external partners, 45% are active partnerships, 19% are partnerships that have been executed whilst 20% are inactive. The remaining 15% are legacy MOUs inherited from Mubadala (Masdar, 2015). Masdar's mixed track record on continuity of partnerships points to particular success in renewable energy collaborations linked to wider government mandates. Similarly, Wood (2016) has noted that the movement of both policies and actors is temporal as a result of evolving social, economic and political conditions across time and space, which Masdar also faced as a result of external factors such as global financial crisis and lower oil prices.

Masdar has contracted a third-party auditor to assess the robustness of reported data, in a move toward improving public accountability. Internally, Masdar committed itself to compliance assessments, management reviews and responsible sourcing verified internally and externally. It also devised its own organizational code of conduct toward equitable business practices based on Mubadala's guidelines (Masdar, 2016a). Thus, in a move away from the closed systems of rentierism, Masdar's commitment to reporting out on sustainability indicators in line with the GRI, to its diverse stakeholders, is an important step toward creating a more open economic system at the institutional level. However, Masdar's ability to report on financial performance is limited by its shareholder Mubadala (which owns 100% of Masdar). Thus, we note on one hand, Masdar gradually adapting to the demands for transparency and accountability whilst simultaneously being subject to the demands of its parent company, the government's investment arm. This is indicative of the blurred relationships between business and government in the local context.

Masdar's economic free zone has gained gradual momentum. From 77 companies on the ground in 2012, the number of companies in the Masdar free zone had increased to 310 institutions in 2015 (Masdar, 2015). However, this number is still a long way off from the initial goal of having 1500 companies occupy the free zone (Kingsley, 2013). Let us also consider the institutional structure and sustainability agenda of the UPC which has also evolved over time.

### 6.2.3 Masdar's Road to Sustainability

In the early period of its conception Masdar signed up to meet and exceed the internationally recognized goals of One Planet Living (OPL), a global initiative based on the ten principles of sustainability developed by Bioregional and WWF International (Crot, 2013, Emirates Wildlife Society, 2008). This included goals toward Zero Carbon, Zero Waste (both during construction and operation), Sustainable Transport, Local and Sustainable Materials, Local and Sustainable Food, Local and Sustainable Water, Natural Habitats and Wildlife, Culture and Heritage, Equity and Fair Trade and Health and Happiness (Crot, 2013). A memorandum of understanding was signed with the Bioregional Development Group toward a One Planet Living Community Partnership. Masdar aimed to meet and exceed the sustainability principles of One Planet Living (Emirates Wildlife Society, 2008). However, these principles have since been superseded by nine key performance indicators (KPI's) in the period post 2010 when Masdar re-evaluated its priorities (Masdar, 2014).

Dolowitz and Marsh (2000), Newman (2017) and Stone (2003) are proponents of considering cases of non-transfer or incomplete transfer of policies and lessons as learning opportunities. The changing priorities of Masdar are part of wider authoritarian and rentier political structures that allow commitments made to one set of guidelines to be replaced with another set in a short time frame in line with leadership's visions without the need to provide the public with a rationale for decisions. Crot (2011) discussed the mismatch between some of the One Planet socially-driven principles and the realities of the local context, particularly around social equity. In addition, the onset of the global financial crisis and scale backs faced by Masdar in 2010, were part of the strategic re-think of the organization's priorities, and the move toward a focus on corporate governance and CSR mirroring wider changes in Abu Dhabi (Mandel, 2010; Ourousoff, 2010; Masdar, 2014, 2015, 2016a).

Caprotti (2014) notes elements of efficiency, rationality and functionality take precedence in MC. He critiques the reduction of the complexities of the built environment to a safe construct focussed on key performance indicators and smart grids that are further rooted in financial motivations and neoliberalism. Rapoport and Hult (2017, p.1781) argue that travelling ideas related to sustainable urbanism are increasingly circulated as an "*internationalised model*" that encompasses design principles and innovative technologies, with implications that extend far beyond the immediate project, with the potential of increased opportunities for commercial

gain. However, the move toward such an internationalised model, sacrifices elements such as social justice and the inclusion of a diverse community of residents (Jensen, 2016). MC's agenda encompasses the notion of Masdar as a business, with core cost-effective gains from resource efficiency. These key aspects reveal clues about the form that sustainability takes on in MC. Under the current model, sustainability at Masdar has a tendency to be research/education-driven, profit-driven, private-sector driven, partnership-driven, soft power-driven, or philanthropic- driven.

**6.3 The Institutional Structure of the UPC**

The UPC is Abu Dhabi's strategic planning agency responsible for defining the future urban vision of the emirate. The work of the UPC's departments span the areas of planning and policy, infrastructure and transportation, environment, Estidama (sustainability) and safety and security. The organization's senior management leads teams of planners under four strategic sectors: Planning and Infrastructure; Corporate Services; Urban Development and Estidama and Strategic Affairs (Abu Dhabi Urban Planning Council, 2016b). The UPC's Urban Structure Framework Plan simultaneously supports the implementation of Economic Vision 2030 and Environment Vision 2030, reflecting the importance that the Gulf states place on overarching visions (Davidson, 2012a; Saif, 2017). As noted in the contextual chapter preceding this, the UPC emerged as an interactive policy transfer medium bringing primarily Western planning ideas to Abu Dhabi through circles of elite architects and planners.

The UPC is chaired by the Crown Prince, Sheikh Mohammed, who also serves as Chairman of the Abu Dhabi Executive Council. A degree of accountability is in place since the Executive Council ensures that the UPC's policies and plans are implemented in an effective manner (Abu Dhabi Executive Council, 2008). In addition, he Abu Dhabi Accountability Authority is the governmental organization with oversight powers over the UPC and the other agencies ensuring the efficient management of public funds, accuracy of financial reporting and promoting accountability and transparency in line with wider government regulations and guidelines. The UPC reviews areas of change across core businesses, support functions and management in line with the government strategic innovation model for all government agencies outlined by the Abu Dhabi Accountability Authority, under the direction of the Crown Prince (The National, 2013).

Dempsey (2014) noted the challenge the UPC's planners faced in curbing development in the past, linked to the way the various agencies worked in silos. He describes the agency approving several real estate projects, leading to excessive development incommensurate with the population's utilisation of housing and services. Changes in the UPC's internal strategy were necessary to streamline the approval process (Dempsey, 2014) to balance development and demand. The UPC oversees land uses, the design of urban environment, transport and infrastructure systems in conjunction with other relevant agencies such as the DOT and the relevant municipalities across the emirate. One of the limitations of the local context is that being a government agency, there is little transparency on projects statistics that do not meet envisaged goals. Published statistics reveal only the projects that have been approved (Abu Dhabi Urban Planning Council, 2017d).

After the oversupply of housing in 2011 the UPC was pressurized to operate in an even more cost-effective and productive manner which impacted the team structures, as many Western planners left the organization creating room for new Emirati leaders (Dempsey, 2014). Despite these challenges, the UPC brought together technically qualified planners with industry experience, and other government agencies and developers to collectively share and create new knowledge (Abu Dhabi Urban Planning Council, 2015c). Thus, internal governance was not always a choice, as external market conditions also prompted internal efficiencies. In regard to the evolution of the UPC, a former UPC planner noted, *"Organizationally the UPC has evolved, and the master planning and regulatory approvals process at the UPC is one of the best in the region. Development review has matured, and become quicker. The foundation of the planning council is the best in the GCC"* (Interviewee X, Former UPC Planner, 2017). However, despite these positive aspects noted by the former planner, Estidama has not gained much traction outside of Abu Dhabi with limited exceptions of a project in Dubai, and another in Sharjah that embraced Estidama (Abu Dhabi Urban Planning Council, 2013a, 2016a). Whilst Estidama has not directly been emulated in the Gulf states, an outward transfer of green building practices and policy knowhow takes place through regional conferences, the work of NGOs such as the Emirates Green Building Council and the continuous mobility of private sector consultants in the GCC involved in green building projects (RetrofitTech Conference, 2017; Interviewee Z, Sustainability Professional, 2017).

The kind of sustainability that the UPC subscribes to represents the incentive-driven and

people-centric characteristics of the UPC's institutional culture. A particular incentive-driven focus of the UPC include its Estidama principles based on four pillars (environmental, economic, social and cultural aspects of sustainability). The Estidama Pearl Rating System (PRS) is a mandatory green building rating system with one pearl reflecting the minimum basic standard, while up to five pearls are awarded for increasingly exemplary levels of sustainability (Abu Dhabi Urban Planning Council, 2010b).

### 6.3.1 The UPC's Transition to Estidama

Estidama (Arabic for sustainability) is a sustainability program that sits at the core of Abu Dhabi's Vision 2030, which guides new development in the emirate. It encompasses all the projects of the UPC and is intent on juxtaposing both modern and traditional elements in the built environment, in parallel with Frampton's (1983) arguments in favour of critical regionalism. Estidama was specifically tailored to meet the demands of Abu Dhabi's climate and environment. The program ensures that sustainability is addressed through environmental, economic, social and cultural perspectives. The emirate was in great need of a radical new policy due to the excessive development in the period prior to the policy, aided by ownership changes in real estate that fuelled a development boom (Davidson, 2009). In a 2010 interview with architect Rem Koolhas, John Madden, a former UPC planner noted, "*There was this tidal wave of unanticipated development funnelled into the UPC… so the quality of the submissions really varied. They (developers) routinely presented a couple of pieces of paper to the leadership for approval…We really wanted to change that and put some rigor into how we experience cities ... how the Emiratis experience them*" (Cormier, 2015, para 27). His words encompass the magnitude of development in Abu Dhabi in the dawn of the UPC's creation, the focus on how local citizens experienced the built environment and the special regulatory role the UPC would play going forward.

Development has been streamlined considerably since 2007. The regulatory system under the PRS, responsible for over 1,672 projects, had by the end of 2016, covered 22,124,089 sq. m of gross floor area (GFA) (Abu Dhabi Urban Planning Council, 2017d). It aimed to raise the minimum standards of buildings and communities across Abu Dhabi, which are a positive step toward improving building and community standards. However, data on which developments fell short of Estidama standards is not publicly shared, thus, only one side of the success story is portrayed. The nuances of the lack of transparency and blurred boundaries between the

developers and business elite in the local context are a contributing factor (Dempsey, 2014). While Estidama represents a governance success story on the one hand, it is also partially contested given the lack of transparency and limited public scrutiny on Estidama applications that do not meet the mandate.

The three fundamental components of the Pearl Rating System are: Pearl Design Ratings, Pearl Construction Ratings and Pearl Operational Ratings. The system is implemented at the community, building and villa levels as well as in the public realm. Aspects of the PRS feature iterative feedback processes. Such feedback loops were completely novel in Abu Dhabi, as noted by the North American planners involved in its creation (Clarion Associates, 2008; Cormier, 2015). The rating system also rewarded innovation and inclusion of cultural themes into planning apart from more universal principles of resource efficiency, environmental protection etc.

Khater (2013) and Neriem (2011) describe the difficulties local practitioners faced in transitioning to the PRS, rooted in the costs and lack of skilled personnel to balance sustainability, design, client needs and profits. The UPC responded to calls for increased direction and also put together a number of specialist manuals to provide guidance to industry practitioners on a range of urban issues such as green building, mosque development, safety and security, community facilities planning, public realm, streets and utility corridors. Each manual is available for public use, displaying vital training and education tools funded and disseminated by the UPC toward solving urban problems collectively.

Through the Complete Sustainable Communities (CSC) initiative the UPC underscored how it would address major planning problems across multiple issues such as land use, population needs, transportation, community facilities, streetscapes, safety, security and housing density of neighbourhoods. Estidama is a primarily government-led program tied to practical, political and economic rationales that prioritizes new builds (Cugurullo, 2013). Given that Estidama applies to new builds and not retrofits of existing structures, the role of Estidama is somewhat limited, and represents wider political soft power goals aimed at transforming Abu Dhabi into a global city, with pristine Estidama-rated communities.

The UPC has embraced an incentive-driven model of sustainability, with an emphasis on low

hanging fruit. However, retrofit solutions and existing building sustainability are being explored by several local stakeholders in Dubai and Abu Dhabi (Hopkinson, 2015).

### *6.3.2 UPC Attempts to Empower a New Generation of Internal and External Change Agents*

The UPC demonstrated its commitment to Estidama by working closely with other government teams and its staff to embed sustainability principles across different departments and functions, (Abu Dhabi Urban Planning Council, 2015c). John Madden, a former UPC planner aptly noted: "*Good sustainability and urbanism infiltrate virtually every level of our work, this is what we (the UPC) strive to integrate as part of the way we conduct our business*" (Madden, 2011). His words reflect sustainability-related planning at the heart of the UPC's interaction with its external partners. By the end of 2016, over 1,900 industry specialists have been assessed on the Pearl Rating System, and are now recognised as Pearl Qualified Professionals (PQPs), while almost 13,000 people have received Estidama training through 459 sessions hosted by the UPC. The PRS has become one of the UPC's external policy transfer mechanisms, empowering external professionals to incorporate sustainability into development proposals. This was possible through strategic internal co-ordination processes initiated by the UPC to engage these external stakeholders (Abu Dhabi Urban Planning Council, 2017d).

Changes internally include a cross-departmental team called '*Tatweer*' (Arabic for development) comprising 14 UAE Nationals across all the strategic sectors of the UPC who are tasked with overseeing close to 50 innovation projects (Abu Dhabi Urban Planning Council, 2015c). The UPC has instituted other human capital programs that identify employee strengths, development areas and leadership readiness. It also customized industry-specific training in line with individual employee needs (Abu Dhabi Urban Planning Council, 2015a). The efforts have helped increase the overall Emiratization presence at the UPC to 70% of the employees (Abu Dhabi Urban Planning Council, 2017d).

Mobility theorists Adey and Bissell (2010) noted that elites who hold power have the ability to alter both institutional capacity and social norms. In the case of Emiratis at the UPC, being given an opportunity to expand their skills, knowledge and leadership, ensure they continue to be empowered as a group. From the UPC's perspective, these initiatives contribute to making the local population self-sufficient in the long term. Expat planners who brought in foreign knowhow simultaneously played a vital but transient role at the UPC, leaving a gap that

Emiratis could fill. Internal governance however, is contested when Emirati planners without adequate experience or training were placed in senior positions that were comparable to foreign planners with significantly greater training and experience (Dempsey, 2014).

The UPC also developed planning curricula in local universities, encouraging students to apply the UPC's design manuals and Estidama policies toward problem solving issues in local neighbourhoods. The UPC collaborated with local universities to create internship opportunities targeted specifically at Emiratis (Abu Dhabi Urban Planning Council, 2016b). These initiatives ensure that knowledge production and policy learning are ongoing processes.

Designated employee teams at the UPC encourage the adoption of international best practices in line with the goals of Vision 2030 (Abu Dhabi Urban Planning Council, 2015c). A former planner with the UPC noted how the organization has matured over time, "*The UPC was a very young authority with big goals around aligning policies and regulations that sometimes didn't align, however, this has levelled off, there is better communication, and it is a very different organization today.*" (Interviewee X, Former UPC Planner, 2017). The changes most notable in the creation of a new strategic plan reflect elements similar to corporate governance.

### 6.3.3 The UPC's 2016-2020 Strategic Plan Offering New Organizational Directions

The UPC's 2016-2020 strategic plan includes new vision and mission statements. The statements encompass the UPC's goal to become a model of international best practice, with a strong focus on sustainability. (Abu Dhabi Urban Planning Council, 2015a). These internal governance changes reflect a progressive work culture with employees participating in goal setting and decision-making, being empowered to contribute collectively to organization-wide solutions. Wider developments in the public sector such as the government's embrace of the European Foundation for Quality Management (EFQM) criteria and the excellence awards instituted by the Abu Dhabi government to recognize high performing government agencies were incentives for Abu Dhabi's government agencies to align internal teams toward future decision-making (Public Sector Excellence Magazine, 2015a). Thus, the UPC and its partnering government agencies are relationally tied to wider government directives at the Emirate level.

The UPC follows a new set of corporate values as part of its role going forward that include

leadership, vision, excellence, collaboration, sustainability, responsibility and innovation. The UPC's Director General, Falah Al Ahbabi noted "*This (the new strategic plan) was an intricate process that involved many stakeholders, including our employees, to ensure everyone understood why we were revising our vision and mission.*" (Abu Dhabi Urban Planning Council, 2015a, para 4). Given that the work of the UPC overlapped with the work of other agencies, the focus on capacity building, training, skills, productivity and leadership development were central to improving internal efficiencies to allow for better external efficiencies.

The changing discourse on planning that the UPC has embraced more recently, reflect a shift from the North American-centric knowledge creation and learning that dominated the institution's early days, to greater opportunities for internal collaborative policy making across teams, collective knowledge creation and learning. A distinct Emirati character is reflected in the UPC's policy agenda given the focus on Emiratization and Emirati housing communities. In 2017, the UPC signed an agreement with 10 major property developers to fund and develop new community amenities such as mosques, playgrounds, public paths and sports facilities across Abu Dhabi. Dedicated teams plan for the location and costs of future projects, in response to the UAE's year of giving (Abu Dhabi Urban Planning Council, 2017b). The initiative represents the strategic role played by the UPC in galvanizing the local private sector toward a higher-level emirate level directive. The only caveat is that the initiatives should not necessarily be one time commitments, rather they should be continued in the longer term.

### 6.3.4. Global and Local Learning as an Outcome of Internal Infrastructure Improvements at the UPC

The UPC has employed various technological initiatives to increase the efficiency of its work. These include geographic information systems (GIS) technology, smart 'geo-planner' applications, and other technology tools for streamlining both planning and decision-making (Abu Dhabi Urban Planning Council, 2015e). The benefits of advancements in technology and improved communication networks that in turn promote learning associated with the transfer of planning ideas has been espoused by Harris and Moore (2013). However, Healey (2015) has pointed out that technology itself is not an absolute, and is effective only when combined with local interpretation and practice in Abu Dhabi.

Learning that takes place across different time periods, and in the context of different planning issues in Abu Dhabi and abroad is a valuable outcome of policy transfer. For example, the UPC's spatial data team, not only provides the UPC with vital data but also encourages learning in the international GIS community through a web portal that allows search options for planners and members of the design community internationally to track master plans and manage planning processes. The aid of decision-making tools with both global and local appeal, is an example of how multiple scales policy transfer is taking place, and an example of reverse transfer where Abu Dhabi-developed technology is being used internationally. The UPC's web portal for spatial planning also won an award from the international firm Environmental Systems Research Institute (ESRI), the supplier of GIS software, beating over 100,000 other ESRI clients (Abu Dhabi Urban Planning Council, 2017c). International recognition and awards such as this are a key element toward Abu Dhabi being perceived as a global city, and advancing the leadership's soft power goals whilst simultaneously promoting learning.

**6.4 Common Trends Witnessed Across Masdar and the UPC**

The alignment of strategic teams across both Masdar and the UPC are part of an ongoing trend in the era of late rentierism to encourage internal efficiencies and organizational learning. In turn, this has spurred ripple effects on external partnerships, expertise and skills development, whilst empowering Emirati employees in particular. Programmes such as the UPC's *Tatweer* initiative, Masdar's youth and women-oriented programmes such as the 'Young Future Energy Leaders' (YFEL) initiative, the Global High Schools category of the Zayed Future Energy Prize (ZFEP), 'Women in Sustainability Environment and Renewable Energy' (WiSER) programme that work to increase opportunities in renewable energy and clean technology, have potential to harness new talent and leadership among new stakeholder networks (Masdar, 2016d). The creation of prize awards such as the ZFEP for example was another outreach strategy to attract policy ideas and solutions from a diverse base of international stakeholders beyond just researchers and the private sector, to include civil society and schools, whilst networks of women entrepreneurs and scientists are key to engaging a new kind of assemblage in Abu Dhabi focussed on mentorship. Thus, institutional empowerment in turn encourages stakeholder empowerment when new stakeholders are initiated into existing networks.

In this regard, a Senior Director at Masdar explained the collaborative opportunities the WiSER program provided women in areas of innovation and scientific breakthrough noting the importance of mentorship to Masdar- *"With greater mentoring and collaborative opportunities, our (Masdar's) knowledge of the issues that uniquely impact women can be harnessed to deliver sustainable growth and innumerable societal benefits. Innovation in sustainability is critical to our future prosperity, and women have a central role to play in this regard"* (Interviewee Y, Senior Director, Masdar, 2017). Attempts to bring in youth and women into the existing initiatives on sustainability represent power sharing away from traditional members of epistemic communities, toward a more open system of inclusion for new stakeholders to participate in future initiatives at these sustainability-driven institutions. The initiatives represent a widening of what Healey (2010, p.379) has termed "*a community of inquirers*" who possess different rationales for participation.

**6.5 Conclusion**

Masdar and the UPC are implementing interactive institutional structures as both institutions move toward becoming more accountable to their stakeholders (Abu Dhabi Urban Planning Council, 2017d).

In particular, Masdar and the UPC employed technological capacity and the skills and experience of influential agents of change, who played important, yet transient, roles in the institution's policy transfer processes. Institutionally, both Masdar and the UPC have exhibited degrees of transparency and accountability in their dealings with external stakeholders. This is evident in Masdar's commitment to the Global Reporting Initiative (GRI) reporting and the issue of detailed sustainability reports to the wider public since 2012 (Masdar, 2012, 2013, 2014, 2015, 2016a) and the UPC's commitment to annual reporting from 2016 onward (Abu Dhabi Urban Planning Council, 2017d).

The UPC has made the details of approved Estidama projects available to the public (Abu Dhabi Urban Planning Council, 2016a). However, the statistics point to approvals, and we do not get the full picture of those projects that do not meet planning regulations. Thus, the blurred boundaries of the local context continue to be felt in the manner the UPC must balance its regulatory powers with the powers of elite developers and rights of citizens.

Given that Masdar, the UPC and other Abu Dhabi government agencies they partner with are all implementing the 2030 Vision simultaneously, policy transfer related to internal governance, external reporting and developing human capital have proliferated at the institutional level in Abu Dhabi. Dimaggio and Powell (1991) note that institutional morphing can occur from coerced transfer and mimetic processes, which seems to be the case in Abu Dhabi, as all the government agencies are encouraged to pursue innovation and excellence (Public Sector Excellence Magazine, 2015a). Moving forward, Dimaggio and Powell (1991) cite common normative backgrounds can facilitate the joint development of common policy models as organizations strive to increase their own legitimacy, as witnessed in the institutions' embrace of CSR, sustainability reporting, accountability, transparency, opportunities for dialogue and feedback and, Emiratization.

We witness elements of Healey's (2004) arguments in the local context, since she iterated that both internal and external criteria can influence governance processes. In particular, Healey (2013) espouses situating planning ideas in specific contexts bringing localised and collective capacity building to the fore. We witness the unique internal governance aspects that gain traction in each institution, including internal feedback loops, some transparency in reporting that is however, still within the purview of authoritarianism. Opportunities for dialogue with stakeholders, and concerted efforts to equip Emiratis with the skills to become the new generation of transfer agents are part of consistent trends going forward for both institutions.

We have come full circle in considering how both Masdar and the UPC have committed to internal governance as well as created unique avenues to share important institutional knowledge with external stakeholders across the sustainability areas under their purview (Abu Dhabi Urban Planning Council, 2015a; Masdar, 2012, 2013, 2014, 2015, 2016a). The ten-year period since the creation of these institutions has thus witnessed profound change in both institutions as they have tried and tested various internal strategies that have received recognition beyond the territorial limits of Abu Dhabi.

# 7. Dualities of Power and Inequality in Mobilising Sustainability Concepts in Abu Dhabi, Masdar and the UPC.

## 7.1 Introduction

This chapter uncovers the politics that accompany the narratives around transfer and mobility of sustainability principles in the local institutional context of Abu Dhabi, and also Masdar and the UPC, and their respective partners in the areas of energy, housing, transport and urban design. Through critically evaluating changing notions of power and persistent equalities we uncover different meanings and experiences associated with the transfer and mobility of sustainability principles by Masdar, the UPC and their partners across various planning issues.

The chapter explores where power lies within networks of sustainability-focussed stakeholders in Abu Dhabi. It attempts to trace why and how aspects of power are in flux across the issues of housing, transport, urban design and energy through applying theoretical concepts from mobility, policy transfer and related governance to interrogate notions of power and also inequality in the local context.

Inspired by Stone's (2005, p.325) conceptualization of power relationships including that of "*power to*" and "*power over*" in coalition formation; power in the local context of Abu Dhabi can be potentially exercised in a variety of forms. This can include the leadership's authoritarian 'power over' individuals' and institutions' right to participate in policy decision-making; the leadership's 'power over' interpretations of equity; justice; and fairness; and its 'power over' the disempowerment and marginalization of some groups. In addition, power is also manifested in the leadership's extension of 'power to' elites; the global and local private sector, and local citizens, and to government agencies and government-backed institutions. There are increasing instances of new stakeholders being empowered as part of the transnational flow of sustainability concepts, while Abu Dhabi's authoritarian leadership still makes top-down decisions.

Massey (1993; 1995) has referred to the uneven nature of power within networks that allowed powerful stakeholders to retain their power. In addition to the uneven assertions of power in the local context, I consider tensions, unequal outcomes and competing values that accompany the transfer and mobilisation of sustainability policies. By uncovering differentials and

inequalities and more importantly why they persist we uncover the implications of mobile sustainability amidst nuances of the local context.

Inequalities experienced by certain groups of stakeholders in Abu Dhabi across non-citizen status and nationality has some parallels to the moral, political and social concerns linked to colonial legacies raised by post-colonial theorists such as Bhabha (1994), Hall and du Gay (1996), Said (1978), Spivak (1988) and others. By following the ideas put forward by these post-colonial thinkers we can gain valuable insight into the experiences of societal groups whose views tend to be underrepresented, and who are subject to contemporary forms of oppression in the local context, despite their majority in numbers (Tharoor, 2015).

Aspects of the rentier social contract, authoritarian top-down decision-making, and post colonialism contribute to the exclusion of certain groups, prioritization of citizens over expats, societal divisions and the resultant divided spaces that follow. Finally, on a more macro level, I also consider similar frictions and tensions that exist in neighbouring Dubai, and the GCC with similar political contexts to Abu Dhabi, to establish a relational perspective on some of the inequalities that accompany transferring and mobilising sustainability concepts.

In prior chapters of this thesis we uncovered how dominant meanings of sustainability have been created primarily by Abu Dhabi's leadership rooted in authoritarianism and oil wealth. Power in Abu Dhabi is inextricably linked to its oil wealth. Abu Dhabi owns the majority of the UAE's hydrocarbon wealth – 95% of the oil and 92% of the gas lie in Abu Dhabi (Abu Dhabi City Guide, 2018). Abu Dhabi's oil wealth have enabled it to reinvent itself as an artistic city, a political and capital city, an Islamic city, a cultural city, a wealthy, luxurious city, and now a sustainable city with an increasingly diversified economy.

With oil, came the power to enact change that was accompanied by the dual forces of globalisation and modernisation. The trend continues with ongoing investments by the Abu Dhabi Government's Executive Council of $82 million toward infrastructure development encompassing housing projects, intelligent transport, open space and public parks (Arabian Business, 2017). Katodrytris and Mitchell (2015) note that speed has impacted contemporary architecture and urbanism in the UAE and the wider GCC as cities are built and expanded at break neck speed. This speed of development is remnant of "*fast policy transfer*" (Peck and Theodore, 2015, p.225) given that modernising the built environment is aligned with wider

political goals. However, with such speed of development come dualities that we will uncover further.

Although the power to mobilise sustainability in the past has primarily been within the purview of the monarchs and the government agencies, new stakeholders including the local and international private sector, non-profit groups and individual residents are also mobilising sustainability. A unique ordering of individuals and institutions among Abu Dhabi's sustainability driven institutions including Masdar, the UPC and their respective partners has emerged. At the outset, these stakeholders include, Abu Dhabi's leadership that also comprise the royals; government agencies; government-owned entities, civil society and the local community. The diagram below showcases a range of stakeholders explored in this research who are involved in implementing sustainability in Abu Dhabi. While the ruling family sits at the apex of the power hierarchy, there is evidence of power sharing across strategic initiatives among stakeholders.
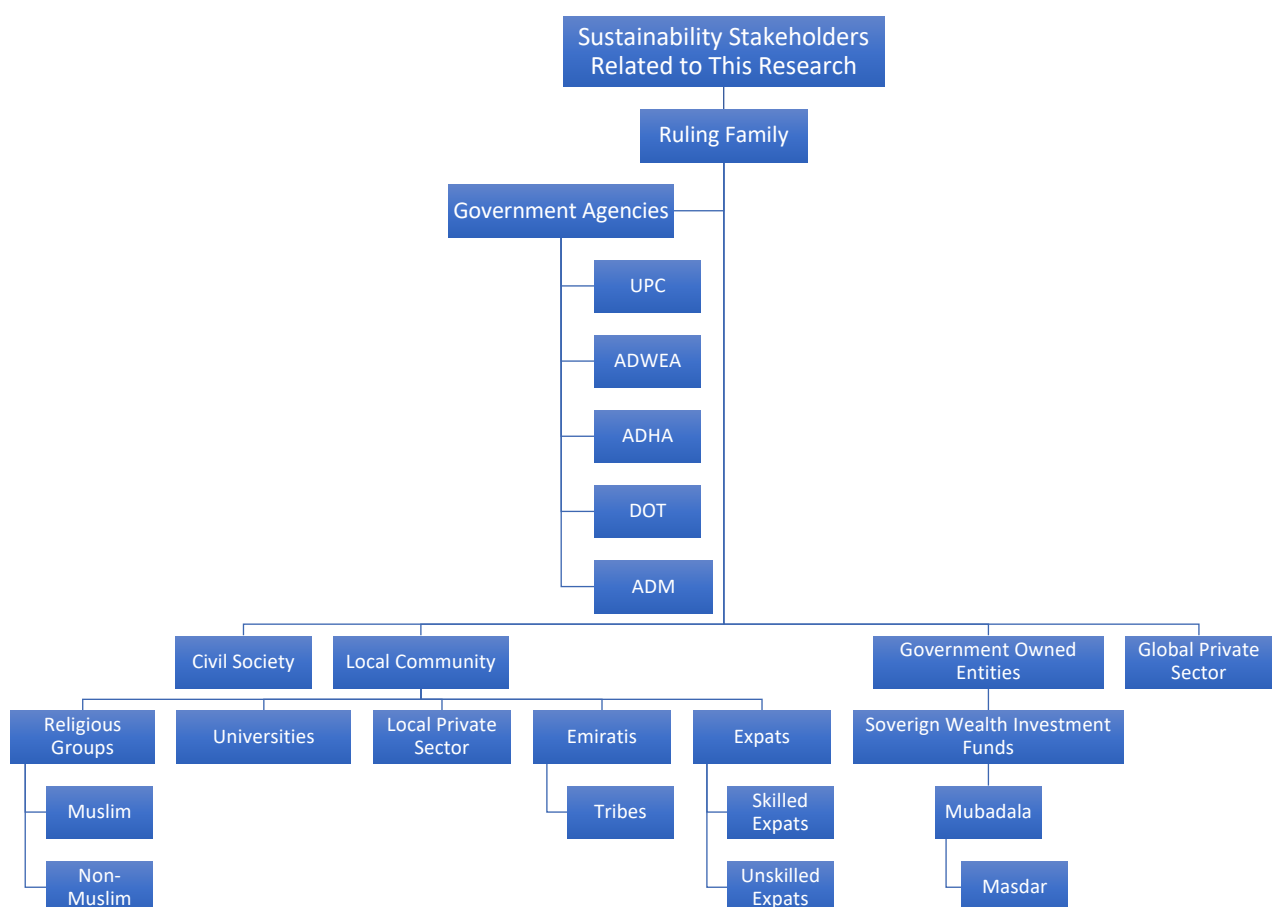


*Figure 20:Concept drawing showcasing sustainability stakeholders in Abu Dhabi pertaining to the sustainability and planning issues explored in this research*

This chapter is laid out across four basic sections, each dedicated to a particular planning issue. It considers energy, followed by housing, transport and finally urban design. The notion of power and persisting inequalities will be addressed from multiple perspectives.

## 7.2 The Dualities of Power and Inequality Related to Energy

In this section on energy the role of power – both top down authoritarian power and the empowerment of government agencies and the private sector are addressed, in light of Abu Dhabi's embrace of renewable and alternative energy policies and initiatives.

There is a concerted effort toward improving the supply of alternative energy in Abu Dhabi, however the industry has also witnessed collaborations and incentives by government agencies to promote demand management around energy. Despite these efforts, clear disadvantages related, in particular, to the unequal pricing of electricity, the use of wealth to buy soft power and stakes in global projects, the disparity in energy allocation where nuclear energy exceeds renewable energy generation targets, the differences between Abu Dhabi's energy subsidies from elsewhere in the UAE, and regional competition from elsewhere in the GCC signal the fact that mobilising alternative energy solutions in Abu Dhabi are not without their challenges.

## 7.3 The Unequal Politics of Energy in Abu Dhabi

The citizen-expat divide is a factor of the rentier social contract between the state and its constituents. In terms of energy, this is evident in differentials in the price of energy charged to different societal groups. Krane (2014) noted that the rate at which power in Abu Dhabi is sold to citizens covers only 16% of the government's cost versus the corresponding rate for expats which covers 47% of government's costs. Both groups have been beneficiaries of subsidized energy in the past, however, this is changing. In 2017, new tariffs introduced by the Abu Dhabi Water and Electricity Authority (ADWEA) signalled changes for Emiratis and expats alike. ADWEA has instituted higher rates for both groups if consumption increases beyond the ideal consumption rate of 200 kwh in villas and 20 kwh in apartments (Dajani, 2016). Emiratis will see their electricity bills rise, with the price differential still very much in favour of Emiratis. According to the 2017 rates, Emiratis will pay 6.7 fils per kilowatt hour whilst expats pay 26.8 fils per kilowatt hour (Dajani, 2016). Thus, while the subsidies to society have recently decreased, they are not excluded in entirety, reflective of the duality between the rentier contract honoured the state, and the energy security goals of the government in the face

of decreased oil prices and overconsumption. The impact of the true cost of subsidies is noted by Krane (2014) who estimates that a price increase of over 500% would be required to be levied on citizens which had the potential to decrease electricity demand by over 50%.

The subsidy levels in Abu Dhabi differ from what is taking place in Dubai and other emirates in the UAE who have reduced subsidies for expats who now pay electricity prices reflective of actual costs, whilst these other emirates have continued to retain citizen subsidies. Dubai has also committed to a 5% renewables goal, evidence that its ambitions are not far from those of Abu Dhabi. Dubai intends to build an industry around solar power that in some ways could mean a duplication of initiatives between Abu Dhabi and Dubai. Dubai has mirrored Abu Dhabi's demand management strategies in its embrace of smart grids, supply-side investments in the Shams Dubai and Mohammed Bin Rashid Solar Park as well as demand management initiatives that track and reduce consumption in the residential and commercial sectors (Dubai Electricity and Water Authority, 2017b).

The disparity between the investment in nuclear power and renewables is also striking. Existing nuclear plants located in Abu Dhabi are the backbone of the UAE's investment in 5.6 GW of civil nuclear energy and are expected to meet 25% of national power demand. This cements Abu Dhabi's position of power in decision-making around energy nationally. Importantly, the UAE aspires to be the regional leader in the nuclear energy space. The project has been justified in light of the UAE climate change commitments. The federal government has sought a transparent development approach for this civil nuclear investment as part of promoting its nuclear energy investments (The Business Year, 2017; Dreazen, 2012).

Abu Dhabi also committed to sourcing 7% of its power from renewable energy sources (Economist Intelligence Unit, 2017), which compared to the plans for nuclear power generation, are much smaller. Nuclear energy is expected to contribute to 25% of the UAE's energy needs by 2021 (Zaatari, 2017). The 7% renewables commitment is an outward sign of the emirate's commitment to sustainability. Using Masdar as a platform, the Abu Dhabi government has invested in projects at home and abroad toward this goal. Internally, there has also been a debate on how Abu Dhabi should meet its 7% renewables goal (Oxford Business Group, 2016). From a political standpoint, the 7% renewables goal was instrumental in helping turn around the negative media that accompanied Abu Dhabi's high carbon footprint, further bolstering the case for its commitment to sustainability (Saadi, 2014). The strategic timing and marketing of alternative energy goals has been a vital part of Abu Dhabi's positioning itself

globally as a sustainability hub and justifying the role of Masdar whilst bolstering its domestic energy security.

### 7.3.1 The Political, Economic and Technological Rationale for Masdar as a Policy Transfer Platform

Abu Dhabi has used its oil wealth to invest in a succession of renewable energy investments through the Masdar platform. Noted examples include Shams 1 within Abu Dhabi, a flagship project in which Masdar has an 80% stake with France's Total holding the other 20%. Further afield, the London Array wind farm and projects in Spain are international projects Masdar has invested in. The total investment in clean energy culminated in 1.7 gigawatts of power deployed or under development globally (Energy Boardroom, 2016).

Masdar has also invested in renewables projects in developing nations such as the Seychelles, Fiji and Mauritius (Economist Intelligence Unit, 2017; Energy Boardroom, 2016). Elsewhere in the Middle East, in Jordan and Oman, Masdar owns renewables project stakes in conjunction with local authorities. The Abu Dhabi Fund for Economic Development has also played a role in providing funding for such projects (Gulf Today, 2018). Its involvement signals that both economic and political rationale influence renewable energy investments. Similar developments in the region are evident in Saudi collaborating with Masdar to develop large-scale renewable energy projects in Egypt (Oxford Business Group, 2016c). This is indicative of Masdar fulfilling its purpose as both technological and operational platform, whilst simultaneously assisting less wealthy neighbours in the wider region in meeting their clean energy goals. These collaborations benefit from access to larger government financial aid pools. Such projects help reinforce Abu Dhabi's position as a regional leader in deploying renewables. However, with Saudi Arabia also participating in similar projects Abu Dhabi is not the only oil-rich leader in the space.

Masdar has been critiqued for its prioritization of global investments that have far outweighed domestic renewables. Currently, domestic renewable energy initiatives are a long way off from meeting local demand despite the Shams 1 project generating 100 MW of solar energy. Energy savings from renewables are minimal since they provide no more than 2.5% of overall electricity in Abu Dhabi (Krane, 2014). In addition, the intermittent nature of renewables is also a contributing factor (Azar, 2016). Thus, the economic returns and soft power that accompany global investments and projects have been prioritised in the case of renewables.

One of the challenges that existing power structures have posed to the emerging renewable energy scene is the absence of a feed-in tariff, this coupled with low electricity prices by international standards leave homeowners and smaller businesses with fewer incentives to install solar panels on their own accord. So far, solar panel installations have been primarily government led (Oxford Business Group, 2016c). Thus, there is room for further demand management initiatives from the private sector in particular beyond ADWEA and the Regulations and Standards Bureau that have primarily been driving it.

### 7.3.2 Soft Power as a Rationale for Pursuing Renewables Projects

One must consider the wider soft power strategies and state transformational elements associated with alternative energy. For example, the UAE has been globally recognized for its investment of AED 16 billion (USD $4.3 billion) in capacity building initiatives in developing countries (The Business Year, 2017). Renewables, as mentioned earlier are key to building a positive image globally and contribute to the UAE's position as a regional hub and role model for renewables expertise.

The post 2012 period marked the launch of the UAE's green growth strategy. By strategically embracing various signatory opportunities related to sustainability, hosting global sustainability conferences, adopting national level sustainability visions, attracting global entities such as the International Renewable Energy Agency (IRENA) to set up headquarters locally, and high profile investments in and by Masdar, the UAE government signalled its commitment to transitioning to a green economy (United Arab Emirates Ministry of Climate Change and Environment, 2016).These strategies were also opportunities for gaining soft power and credibility regionally and globally.

Let us now consider the notion of evolving power through the UPC's responses toward energy efficiency.

### 7.3.3 The UPC's Energy Policies and the Institution's Contested Regulatory Power

Since its launch, Estidama achieved a 40% improvement in energy efficiency across mandated Estidama projects over pre-Estidama levels (Saliba, 2016). The mandatory nature of the policy enabled it to take root in Abu Dhabi despite the challenges posed to developers. At the WFES 2011, the public had an opportunity to engage in a question and answer session with UPC planners, where some developers in attendance voiced their concerns about increased costs,

project delays and the need for hiring and training sustainability experts with skills in specific sustainability criteria. The UPC's planners utilized the opportunity to inform them about their open-door approach toward addressing Estidama-related concerns and the provision of sponsored training (Mascarenhas, 2012).

In the early months of Estidama's implementation in 2010, all but three applications for building permits were rejected in Abu Dhabi for their inability to meet Estidama requirements (Neriem, 2011). A former UPC planner explained the growing pains faced by the industry -

*"In terms of acceptance from clients and developers there have been varied responses. For international consultants, there has been a normal learning curve compared with smaller consultants who needed to hire specialists in energy modelling, landscape architects, ecologists, etc. The challenges associated with (Estidama) coordination costs impact fees and risk levels... In the past, there was no standardization in the codes, and application often depended on the country that consultants came from." (Interviewee X, Former UPC Planner, 2017).*

The comments shed light on how the diversity of change agents involved in the implementation process impacted the sustainability outcomes, given their diverse experience and background. Khater (2013) also noted similar contested issues particularly around the cost of pursuing energy efficiency given that energy efficient building materials were not available locally and developers faced budgets being curtailed by investors. Azar (2016) also described the costs of energy efficiency as a deterrent to building owners, in addition to the lack of expertise particularly among stakeholders who worked lower down on the sustainability chain. Thus, the UPC's regulatory power was being challenged by a host of factors outside its control. Over time, the UPC addressed these challenges and concerns by commissioning a cost consultant to review the associated costs. This allowed the UPC to validate the efficacy of the policy to the development community, by testing the cost effectiveness of Estidama criteria itself.  The consultant's report concluded that attempting to achieve 1-2 pearls would add a cost premium of somewhere between 2-4% to a development's design and construction but would ultimately result in a 25-30% reduction in water consumption and nearly 35-40% reduction in energy usage (Saliba, 2016). Along with exercising its regulatory power, effective responses by the UPC to the community of developers and industry stakeholders began to have more positive

effects in the number of projects that received Estidama approvals. In 2015, for example, close to 26% more gross floor area of development was approved compared to 2014 by the UPC (Zaman, 2016).

However, the UPC's regulatory power continued to face challenges. The blurred boundaries between developers and powerful elites allowed powerful developers to evade UPC requirements. The UPC was still subject to the nuances of authoritarianism and its accompanying power structures (Cormier, 2015; Dempsey, 2014). Such contested institutional power on the part of the UPC is reflective of issues that Peck and Theodore (2010) describe in relation to the role of politically influenced institutional contexts where an institution's capability to adopt and implement policy is dependent on existing power structures and relations.

Policy transfer implemented by the UPC is reflective of traditional policy transfer elements around emulation and lesson-drawing noted by Dolowitz and Marsh (2000) and Rose (1991) given that energy experts devised various elements of Estidama energy policy from Leadership in Energy and Environmental Design (LEED). Planners and teams of consultants at the UPC focussed on the initial hard transfer of best practices, but also on the soft transfer of experts' skills, and spreading the message of Estidama through training programs and conference presentations. The final iteration of Estidama reflects an increased focus on government-led decisions by the UPC in collaboration with other government agencies compared with the initial power wielded by foreign planners, consultancies, think tanks and non-state actors earlier in the Estidama creation process (Abu Dhabi Urban Planning Council, 2010b; Clarion Associates, 2008). However, powerful developers were often able to evade UPC requirements due to blurred economic interests in the local context which, in a relatively opaque authoritarian set up means that these developers are rarely publicly named (Dempsey, 2014).

### 7.3.4 The Role of Masdar within the Politics of Energy

I now turn my attention to Masdar and its role in the politics of energy in Abu Dhabi. As noted above in discussing Emirate-level energy initiatives, Masdar plays a critical role in the UAE's renewables scene, and also collaborates with Dubai's authorities toward national-level goals (Energy Boardroom, 2016). This role as an intermediary providing resources and knowhow to diverse stakeholders within and beyond the UAE on the one hand, potentially justifies a role for Masdar. However, it has been critiqued as a form of "*redundant institution building*" in the

renewable energy space (Krane, 2014, p.8). We can thus also question, whether Abu Dhabi had to necessarily create Masdar in the first place. Given that Masdar has not grown at the speed first anticipated by the leadership, it could be one of the redundant institutions that Krane (2014) alludes to. If we consider this from a relational perspective, the other Gulf States have each begun their renewables and green building paths toward sustainability also creating specialist, purpose-driven initiatives such as Qatar's Energy City, and Saudi Arabia's King Abdullah University for Science and Technology. Each of them have their own individual interpretation of sustainability intertwined with technological innovation (Reiche, 2010). When such initiatives are politically justified under the wider umbrella of economic diversification, and government-backed in an authoritarian context, there is limited public critique on whether such initiatives are relevant or redundant.

One of the instances of evolving power in Abu Dhabi is Masdar's profit-driven mandate. Masdar is quasi-government owned and although it is the physical embodiment of the Abu Dhabi leadership's international, regional and local renewable energy investments, it cannot rely completely on the government for its income stream. Masdar's Executive Director of Clean Energy in a media interview commented on strategic public and private partnerships with stakeholders that share mutual interests. He noted, "*We (Masdar) take on renewable projects with the clear intent of making a return on our investment. This reflects our fundamental belief that the sector is only sustainable, if it is economically viable*" (Energy Boardroom 2016, para 13). He further commented on Masdar's mobility in international markets being dependent on factors such as the stability of the location, energy demand, economic growth and GDP, resource availability and an energy regulatory framework that encourages private investments. The Director's comments direct our attention to the factors that Masdar considers while investing internationally. In being profit-driven, Masdar becomes a role model for other quasi-government projects to increasingly become self-sufficient, and move away from receiving government funding.

In further considering the concept of power, I turn my attention to the implications of Abu Dhabi's winning bid to host the headquarters of the International Renewable Energy Agency (IRENA) at MC.

*7.3.5 The IRENA bid and Masdar's Energy Efficiency Solutions*

Abu Dhabi's leadership combined with Masdar's efforts to win the bid to host IRENA showcased the collective value of Abu Dhabi's various alternative energy solutions and investments, including philanthropic investments in developing nations (Kaye, 2016). The Abu Dhabi Fund for Development promised $50 million each year for the first seven years to fund IRENA projects in developing countries (Van der Graaf, 2012). However, such soft power investments are not sustainable over time, particularly amidst falling oil revenues. The initial carrot and stick approach allowed the UAE to associate itself with IRENA's global work. The organization is involved in setting voluntary renewables targets for members with the goal to increase the global share of renewables to 36% by 2050. By being instrumental in establishing the IRENA headquarters in MC the Abu Dhabi government and Masdar also helped develop one of the UAE's greenest building structures (Oxford Business Group, 2016c), and simultaneously another soft power conquest. We witness the strategic blending of oil wealth with philanthropic investment, green building, attainment of soft power around global renewable energy adoption through Abu Dhabi's alignment with the globally recognized brand of IRENA.

Van der Graaf (2012, 2013) critiqued the use of financial clout in relation to Abu Dhabi's efforts to secure the IRENA bid, which are concurrent with Davidson's (2012) assertion that Abu Dhabi's attempts to build soft power in the West, are critical to creating a neutral, benevolent identity abroad. We also note elements of what Wolman and Page (2002) describe in the behaviour of elites who influence policy circulation through creating strategic assemblages. In light of this, the policy discourses that emerge from such strategic assemblages can potentially retain the particular biases and elements of the power dynamics of a limited set of powerful stakeholders. The first director-general of IRENA explained in a media interview that some member states had more influence than others (Renewable Energy Magazine, 2009). The comments reflect the fact that power hierarchies among key decision-makers both within and outside the organization prevailed. The award of funds to IRENA has been mutually beneficial to the stakeholders. This is characteristic of the blurred boundaries associated with state-owned/state-connected entities that encourage the formation of politically strategic assemblages. The location of IRENA in Abu Dhabi proved to be fortuitous since IRENA faced a turbulent first two years (Van der Graaf, 2012). Thus, IRENA was able to ride out its financial

troubles, whilst Abu Dhabi and Masdar both gained recognition on the global stage. Masdar is thus situated amongst complex political forces, that prompt it to balance a combination of philanthropic, economic and politically-strategic investments.

To further understand the impact of power contestations, let us consider the case of Masdar's Swiss Village. This is an example of how an assemblage of clean technology entrepreneurs failed to sustain a collaboration in the long term and had to submit to the decision-making power wielded by Masdar and Mubadala in the collaboration (Schilliger, 2012).

### 7.3.6 The Failed Swiss Village at MC

The Swiss Village at MC was envisioned to be an avenue for lucrative contracts for Swiss firms engaged in clean technology who could benefit from specific tenancy, service and supply contracts and the incentives of the Masdar free zone. With a scheduled opening for 2015 the village was to feature a mixed-use community including a Swiss business hub, a private school, housing as well as the Swiss embassy and residence (Gale, 2010). Swiss firms hoped to become the first tenants of the Swiss Village, and contenders for related projects in the upcoming village. Companies with experience in Swiss Minergie building standards, architects and related experts envisaged a demand for their experience (Interviewee U, Former Member, Swiss Cleantech Association, 2011). The political significance of the project was evident in the signing of an MOU between the UAE and Swiss governments that promoted the transfer of research and technology around renewable energy. In addition, an MOU between Masdar and the Swiss Village Association (SVA) a local platform for Swiss clean technology firms was signed to develop the Swiss village in MC (Hope, 2009). Thus, the assemblage around the Swiss Village featured the participation of high level Swiss and Abu Dhabi government entities and the private sector with the potential for a governance process to emerge around mutual interests and benefits. In 2011, when I visited Abu Dhabi, Swiss companies were exhibitors at a dedicated Swiss Pavilion at the WFES, using the opportunity to showcase their services and forge new contracts. The project still appeared to be on track given the large number of dignitaries and Swiss Companies present at the Swiss Pavilion (Mascarenhas, 2012). However, in early 2012, a Swiss Foreign Ministry Spokesperson confirmed that conditions for the construction of the Swiss Sprinter building did not yet exist. This was a sign that the Swiss companies and the SVA had to submit to the decision-making power wielded by Masdar and its parent company Mubadala in the collaboration. Mubadala had laid down a stipulation that dredging for the construction of the first building of the Swiss Village would only begin if 40%

of the planned area was rented. In 2012, a number of Swiss sponsors had disassociated themselves from the project including financial sponsor Credit Suisse and others. Not enough small and medium-sized enterprises (SMEs) committed to laying down roots in Abu Dhabi to realize the envisioned clean tech neighbourhood (Schilliger, 2012). We witness Mubadala's exercise of power over the assemblage by prioritizing its development agenda. The two avenues of purpose and power (Stone, 2005, p. 325) in the case of the Swiss Village were ultimately not aligned, eroding the original purpose of the collaboration.

The Swiss companies with experience in Swiss Minergie building standards envisaged a demand for their expertise locally and the SVA played a role in bringing Swiss clean tech firms together through its public relations campaign (Interviewee U, Former Member Swiss Cleantech Association, 2011). However, US-based LEED certification gained popularity over other certification systems eventually. LEED's popularity in the UAE over time is reflected in the UAE recently ranking 8th highest in the world for having the total number of LEED-certified and registered projects (Long, 2015). What was hoped to be a common agenda item, did not yield the desired outcome for the Swiss firms.

We garner some interesting lessons on power, and how it did not evolve into a thriving governance process in the case of MC's Swiss Village. In comparison to IRENA which was backed by the highest echelons of the government, the plans for the Swiss village were relatively ambitious at the time given that MC's infrastructure was still very much a works-in-progress. MOUs, the preferred partnership mechanism, and medium for policy mobility, did not succeed in keeping all the partners committed to the project over the long-term. The timing of the Swiss Village was also crucial given that it coincided with the oversupply of real estate in Abu Dhabi's housing and the scale-backs faced by Masdar in 2010 (Dempsey, 2014; Goldenberg, 2016). Finally, as noted above, the Swiss partners had hoped for the transfer of Minergie standards to Abu Dhabi which could potentially have increased the potential for subsequent policy transfer processes. The failure of the Swiss Village explains the limits to collaboration and solutions-driven learning among renewable energy stakeholders, impacted by authoritarian politics and unequal concentrations of power prevalent in the local context. This mirrors McFarlane's (2009) notions of how power can carry on uncontested among actors in a network, with Mubadala's power being uncontested in the Swiss Village example, whilst the Swiss partners were unable to pre-empt local institutional and political structures, that Peck and Theodore (2015) noted were sometimes influential in mobility processes.

However, the story of evolving power around energy initiatives at Masdar reveals that some assemblages particularly with large multinational private sector corporations such as GE and Siemens have met with more success than the Swiss village.

### 7.3.7 Community-Focussed Outreach by Masdar, Siemens and GE

Siemens and GE have long-term infrastructure commitments at MC dedicated to solving energy efficiency and are partnering with Masdar across multiple initiatives with the potential to generate both housing and employment opportunities in the future. The locally-housed Siemens and GE-led innovation centres have aided Masdar's goals to attract start-ups, SMEs and the wider community of visitors and potential future residents of the city. In addition, the partnerships have spurred jobs creation, technology, research and innovation and gender equality whilst also expanding the companies' brand image and profits regionally (Capital Business, 2015; Hamid, 2014).

The Siemens partnership has steadily grown across a range of initiatives at Masdar (Future Build, 2011). Siemens tackles demand management of resources at MC through jointly developed smart grids across the city and manages an advanced energy distribution system across different types of buildings (Ahmed, 2011). The partnership simultaneously generated over 2000 jobs, provided knowledge and technology transfer and research and development that supported the Abu Dhabi government's economic diversification priorities (Siemens, 2011). At a higher level, the partnership serves the UAE's federal relationship with Germany and contributes to the UAE's green growth agenda. Similarly, we witness avenues of power sharing between Siemens and MIST that have together ensured grants, scholarships and training opportunities. The Siemens building at MC is a visible landmark, a 3-Estidama pearl rated building and a physical and visible testament to the company's long-term collaboration with Masdar (Future Build, 2012; Mazzoni, 2014; Siemens, 2011).

The GE Ecomagination Centre showcases large-scale innovation initiatives attracting strategic partners and visitors from the general public that has contributed to sustainability awareness in Abu Dhabi (Mazzoni, 2014). The location of GE's Ecomagination centre in Masdar's Incubator building has potential to increase future tenancy opportunities given GE's respected brand and reputation for specialist knowledge in the region (Hamid, 2014). GE's President and CEO for the Middle East, commented on the importance of the UAE to the company's growth in the region given that regional headquarters are located there, with offices in Dubai and Abu Dhabi

(Capital Business, 2015). However, if we look at these strategic partnerships from a critical perspective, we must recognize the negative implications associated with power wielded by multinational corporations such as Siemens or GE, who possess ample resources and knowledge of key markets and sectors enabling them to strategically market *their* products and services. One of the dangers of Masdar placing much importance on GE and Siemens products, human capital and services is that other firms, particularly SMEs and small firms from the local private sector may be adversely impacted by these high-level partnerships that place large corporations in a strategic position.

Much like Siemens, GE has collaborated with a range of diverse initiatives related to Masdar such as the Masdar Institute's Biofuels Consortium, sponsorship of leadership training programs and internships that encourage women's participation and workforce diversity in energy and sustainability through its commitment to Masdar's WiSER initiative, aimed at increasing education, training, employment and knowledge exchange opportunities for women (Masdar, 2016d). GE's investment in Masdar's second clean tech fund was $25 million out of a total value of $290 million signalling diverse areas of collaboration between the partners (Hamid, 2014). We witness GE's wider politically-centric investments in the local context. The Ecomagination centre in MC complements GE's partnerships across energy, aviation, power, water, healthcare and lighting in the UAE with a number of vital partnerships in the area of internet technologies for energy, aluminium and aviation with Dubai-based entities (Capital Business, 2015). In addition, a high-level partnership between GE and Mubadala (Masdar's parent company) has been in place since 2008 (Mazzoni, 2014). Beyond the UAE, Saudi Arabia is also home to a large GE presence in terms of human capability, technology centres as well as Saudi-based Innovation centre. Thus, when we consider the location of the GE Ecomagination Centre in MC, it is a small part of a much wider regional presence that GE maintains across several countries in the Middle East region in nations such as Egypt, Qatar, Saudi Arabia, the UAE and others across corporate leadership, corporate responsibility, human development, gender development and research across diverse sectors such as healthcare, engineering and energy (Capital Business, 2015).

We witness a multi-faceted approach to partnership in the case of GE, Siemens and Masdar toward wider national initiatives such as the UAE's Vision 2021 (Capital Business, 2015). Policies, knowledge and the solutions, products and services associated with the collaboration are reminiscent of what Peck and Theodore (2015, p.225) call "*fast policy transfer*". The speed

of transfer of ideas to Masdar is aided by Siemens and GE being involved in high level partnerships with political importance and simultaneously backed by the strength of their global brands (General Electric, 2008; Siemens, 2011).The Siemens and GE initiatives reflect ways in which power sharing between elite stakeholders is increasingly taking place in the local context, but also reflect power being retained among certain high level stakeholders which could monopolise certain business streams in the eco-city. On a positive note, such high level multi-scaled private sector partnerships between these multinational firms and Masdar produce outputs that are solutions-driven and replicable outside the boundaries of Masdar (Capital Business, 2015). Thus, renewable energy-related knowhow transferred to Abu Dhabi is able to transcend physical space. Mobility theorists in particular advocate for policies to be mobilised at multiple scales. The strategic resource mobilisation of Siemens and GE-related policy transfers within the wider Gulf region have the potential for positive economic and social outcomes. However, we must recognize wider political nuances that also impact which strategic partnerships are prioritised over others, given that the Abu Dhabi government has wider economic diversification interests that overlap with the economic rationale of these multinational firms.

It is important to situate Abu Dhabi's power in the renewable energy space from a regional perspective, in keeping with assertions from mobility theorists on exploring assemblages in a wider context of regional and global factors. At the outset, Abu Dhabi is not the only contender in the space. All the GCC countries made a general commitment to reduce carbon emissions reflecting competition in energy diversification arena.

### 7.3.8 Regional Developments in the Field of Alternative Energy

The UAE, Saudi, Qatar and Kuwait committed to renewables projects that will form part of their energy mix (Saadi, 2014). Saudi Arabia has released tenders for two 50 MW solar plants. Qatar Solar Energy has also embraced foreign ventures to harness solar energy (Avlonas, 2017; Halligan, 2016). In addition, Qatar has initiated demand management programs through its national Tarsheed initiative aimed at reducing electricity consumption and carbon emissions, and a similar program to Abu Dhabi around building green schools (The Peninsula, 2017). Regionally there is growing commitment to renewables and green building practices which signifies knowledge creation as a result of the growth of jobs, demand for foreign consultants, local training programs and awareness among diverse stakeholders in the region.

In the area of green building, Saudi Arabia made some positive traction with its Green Building Forum announcing that the Kingdom owns 15% of the total green buildings in the Middle East. In Qatar, the Qatar Foundation a semi-private non-profit organization has been driving the creation of LEED buildings in Education City and has committed to preservation of historic neighbourhoods (Qatar Foundation, 2015). These regional developments taking place at various scales exist in parallel to some sustainability initiatives we witness in Masdar, and the wider Esidama programs of the UPC.

The surge in energy conservation practices particularly through green building initiatives is also a factor of the mobile change agents that work across different Gulf states (Interviewee Z, Sustainability Professional, 2017). This can have implications on competitive bidding among global firms, the increased movement of change agents in the region, increases in the number of trained sustainability professionals and ultimately, improved sustainability knowhow and standards across the region.

However, tensions linked to political power also abound in the region that contribute to governance around energy being contested. Regional political differences such as Qatar's unwillingness to export gas at reduced cost to GCC neighbouring states contributes to the politics around energy that Abu Dhabi faces going forward (Krane, 2014). Given the 2017 political standoff between Qatar and other GCC nations, external politics could further impede regional relationships around sustainability. Another critical issue Halligan (2016) has discussed, is the focus on varying business cases in the region around energy saving. For example, UAE villas are subject to demand management strategies and operate in an environment where greater regulations, embrace of global standards and institutional support exist compared with other locations in the Gulf (Interviewee Z, Sustainability Professional, 2017).

New funding resources are required to expand renewables across the GCC given the growing demand. Toward this end, instances of power sharing are taking place in the late rentier era at the regional, federal, emirate and the institutional level in relation to energy. This is evident in the formation of a joint Gulf power grid that has led to savings of $3 billion in investments and $330 million in operating costs and fuel (Halligan, 2016). However, energy is primarily state controlled in GCC nations preventing private sector utility companies from displacing government monopolies. Government companies are still handing out subsidies which are not always beneficial in the long term. We also witness how attitude change toward energy demand

management is more government driven, partly linked to the continued dependence on oil both in Abu Dhabi and the wider region.

Having considered the politics of energy, addressing transport issues is another element of Abu Dhabi's sustainability journey. The nexus between energy and transport (particularly public transport and energy efficiency options) is relevant toward lowering the emirate's carbon footprint. In the section below, I consider how power is manifested in Abu Dhabi's transport sector, and the unique role of Masdar, and the efforts of the UPC and the DOT toward reducing car dependence.

**7.4 Evolving Manifestations of Power in Abu Dhabi's Transport Sector**

Car dependence, inadequate accessibility to public transport and divided spaces as a factor of excessive development have resulted in the social and economic exclusion of some groups. Access to infrastructure in general increases ability for excluded groups to be connected to jobs and income and opportunities for upward mobility. Graham and Marvin (2002, p.195) note "*A person's or groups' ability to construct their identity, and to exercise social and economic power, thus derives very strongly from the degree to which they can mediate their lives with infrastructure and so extend their influence over space.*" The rapid urbanization of Abu Dhabi after the discovery of oil coupled with oil wealth gradually converted Abu Dhabi into one of the most car dependent cities in the world. Subsidized fuel has played a role in exacerbating car dependence. The government has recognized the link between addressing car dependence and the related energy savings and has systematically increased the price of fuel to market levels, though the benchmarks used by the Ministry of Energy are not publicly available (Graves, 2017c). The dualities of power in the transport sector have plagued the government's response to decreasing Abu Dhabi's dependence on cars.

The economic potential of the transport sector, has been recognized by the Abu Dhabi government. Sectors such as aviation and the ports have been lucrative economic diversification sectors (Oxford Business Group, 2016b; Simpson, 2017). Similarly, Abu Dhabi has capitalised on transport feasibility studies that allow it to gain soft power, such as its plans to introduce Hyperloop technology in the emirate by 2020 (The National, 2017b). Wider GCC rail networks plans were on hold as neighbouring Gulf nations fell behind on their rail projects. In the interim, Abu Dhabi's DOT focussed on testing hyper loop technology (Reuters, 2016).

These developments reflect Abu Dhabi's power and resource capacity to focus on testing unproven technology whilst large regional infrastructure commitments are put on hold.

One aspect of evolving power structures in the area of transport has been the continuous changes in the transport regulatory system over time. The natural inter-linkages that the UPC and DOT shared over planning and transport encouraged joint initiatives. Whilst creating the emirate's 20-year transport plans, the DOT created a joint committee with the UPC, DMA, regional municipalities and MIST to oversee the plans' economic feasibility, and to ensure it was both culturally and physically accessible (Abu Dhabi Department of Transport, 2015). The transport sector has witnessed assemblages between the DOT, UPC, DMA TransAD, Masdar, the private sector and civil society over time. Dempsey (2014) noted outcomes of joint decision-making around locating and aligning metro systems, strategies to encourage usage and efforts to limit the inefficient expansion of roads and infrastructure. We note instances of power sharing in the former examples, and also power centralization over some aspects of transport in Abu Dhabi noted in the Department of Municipal Affairs and Transport's regulatory power over public transport, traffic centres, and logistics facilities across the emirate (The National, 2016b).

As transport assemblages in Abu Dhabi expand, this growth is also accompanied by unique challenges. The head of the DOT's Public Transport Planning Section Abdulla Al Mehairbi noted the tensions that arise when interests of powerful stakeholders collide such as those between government agencies and developers and the mind set of residents who need to be convinced of the benefits of public transport. He noted the difficulties government agencies faced in convincing developers that public transport and connections to amenities had on land values, particularly in cases where developers owned land. Al Mehairbi noted, *"people put their businesses first. For example, if we go to developers and ask them to spare a piece of land to construct a metro station, it takes them a lot of time to think about it, and sometimes they don't agree to it."* (Public Sector Excellence Magazine, 2015b, para 8). The power wielded by developers over land in Abu Dhabi is a contested issue that impacts not only transport, but also housing given the overlaps between the issues, that we will encounter further in the chapter.

Similarly, during the implementation of development plans under Plan 2030 not all land owners benefited equally from proposed development projects. The negotiating role of the Crown

prince and the ruling elite were key to stemming conflict and keeping disgruntled parties satisfied. During the planning of the new Etihad railway, UPC planners faced challenges when the proposed route overlapped with heritage farms, however even complex land use disputes and negotiations were possible as long as the highest echelons of power from within the royal family were involved in mediating disputes (Dempsey, 2014). Thus, in some instances, authoritarian power proved to be beneficial to the aims of the UPC allowing the agency to overcome hurdles around eminent domain.

In the area of transport, we note greater participation in joint decision-making among assemblages of government agencies around transport projects including increasing involvement from the private sector and civil society at multiple scales, but we have simultaneously witnessed contestations around land for transport planning and willingness to embrace public transport. Transport emerges as a contested issue where the social divisions within Abu Dhabi are increasingly evident as we shall explore further.

### 7.4.1 Transport and Inequality in Abu Dhabi

The societal divide in the transport sector in Abu Dhabi is particularly evident in bus use (Qamhaieh and Chakravarty, 2017). Buses are the main mode of transportation by residents who are unable to afford cars or taxis (Mascarenhas, 2012). It is hoped that with the launch of metro and rail, public transport will be used by wider segments of the population beyond just low-income segments (Ochieng and Jama, 2015). In addition, during fieldwork I observed that, most pedestrians in downtown Abu Dhabi during rush hour and on weekends, tended to be non-Emiratis from middle and low-income expat groups (Mascarenhas, 2012). Gale (2009) and Hammoudi et al. (2013) describe the recent increase in pedestrian fatalities in the city. A 2013 traffic study revealed that the majority of pedestrian deaths in Abu Dhabi as a result of road and traffic accidents are from non-Emirati groups (Hammoudi et al., 2013). The societal disparities associated with income inequality pervade such trends, and point to the need for a multi-pronged set of policy solutions around both urban design and transport-oriented development by the UPC and the DOT. The DOT is tasked with providing services to the diverse population segments that rely on public transport. For example, it has worked to offer women access to gender specific taxi options in the form of pink taxis driven by female drivers controlled via a central tracking and dispatch system to increase the safety of female passengers (Abdul Kader, 2010). Such initiatives point to greater attempts to integrate the needs of local

women in Abu Dhabi. Part of the rationale for the program was rooted in safety vulnerabilities that female residents and visitors faced in riding male-driven taxis (The National, 2010). There is evidence of oil wealth being invested in state-of-the-art smart transportation technology, this however benefits the population segments able to afford cars and have access to smart phones (Ruiz, 2014a).

Over the years, Abu Dhabi's oil wealth allowed the DOT to keep the bus fares extremely low, which did not even cover the operating costs. City bus fares were doubled in 2012, escalating on a per-kilometre basis on regional and intercity services. By 2014, the number of bus journeys undertaken by commuters had fallen by 21% despite the addition of 15 new routes to the bus network and an increase in the availability of peak-time buses. Traffic experts in Abu Dhabi began to realize the importance of pricing mass transit in line with end users' affordability (Ruiz, 2014c). In light of the hiked bus fares the operation of illegal private vehicles was exacerbated, which further hurt bus transport usage rates (Ruiz, 2015). This is in line with arguments by Lehman (2014, p.27) who calls for "*affordable and achievable*" multi-dimensional sustainability solutions noting the importance of adapting them to local needs. The challenge of balancing operating costs and customers affordability of fares continues in the present. In 2017, Abu Dhabi's Executive Council increased by Executive decree the minimum taxi fares to AED 12 with additional reservation fees (Agarib, 2017). Such measures tend to disproportionately impact middle and lower income segments of the population who cannot afford their own cars. These groups do not have a voice in price decisions, and price increases could push them toward other options such as ride sharing.

When the regulatory body TransAD (now known as the Integrated Transport Centre) established by the DOT, overhauled the old taxi system in 2012 and replaced them with state of the art Nissans and uniformed, licensed drivers, over 8,000 taxi drivers from the old taxi system were given the option of joining the new fleet after learning English or Arabic (Ahmad 2014). However, while Emirati owners of older taxi companies were compensated for the loss of their taxi services, each receiving Dhs. 1000 a month for 25 years, the non-Emirati taxi drivers, who had also lost their livelihoods, received no similar compensation (Emirates 24/7, 2010). Here we witness, some limited but unequal concessions made to accommodate drivers of the old taxi fleet, with Emiratis receiving a distinct priority. The rationale of the transport agencies was to promote higher standards and place drivers through a vetting system (Ahmad,

2014). However, if viewed from another lens, one could argue that the government has succeeded in monopolizing aspects of transport through centralizing the taxi service. This has implications on market-driven transport, which ordinarily reflects power sharing and can include ride hailing services. However, Abu Dhabi's ban of Uber suggests top-down power is still in place. The contestations between the Abu Dhabi transport regulatory bodies and Uber reflect the dualities of power that pervade market-driven transport initiatives (CNBC, 2016). Similarly, mobility theorists such as McCann and Ward (2015) have considered the exercise of power and its impact on either causing or mitigating inequalities, given that power can be contested or not, among actors in a network.

Whilst modern advances in technology have made ride hailing services such as Uber and Careem (a similar local service) popular in Dubai, in Abu Dhabi, contestations between regulators and Uber around licensing regulations has left the space fragmented (Deulgaonkar, 2017). From the perspective of regulators, concerns related to price-setting, quality of vehicles and drivers, safety of passengers, the use of licensed cars and restrictions on pick up and drop off points, were a priority and Uber and its drivers were expected to operate within the regulations (CNBC, 2016). On the one hand, Abu Dhabi's transport authorities could offer additional options and balance competition in the transport sector in the future. On the other hand, Uber and other ride-hailing services can be seen to encroach upon the government's market share, where government taxis have long held a monopoly in this space. The banning of Uber in Abu Dhabi represents how popular global transport trends around digitally-linked mobility have not been adopted efficiently in the local context. Uber and Careem potentially offer new transport options to diverse groups of stakeholders in Abu Dhabi, as they have done in Dubai (Deulgaonkar, 2017). We are privy to the differences in centrally-controlled and market-driven transport solutions embraced by the two emirates.

From the discussion above, it is evident that the UPC and DOT must contend with the inequalities that pervade the local context. As government agencies balance the demand for transport options with the challenges that urban sprawl and low-density housing place on transport services, we realize the inherent overlaps between housing and transport that exist. This leads us to understand power contestations around housing.

**7.5 Contested Power around Housing**

Abu Dhabi's excessive development can be attributed to a host of development companies that initiated a number of mega-scale high end developments. These often conflicted with the building blocks of Plan Abu Dhabi 2030 (Morgan, 2015b). Power has not evolved much in the realm of real-estate, with the vast majority of developers being state-owned and most real estate concentrated in the hands of a few master developers often with ties to key members of the royal family (Davidson, 2009a; Oxford Business Group, 2016a). An example of the blurred boundaries between the state and developers is evident in the 2010 bailout of major developer Aldar by the Abu Dhabi government to counter economic difficulties and market pressures (Fitch, 2013). Another developer Sorouh has a large number of shareholders, however it is believed to be under the patronage of the royal family (Davidson, 2009a). The role of informal social contracts at play between developers and the UPC is reflective of *wasta* (Arabic for influence) as noted by Barnett at al. (2013) who contend that *wasta* is the invisible hand resolving conflicts and enhancing individual interests in the local context. Such allegiances and the strategic distribution of power nurtured in modern Abu Dhabi are a testament to the fact that power is concentrated in the hands of a few elites. Power struggles amidst networks of elites from the royal family extended to their interaction with the UPC in the domain of development approvals allowing numerous developments to garner approval, even though they conflicted with aspects of the UPC's agenda (Dempsey, 2014).

*7.5.1 Inequalities Related to Housing in Abu Dhabi*

Newer forms of power sharing are possible in Abu Dhabi as the purposeful ordering of real estate is increasingly conceptualised as being income generational. Davidson (2009a) asserted the value the additional revenue stream of domestic investment that real estate provided particularly after the 2005 government decision to allow 99 year leases on foreign ownership. However, power sharing is limited, as pointed out by Barnard (2014) who noted that the law permitted Emiratis to own freehold property anywhere in Abu Dhabi, nationals of Gulf states were allowed to own property in designated investment zones, whilst all other nationalities were granted the right to buy the equivalent of long term leases in multi-storey developments, excluding the land itself, in specified investment zones. Owners in Abu Dhabi could only buy rights to use property owned by another person/entity for the duration of 99 years, without

much clarity on ownership past the 99-year period (Barnard, 2014). Such particularities of housing are indicative of the state and its authoritarian political system that is shrouded in privacy. Yet, the state has strategically expanded opportunities for income generation for local land owners and developers through real estate laws designed in their favour that further exacerbated the societal divisions and wealth differentials. Cresswell (2010) notes the inter-twining of physical and social mobility that empower some groups and disregard others, drawing attention to the importance of considering underlying meanings, political and social sensitivities that characterize mobility. The population imbalance in Abu Dhabi is a factor that contributes to the mobility of some segments and immobility of others in relation to housing.

*7.5.1.2 Expats Face Housing Inequalities Despite Strength in Numbers*

Given the population imbalance with expats outnumbering Emirati citizens by over 80% of the total population (Go-Gulf, 2016), the inclusion of expats into the emirate's housing equation becomes all the more vital. The Statistics Centre Abu Dhabi (2016) has estimated the total number of expats in Abu Dhabi to be 2.2 million while the Emirati population was 536,741 according to 2015 demographic indicators. Thus, there is an economic and social rationale for pursuing middle income housing with the greatest demand coming from expat families in Abu Dhabi. Flanagan (2015) noted that as of 2015, only 4% of Abu Dhabi's housing stock was made up of homes worth less than $1 million signalling the imbalance in the housing market. Davidson (2009b) describes the inflated accommodation costs fuelled by the demand created by the increasing expat population and a shortage of housing stock in the capital. The housing shortage was particularly felt in housing segments at the lower end of the market that were impacted by the government's annual rent increases of 5% that property experts predicted were unsustainable in the long term (Gulf Business, 2014; Fahy, 2015b). Norwood (2015) cites an example of how staff at Abu Dhabi's Cleveland Clinic were unable to find owner-occupied and rental housing due to the acute housing shortage with unaffordable rentals, incommensurate with their earning potential.

One of the outcomes of the high rentals, and lack of affordable housing was the flow of many expatriates to Dubai where both rental and sale prices of housing were lower. Thus, the mobility of expats in search of housing was higher compared to Emiratis who were eligible for state-sponsored housing. However, a top-down mandatory policy by the Abu Dhabi Government that all public-sector staff in Abu Dhabi with an accommodation allowance were required to

reside in Abu Dhabi changed the housing situation (Norwood, 2015). The policy created an immediate demand for housing in Abu Dhabi, and with it, housing prices further increased.

Tatchell (2009) describes how expats in Abu Dhabi have had to adopt local codes and standards, and ensure they live their lives within the limits of the state. Her words reflect the temporary nature of expat existence "*Most of us were only guests in someone else's country. There could be no gentle criticism or the suggestion that there might be room for change*" (Tatchell, 2009, p.16). Gardener's (2008) and Vora's (2013) work on expats in Bahrain and Dubai respectively, reflect parallel sentiments where they argue that expats there face vulnerabilities unique to their position in society, coupled with complexities of being associated with multiple identities and locations.

Unnikrishnan (2017) further puts this in perspective describing how the low-income segment of the market has been adversely hit, evidenced by the growing demand for bed space, and bunk beds in shared rooms. Beyond downtown, many new communities that offered affordable housing were unconnected from vital community amenities and facilities (Flanagan, 2015). Societal hierarchies among expats further determined how housing and space are characterised at the lower levels of the housing spectrum such as preferences for Filipinos or women only for some housing options. The temporary nature of expat livelihoods to employment uncertainty which has meant short-term living situations for some, whilst other expats are chained to a vicious cycle of debt and poverty in Abu Dhabi (Unnikrishnan, 2017). Ahmad (2015a) notes urban issues such as illegal sub-lets, overcrowding and the subsequent public health and safety issues that were not systematically tracked down upon by authorities. Tatchell (2009, p.16) describes the societal hierarchies aptly, "*a system in which people were valued differently by race as well as profession. The hierarchy was unspoken but ritually observed*". We are drawn to the lack of mobility of some lower-income expats, many of whom are steeped in debt, who have no option but to settle for low-quality, often illegal housing options. Dempsey (2014) explains that the issues of being 'temporary guest workers' also plague higher income expats paid generous salaries, who still face uncertainties in their housing options given the uncertainties in the job market. Thus, for all expats, unlike Emiratis, housing and employment are critically tied together along with the vulnerability of impermanence. Employment opportunities are in turn impacted by economic factors including fluctuating oil prices in a pattern of delicate dominos. For example, the loss of jobs in the sector had ripple

effects on housing, given the increase in living costs across all income segments increasing demand for affordable units by higher income segments (Buller, 2017; Kerr, 2017).

The discussion that follows sheds light on the fact that housing is a vital part of Abu Dhabi's wider economic diversification strategy, given its inherent link to employment particularly in the case of expats. Many large scale commercial enterprises pivotal to economic diversification need to attract professionals and other staff going forward, particularly given that there is still a short supply of Emiratis who possess the necessary skills, qualifications or training to independently manage the long-term diversification plans (Davidson, 2009b; Tatchell, 2009). The lack of affordable housing can have ripple effects on other economic sectors if housing is not priced appropriately and targeted at the diverse population segments of Abu Dhabi. Toward this end, the government has unveiled a number of solutions.

### 7.5.2 Empowering Expats with Housing Programs: A Form of Power Sharing

In 2010, the UPC unveiled a middle-income rental policy, followed by a discussion toward a mandatory affordable housing policy in 2016 (Fahy, 2015c; Ramavarman, 2010). The introduction of inclusionary zoning in Dubai and Abu Dhabi, re-introduction of rent caps, and joint housing and transport solutions that allow people in affordable housing neighbourhoods to access transport links are solutions that shift the balance of power in favour of low and middle-income home seekers. Most affordable housing for expats particularly in newer communities is located far from downtown Abu Dhabi, where public transport does not extend. Some examples are Khalifa B, Mohammed Bin Zayed and Mussafah (Flanagan, 2015; JLL, 2015). Developers are attempting to attract middle-income owner expat occupiers through flexible payment plans, reducing unit sizes and applying standardised units to save costs (JLL, 2015). These trends represent developers changing their former business models to incorporate the needs of new stakeholders that they previously had not addressed.

In 2016, the UPC consulted with developers in the creation of a new affordable housing policy and a housing manual that will impact affordable housing allocations in all new master developments. Abdulla Al Sahi, Executive Director of the Planning and Infrastructure Sector at the UPC noted: "*We are not saying affordable housing needs to be full-fledged or high, but there should be a minimum percentage which will be announced after the manual is being approved.*" (Deulgaonkar, 2016, para 8). By the end of 2017, the UPC had not yet announced

what the minimum percentage would be, indicative of the ongoing debate and negotiations around affordable housing in the interim. The UPC's efforts to craft a workable affordable housing policy despite the conflicts associated with vested interests in the local context, provide evidence that the UPC has made the crucial link between economic diversification and the housing needs of the labour force that support it. The power sharing between the UPC and developers sheds light on the fact that the issue of affordable housing does not exist in a silo, rather housing has distinct overlaps with the economy, financial services, transport, sprawl, and infrastructure planning impacting other projects that contribute to Abu Dhabi's growth.

*7.5.2.1 Mandatory Decree toward Provision of Housing for Low-Income Workers*

At the opposite end of the housing spectrum, there existed a need for affordable housing given rents for a four-person shared room were in the range of Dhs.2000-3000 per month, beyond the affordability of many low-income workers. A new affordable housing decree made it mandatory for companies with more than 50 workers to provide free housing to workers earning less than Dhs.2000 per month. The government sets standards on the location of accommodation, hygiene and medical service provision, availability of safety equipment and protocols, and has committed to undertaking regular inspections to ensure compliance. It has also committed to taking legal action against firms that failed to adhere to the regulation (Fahy, 2016). While this is a policy with potentially positive outcomes, many end-users are still bound to employers in the vicious cycle of the *kafala* sponsorship system where passports are confiscated by employers, wages withheld amongst other workers' rights infringements despite reforms to labour laws in the UAE (Human Rights Watch, 2015; Khan, 2014). Thus, power is still in the hands of employers with their own vested interests in preventing workers from absconding. Given the lack of transparency around compliance, the actual implementation of the housing policy in practice may be difficult to gauge. It is possible that some companies may find ways to evade the policy, although large employers in Abu Dhabi are better positioned to absorb the housing costs associated with the decree and can negotiate viable rates with developers, whilst smaller employers are apt to be more challenged in this regard (Fahy, 2016).

We witness ways in which different stakeholders in the local context are impacted by the lack of affordable housing, and how new solutions are being implemented. When considered from a post-colonial lens, the temporary identity that accompanies these low-income workers, bondage into the *kafala* system, lack of representation, low income and nationality-based

marginalisation from society, are forms of existing oppression, linked to Abu Dhabi's history of dependence on foreign labour from abroad. The solutions to offer company-sponsored housing have implications on power, given that the government is empowering low-income workers with access to mandatory company-sponsored housing, whilst simultaneously preserving the power hierarchy between the employer and employee, and simultaneously creating an income stream for developers who will build the accommodation. The unequal power relations the lower-income expat groups are immersed in resemble the old colonizer-colonized dichotomy.

McFarlane (2009) argues in favour of considering multiple conceptions of power as part of understanding mobility. The discussion of housing challenges faced by the expat community is linked to the communities' temporal existence that in turn impacts the contested nature of the housing space.

Power-sharing solutions are also evident in areas of housing with income-generational potential, such as the empowerment of real-estate investors with consumer protection options.

*7.5.2.2 The Empowerment of Investors as a Housing Solution*

From the government's perspective, power-sharing is evident in a new legislation related to the protection of investor rights with accountability and transparency, which served to re-establish trust between the UPC, Municipalities, Department of Municipal Affairs (DMA), owners, occupiers and developers to solve the housing imbalance. The decree, passed in 2015, aimed to protect investor rights and encourage foreign investors (Rahman and Diaa, 2015). Healey (2004) argues that different strategies are required towards cementing transformative governance such as mobilising like-minded actors around mutual discourses in a bid to break away from problematic structures.

A former banker in Abu Dhabi explained the need for more escrow account, more transparent registration of properties and ownership titles in a market heavily influenced by a few wealthy developers (Interviewee H, former Banker, Local Bank, 2012). Prior to the issue of the 2015 real estate law, construction delays, high management fees, poor quality construction and the failure of government agencies to issue final development permits contributed to delays in the launch of properties. Over a hundred buyers filed lawsuits in late 2011 demanding refunds from

developers on stalled projects scheduled for completion in the newly created free zones. The issue escalated mainly due to the lack of expertise among developers and government agencies in being able to handle the magnitude of development projects within the stipulated timelines, leaving investors and buyers, without investor protection (Brass, 2011). Healey (2004) and Sandercock (1998) are proponents of learning from constraining practices that in turn call for the open negotiation of values

The 2015 decree attempted to address these issues by safeguarding the interests of developers and investors in the long-term. The purchase and sale of properties would now be under government purview, with a land register monitored by the Department of Municipal Affairs (DMA). The law also had provisions for owners' associations that held title to common parts of the development, however in keeping with nuances of the local context, the DMA held discretion over the practicalities of the owners' associations. The DMA's power also extended over developers, with the ability to cancel real estate projects in cases where development had not begun within six months of the stated period (El Tahir and Bowman, 2015).

Developers were mandated to create project guarantee accounts documenting all buyers' payments under the law. The decree enabled greater transparency of data and matching payments with development progress to safeguard investor interests. Some large developers such as Aldar welcomed the decree given the potential to spur further investment (Rahman and Diaa, 2015). However, the law also had adverse impacts on developers who fell behind on construction (El Tahir and Bowman, 2015). Despite its positive features, the law has been critiqued for a lack of clarity around whether investors can address problems such as breach of contract with authorities over uncompleted existing projects, or whether the law is applicable to future projects (Rahman and Diaa, 2015).

Benson (2009) cites soft transfers working within informational networks among like-minded entities as a growing phenomenon. Similarly, the unique assemblage of the DMA, developers and investors reflected new avenues of information and empowerment of new stakeholders. From McFarlane's (2009) perspective the assemblage concept encompasses power existing as a plurality versus being centrally controlled or distributed equally, yet the authoritarian political context within which the real estate decree operates signals that all stakeholders are subject to top-down changes to the law.

Jessop (2003) notes reflexive aspects of horizontal self-organization among mutually interdependent actors on collaborative projects. We witness this in the example of the real estate decree despite it being government-driven. The solutions driven approach adopted by Healey (2004) and Jessop (2003) help understand key elements that increase the scope and contribute to the longevity of the assemblage, or conversely, the factors that contribute to the failure and demise of the assemblage. The real estate law became a power-sharing mechanism for lenders, potential buyers and developers to build trust, share project data and simultaneously understand end-users' needs. A positive outcome was the creation of a special free zone offering mortgage providers remedies in the case of borrower default and allows for smoother purchase and sale processes – the Abu Dhabi Global Market (ADGM) (Brass, 2011). In particular, the two avenues of purpose and power (Stone 2005, p.325) have been aligned by these disparate actors representing new avenues to drive a more transparent and buoyant real estate market.

### 7.5.3 Dualities of Divided Space: Tradition versus Modernity

Housing in Abu Dhabi is sub-divided across class, social power, ethnicity and nationality, with separate areas catering to Emiratis and expatriate residents (Tatchell, 2009; Mascarenhas 2012). Ouis (2011) put this in perspective describing the contrast between Emirati neighbourhoods and international-oriented, liberal developments with bars and nightclubs that were strategically located in separate areas of the city such as the newly developed islands. These areas allowed wealthy expats and mostly Emirati male citizens opportunities to explore liberal moral codes beyond their Islamic heritage and norms, part of the legacy of globalization. Thus, we are increasingly aware of the global-local binary, and cultural and political factors that come into conflict with policies that favour modern housing and leisure developments, an anomaly in the local context. Khalaf (2001) considers the cultural perspective of local communities that remain self-restricted, particularly Emirati neighbourhoods.

Having considered the issues associated with inequality faced by expats, let us understand how Emiratis culture, society and traditions are empowered through the steady expansion of Emirati housing and neighbourhoods.

### 7.5.4 Emirati Neighbourhoods – A Symbol of State Legitimacy and the Social Contract with Citizens

What is evident in Abu Dhabi is that existing power structures continue to be steeped in the rentier social contract despite the move toward economic diversification. This has determined why certain housing-related assemblages are created, and empowered with what McFarlane (2009, p.16) has described as the "*capacity to assemble*". In lieu of the state's rentier contract with citizens and importance of housing provision to political legitimacy, Emirati housing and the creation of Emirati neighbourhoods emerged as an exercise in nation and identity building since the segregation of spaces for Emiratis helped preserve their cultural traditions and way of life.

Under the terms of the rentier bargain, the government delivers free plots of land to Abu Dhabi citizens (Tatchell, 2009). However, the distribution of plots of land does not always meet the needs of all Emiratis. There are instances of many Emiratis who have offered the free land back to the government in exchange for a constructed house (Abu Dhabi Housing Authority, 2016). Thus, Emirati housing proved to have its own set of complexities. For example, Emiratis prefer to live, by and large, in close-knit family groups with private spaces for women and children. Beyond just community spaces, housing placed in close proximity fostered the social organization of tribes and families (Larry Beasley and Associates Planning Inc., 2015). Tatchell (2009) pointed out that many Emiratis have second homes in remote areas and shuttle between them. This is often the case, since the prevailing Islamic custom that allows up to 4 wives has allowed Emirati families to expand in size (Tatchell, 2009). The UPC and Abu Dhabi Housing Authority (ADHA) are tasked with preserving such long-standing family and tribal allegiances. Those Emiratis most in need of state housing receive it first, whilst others are put on a waiting list (Abu Dhabi Housing Authority, 2016).

Urban-tribal divisions and regional differences across the GCC (see Kinninmont, 2015) along with the complexity of a large stateless population are contributing factors to fragmented local populations in the GCC. Although these stateless populations known locally as "*bidoon*" (Arabic for 'without') have been born in the GCC they have limited access to public services, jobs, education, housing or healthcare on account of their statelessness. Over time although these issues have gained media attention, the divisions are still a contested issue, with positive outcomes from some stateless citizens who gained local citizenship (Reuters, 2012; Zacharias,

2012, para 1). These persisting inequalities shape the way sustainability policies are interpreted and implemented regionally, including Abu Dhabi where the balance of power favours local citizens. These particularities of the local context encourage over-reliance on the government to solve the housing dilemma.

Emirati housing remains a priority as witnessed in the aftermath of the Arab Spring (Abu Dhabi Housing Authority, 2016). Amidst political uncertainty in the wider region, Abu Dhabi's National Housing Program committed to build over 13,000 villas for Emiratis and creating mixed use communities (Abu Dhabi Urban Planning Council, 2011). Whilst the government re-evaluated spending in other sectors, it increased spending on Emirati housing despite the population being balanced in favour of expats (Gulf News, 2017b).

*7.5.4.1 Shining New Emirati Cities as Cultural Strongholds of Political Legitimacy*

A factor that encouraged the popularity of Emirati communities to occur was their unique branding. Dempsey (2014, p.38) described a trend of branding developments toward Emiratis through representations showing groups of Emirati families enjoying "*their shining new city*". Emirati housing represented the political aspirations of Abu Dhabi's leadership around inter-generational equity.

Policy transfer related to the provision of high quality Emirati housing played a role in asserting the rentier values of the state. Dolowitz (2003) and Dolowitz and Marsh (1996) concurred that policies would inevitably be transferred in varying degrees, as a process of local adaptation and modification occurred that culminated in policy innovation. The Emirati housing displayed innovative aspects such as the incorporation of North-American design principles that propagated walkable, mixed use neighbourhoods, proximity to transit, with requisite community amenities along with town planning principles inherent to the local context (Clarion Associates, 2008).

The UPC recognized the importance of incorporating modern features and functions amidst traditional urban forms including *fareejs* (small neighbourhoods), *barahaats* (small-scale informal community spaces), *meydeens* (formal community spaces) and *sikkaks* (pedestrian paths) (Abu Dhabi Urban Planning Council, 2010a). Rose (1991, p. 22) refers to the "*hybridization*" of solutions combining both cultural and social needs with urban design

principles to maximize the effective use of space. Rose (1993) observes that content-wise, having fewer perceived negative impacts with the policy will contribute to the likelihood of transfer. This was true in the case of Emirati housing given the associated cultural and social implications.

The Abu Dhabi Emirati housing projects were role models for the Saudi government that sought inspiration from visits to Aldar's Al Falah community, a community of 5,000 new homes built five villages around a town centre with a mix of retail and community amenities (Abu Dhabi Urban Planning Council, 2011). Another role-model for Emirati housing is Zayed City, a 45km square mega mixed-use development costing $3.3. billion that will become one of the emirate's largest low-density residential neighbourhoods comprised of Estidama-regulated infrastructure and amenities (Abu Dhabi Urban Planning Council, 2017a).

However, with the expansion of low-density Emirati communities, Abu Dhabi runs the risk of spawning disconnected fledgling communities contributing to sprawl. The focus on villas and low-density housing has been critiqued by Dempsey (2014), given that the housing stock for locals has not diversified much from traditional villas which are unsustainable in terms of energy consumption. The provision of state of the art Emirati neighbourhoods lie in contrast to many existing expat centric neighbourhoods many of which are facing urban problems such as a lack of affordable housing, older housing stock, poorly maintained community amenities, abandoned vehicles, waste collection problems and a lack of parking (JLL, 2015; The National, 2016a).

Areas of commonality between Emirati neighbourhoods and MC's housing include architecture and design adapted to the local culture including purpose-built villas, state-of-the-art housing and a lack of diversity in the housing community, rendering them relatively insular. The discussion now turns to MC's housing offerings.

### 7.5.5 Lack of Diversity in Masdar City's(MC) Housing Offerings

In 2014, Anthony Mallows MC's Director announced the building of a mix of residential apartments, villas and family homes. However, in 2014, there had been no direct mention of affordable housing offerings among the 750 homes on the open market. In a city with 30% of the original plan zoned specifically for housing, MC prioritized internal exclusiveness. The 500 initial homes were leased to corporations and educational institutions affiliated with

Masdar (Laylin, 2014). Prior to pursuing affordable housing options MC prioritised achieving maximum tenancy in existing buildings in response to market demand. Mallows comments in a media interview were indicative of this approach, *"All of the buildings we have to date are fully tenanted and occupied, so there's no vacancies and we are already feeling the pinch in terms of the need to build aggressively to accommodate demand"* (Fahy, 2015d, para 10).

MC's population is not particularly diverse given that its residents comprise an educated, privileged group of faculty, students and employees that are simply part of a wider business strategy (Jensen, 2016; Yigticanlar, 2016). Ouroussoff (2010) pointed out that the decision on who gets to live in Masdar rests with the government who plays the role of landlord. Despite its profit-making mandate, Masdar is also subject to the government's housing regulations and affordable housing stipulations. In 2016, Masdar responded to wider housing trends in Abu Dhabi and made both high end and middle-income housing available as part of its newly commissioned Leonardo development which also achieved 3 Estidama Pearls, evidence that the development was also resource efficient. The income-generational aspect that accompanies real estate is particularly key for Masdar which is profit-driven. By April 2016, over 93% of the new apartments had been reserved displaying demand from high end and middle-income customers (Dey, 2016a). However, Yigticanlar (2016) notes in Masdar City's urban plan only 20% of residential areas are allocated towards those in need of affordable housing in line with the UPC's stipulation, a reality that is not consistent with the social sustainability messages associated with the project that was planned to house a wider cross-section of society (Cugurullo, 2013; Ouroussoff, 2010).

In 2017 MC housed close to 300 full-time students enrolled at MIST, with around 2,000 apartments under construction or in the design phase through Masdar or third-party investors. Over the next three years the residential population at Masdar City is expected to reach 3,500 people (Emirates 24/7, 2017). These figures are a long way off from the expected goals of the city which initially projected 50,000 residents (Sgouridis and Kennedy, 2010). Thus, the reality of slow development also impacts Masdar's ability to become inclusive. However, it can also be argued that the strategic development of the city over time has allowed it to adapt its housing in line with evolving demands in the wider market.

Critics of MC question why the eco-city has been created as a stand-alone development that contributes to sprawl and a walled enclave (Goldenberg, 2016; Jensen, 2016; Ouroussoff,

2010). However, proponents of such satellite communities cite the social and economic benefits of such developments (Barnard, 2014).

The final issue considered with respect to issues of power and inequality include contestations around design within Abu Dhabi's built environment.

## 7.6 Power Asserted in the Realm of Urban Design

Power asserted by the UPC over types of development have been noted in the loss of older structures in the city where vibrant communities still thrive, where community spaces and even temporary mosques were gradually phased out as the uniform design and quality of public spaces became a UPC priority. However, this took place at the cost of displacing sites of community gathering such as the Al Markaziya mosque located between an electricity sub-station and a dilapidated building. The low-income worshippers lost an important facet of their social and religious lives (Leech, 2012). Although comprehensive, the UPC's street design specifications have not adequately planned for the low-income groups that lie at the heart of informal street activity. These groups populate existing public spaces that are unstructured by the UPC's design standards but nevertheless teeming with their own vitality. These are the spaces referred to by Williams (2015, para. 6) as "*places in the city that aren't like everywhere else*".

The rigid prescriptions of the manual therefore took away from the natural organic activity of urban spaces that would ordinarily make them unique (Dempsey, 2014). Instead, the standardizing of good urban spaces, can as Williams (2015) suggests make certain street elements and spaces become relics of the past. Local street elements and traditions were thus threatened along the path to modernization and standardization. Dempsey (2014, p.42) aptly notes, "*The great irony of urban planning is that disorder and chaos are just as necessary to the health and growth of a city as are organization and command*". The new street guidelines were gradually eroding parts of old Abu Dhabi and uniformly modernizing them. Similarly, Leech (2012) notes that examples of vernacular Emirati mosque structures have been replaced by design inspiration from as far as Andalusia and Iraq. Traditional Emirati mosques that once featured locally sourced building materials and vernacular design had been replaced by modern structures that were built larger to accommodate more people.

The UPC was faced with balancing population growth whilst also balancing the need for design efficiency and preservation. It is worth considering an argument put forward by Page (2000) who urges those engaging in policy transfer to question if policy transfer is necessary in the first place. Healey (2013) has similarly argued that the sacrifice of localised practices in favour of ideas from established powerful circuits can be regressive. In light of these arguments, the purposeful preservation of existing streets and culturally important neighbourhoods in downtown Abu Dhabi, are issues the UPC must balance going forward. Given the lack of power-sharing with impacted communities in development decisions that have eroded older spaces, it is mainly spaces that are culturally important to citizens, or design inspiration that can buy soft power such as emulating designs from elsewhere in the Islamic world that are pursued (Gudaitis, 2010; Leech, 2012). Thus, elements of design and the ordering of space have also been subject to nuances of power.

**7.7 Conclusion**

We have witnessed several instances of authoritarian power controlling aspects of development in relation to the planning and sustainability issues addressed in the discussion. Graham and Marvin's (2002, p.195) description of attributes that allow stakeholders to be empowered including their ability to '*exercise social and economic power*' and '*extend their influence over space*' for the most part does not take place readily for low and middle-income expats in Abu Dhabi, who have been subject to the state ordering where they live, their access to amenities, how much they pay for energy and how they travel. New networks of power-sharing that incorporate both Abu Dhabi government agencies and the private sector in particular are evolving in the areas of energy, housing and transport.

The global-local binary associated with adapting sustainability solutions has increased overlaps between the different stakeholders. For example, the ruling family and the local private sector including real estate developers have substantial overlaps in the local context. The work of government agencies such as the UPC, Department of Transport, Department of Municipal Affairs, and Municipalities also overlap across planning and infrastructure activities. Overlaps also exist across the work of Masdar, the Abu Dhabi Water and Electricity Authority and the global private sector working on alternative energy solutions. Similarly, the work of the Housing Authority and the UPC overlap with developers from the local private sector on the issue of housing. These overlaps become important factors that result in power evolution over

time. The rope of authoritarianism is increasingly differentiated across multiple strands, as new institutions and individual stakeholders including women, youth and local residents are gradually included in sustainability considerations. However, concurrently, some blanket decrees have been issued reinforcing the authoritarian top-down decision-making structure, witnessed in the banning of Uber, the priority of Emirati housing, the empowerment of housing investors, and the requirement for companies to take on housing responsibilities for low-income workers.

Inclusive housing and transport policies are crucial to allowing expats to gradually increase their own social and economic power. These solutions are based on the state's recognition of the economic value these groups provide to the economy. The overpricing of Abu Dhabi's bus system had negative implications on congestion and increased the number of illegal vehicles which defeats the public transport aspirations of the DOT. Thus, inclusive policies are vital to the long-term considerations of sustainability.

Power sharing noted in the creation of assemblages of local and global actors have often proliferated due to their economic and soft power potential. This is most prevalent in the case of Masdar's international renewables projects in developing countries and the region. The transfer of knowhow has empowered policy end-users in many cases such as housing investors in the case of the real estate decree that encouraged a more transparent real estate market. The UPC also benefitted from increased outreach and training to new sets of stakeholders whilst mobilising Estidama. We realize that dominant meanings around the mobility of sustainability concepts are still created from the perspective of the ruling family, and those associated with its network of power, given the contestations that arise between developers and government agencies tasked with development. At the same time, authoritarian power leaves accountability in the hands of the government, that has the power to save developers in times of need, as witnessed in the case of Aldar (Fitch, 2013) as well as power to negotiate the complexities of eminent domain (Dempsey, 2014).

As we have learned from the discussion, developers also possess significant power over ordering space and controlling the way people use it and move across it based on strategic allocations. These divisions of space have slowed down the movement of lower and middle-income groups forced to live in neighbourhoods located far from jobs and amenities, whilst in the case of Emirati housing, the movement of the Emiratis most in need of state housing was

speeded up by the ADHA. Elements of urban and architectural design, and the ordering of space were subject to the nuances of power and inequality. This was noted in the tearing down of old mosques and replacement with state-of-the-art ones, the lack of priority of the needs of low-income communities, erosion of streets that are hubs for informal community life among low-income expats, the lack of participation from all impacted communities in development decision-making, and the pursuit and prioritizing of development deemed important to local citizens often with cultural and religious value. The interdependence between modernity and tradition as noted by Robinson (2006) comes into play here. Imperial constructs of the relationship between colonizers and the colonized put forward by Fanon (1986) and Said (1978) that focussed on the hierarchies and tensions between the two camps, have been manifested in the social divide in modern day Abu Dhabi where high priority is given to the needs of local citizens while low-income expats at the opposite end of the spectrum are often adversely affected.

The globalised power of the private sector, particularly firms such as Siemens and GE, and also the power of internationally recognized institutions such as IRENA allow for the empowerment of Masdar given the exchanges of information and technology that accompany these interactions. However, this power comes at the price of being concentrated among a limited set of stakeholders, leaving others out of the equation. Power is in flux with respect to Abu Dhabi's sustainability scene, and depending on the particular issue, the same stakeholder can be powerful, or rendered powerless. The UPC for example, emerges as a powerful agency given its regulatory powers in some instances, and in other instances developers have had the upper hand.

The implementation of sustainability concepts continues to be ridden with persistent inequalities, which has implications for both a sense of belonging among Emiratis and a sense of impermanence on the part of expats. Instances of friction that developed around sustainability issues was due to the Planners failure to acknowledge the diverse needs of low income communities, the persistence of societal hierarchies and the *kafala* system and the absence of the expat voice in the planning process.

Normative perspectives on justice and fairness put forward by Healey (2013) are not applicable in the same manner to Abu Dhabi, given its political complexities. Similar inequalities related to the citizen-expat divide are also prevalent in neighbouring Dubai, and other GCC nations in

the region (Davidson, 2012a). Thus, when considered from a relational perspective, the inequalities that accompany transferring and implementing sustainability policies are not unique to Abu Dhabi. Regional competition as a factor of other GCC states pursuing similar projects and attracting experts from a similar pool of talent, will continue to make Abu Dhabi's sustainability scene competitive in terms of the pricing of its products and services, thus challenging the soft power that Abu Dhabi seeks to gain as a regional leader in sustainability.

This research points to the increasingly co-existence of overlapping policy solutions around energy, housing, urban design and transport for diverse expat communities along with policies such as Emirati housing and subsidized energy aimed at citizens. The more sustainability is thought of as a universal concept, the greater the chance the different issue-specific solutions have of succeeding in the long term, towards greater empowerment and equity particularly for those at the margins.

## Chapter 8: The Politics of Adapting Knowledge and Nuances of Governance in Mobilising Sustainability Concepts in Abu Dhabi

### 8.1 Introduction

This chapter explores the politics associated with the production and adaptation of knowledge and nuances of subsequent governance processes that accompany the mobilisation of sustainability concepts in Abu Dhabi. The production and adaptation of knowledge is impacted by unique mechanisms and patterns of transfer that vary across diverse planning issues and existing power hierarchies. The scale of transfer (global, regional, national, emirate, institutional-level), the unique political, social and economic importance of the sustainability issue, the timing and speed of transfer and implementation are factors at play in knowledge creation and governance. Stone (2003) argues that the creation of experiential knowledge gained from testing new policies in a new domain are valuable aspects related to policy transfer. Considering both internal and relational factors that propel transfer, will reveal how hybrid sustainability concepts or "*parts of everywhere*" (McCann, 2011, p.144) emerge in Abu Dhabi.

McFarlane (2011), Prince (2010), McCann and Ward (2010, 2011) and Peck and Theodore (2010) favour addressing both relational and territorial elements of transfer processes given that multiple change agents are operating at various scales. By tracing the origins and context of assemblages as proposed by Wood (2016) and juxtaposing them against wider global forces, we get a sense of multi-level connections between local, regional and global stakeholders and the potential tensions that arise. In light of this, I also explore the transfer phenomenon in relation to aspects such as globalization, modernization and regional competiveness.

To understand how sustainability is mobilised at various levels in Abu Dhabi, I explore why certain ideas are strategically chosen to be transferred, local adaptations of global best practice, and the creation of hybrid policies. At the institutional level of Masdar and the UPC, I consider the role of newly formed local, regional and international assemblages. I examine how and why such multi-level knowledge-based assemblages have thrived over time and subsequently look at factors that challenge the mobilisation of adapted sustainability knowhow. In addition, I explore instances of non-transfer of policy knowhow and policy transfer failure as integral parts of policy learning. I also consider instances of reverse transfer of knowhow from Abu Dhabi to other parts of the world.

While viewing multiple perspectives, I heed Healey's (2013) advice on situating planning ideas in the specific local context by considering aspects of localised, collective capacity building. Thus, I will consider whether knowledge production has had a positive impact on solving local planning problems and mobilising sustainability concepts among a diverse set of stakeholders in Abu Dhabi. It is possible that only certain segments experience the value of knowledge production and adapted knowhow, whilst other stakeholders are not privy to learning processes, creating learning gaps.

Collaborative governance has emerged as a result of interactions among global, regional and local actors engaged in transferring and implementing sustainability in Abu Dhabi. Mobility theorists address governance through their focus on debates around assemblage, territoriality, relationality, and actors within networks. However, the processes associated with governance can be contested as a result of a number of factors relevant to the local context. These include competing interests of a limited set of powerful stakeholders, divergent meanings of sustainability for different stakeholders, opaque political systems that mask accountability and transparency in an authoritarian state, and other local contextual factors related to authoritarianism and rentierism that can hamper attempts at collaborative governance among assemblages of actors and institutions across different scales. The empirical data will be juxtaposed against ideas by Healey (2004; 2013), McCann (2011), McFarlane (2009), Prince (2010), Ward (2006) and other theorists, who focus on the purposive gathering of people, institutional capacities, expertise, techniques, technologies, and political power associated with both local and external assemblages.

Multi-level governance encompassing the creation of epistemic communities, assemblages of multi-scale actors, networks, knowledge circuits, joint decision-making opportunities, collaborations and consensus-driven initiatives across energy, housing, transport and urban design have taken place in Masdar and the UPC, with mixed outcomes.

Let us first consider the politics around knowledge production related to energy.

## 8.2 Strategic Biases Within Energy-Related Knowledge Production

The transfer and implementation of alternative energy policies produced knowhow and learning accompanied by political, economic, and soft power opportunities. The UPC and Masdar's responses to energy inefficiency are embedded in wider national and emirate level goals to improve energy security, reduce carbon emissions and dependence on imported natural gas.

Opportunities gained from the transfer and implementation of alternative energy policies by Abu Dhabi reflect new knowledge around demand management. They also reflect a clear preference for supply side initiatives in part due to the existing social contract with citizens (Krane, 2014). In general, Abu Dhabi has embarked on solutions-driven learning based on trial and error in the field of alternative energy. Multi-governance processes are evident in the collaborations among government agencies such as ADWEA and the RSB around demand and supply management going forward, and in particular the potential of privatising power given the associated cost and efficiency benefits (The Business Year, 2017). However, the shift to privatisation is a contested issue given the political implications of removing subsidies entirely.

At the emirate level, parallel developments in neighbouring Dubai are evidence of both emirates actively pursuing energy efficiency initiatives. For example, Dubai's 2030 integrated energy strategy aims to generate 15% from renewable energy and 7% from nuclear power (Society and Environment, 2015d). Dubai also launched green building regulations, a metro system and ecologically-friendly taxis. It developed its own carbon excellence centre and a dedicated 1000 MW solar park. The Dubai Electricity and Water Authority (DEWA) launched Shams Dubai – its first smart metering initiative toward building a local green economy (Dubai Water and Electricity Authority, 2017b; Simpson, 2017). In a manner similar to Abu Dhabi's Masdar, Dubai has also invested in creating a green zone that thrives on income-driven sustainability. The zone provides an enabling business environment to start-up companies to develop and market green technologies (Gulf News, 2016). The two emirates share complementary energy conservation and supply-side initiatives, which could be subject to duplication in the future if strategies that allow for resource collaboration, knowledge transfer and data-sharing are not implemented among the larger players such as Abu Dhabi's ADWEA and Dubai DEWA. One avenue of inter-emirate cooperation that has met with success in this area is the selection of a Masdar-led consortium of private companies by the Dubai Water and Electricity Department for the third phase of Dubai's solar park (Society and Environment,

2016c). The Abu Dhabi-Dubai dynamic of competition, emulation, and collaboration are part of the territorial and relational aspects of mobile policies that Peck and Theodore (2010), McCann and Ward (2010) and other mobility scholars consider to be of importance in understanding the wider context of a policy.

**8.3 Energy Saving Schemes Reflect New Knowledge Gained by Government Agencies and Consumers**

The demand-side strategies being pilot tested in Abu Dhabi include the introduction of smart meters across 400 villas in Abu Dhabi in 2014 revealing electricity consumption in real time. Through the RSB, the government offered a rebate scheme to consumers if they shifted demand from peak to off peak periods. The findings of the pilot scheme were positive with over 60% of customers receiving money back by adjusting their usage. In addition, the smart meters also had a net positive impact with consumers reducing their consumption between 25% and 50% (Oxford Business Group, 2014a). Thus, collaboration among ADWEA, the RSB and consumers resulted in new knowledge gained from testing incentives levels among consumers. However, given that these results represent a small sub-set of Abu Dhabi's households, the greater challenge in the local context involves the more challenging goal of achieving inherent behavioural change on a mass-scale.

Recently, the role of ADWEA in incentivising Energy Service Companies (ESCOs) from the private sector to take on energy performance contracting. Working with other regulatory agencies ADWEA has attempted to replace equipment such as air conditioners, elevators, lighting etc. with energy efficient devices. The initiative is designed with the long-term goal of building owners taking over from the ESCOs post contract (Abu Dhabi Department of Economic Development, 2017). This form of knowledge sharing among government agencies amongst private sector ESCOs and building owners is a crucial element in retrofitting existing buildings toward emirate-wide consumption reduction, particularly since Estidama is focussed on new builds. As the stakeholders involved in implementing demand management around energy expands, we note that knowledge is increasingly produced as part of experimental governance processes.

Let us now consider energy-related knowledge production at Masdar and the UPC.

**8.4 Assemblages Around Energy-Related Knowledge Production at Masdar**

Masdar serves as a platform for solar investments and energy efficient buildings offering energy saving possibilities, job opportunities, research and education opportunities around renewable energy to Abu Dhabi and the rest of the world. Explaining the importance of the deployment of renewable energy internally to Masdar and the value derived from international initiatives, a Senior Director at Masdar explained, "*Collaboration is essential for taking our industry forward, leading to closer ties, investment and value creation.*" (Interviewee Y, Senior Director, Masdar, 2017). The concept of value creation as a factor of diverse collaborations described above, encompasses not just investment gains, but also forging new partnerships and simultaneously expanding Masdar's recognition globally.

Masdar has built a niche brand image as being both an OPEC nation's sustainability and clean energy platform and producer of renewable energy globally (Rold, 2015). Despite being a crucial project to Abu Dhabi, the initiative's expansion plans and scale of its partnerships were scaled back in the wake of the global financial crisis (Ouroussoff, 2010).

In some ways energy-focussed collaboration allows for greater accountability to multiple stakeholders including the international private sector, constituents and local and foreign governments. Masdar's Clean Energy Director Mr. Bader Al Lamki described how Masdar's profit driven approach has contributed to continuous learning and strategic new collaborations that allow the institution to maintain its competitive edge (Energy Boardroom, 2016).

Let us consider one of Masdar's active knowledge transfer platforms, the Masdar Institute.

*8.4.1 Role of the Masdar Institute in Knowledge Transfers*

The Masdar Institute of Science and Technology (MIST) engages in multi-disciplinary research initiatives, real-time experiments and partnerships with industry to ensure new avenues to invest Abu Dhabi's oil wealth. The Massachusetts Institute of Technology (MIT) in particular, served as an influential change agent deploying numerous staff from its engineering department as the first wave of knowledge transfers to MIST began. MIST had a higher than average tuition budget of $150 million, far more than conventional tuition charging universities, a factor that increased instances of policy transfer particularly related to research and curriculum. However, the transfer process took place at a price, MIT was paid $10 million a year by Masdar to advise MIST and also recruit its faculty and students (Kannelos, 2010).

MIST has developed a legacy of safeguarding intellectual property, thus encouraging inward and outward knowledge transfers. In 2015, MIST boasted a successful intellectual property track record with 96 invention disclosures, six issued patents and 54 pending patent applications (Masdar, 2015). The success in part is attributed to MIST aligning its research projects in line with the wider economic diversification priorities of the Abu Dhabi government that placed importance on technology and innovation around clean energy (Interviewee F, Professor, Masdar Institute, 2011). The pursuit of learning from a variety of sources, including research collaborations made MIST important to Abu Dhabi. It filled a void in the market since prior to its creation few research and development intensive academic institutions existed in Abu Dhabi. However, MIST is not a unique model, in the wider region Saudi Arabia and Qatar have also set up education cities that attract both academics and multinational companies contributing to a regional trend around research collaboration with industry. An area Masdar has been relatively successful in is its ability to integrate socio-economic, policy-oriented and technological perspectives across a range of industries (Interviewee F, Professor, Masdar Institute, 2011).

The Vice-President of Research at the Masdar Institute, Dr. Stephen Griffiths highlighted the Masdar Institute's efforts to merge academic and industry resources, skills and capacities including state-owned enterprises, large multi-national companies, and small and medium-sized companies (Griffiths, 2012). A former academic at MIST shed light on the critical role Masdar played in policy making with the Abu Dhabi government – "*Masdar is shaping and designing a policy and regulatory framework with the government around feed-in-tariffs, and potential costs to the government fostering a culture of collaboration with other vital government agencies such as the UPC, EAD, and ADWEA on a scale that was not developed earlier.*" (Interviewee J, Former Assistant Professor, Masdar Institute, 2011).

While my discussions with professors at MIST suggested that the collaboration was mutually beneficial, the fact that MIT received a hefty fee for its services is an example of Abu Dhabi exerting its wealth to secure the backing of MIT's reputed education brand. This is akin to an argument put forward by Kingdon (1995, p.122) who considers the motivation on the part of change agents, as "*future return*" in the form of brand recognition and compensation in exchange for best practices and skills. Thus, knowledge production among collaborators that directly advanced the government's broader political rationale toward soft power and economic diversification were readily embraced for their ability to generate such returns on investment.

An example of a collaboration undertaken by MIST that had a combination of soft power potential and global economic significance to Abu Dhabi was the Bio Fuels collaboration, to which the discussion turns.

### 8.4.2 Strategic Governance Collaboration Toward Economic and Soft Power Gains

MIST served as a crucial research platform and partner to Boeing, a leading global private sector aviation giant on a crucial energy efficiency collaboration. Boeing discovered a major breakthrough in the form of halophyte bio-fuel that could be sourced locally. No patents around the creation of halophyte bio-fuel existed globally, before the collaboration which boded well for the partners. MIST agreed to run a pilot facility in Abu Dhabi to determine costs and scalability. The pilot scheme was successful during the two-year test period. The consortium attracted academics, journalists, clean tech experts and other interested parties into the movement promoting halophyte bio-fuels (Masdar Institute, 2011).

The collaboration started out as a self-organized alliance involving multiple organizations with the aim of growing a sustainable aviation bio-fuel industry in the United Arab Emirates. The partnership had long-term national implications including gaining soft power and global recognition (Etihad Airlines, 2015).

Building on the success of the governance process that had been initiated by MIST in 2009, five years later the Abu Dhabi government stepped in to take on a strategic leadership role, given the national and international economic potential of the project. It spearheaded rapid commercialization of the pilot and initiated capacity building across other government-owned corporations, agencies and the private sector (Beckman, 2014). Thus, MIST played a crucial role in setting up the framework for the partnership to thrive in the long run. The diverse experiences and resources of each of the collaborators can be likened to Healey and Upton's (2010) concept of "*communities of practice*" as well as Haas's (1992) concept of "*epistemic communities*" that point to the importance of learning that emanates from networks of key stakeholders involved in conducting policy analysis. Given that bio-fuels were a relatively untested resource, the project carried with it certain risks, however, the powerful political backing of the government and the global private sector strengthened the collaboration, as it grew from a simple pilot project at MIST.

We witness the bio-fuels initiative possessing local and global value, with efforts to brand it a UAE initiative, and a global one simultaneously. Similarly, the Shams 1 project also encompassed international private sector participation, whilst Masdar has capitalised on synergies between the local energy sector evident in its partnership with the Abu Dhabi National Oil Company (ADNOC) on Al Reyadah, a carbon capture initiative, to be used towards enhanced oil recovery (Energy Boardroom, 2016). The merging of energy efficiency and carbon emissions reductions with the work of the oil industry are a vital form of adapting concepts to the local context.

Masdar has had some success as an experimental test bed in line with arguments by Evans and Karvonen (2014) who note the efficacy of urban laboratory spaces in their ability to showcase innovation in real-time. Karvonen and van Heur (2014, p.386), however, critique such spaces as being "*constructed spaces*" concurring that the urban laboratory is "*both a place and a non-place and much of the work that goes into constructing the laboratory revolves around mediating this tension*". The argument Karvonen and van Heur (2014) put forward is the need for making a distinction between the field and laboratory through strategically positioning standards, concepts, theories and techniques that in turn order the way data, resources and actors are positioned. Masdar is very much a '*constructed*' space in line with these arguments, its resources subject to controls by its parent company, Mubadala, the government's investment arm and Abu Dhabi's leadership (Masdar, 2015).

While collaborations that involve powerful stakeholders and economic potential have had a good track record, Ward (1999) questions why only certain lessons are borrowed, while others are not in mobility processes. In other words, without inherent linkages with the profitable industries such as aviation or oil, would these projects have eventually grown in the way they did? This line of thinking opens up the debate on the tendency for politically and economically-motivated assemblages and policies impacted by power dynamics that take precedence over other initiatives.

Another critique of Masdar's knowledge sharing is that the public has been left out of Masdar's efforts to produce knowhow that primarily favours the academic and business elite. Other segments outside of these intellectual elites have limited access to experimental energy saving possibilities, job opportunities, research and education opportunities. With the exception of the Masdar annual Sustainability Week that allows for limited exposure of Masdar's initiatives to

the general public, there could be more opportunities for the public to more meaningfully engage with Masdar's initiatives in the long term.

In particular, Masdar has pursued a global approach to attracting new partners including individuals and institutions.

### 8.4.3 New Voices and Knowledge Production Platforms Around Alternative Energy

The creation of new knowledge around alternative energy and public-private collaboration by Masdar has increasingly become inclusive of women, youth, education institutions, and small and medium scale enterprises from developing nations and elsewhere around the world. We witness a trend of mobile sustainability-centred networks that are orienting themselves along a global agenda at Masdar. Mechanisms for partnership include knowledge transfer, and innovation globally through avenues such as the Zayed Prize and its growing international community of prize winners. Social outreach programs with women such as the WiSER program and MIST's Young Future Energy Leaders (YFEL) program have consistently sought to empower these groups. A Senior Director at Masdar explained the positive role women have in impacting policy, business and technology, noting, "*With greater mentoring and collaborative opportunities, our (Masdar's) knowledge of the issues that uniquely impact women can be harnessed to deliver sustainable growth and innumerable societal benefits.*" (Interviewee Y, Senior Director, Masdar, 2017). The WiSER program has partnered with GE to offer a leadership training program for women through its Ecomagination centre. The Masdar Institute and WiSER also offer fully-sponsored scholarships to women globally with an interest in these issues (Masdar, 2016d). These outreach programs that attract women with international talent and experience to Abu Dhabi have positive implications for human capability at Masdar.

The growth of such strategically constructed networks resemble Haas's (1992) concept of epistemic communities with experts empowered to articulate wider stakeholder interests. However, it is imperative that these programs initiated by Masdar move beyond the elite decision-making circles of actors who share normative beliefs and values, to frame issues for a variety of stakeholders toward jointly solving issues around clean energy.

In contrast, the UPC's agenda has been more localised around energy, which I now address.

**8.5 The UPC's Role in Knowledge Creation Around Energy**

The built environment offered considerable room for resource efficiency. Top down decision-making associated with authoritarianism made energy savings solutions mandatory as part of Estidama. Khater (2013) noted a growing trend of properties being positioned as being resource efficient and sustainable.

As part of increasing acceptance of Estidama energy efficiency requirements among developers and building professionals in Abu Dhabi many modern buildings feature complex building management systems which collect data in real time through smart meters and on a wider level through smart grids (Azar 2016). However, going forward the real challenge will be in sharing data among relevant parties, achieving governmental oversight and jointly-creating public-private solutions around energy. Yigticanlar (2016) notes that the modern challenge of managing the volume of data produced in smart cities can open up concerns around data quality, security and validity. A local sustainability professional with experience in both Abu Dhabi and Dubai in the area of green building explained that progress was being made in both emirates in the area of making asset classes of buildings more sustainable. She explained, *"One avenue we see greater efficiency is the re-commissioning of an existing building for greater efficiency. It increases ability to attract tenants, and Estidama is a part of that. Entities are getting more interested in an overall asset management plan. So, we are moving from the micro to the macro level in terms of achieving greater building efficiency."* *(Interviewee Z, Sustainability Professional, 2017)*. The comments are reflective of market trends that have the capacity to spur new assemblages of mobile energy experts, planners, architects, local developers and building owners in the UAE for collaboration on green building and retrofit projects whilst remaining economically viable amidst existing subsidy reductions.

At the end of 2015, a total of 13,455 villas, 1,218 buildings were awarded an Estidama Pearl Design Rating (Abu Dhabi Urban Planning Council, 2016a). While the pearl rating signifies the developments have attained minimum Estidama energy standards, it is vital that the efficiencies continue throughout the life cycle of the building.

As of 2016, all Masdar buildings were designed to achieve energy and water consumption savings of at least 40% in accordance with LEED and Estidama baselines. While all MC buildings achieve a minimum of a 3-pearl rating, Masdar has exhibited high levels of resource efficiency knowhow in some buildings such as the IRENA headquarters, achieving a 4-pearl

rating on the Estidama system (Masdar, 2015). Similarly, Aldar's Chief Development Officer in a media interview noted that 70%-80% of Estidama-related costs would be covered over a 30 to 40-year period, thus justifying the costs (Middle East Construction News, 2015a). However, given its large financial resources, a large developer such as Aldar has the capacity to absorb Estidama-related costs with greater ease, compared with smaller developers. An Aldar consultant explained the far-reaching extent of Aldar's operations that included investments in businesses beyond its real estate portfolio, which itself extended across residential, commercial, retail, leisure, hospitality and even education communities (Interviewee S, Consultant, Aldar, 2012). Thus, the developers such as Aldar, and Masdar developed an understanding of cost efficiencies and technological advancements related to energy efficiency that improved their ability to respond to the Estidama mandate.

The UPC's engagement with non-profit groups such as Emirates Green Building Council has also been key towards mobilising green building standards regionally. Toward the goal of establishing a replicable regional model for sustainable building, the Emirates GBC has partnered with other Green councils in the region to share achievements and lessons learnt. It also instituted an award to recognize organizations across the Middle East for implementing sustainable design, construction and operating buildings and structures. The Board of Emirates GBC comprises of private sector firms in the UAE's building industry, and has forged several memorandums of understanding with government agencies including the UPC, municipalities across the UAE, Masdar, as well as local NGOs and academic institutions around creating technical and educational programs to drive UAE-wide sustainability and green building practices. By further leveraging its resources at regional conferences and through its annual award, the NGO plays a vital role bridging the divide between the various entities pursuing sustainability in the UAE and the region (Emirates Green Building Council, 2016).

Also, at a regional level the number and frequency of international conferences focussed on green building and related energy efficiency of construction have burgeoned including events such as Arabian Construction Week, WFES, World Eco Construct, the Big 5 among others at the regional level (Emirates Green Building Council, 2016). This is evidence, that resource efficiency is a growing focus of discussion among other Gulf states and the wider region. In the global conference space, Dubai's Water-Technology-Environment (WETEX) conference and the Dubai Solar Show (Society and Environment, 2016d, 2016e) perform a parallel role to the World Future Energy Summit (WFES) hosted annually by Masdar. The production of

knowledge around green building and energy efficiency in Dubai and Abu Dhabi is a symbiotic process influenced by both local and international factors in line with considerations put forward by Brenner (2001, 2004), Healey (2013) and Sheller and Urry (2006) who consider how space is transformed as a result of particular interests of individuals and institutions mobilising policy.

Beyond energy, the field of housing has also witnessed a multi-pronged approach to knowledge sharing which we turn our attention to.

## 8.6 The Politics of Knowledge Production around Housing

Housing emerged as a vital issue that witnessed renewed importance in Abu Dhabi, and around the GCC particularly in the aftermath of the Arab Spring when the importance of preserving and cementing the social contract between the authoritarian governments and their constituents became a priority (McGinely, 2011; Munajjed, 2013).

In situating developments around housing in Abu Dhabi with Dubai and the wider region we note a number of parallels. For example, Dubai's diamond developers created 'The Sustainable City' a green real estate development (Diamond Developers, 2016a and 2016b). The development represents a parallel initiative to green developments in Abu Dhabi including Masdar. An example of inter-emirate collaboration in the area of housing is witnessed in the March 2016 collaboration between the Abu Dhabi UPC and Dubai's Mohammed Bin Rashid Housing Establishment to build 72 villas in line with Estidama requirements (Abu Dhabi Urban Planning Council, 2016a). Abu Dhabi's Estidama was also implemented in the emirate of Sharjah as part of the UPC's collaboration with the American University of Sharjah as part of the UPC's commitment to engaging with students across the UAE on aspects of sustainable design and construction (Abu Dhabi Urban Planning Council, 2013a). These trans-emirate collaborations between Abu Dhabi, Dubai and Sharjah facilitate opportunities for knowledge exchange beyond the individual emirates.

### 8.6.1 Regional Housing Developments Reflect Parallel Programs

Much like Abu Dhabi, Qatar also honours its rentier contract with citizens through the provision of home loans by the Qatar Development Bank. The Omani and Bahraini governments sponsored a similar housing assistance and home loan program. What is unique to Bahrain, is the government's sponsorship of regional and international conferences focussed

on housing, collaboration with the private sector on a large scale affordable housing project on reclaimed land, and the establishment of a local bank dedicated to providing housing finance options to citizens. Kuwait has also embarked on similar programs, collaborating with the private sector to deliver mega projects with allocations for Kuwaitis on welfare. In addition, the Kuwaiti government sponsors its local authority with funds to address housing needs (Munajjed, 2013). Dempsey (2014) and Abdul Salam et al. (2014) have critiqued the societal division associated with such policies in Abu Dhabi's and Saudi's context where expats are given secondary concern often in lower quality housing, while Kirk (2016) has critiqued Kuwait's housing programs for their contribution to sprawl and increasing car dependence. On the other hand, the fact that these GCC governments have recognised the importance of engaging the private sector in the provision of affordable housing is a vital step going forward, given their state budgets face challenges due to low oil prices.

Abu Dhabi's housing programs mirror the programs in Saudi Arabia particularly around the provision of free plots of land, interest free loans to citizens and building cities from scratch for citizens in need of housing. In addition, the creation of Sharia-compatible housing finance options and new housing finance institutions in Abu Dhabi take place in parallel with the other GCC nations (Munnajed, 2013). Deloitte (2015) noted that Abu Dhabi led the region in the creation of new government entities dedicated to housing, and the construction of planned neighbourhoods for citizens. Kirk (2016) writing in the context of Kuwait, has discussed some of the negative implications associated with housing policies that are unequal. Despite the good intentions to provide affordable housing to those in need, some citizens have obtained housing benefits despite being ineligible and have instead utilised allocated housing for speculative purposes, which has resulted in driving up real estate prices. The safeguards the Abu Dhabi Housing Authority has put in place to ensure that those most in need receive housing first have been a buffer against speculative practices (Abu Dhabi Housing Authority, 2016). The area of housing where Abu Dhabi has been a role-model is the modern adaptation of culturally-specific housing.

### 8.6.2 Abu Dhabi's Priority of Culturally-Specific Housing

The UPC recognized the importance of preserving traditional Emirati urban forms including *fareejs* (small neighbourhoods), *barahaats* (informal community spaces), *meydeens* (formal community spaces) and *sikkaks* (pedestrian paths or alleyways) (Abu Dhabi Urban Planning

Council, 2010a). In addition, the solutions combined both cultural and social needs with urban design principles to maximize the effective use of space.

The renewed focus on Emirati neighbourhoods as part of Plan Abu Dhabi 2030 helped the UPC experiment with new alternatives for housing. Developers such as Aldar built homes within a ten-minute walk of schools, mosques, and a market square with retail offerings to encourage walking (Dey, 2016b). The UPC has been able to incorporate a better balance between jobs and housing on a limited scale in Al Falah, which has been a positive outcome of the hybrid policies. The new communities reflected some aspects of new urbanism combined with the local culture. The Al Falah Emirati community, for example, comprises six villages around a central town centre. Mosques, schools and other retail facilities in the community increase the economic potential of the development since they draw in visitors. In 2016, 70% of Al Falah's 100 retail units were occupied and operational. Thus, there is increasing evidence that housing investments by the government spurred additional jobs and economic opportunities (Dey, 2016b).

The UPC rewarded developers for the provision of outdoor spaces with culturally sensitive uses and gender-specific areas, reflecting cultural norms. Whilst foreign planners and consultants had suggested high density options, the UPC adopted local norms for neighbourhood planning where Emirati families have on average 8.2 persons per household that call for larger than average dwellings (Clarion Associates, 2008; Dempsey, 2014). While on the one hand this could be considered an example of "*inspiration*" akin to ideas put forward by Rose (1991, p.22), given that new policy solutions that merged housing and urban design were developed locally; on the other hand, the decision to build low-density housing despite its contribution to sprawl and energy inefficiency, was pursued. Thus, what is considered a policy inspiration for some groups such as the local community, were not perceived in the same way by foreign planners at the UPC.

One of the main forms of knowledge production is learning from failed policy solutions. The UPC experienced its own form of policy learning, from dealing with the failure of developers to adhere to its requests for middle-income rental housing. Over time, the agency sought consensus with developers on mandatory affordable housing quotas as a way forward. Evans (2013) noted that policy learning occurred by balancing political, physical, economic, social, technological and other market factors within multi-level governance networks. A trend in Abu

Dhabi around housing-related governance processes is that they are hastened when economic gains are pursued in the long term. Development has not been completely restrained despite Estidama requiring assessments on key site elements such as transport, land use, density, open space, the site's cultural significance, employment opportunities etc. as noted by Cormier (2015) and Dempsey (2014).

Let us consider a successful example of locally-derived governance that addressed housing, transport and community infrastructure simultaneously, through a carefully crafted iterative process between the UPC and private developers on Reem Island.

### 8.6.3 Reem Island's Governance-Driven Planning Solutions

Reem Island, a mega development in Abu Dhabi has been under construction since 2005, however its development was taking place in silos with individual developers focused internally on their own developments and profits, without giving community facilities and transport adequate consideration. This resulted in isolated, unconnected developments (Morgan, 2015b).

Healey et al. (1999) asserted the value of learning from new governance possibilities through developing new relations and focal points between key stakeholders. On Reem Island, a governance gap around spatial, infrastructural, political, and social factors had ensued, given the individual developer's project goals. In addition, historical and political contextual factors related to some developers wielding greater power and larger ownership power over land were also at play. These issues are considered by both planning and mobility theorists who consider forces that shape contemporary planning solutions.

The UPC created an integrated concept master plan (ICMP) that all the developers eventually agreed. The experience of implementing Estidama allowed new circuits of knowledge and governance to form. The challenges faced by the UPC are reflective of ideas put forward by Healey (2013) on the importance of identifying struggles associated with adapting policies. Under the UPC's guidance the three developers came together to form a single master developer under the umbrella entity of Bunya, tasked with being the resident regulatory authority for Reem Island. We witness the creation of a new institution that emerged from formerly unconnected developers, empowered to seek consensus with the UPC.

The UPC's timely intervention intercepted the unconnected developers early in the process since Reem is only 15% built at present, and houses 20,000 residents currently with the population expected to increase to over 200,000 when complete (Morgan, 2015a).

The UPC had to compromise on the developers' demands for increasing the cap of Reem Island's population and settled on increasing the population by 10,000 during negotiations. In turn, the UPC leveraged developers to create additional services and amenities for the community. It negotiated the building of 20 schools (increased from 15) as well as increased the community's public beach, water front promenade and recreation area from 400,000 square meters to 750,000 square meters (Fahy, 2015a). Most importantly, the UPC negotiated with developers on an affordable housing figure of 20% of housing offerings on Reem Island (Ahmad, 2015b). These active strategies pursued by the UPC and Bunya contributed to the island becoming a viable and affordable housing option for the future. Healey (2004) noted that both internal and external criteria can influence governance processes. In particular, Healey (2013) espouses situating planning ideas in specific contexts bringing localised and collective capacity building to the fore. Eventually, the UPC overcame the local barriers around the lack of planning capacity, developers' lack of attention to development regulations, and inward-focussed planning.

However, successful governance in the areas of services, amenities and transport between the UPC and Bunya has not translated into the ongoing maintenance of housing and services on Reem Island which witnessed the flooding of garages and reports of electrical wires submerged in water in areas of construction in a number of apartment complexes creating hardship for tenants. The properties have been handed over by the developers to third party property managers which proved to be a weak link in the otherwise successful governance process (Al Subaihi, 2016). We witness elements of contested governance in the long term. McFarlane (2009) calls for focussing on the specific outcomes of an assemblage, how an assemblage extends among external groups from the initial members and instances of collapse and reconstitution in new forms. The fragility of the assemblage created between the UPC and developers encompasses characteristics of assemblages noted by Ong and Collier (2005) who note the instability and heterogeneous nature of assemblages. The physical and temporal aspects of assemblages in the context of Reem Island shed light on the challenges the UPC faces in monitoring aspects of the assemblage over time.

While integrated concept master plans (ICMPs) as a governance tool for the UPC have much utility, they are also lengthy and costly processes. The ICMP took over seven years to materialize on Reem Island, and was costly for the developers. Bunya for example, needed a cash infusion of $1.36 billion to complete its work (Zawya, 2015). In addition, the transparency and contestability of development processes is not always smooth (Dempsey, 2014; Morgan, 2015b). Nevertheless, Reem Island represents an experiment around multi-stakeholder governance of master-planned communities.

The gap in governance mechanisms in general in Abu Dhabi toward addressing the housing imbalance is noted in the government being the most active change agent on the housing scene, however there is a growing need for private sector participation.

### 8.6.4 The Private Sector and Affordable Housing

The local mortgage market is in need of the private sector to play a role in offering cost efficiencies and consumer choices. Local barriers challenge the provision of capital to the lower and middle-income segments in need of it, particularly non-Emiratis. Large multinational financial institutions in the local context have a tendency to cater to higher income groups (Hassler, 2011). Banks in the UAE are also constrained by norms, such as Sharia' law that prohibit banks from reclaiming a person's house even if the owner defaults on mortgage payments, as well as government bureaucracy around mortgage provisions that dissuade private lenders (Bohsali et al., 2014).

Private sector financial institutions have faced a learning curve around mortgages in the local context. A former banker at a local bank explained the priorities in the mortgage process and the need for more incentives in the capital market. He noted "*foreclosure laws are difficult to implement in the local context where the private sector needs incentives to resolve challenges... the fundamentals of the market and the economic cycles need to change. This will change with the government taking a more proactive part in this process*" (Interviewee H, former Banker, Local Bank, 2012). On the banking sector side, challenges in the form of shortage in liquidity has also played a role in financial institutions not offering more refinance options. Abu Dhabi needs better housing data using information from land registries to develop a central repository to track property development and develop price indices of units by neighbourhood and

monitor incomes and end-user affordability (Hassler, 2011). The outreach to developers by the UPC around the creation of a central property database is a positive step toward bridging the gap between market demand and the supply of properties (Abu Dhabi Urban Planning Council, 2015d; Middle East Construction News 2015b).

### *8.6.5 UPC Lessons from Engaging the Developers to Solve Housing Issues*

The most vital private sector players for the UPC were the developers, particularly in increasing the supply of affordable housing. The UPC underwent a process of policy learning from the delays in implementing its middle-income housing policy. By 2015, developers were finally able to unveil middle-income housing five years after the initial policy (Fahy, 2015c). The UPC's outreach to developers in this regard yielded positive outcomes bringing together the different stakeholders into a common discussion. In a 2015 press interview Talal Al Dhiyebi, the Chief Development Officer of Aldar, described Aldar's attempts to price housing aimed at middle-income earners at 30 to 40 percent lower than current market value. In addition, he noted a circular, iterative feedback processes between Aldar, the UPC and municipal authorities around the provision of affordable housing, "*They (the UPC) involve us in a lot of policy-making that they do. They take our (Aldar) feedback seriously and even after the implementation, they come back to us to look at the lessons learnt.*" (Middle East Construction News, 2015a, para 10). Aldar's consideration of the range of customers and their incomes, including employees in the oil and gas sector, teachers and nurses, and the need for larger apartments to cater to families signals the recognition of these market segments and their different needs (Barnard, 2015b). The UPC's engagement with developers is key to building knowledge on housing families and not just singles. On a social level, this is a vital step toward improving Abu Dhabi's gender imbalance where the male population is more than double that of females (Statistics Centre Abu Dhabi, 2016). Resident satisfaction levels would also be likely to increase as more middle-income earners have affordable opportunities to house their families on existing salaries.

While large developers such as Aldar have been able to respond to UPC negotiations and adapt accordingly, those without vast resources may not have the same potential to do so. There is a growing need for government driven incentives around lower land pricing and associated taxes, subsidized building materials and lower transaction costs that would incentivise developers to offer affordable housing options. The overlap between housing and finance are avenues for the

government and private sector to collaborate on solutions (Interviewee H, Former Banker, Local Bank, 2012). Thus, carefully crafted governance processes over time involving developers and the UPC were crucial to meeting the UPC's middle income policy. Knowledge creation must be accompanied by knowledge sharing if multi-stakeholder consensus is to be sought, particularly among a host of developers engaged in diverse construction projects.

In November 2015, the UPC unveiled its *Tawasul* (Arabic for 'seeking to draw close') program, after surveying developers and sustainability consulting firms, on ways to improve development reviews, assessments and permits related to UPC policies and guidelines. The UPC signed an agreement with 19 developers in 2015 to share project data that would be included in a centrally managed property database with details on sale prices, unit sizes, rental agreements, and occupant profiles (Fahy, 2015c; Middle East Construction News, 2015b). Such a database reflects a production of knowledge from a diverse set of stakeholders, a key element to adapting housing solutions to reflect current demand and supply. The *Tawasul* program brought together the UPC's planners, Pearl Qualified Professionals (PQPs) (design professionals who have passed the Estidama exam), sustainability experts from private consultancies, and representatives from the developers Aldar, Reem, Tamouh, Tourism and Development Investment Company among others to discuss greater transparency among ongoing projects. The process considered the difficulties developers faced in balancing cost, the technical requirements of Estidama and meeting timelines for development. The UPC used the conclusions drawn from the workshop to inform its 2016-2020 urban development and Estidama strategy (Abu Dhabi Urban Planning Council, 2015a, 2015d).

The data sharing between developers and the UPC will contribute to better managing the housing imbalance and increasing transparency and oversight. In relation to new knowledge transfers between the UPC and developers, Mohammad Al Khader, the UPC's Executive Director for Urban Development and Sustainability, referring to dialogue with developers, noted "*It's more to develop a shared conversation with them and see how we can serve their planning needs, rather than being the planning police.*" (Fahy, 2015c, para 14). His comments reflect a nuance of the local context where a middle path between disparate interests is pursued, instead of the policing role played by the UPC.

The production of knowledge has also been pursued through household surveys conducted by the UPC as part of understanding resident needs (Middle East Construction News, 2015b). The

exercise allowed the UPC to gain community-based evidence on the importance of providing housing with requisite community and transport facilities. Thus, we witness, knowledge production with groups that previously were not engaged in decision-making. At the same time, it was within the wherewithal of the UPC to balance public needs, some seemingly far-fetched, with its development agenda, as noted by a senior associate planner at the UPC. "*Sometimes, we'd have people come and say, 'We want a Disneyland!'...in the end our job is to not only understand their needs, but also give them what is best, based on our (UPC's) experience, knowledge, and the shared knowledge amongst the government agencies.*" – Talal Al Ansari, Senior Associate Planner, UPC (Middle East Construction News, 2015b, para 25).

Ansari's words reflect the pro-governance outlook of the UPC where shared knowhow among the relevant agencies is part of the UPC's planning processes. A former planner at the UPC described the multi-faceted character of Estidama in its ability to galvanize new stakeholders, noting *"Estidama established change in the market. It created a competent sustainability community. The planning council steadily evolved as an institution and has transformed the capacity and face of talent in the region, there is an entire market linked to Estidama"* (Interviewee X, Former UPC Planner, 2017). The ability for a policy to create new business streams within Abu Dhabi around areas such as sustainability training, materials, jobs etc. represents the importance of having a long term economic rationale tied to the knowledge production by the UPC and its stakeholders. While these aspects are a positive step toward adapting Estidama in the local context, there is a need for similar processes to be initiated around refurbishing and retrofitting existing units instead of the current trend of building new developments.

Let us now consider Masdar's foray in localised housing solutions that combine housing and energy-efficiency.

### 8.6.6 Masdar's Eco-Villa: A Multi-Pronged Solution to Housing and Energy Inefficiency

MC's eco-villa is a pilot project that comprises of water and energy-saving technologies, including roof top solar panels, passive energy and water saving solutions. The pilot project involved an Emirati family living in the experimental housing option, whilst Masdar's sustainability team analysed the resource efficiency of the villa while in use. The eventual goal is to commercialise the concept. A key element in determining the viability of the project was

getting the eco-villa to achieve a high pearl rating on the Estidama system, achieving noticeable energy savings and managing construction costs. The prototype was sized at 405 square meters, achieved a 4-pearl rating and used 72% less energy and 35% less water than a villa of comparable size in Abu Dhabi (Emirates 24/7, 2017). The project was the first of its kind, and represented a novel way for testing energy efficiency ideas in housing, whilst still maintaining the privacy of villa living. The main challenges going forward will be related to achieving construction cost savings in the long term, if developers adopt the concept and build entire villa communities. Joss (2015, p.835) notes one of the challenges associated with eco-cities is that they often fail to provide solutions to their wider communities beyond the immediate 'premium enclave' (author's emphasis) of the eco-city. If the eco-villa at Masdar can be scaled upward cost-effectively, it could be a valuable initiative that dually solves energy and housing issues in the local context.

An important outcome of the pursuit of knowledge production are the inherent overlaps that arise from solutions across multiple planning issues that fit the wider economic and political framework of the government and local cultural preferences. New transport solutions also offer considerable overlaps with housing and energy. However, these solutions have emerged in a contested space given the diverse preferences and attitudes of stakeholders in the local context.

**8.7 Multi-Modal Transit Delays in Abu Dhabi Stall Knowledge Production**

Transport related knowledge production in Abu Dhabi has been linked to the promotion of mass transit systems, however, long term plans to build a comprehensive metro and light rail network are scheduled to commence operations in 2020 (Barnard and Neuhof, 2013). Thus, knowledge production around metro and light rail usage are stalled.

Until the expected start of the metro system and the creation of over 950 km of walking and cycle paths by 2030, a bus system has been introduced in downtown Abu Dhabi and its surrounding neighbourhoods (Oxford Business Group, 2016b). Capitalizing on the high rates of smart phone ownership locally, technology-based transport improvements have helped to help steer motorists away from traffic jams, find parking systems and optimal routes to their destination. The data is being installed in satellite navigation systems in cars (Ruiz, 2014a). Advanced technology that measures speed and mobile speed radars are local solutions to help decrease the incidence on speeding. However, technological solutions cannot replace the

human enforcement and police presence that are essential to curb speeding and bad driving practices (Al Ramahi, 2017).

Transport-related technology in the form of automated card systems and renovated bus shelters are examples of technological advancements with a track record of use elsewhere that have shaped Abu Dhabi's public transport scene (Ruiz, 2014c). Since 2014, the DOT has introduced a multi-modal journey, parking guidance and information system, and real-time bus travel information for residents based on successful global solutions. (ITS International, 2014). Battery-powered buses have run on high density routes in Abu Dhabi. The initiative met with challenges posed by the local climate, given that the demand for air conditioning drained the batteries. Despite the technological and climatic issues the DOT continues to engage in feasibility studies on alternative fuels, emissions reduction technologies and understanding how to convert existing vehicles to cleaner options (Ahmad, 2013). These developments reflect multiple synergies between the initiatives at Masdar and the DOT, and are evidence that technologically-related transport solutions transferred at a rapid pace since 2010.

However, local attitudes and preferences in Abu Dhabi counter advances in transport-related knowledge production, that we must consider.

### 8.7.1 Challenges to Transport-Related Knowledge Production and Governance Processes

Wide roads, urban sprawl and the prevalence of low-density housing in the form of villas increase the need for car travel. Low fuel prices and low interest rates on car loans further exacerbate car dependence. (Ochieng and Jama, 2015). In addition, fast driving particularly among young Emirati males showcase road pride and one-upmanship, with similar trends elsewhere in the GCC (Fisher, 2011). Local attitudes such as a preference for large gas guzzling vehicles, and the perception of the car as a status symbol support car dependence, whilst improper lane changing, a poor track record of indicator and seatbelt use, and speeding contribute to unsafe driving conditions (Bouyamourn 2015b; Teserero, 2018a; Thekkepat, 2014).

Ochieng and Jama (2015) suggest six actions being undertaken by the Abu Dhabi Government and the DOT toward reducing car dependence. They include the launch of multi-modal transit, demand management measures such as increases in parking fees, road tolls, new vehicle

emission standards, increases in fuel prices and subsidizing public bus transport to encourage an intrinsic shift in attitudes toward public transport. The DOT has also considered encouraging transit-oriented development (Ochieng and Jama, 2015). The work of the UPC overlaps with DOT initiatives in its domain over land use and development codes with potential to spur housing and transport solutions such as TODs which encourage neighbourhood liveability, decrease urban sprawl, encourage shared usage of vehicles and access to a range of transport options (Besser & Dannenberg, 2005). Given these overlaps, the role of the DOT became increasingly important to supporting both Masdar's and the UPC's efforts to reduce car dependence in Abu Dhabi.

The local context, however, poses threats to the rise of transit-oriented developments.

### *8.7.2 Contested Ideas Around Transit Oriented Developments in Al Wathba*

Nuances of the local context emerged while planning future housing in the Al Wathba neighbourhood, highlighting the importance of locally-adapted knowledge. The UPC's foreign consultants attempted to implement high-density, transit oriented developments by building vertically. Their original plan was adapted to both climate and historical precedents. It offered housing in the form of apartments and town homes that were in fact the vertical form of the '*fareej*' (small neighbourhood) and left additional room for transit oriented development and community clusters. However, the consultants on the project had to adhere to the UPC General Manager's instruction to re-think the transit-oriented housing options for Al Wathba given the cultural preferences for low-density housing (Abu Dhabi Urban Planning Council, 2010a; Dempsey, 2014).

Despite the challenges faced in the Al Wathba case, we cannot discount the potential of Transit Oriented Development (TOD) based on the limited demand for such developments among the Emirati community. It is possible that expat communities could favour high density TODs particularly as developers are expected to meet new affordable housing targets in the future (JLL, 2015). TODs could play a vital role in connecting residents with their places of work over time.

One of the strategies toward the implementation of an integrated transport system is the formation of cross-agency consultative groups among Abu Dhabi's government agencies to which our attention turns.

### 8.7.3 DOT, Masdar and UPC Engage in Knowledge Sharing Around Transport

Abu Dhabi's government agencies including the UPC, DOT, Abu Dhabi System Information Centre (ADSIC) and the Environment Agency (EAD) along with the municipalities developed a strategic action plan designed to cater to multiple users' needs. The DOT has further widened its consultative group to include stakeholders such as the police, emergency services, mass transit operators and the civil aviation and maritime sectors toward planning integrated transport systems (ITS, 2014). In a cross-collaborative endeavour, staff members from the UPC, DOT, Masdar and other agencies were involved in the creation of Abu Dhabi's Surface Transport Plan. This was evidence that the government agencies had recognized the importance of their overlapping roles in providing multi-modal transport and safer, walkable streets and initiated joint discussions (Abu Dhabi Department of Transport, 2009).

The head of the DOT's Public Transport Planning Section Abdulla Al Mehairbi noted the global precedents and attention to street details in cities such as Madrid and Singapore were considered, in putting together Abu Dhabi's Surface Transport Plan. He noted the way knowledge was constructed, "*The team put together to lead the project were experts from the U.S., Europe, and East Asia, so all this knowledge put together gave me a really good opportunity to see how things are done in other parts of the world*" (Public Sector Excellence Magazine, 2015b, para 6). Multiple processes of building knowledge by the DOT through the search for global best practice solutions, engaging international planning consultants such as planning firm Atkins to map international best practices and identify exemplary organizations engaged in transport projects are evidence of the local demand for policy ideas from elsewhere (Atkins, 2017).

Often best international practices were not always readily applicable to Abu Dhabi given the nuances of the local context. For example, cross-collaboration among government authorities also took place around a walking and cycling master plan aimed at encouraging evening bike usage customised to local temperatures. Abu Dhabi's exceedingly high summer temperatures in particular make walking, cycling and waiting for public transport a challenge. MC's

transport-related experiments around the Personal Rapid Transit, electric cars buses and bike sharing have been limited to the eco-city, but have also served as a test ground for solutions that work and those that do not work well in the local context (Masdar, 2016a). The Masdar Institute has played a role in sharing knowhow externally with the DOT around technological requirements, electrifying the existing transport system and transport infrastructure in Abu Dhabi (Abu Dhabi Department of Transport, 2012). However, challenges inherent to the local context as noted above by Bouyamourn (2015b) that are rooted in the social divide, attitudes toward driving, local temperatures, and preferences for luxury cars are difficult to overcome in the short run.

Transport issues in Abu Dhabi are increasingly conceptualised at multiple levels, including regional and global, despite transport traditionally being locally centric, reflecting ideas by mobility theorists Peck and Theodore (2015, p.225) who note that policy making is increasingly taking place in a "*comparative context relative to recognized models and alternatives*". The multi-scalar lens proposed by mobility theorists increases the consideration of the needs and values of a broader set of stakeholders.

### 8.7.4 Multi-scaled Attempts to Shape Transport Knowledge in Abu Dhabi

The DOT's staff also sit on the Middle East regional chapter's board of an international non-profit – the International Association of Public Transport (UITP - Union Internationale des Transports Publics) dedicated to public transport knowledge sharing. Saeed Al Hameli, a DOT staffer and the elected vice chairman of the non-profit's Middle East chapter noted "*When we sit on the policy board, we look at the developments, funding, policies, land use, infrastructure and choose the best combination of transport modes. My position in the UITP Mena will give a chance for people in Abu Dhabi to learn more about public transport, the best expertise and international best practice to the sector.*" (Ruiz, 2014b, para 10). The comments reflect the DOT's recognition of the value gained by engaging with international non-profit and international experts in the region and around the world. Such interactions increase the possibility of solving local transport problems through learning from and testing global solutions. Abu Dhabi will also play host to the World Roads Association meeting in 2019 (Abu Dhabi Department of Urban Planning and Municipalities, 2017).

Thus, the DOT's strategic participation in international transport assemblages signifies Abu Dhabi's intent to embrace tested global solutions and increase its interaction with counterparts

from other cities. We witness elements of what McCann and Ward (2011, p.xvi) term "*local globalness*" in relation to Abu Dhabi's outreach to international entities around global transport solutions as a step in adapting policies locally. Evidence of the DOT adapting global issues around road safety to the local context is evident in its collaboration with the Abu Dhabi Police on the creation of a road user code (Ruiz, 2014c). In addition, a federal level policy introduced by the Ministry of Energy in August 2015 removed fuel subsidies and set monthly fuel prices based on global markets (Arabian Business, 2016). Despite fuel reforms, the decreased oil prices in December 2015 for diesel and gas were lower than they were before the reforms were introduced. The low oil prices impacted by external global markets, allowed both Emiratis and expats to absorb the reforms, however, in the case of an increase in oil prices, the impact of the reforms will be more pronounced as residents will be faced with steeper increases in fuel prices (Boersma and Griffiths, 2016).

The challenge going forward is Abu Dhabi's clear preference for passive strategies to reduce car-dependence. As noted above, residents have been able to absorb the fuel surcharge which emerged as a passive strategy, maintaining the status quo in favour of car dependence. MC also falls into a similar trap of exploring passive energy-efficient transport solutions, to which our attention turns.

### *8.7.5 The Opportunities and Limitations of Masdar's Transport Solutions*

We noted earlier in the discussion that MC's transport solutions so far, have had limited applicability in Abu Dhabi, with the exception of vital information sharing between MIST and the DOT on transport infrastructure improvements (Abu Dhabi Department of Transport, 2012).

Technology-based solutions from MIST's dedicated transport laboratory have had utility outside the boundaries of MC. These solutions involved the creation of a blueprint for an integrated rapid transit system customized using mobile apps to promote public transport use, biking and walking. The solutions addressed the different transport preferences of low, middle and high-income earners. MIST also proposed a mobile app for counting pedestrian steps to bus stations. Another solution envisioned buses operating in fully or partially-dedicated bus lanes. (Ruiz, 2016). The diversified bus system proposed by MIST is an example of adapted policy knowledge localised to suit the specific class and income hierarchies that are

characteristic of Abu Dhabi's population. However, from another point of view, the same initiative can also be viewed as a transit system that encourages segregation across income and nationality.

MC has emerged as a testing ground for energy efficiency transport solutions. One example of this is Masdar's collaboration with Mitsubishi on an electric vehicle pilot project that received high level support from both Masdar and Mitsubishi. The project had opportunities for internships, training and workshops among the partners. Mitsubishi and its heavy industries division managed the vehicles and management system, whilst Masdar provided the charging infrastructure. The project aimed to test the viability of electric vehicle technology in the local context. Lessons were gained through solving technological issues in the local climate through the launch of the first fleet of MC's electric vehicles (Interviewee D, Manager, Mitsubishi, 2017; Vorano, 2011). The DOT's continued experimentation with electric buses is evidence that electric vehicles are still on Abu Dhabi's wider transport agenda (Ahmad, 2013).

During my fieldwork in Abu Dhabi in 2012, I had an opportunity to ride in one of the Masdar/Mitsubishi electric vehicles between the Abu Dhabi National Exhibition Centre (ADNEC) and MC and experienced the vehicles first hand. Whilst comfortable and air conditioned, the electric cars were considerably smaller than the other larger polluting vehicles on Abu Dhabi's major thoroughfares which were travelling at faster speeds in comparison to the Masdar/Mitsubishi-developed electric vehicles (Mascarenhas 2012).

Other examples of internal energy efficient transport options include bike shares and the personal rapid transit system consisting of driverless pods. However, in light of the financial crisis and Masdar's 2010 scale-backs, the PRT was drastically scaled back from the original master plan and currently operates only within the core of the city (Goldenberg, 2016; Kingsley, 2013). The failed PRT expansion is representative of incomplete policy transfer, since the transfer took place in a limited way, and could not be implemented as planned.

One aspect of transport related governance in the UAE that has grown at a rapid pace, and represents a solution focussed on education and awareness is Road Safety UAE. The non-profit initiative is unique in its approach, as it is resident-driven and focussed on changing the collective attitudes of drivers and driving habits in Abu Dhabi.

### 8.7.6 Road Safety UAE: Resident-Driven Initiative Promoting Awareness of Problematic Driving

The work of Road Safety UAE has been able to galvanize both government agencies and the private sector by presenting concept papers to local transport agencies, and partnering with two large global corporate firms working locally in the UAE – BMW and Michelin, towards promoting awareness of problematic driving attitudes in the local context. The non-profit campaign founded by an Austrian expat, has incorporated the views of multiple stakeholders including local schools, the local private sector, government agencies and residents through a public website and blog to encourage public dialogue on promoting road safety. The initiative has found a niche in appealing to corporate social responsibility priorities of the local private sector, providing data to government agencies, collaborating with schools and getting feedback from residents on the common issue of road safety which is of mutual interest to all these stakeholders (Thekkepat, 2014; Tesorero, 2018b). Peck and Theodore (2015, p.225) describe the proliferation of "*soft infrastructure*" in the form of online resource banks, conferences, learning networks, and case-study manuals. Road Safety UAE emerges as a medium that allows new intermediaries and a mechanism for expanding common networks among diverse local stakeholders to mobilise road safety.

Healey (2015) contends that planning practices develop and flourish amidst local interpretation and practice, which is increasingly evident in the example of Road Safety UAE. Awareness campaigns are a particular nuance of the local context, that can actually thrive along with the ruling rentier social contract since they do not challenge authoritarian rule. However, in 2017, 60% of Abu Dhabi's fatalities were the outcome of seatbelt violations despite the UAE-wide seat belt law introduced in July 2017 making it compulsory for all passengers in cars to wear seatbelts (Teserero, 2018a). Thus, we note that reforms have limited value when poor attitudes to road safety and reckless driving prevail.

Nuances of the local context have further contributed to a failed governance processes related to the UPC and DOT's collaboration on the proposed taxi village.

### 8.7.7 The UPC, DOT and the Case of Taxi Village

The UPC and the DOT embarked on a collaboration that simultaneously addressed housing and transport problems. The proposed construction of a new taxi village for the city aimed to solve taxi-related parking congestion in downtown Abu Dhabi and reduce the safety concerns

arising from taxi drivers spending long shifts on roads. UPC planners collaborated with DOT counterparts in selecting appropriate land and acquiring the necessary permissions. The master plan for the village had operational offices, housing, dining, recreation facilities, a masjid, on-site vehicle maintenance and fuelling station. Housing and meals were to be funded by the DOT. The taxi village was also planned to accommodate female drivers at a separate location (Dempsey, 2014). Thus, the project had social and economic implications. The main taxi village was to be located in Mussafah and could accommodate up to 20,000 drivers with the DOT overseeing the project (Al Mazroui Group, 2018). The project also offered taxi drivers respite from labour camp regulations and the lack of parking spaces (Ahmad, 2014b).

Economically, the taxi village was planned to fund itself with plans for the 4 operational complexes to be franchised externally. This was reminiscent of characteristics of late rentierism that encouraged greater self-sufficiency of initiatives. The Al Mazroui Group, a local firm was selected to complete the concept design and the master plan, evidence that the project provided economic opportunities to the local private sector. However, the plans for the Taxi Village were eventually put on hold, despite the benefits it was expected to bring (Dempsey, 2014). The plans for the village coincided with the Arab Spring, when the government focussed on other politically-driven priorities (McGinley, 2011). Given that the main beneficiaries were low-income taxi workers, the decision to stall the project meant that their needs were given lower priority than others by the decision-makers. The example is reflective of the reality of some policy transfer and knowledge production opportunities that are curtailed for political reasons and priorities in an opaque decision-making context. The non-citizen stakeholders impacted in this case, did not possess recourse to question why the project did not reach fruition.

Having discussed, the transport solutions and initiatives being implemented by the UPC, DOT and Masdar within the wider transport issues of Abu Dhabi, it is interesting to note that these solutions are accompanied by similar trends elsewhere in the GCC.

### 8.7.8 Situating Abu Dhabi amidst Regional Transport Developments

Transport developments in the UAE have witnessed a trend of embracing unproven, soft power-driven projects. Whilst long term national infrastructure projects such as Etihad Rail, a national and regional rail project was recently put on hold, Dubai and Abu Dhabi have begun

to test hyperloop systems (Reuters, 2016). Dubai is a valuable public transport role model for Abu Dhabi given its investment in a metro-system, additional buses, trams and water taxis toward an integrated transport system (Deloitte, 2015). In the area of transport, Abu Dhabi signed an agreement with the U.S. based Hyperloop Transport Technologies (HyperloopTT), after a similar announcement made in Dubai in 2016 (Reuters, 2016). The expanding role of private firms specializing in transport and infrastructure development are vital to the growth of transport-related assemblages in Dubai and Abu Dhabi. Thus, hyperloop solutions reflect contextual and relational factors is envisaged by mobility and some policy transfer theorists (see Evans and Davies, 1999; McFarlane, 2009; Peck, 2011) who focus on dynamic interactions that arise between territorially centred policies and wider networks and relations.

Across other parts of the GCC there is increasing evidence of parallel transport solutions. Qatar's government, for example, has commissioned feasibility studies related to the construction of transit oriented developments while its urban public transit systems including metro and light rail are concurrently under construction in preparation for the 2022 World Cup (Deloitte, 2015; Zaina and Furlan, 2016). Given that Qatar faces similar challenges to Abu Dhabi in the local context around integrating transport infrastructure and land use, and a culture of car dependence, the ongoing foray into TOD studies and feasibility in practice will have regional implications if implemented. Most transport solutions are government-driven whilst some involve joint ventures with the private-sector. For instance, Oman's national rail project has attracted joint ventures with the international private sector (Deloitte, 2015). Saudi has invested in metro systems for its major cities including Riyadh, Jeddah, Makkah as well as high speed lines connecting Makkah to Medina, amidst roads, ports and airport projects (Atkins, 2014). Inter-city connectivity is a growing trend across the GCC. These nations face similar challenges such as providing adequate transport, housing and infrastructure to cater to the vast number of temporary workers (Deloitte, 2015). Thus, MIST's class centric transport options could have regional applications. Other class-centric transport systems are already in effect beyond Abu Dhabi, such as Oman's *Baiza* buses, a functional blend between shared taxis and transit buses that is also plagued by slow boarding and unreliability (Abdel Raouf and Luomi, 2016). The persistent inequalities faced by communities at the margins in Abu Dhabi exist in parallel with similar challenges faced by these groups elsewhere in the Gulf states.

Subsidy reforms continue to be unevenly implemented across the Gulf states despite the economic rationale for them. While Abu Dhabi has already implemented its fuel reforms, in

contrast, Kuwait was faced with reversing its fuel price increases given the negative reaction from users (Rahman, 2015). Abdel Raouf and Luomi (2016) have proposed that local adaptations of proven concepts that prioritise local needs and climate be considered, such as air-conditioned transit, walkway linking stations, ride-sharing for designated areas etc. Some of these are already being planned in conjunction with Estidama requirements in Abu Dhabi (Abu Dhabi Urban Planning Council, 2010b). Abu Dhabi's unique solutions in the area of public transport, road safety education and awareness, technologically progressive transport options have been vital to the creation of context-relevant solutions. Mobility theorists also cite the importance of considering the local context in which transfer agents and solutions operate (Theodore and Peck, 2010; 2012).

However, the expansion of existing roads, and highway infrastructure continues across Abu Dhabi and the region with a number of long-term projects in progress (Deloitte, 2015; The Business Year, 2017).

Given the long lead times associated with transport infrastructure being realized, improvements in urban design became a viable area for collaborative work among Abu Dhabi's government agencies.

**8.8 Strategic Collaborations that Promoted Urban Design Governance**

A particularly noteworthy element of urban design governance was that it had a universal quality that cut across the social divide alleviating street conditions for Emiratis and expats alike. The UPC considered residents' preferences and behaviour, and organised site visits to a number of new developments under construction to understand the design issues and associated solutions toward the creation of its design manual. During the first two years of the street manual's implementation, feedback was collected by the UPC from various stakeholders including residents (Abu Dhabi Urban Planning Council, 2013b). Various government agencies including the DOT, municipalities, police and other agencies collaborated on the manual that featured recommendations for street and public realm design such as bike lanes, shading, landscaping, walking and biking paths, safer medians for pedestrians, raised zebra crossings, urban braille, and road narrowing solutions (Abu Dhabi Urban Planning Council, 2010c; Clarion Associates, 2008; Gale, 2009).

In a bid to share street design knowhow globally, a publicly accessible online design tool has been made available to the public (McGinley, 2016). In relation to reverse policy transfer, a concept noted by Khirfan and Jaffer (2014), the UPC's 2013 award for best design standards from the US-based Institute for Transport Engineers is evidence that the hybrid policies came full circle and were recognized in the jurisdiction from where design was initially emulated (Abu Dhabi Urban Planning Council, 2013c). Thus, a multi-layered and multi-faceted decision-making process that educated external stakeholders and also incorporated community feedback at specific junctures was a positive outcome and represented a departure from existing top down decision-making. Instances of policy innovation described by Rose (1991) were evident in the UPC's design processes which attempted to be inclusive of diverse views, and also practical in their application.

However, the UPC's urban design pursuits were sometimes undermined by conflicting decisions made by other government agencies. An instance of this was the Abu Dhabi Police Department's decision to increase speed limits in Abu Dhabi which went against the UPC's design manual specifications for road safety. The UPC also had to negotiate with utility providers on a way to bring the utility lines directly under the streets, which the providers had resisted until the creation of the design manual (Abdo, 2010; Dempsey, 2014). These challenges are telling of local factors that challenge the implementation of imported design concepts. Thus, historical precedents discussed by Dolowitz and Marsh (1996) who note that former institutional structures and processes impact the way new policies are shaped and the degree to which they are transferred.

Whilst the urban street design manual was inclusive of a diverse set of residents in its feedback loop, not all participatory processes were inclusive. Often interactive processes around neighbourhood revitalization were focussed on Emirati neighbourhoods.

### 8.8.1 Selective Participatory Urban Design in Local Neighbourhoods

Persistent inequalities that favour local citizens over other residents contribute to contested governance processes around resident engagement in Abu Dhabi. Consensus-driven public outreach to Emirati strongholds of Shahama and Bahia with a population of about 25,000, by the UPC, took place by combining the concept of the local *majlis* (Arabic for 'a place of sitting') and the Western town hall meeting. The UPC created an open platform through which

citizens, leaders and government agencies could interact, raise concerns and issues of mutual interest (Gudaitis, 2010). The *majlis* however, is an unusual construct in that it occupies a grey zone within the realm of state and society (Young, 2014)). While the *majlis* represents a traditional form of consensus-driven policy-making primarily among elites in the Gulf, it is not particularly inclusive of all segments of society.

From a UPC perspective it was important to meet in person with the end users of the communities they were planning for. The sessions were segregated by gender in keeping with the local customs. Local preferences for courtyard style homes and low-density housing choices, and positioning amenities within walking distance of houses were garnered (Gudaitis, 2010). McCann (2011), Prince (2010), Ward (2006) and other mobility theorists, focus on the purposive gathering of people, institutional capacities, expertise, models, techniques and technologies, and political power associated with *both* local and external assemblages. The purposeful choice of Emirati neighbourhoods represented local assemblages that the UPC was involved in, whilst the soft power derived from these events allowed the UPC to showcase some forms of power sharing with the international planning community, and forge external assemblages simultaneously.

The departure from government-led local planning, and the combination of the traditional concept of the *majlis* with the Western notion of the town hall meeting, was an example of a governance process adapted to the local culture and context, and reflected a context-specific form of knowledge production. Chakravarty et al. (2013) however, caution that public participation should not be a one-off activity. While the UPC committed to engaging in direct interaction with residents and important stakeholders in scheduled consultation sessions to inform residents of planning projects in advance (UPC Press Release, 26th March 2012), this is also a costly process, and there is limited data on how this is taking place uniformly.

In 2016, the Abu Dhabi Municipality (ADM) has undertaken neighbourhood surveys in the less affluent neighbourhood of Mussafah in a bid to improve community facilities. Although public participation did not take the form of a *majlis*, 515 residents, business owners and community members participated in the survey exercise garnering the views of expat and local citizens. Key issues that emerged were the lack of safety on neighbourhood roads and rising commercial rents. Residents demanded more mosques, playgrounds, parks and public restrooms. In addition, the survey pointed to the need for access to public transport in the area, affordable housing, waste collection, pedestrian paths, garbage disposal, and the removal of

abandoned vehicles (The National, 2016a). The issues outlined in the survey are indicative of the disenfranchised communities that reside in Mussafah and the troubling urban issues that poorer primarily non-Emirati neighbourhoods contend with. The selective inclusion of some communities in decision-making contributes to governance around design being a contested issue. Healey (2004) has argued that strategies such as mobilising like-minded actors around mutual discourses can break away from problematic structures toward transformative governance. However, governance in Abu Dhabi cannot be transformative as outlined by Healey, given the inability to move away from problematic social contracts that prioritise some stakeholders over others. However, the recognition of the government's choice of different kinds of outreach tailored to diverse social segments around urban design improvements by agencies such as the UPC and the municipality are evidence that the government intends to take action around urban design issues, producing new and context relevant knowledge based on existing residents' views and neighbourhood data.

### 8.8.2 Situating Urban Design Within the Region

In the area of urban design, we witness the competitive impact of Dubai on development plans in Abu Dhabi in line with arguments made around the influence of 'Dubaisation' elsewhere in the Middle East that promotes sprawl, spatial segregation and car dependence (Abaza 2011, p.1075, Elsheshtawy, 2006) and the loss of urban spaces in cities that Zukin (2010) critiques for contributing to gentrification. John Madden, a former UPC planner noted the competitive nature of development in Abu Dhabi, "*Each project is trying to maximize its own individual profit on a particular site. But sometimes they are so focused on what that one site is, in terms of maximising profit, that it might be the exact same program two blocks down the road*" (Cormier, 2015, para 29). These ideas around emulation are also discussed by Furlan and Faggion (2017), who argue that planning within GCC cities has a trend of being impacted by globalization and economic factors, including land speculation and urban sprawl that has spawned the duplication of unconnected environment in terms of the public realm, streets and landscapes. Celebrity architects and their designs have been pursued in the Gulf cities including Abu Dhabi (Ponzini, 2011), however, such designs often fail to meet end users' needs and have limited social significance. Katodrytis and Mitchell (2015b) similarly describe the struggle to implement local practices in the Gulf cities amidst exaggerated architectural structures. These arguments mirror those made by Elsheshtawy (2004) and Ouis (2011) with respect to Abu

Dhabi's spaces. Furlan and Faagion (2017) advocate the preservation of history, culture and identity regional socio-spatial policies in the context of the GCC which are under threat.

There are clear overlaps between Abu Dhabi's development path and elsewhere in Dubai, Doha, Bahrain and Saudi's major cities (see Saif, 2017; Willis, 2015). The spread of urban development patterns is reminiscent of Peck and Theodore's (2015, p. xv) concept of '*fast policy transfer*' regionally with the accompanying risk of a one-size-fits-all approach across the design of these cities ignoring the existing local specificities and differences. Peck and Theodore (2015) also argued that such challenges can be countered through intensified connectivity over time between sites of policy development. Local planning authorities are already engaging in tertiary knowledge sharing, such as exchanges between the UPC and the Saudi Economic Cities Authority (Sinclair, 2014). Yet, more regional engagement and awareness of the importance of local practices is vital.

## 8.9 Conclusion

We have traced a path around various local, regional and global knowledge-producing assemblages in relation to Abu Dhabi over the course of this chapter. This opens up multiple narratives on how diverse actors in the local context, share learning and implement sustainable concepts over newly formed networks. Sustainability concepts, particularly around energy, have greater mobility compared to housing, transport and urban design solutions. We noted how Masdar and its energy initiatives have expanded across multiple levels in the UAE, regionally and globally. This has allowed Masdar and Abu Dhabi to both become globally competitive in the renewable energy space. In contrast, Masdar's housing, transport and urban design features have so far had limited impact outside MC's boundaries, particularly when compared with its contributions to renewable energy knowledge production and governance. The vital political and economic role played by MIST, IRENA and the Bio-fuels Consortium in creating assemblages around energy are an ongoing part of Abu Dhabi's energy future.

Housing and transport solutions produced by assemblages of government agencies, developers and residents in some cases, must counter political, social and cultural tensions that result in divided spaces in the built environment. Yet, there have also been positive outcomes related to knowledge production. The pursuit of Emirati housing despite the challenges of the process have resulted in culture-specific and climate adapted housing and community facilities. This is

in line with Healey's (2013) assertions on situating planning ideas in the specific local context by considering aspects of localised, collective capacity building. The creation of the UPC's urban design manual also revealed attempts to promote safer streets, and increased opportunities to walk and bike. We also note how the policy transfer process comes full circle when the UPC's urban design improvements in Abu Dhabi were recognized in the US and the UPC shared its online tool on urban design globally.

Masdar also garnered vital learning through implementing phased development and increasing a diversity of housing options. By shifting from a full focus on the PRT to developing a thriving electric vehicle project, biking options and more importantly knowledge-sharing with the DOT through MIST, Masdar is moving toward developing sustainability solutions with potential to impact greater Abu Dhabi.

The movement of knowledge and the subsequent governance in relation to knowledge production has also been characterised by politics, stakeholder biases and competing interests. In many instances, authoritarian power and political priorities took precedence in decision-making such as the case of the taxi-village and interactive town hall meetings in predominantly Emirati neighbourhoods. In general, the UPC's Estidama and MC's renewable energy collaborations have exhibited longevity due to being linked to wider government mandates. This is reflective of arguments by McFarlane (2009) who noted that along with learning, different forms of power are also transformed across time and space in mobile processes.

With regards to mobile sustainability concepts and related governance, the international private sector and local non-profit organizations have also played an active role in transferring and implementing sustainability knowhow from a regional perspective. In the area of housing and transport, international planning consultancies have been vital change agents responsible for transferring housing and transport solutions regionally. These firms include groups such as Atkins, Deloitte and others who have routinely published industry reports assessing sustainability issues in the region, and engaged in important consulting projects (Atkins, 2017; Deloitte, 2015).

Governance processes among a wider set of stakeholders related to transport, housing and urban design were characterized by network formation based on stakeholders' mutual interests.

A notable example is the UPC's efforts to coordinate urban design improvements across various government agencies. Similarly, a governance process that demonstrated vital social learning was the UPC's engagement with developers and efforts to craft an affordable housing policy.

However, some governance processes have been contested as witnessed in Reem Island where third party stakeholders did not maintain the infrastructure in the long term and competing developers' interests that stalled the UPC's negotiations for several years. Another assemblage that did not follow through was the UPC-DOT collaboration around the taxi village. Nuances of the local political context impact the privatisation of energy utilities that could further galvanise energy efficiency. It becomes increasingly evident that oil wealth, authoritarianism, and the social contract with citizens underlie mobile sustainability concepts in Abu Dhabi. When knowledge is produced by assemblages of diverse stakeholders, these represent new forms of political legitimization for Abu Dhabi's leadership.

Increasingly the research pointed to solutions that combined politically important economic and social factors such as the pursuit of low-density Emirati housing versus transit-oriented developments, public participation in designing Emirati neighbourhoods versus municipality surveys in expat neighbourhoods, eco-villas being tested on Emirati family consumption. While some solutions were focussed on citizens, some solutions such as the changes posed by the UPC's design manual, expansion of walking and public transport services and affordable housing negotiations on Reem Island impacted a variety of population segments. However, despite advancements in knowledge sharing and new knowledge production Abu Dhabi is still car-centric, spatially segregated and lacks greater opportunities for interactive participatory decision-making outside of local citizens. It is a challenge for actors engaging in purposeful assemblages to balance the tensions of overlapping social, economic and political relations across time and space in Abu Dhabi's local context.

What makes Abu Dhabi unique is its foray into governance across overlapping planning issues. The adaptation of solutions across policy areas with natural overlaps such as housing and transport (TODs, Taxi-Village, Shahama/Bahia *majlis*), housing and energy (Masdar Eco-villas, Emirates GBC), urban design, transport and road safety (Road Safety UAE, street design manual), energy and transport (Masdar's electric vehicles) among other examples, proved that synergies could be achieved. This is concurrent with arguments by McCann (2011), Prince

(2010), Ward (2006) and other mobility theorists, who focus on the purposive gathering of people, institutional capacities, expertise, models, techniques and technologies, and political power associated with both local and external assemblages. We have thus come to understand that governance processes must engage governmental agencies, the private sector, non-profits and residents working together on projects of mutual benefit and interest.

The competition and proximity between Abu Dhabi and Dubai has played a role in the production of sustainability knowhow in Abu Dhabi given both Emirates are compelled to compete with one another. This is evident in similar energy efficiency initiatives, the pursuit of hyperloop and other transport solutions, urban design criteria and Estidama-compliant housing developments. Dubai, plays a role in the future sustainability developments that unfold in Abu Dhabi. It is a hub for complementary but also competitive initiatives that Abu Dhabi and its various government agencies must monitor going forward.

The adaptation and shaping of sustainability knowhow in Abu Dhabi mirrors regional developments elsewhere in the GCC particularly around transport and infrastructure development and the transfer of green building standards regionally, spurred in part by the role of regional green building councils. Considering these relational factors that propel transfer, we can argue that the research hypothesis around the positive impact of knowledge production and hybrid versions of concepts or "*parts of everywhere*" (McCann, 2011, p.144) that have emerged in Abu Dhabi and the GCC states, have for the most part had positive impacts across energy, housing, transport and design due to the creative adaptations to the local context. However, this knowledge is also biased, and controlled by powerful stakeholders in the local context. Given the inequalities that persist, the positive outcomes from new sustainability knowledge gained, are countered by the fact that not all segments enjoy the benefits of sustainability knowledge.

We can also argue that on balance governance is contested in some instances because of the nuances of immense oil wealth and authoritarianism that define the local context, but not all instances, particularly where economic returns and soft power were possible. Knowledge sharing and governance mechanisms allow Abu Dhabi the opportunity to reimagine itself in diverse ways. The focus on walkable, culturally-sensitive Emirati neighbourhoods, soft power building and income-generating initiatives are pursued actively in Abu Dhabi. Stone (2003) argues that the creation of new ideas, institutional capacity building, and experiential

knowledge gained from testing new policies in a new domain are particularly valuable aspects related to policy transfer. Despite contestations that impact governance processes in the long term, there is concrete evidence of assemblages of familiar stakeholders (the government agencies) and increasingly new voices (private sector banks and developers, buyers, investors and residents) being harnessed in the implementation of sustainability concepts in Abu Dhabi.

## 9. Conclusion: Evolving Power Relations, Inequalities, Opportunities for Knowledge Production and Contested Governance Impact the Politics of Mobilising Sustainability in Abu Dhabi

### 9.1 Introduction

The theoretical concepts from the literature on policy transfer, policy mobility, and related governance were interpreted and adapted to diverse planning and sustainability issues in Abu Dhabi. By uncovering aspects of power, inequality, knowledge production and governance from diverse perspectives, we gain a deeper understanding of the politics, interpretations and implications that emerge from the transfer and mobilization of sustainability concepts to Abu Dhabi.

Over the course of this research it became clear that the different actors and institutions involved in mobilising the policies across the diverse planning and sustainability issues were interacting across multiple scales. Factors such as globalisation and modernisation also played a role in bringing experienced experts and consultants to Abu Dhabi, accompanied by their own experiences and visions of sustainability (Saif, 2016).

Issues such as power and inequality often challenged the viability of proposed sustainability solutions in some ways, whilst power could also be mobilised positively to encourage the co-production of knowledge by foreign and local stakeholders toward locally-adapted solutions. Similarly, governance processes that ensued were both positive developments in some cases where new stakeholders were involved in mobilising sustainability solutions, whilst in other cases complexities in the local context resulted in contested governance processes, inactive partnerships and imbalanced governance that prioritised some communities over others. Robinson (2006) has championed the learning that arises from local complexities. The nuances of the local context provided a series of lessons on how contestations between globalisation and modernisation countered the state's social contract with citizens, and existing cultural preferences and attitudes to sustainability. The overlapping political, economic and social factors across time and space that mobility theorists such as Larner and Laurie (2010), Peck and Theodore (2012), McCann and Ward (2011) and others have deemed as vital areas of exploration, impacted interpretations of sustainability concepts in Abu Dhabi.

The findings are organised in 4 sections across the chapter, each dedicated to one of the four research hypotheses that the thesis has considered. We begin with the issue of power, followed by inequality. We next consider co-production of knowledge and finally, the issue of governance. Under each of these interrelated and interdependent hypotheses, I situate the findings about Abu Dhabi in relation to the GCC and Dubai, and consider developments in Masdar and the UPC in relation to housing, energy, transport and urban design.

**9.2 Findings Relating to Evolving Power in Abu Dhabi**

Let us consider Research Hypothesis 1 which stated - Strategic power sharing among Abu Dhabi's diverse sustainability-related stakeholders in the wake of globalisation is diversifying the rentier, authoritarian status quo in its traditional form.

At the outset, this hypothesis is true in part, given that power is increasingly being shared among diverse stakeholders around sustainability, however, while the rentier *status quo* is being diversified, absolute authoritarian power in Abu Dhabi still lies with the monarchs. By placing control over sustainability policies and their implementation within a handful of elites, government-backed organizations and government agencies, the Abu Dhabi leadership exhibits its preference for a controlled and economically-strategic form of sustainability.

Over the course of this research, we encountered concepts of authoritarianism and rentierism and how they often exist in tandem. However, we also noted cases where they do not exist together. Thus, I addressed aspects of authoritarianism and rentierism separately. It became evident that rentierism is being eroded, whilst authoritarianism is intact in the era of late rentierism. This has been manifested in increased reliance among the Gulf states on market-based mechanisms, privatization, wealth generation and economic diversification that signalled the erosion of traditional rentierism (Gray, 2011).

Although authoritarianism has not been eroded, the emergence of technology advancements, social media, smart phones and satellite television, platforms have made it increasingly difficult for governments to co-opt knowledge. This has been referred to by Kinninmont (2015, p.32) as a greater '*democratization of information*' with increasingly educated and socially aware citizens able to voice their opinions (Davidson, 2012b; Levins, 2013; Saif, 2016). We noted in Chapter 4 that Gulf states are faced with balancing blurred boundaries between the monarchies

and their business interests (Davidson, 2012b). Similarly, Healey's (2013) description of "*messy worlds*" within which concepts circulate, are applicable to the Gulf states given the complex historical and cultural factors at play (Healey 2013, p.1517).

In chapter 4 it became evident that the state emerged as the most important actor involved in interpreting and implementing sustainability across the GCC. The respective governments and their agencies in these states, were mechanisms through which state power was exercised. The assertion of power by the leadership takes place amidst an influx of large numbers of foreigners and the growing presence of foreign multi-national firms (Deloitte, 2015; Goodwin, 2016). Power across the Gulf states has been shaped by a combination of external and internal alliances rooted in family lineage, marriage, business and tribal allegiances that feed informal social contracts (Barnett et. al, 2013; Davidson 2009a, 2012a).

A continuous movement between the assertion of power and attempts at power sharing became evident over the examples considered in this research. Gulf states have responded to demands for '*representative institutions*' and '*responsive government*' as well as political accountability (Gause, 1994, p.42). However, many such opportunities for representation are in fact manipulated by ruling families holding on to the majority of seats and retaining the top-down decision-making structure (Nonneman, 2008). The embrace of sustainability in Abu Dhabi took place amidst improved productivity, governance and competitiveness of state-owned enterprises and the private sector made possible through power-sharing and shared decision-making among such entities (Kamrava et al., 2016).

Another mechanism for asserting authoritarian power was the pursuit of expensive sustainability initiatives and investments that simultaneously earned the Gulf states soft power. The pursuit of overambitious projects came at tremendous financial and human capital cost, in a bid to build extravagant, one of a kind projects (Jensen, 2016; Sillitoe, 2014).

The particular historical nuances of oil wealth also perpetuated the social divisions and subsequent spatial divisions that Hertog (2017, p. 9) referred to as "*a larger process of enclave-building*", a manifestation of authoritarian power that goes unchallenged. Given that a great number of projects and initiatives are tied to the government, the values of the government are reflected in technology, social media, online resources and the related networks. This results in a diluted representation of societal values.

Davidson's (2012b, para 2) suggestion of a "*mosaic model*" of strategically balancing traditional loyalties alongside modernization by the Gulf monarchies is reflective of Abu Dhabi's path toward adapting and implementing sustainability. However, the pursuit of such a balance is complex.

Let us consider findings rooted in historic and regional manifestations of power.

### 9.2.1 Historic and Regional Manifestations of Power

The dependence on both foreign professionals and migrant labour is rooted in the reliance on labour from the Indian subcontinent given the short supply of skills among local citizens to undertake rapid modernisation (Tatchell, 2009; Tharoor, 2015). Sheikh Zayed's intent to move away from the colonial past and collaborate with new change agents was noted in the replacement of British planners with other international experts from Japan, Egypt, and more recently the North American influence (Dempsey, 2014; Saif, 2107; Tatchell, 2009). The colonial past also brought to the fore deeper historically rooted societal hierarchies that pervade the implementation of sustainability policies (Khalaf, 2001).

We learned that GCC governments' including Abu Dhabi have relied extensively on foreign expertise, migrant labour and foreign experts and consultants as part of modernising their cities (Saif, 2016; Tadros, 2015; Tharoor, 2015). Increasingly, human capacity is evolving through various initiatives to hire local citizens, including in areas of sustainability. However, the rentier attitudes that persist including a sense of entitlement in the local population continue to impact the delicate balance of power-sharing (Levins, 2013).

While Islam is a religious belief, it also took on culture and heritage-related importance in this research. In Chapter 4, we noted Islam has been employed to bolster state power and regional stability in the Gulf states and in Abu Dhabi. Islam was paired with the rationale for cultural preservation and was evident in the building of mosques, Islamic art and educational institutions in the built environment of Gulf countries (Gierlichs, 2016; Harrell, 2014; Levins, 2013). It became evident Islam impacted aspects of gender equality that were noted in gender specific public spaces and transport options in Abu Dhabi and Dubai (Mascarenhas, 2012). The Sunni-Shia and Islamist-secular divisions of Islam were noted in state-funding being granted

to Sunni mosques in Abu Dhabi (Dempsey, 2014). Thus, Islam continues to emerge as a fragmented concept, subject to interpretation by those in power. Islam tied the Gulf states together in some ways (Davidson 2012b; Levins, 2013) but it proved to also be contested, based on the sectarian tensions and political rifts that arise from differing interpretations. In aspects such as the built environment which are culturally and socially relevant, but less political in nature, Islam thrives as a mobile concept, versus ideologically-driven aspects of Islam.

Let us consider the findings around evolving power at the institutional level.

### 9.2.2 Evolving Power Structures at the Institutional Level

Masdar plays a pivotal role in promoting itself globally as Abu Dhabi's premier sustainability hub, particularly around business and research (Masdar, 2016a). We noted the strategic role Masdar's media machine plays in positively portraying the brand of the organization externally. The use of technology to feed wider soft power intentions of the state, is evidence that economically-driven sustainability thrives at Masdar. Power sharing away from traditional members of epistemic communities was evident in Masdar's strategic attempts to bring in youth and women into organizational initiatives on sustainability. Masdar is thus situated amongst complex political forces that prompt it to balance a combination of philanthropic, economic and politically-strategic investments.

At the UPC, power was wielded by Abu Dhabi's leadership, and a group of senior Emirati and North American planners in the institution's early days (Pricetags, 2007). Powerful interests within familiar networks of North American planners allowed for planning concepts to transfer with greater speed, mirroring what McFarlane (2009), Peck and Theodore (2015) and Prince (2014) have noted with regard to the existence of powerful interests at play in mobility processes. Peck and Theodore (2015, p.223) noted that the speed with which policy is codified has to do with powerful interests within "*dense networks of hierarchical and lateral relations*" The institution's decisions sometimes conflicted with the values of North American planners. For example, with regard to labour camps placed outside the city limits, the power asserted by elites in the local context made it difficult for the UPC to enforce development regulations (Dempsey, 2014). However, Abu Dhabi's leadership exercised clear decision-making power

over the initiatives and strategies the institution embarked on (Cormier, 2010; Interviewee X, Former UPC Planner, 2017; Pricetags, 2007; Weinstein, 2010).

Let us explore the findings around evolving power in the area of energy.

### 9.2.3 Power Manifested in the Area of Energy

The rationale for the pursuit of Abu Dhabi's alternative energy investments and the Masdar initiative was rooted in economic diversification and energy security. Masdar was also a soft power generating mechanism, an avenue for technology experimentation, jobs creation, skills development, knowledge production and marketing and branding Abu Dhabi as a renewable energy hub. However, Masdar has been critiqued as a form of "*redundant institution building*" in the renewable energy space (Krane, 2014, p.8). Given that Masdar has not grown at the speed first anticipated by the leadership, we can question whether Abu Dhabi had to necessarily create Masdar in the first place. From a relational perspective, Saudi Arabia, Qatar and others in the GCC are gradually playing catch-up to the lead that Abu Dhabi has established. These nations have created specialist, purpose-driven initiatives such as Qatar's Energy City, and Saudi Arabia's King Abdullah University for Science and Technology. What became evident was when such political and soft power -driven initiatives are justified under the wider umbrella of economic diversification, there was limited public critique on whether such initiatives are redundant.

The demand management initiatives by the public sector have been experimental and small-scale in comparison to the investment in supply-side, soft power generating initiatives. Thus, power continues to be asserted through high profile supply-side investments, that showcase the political intent of the government.

We witnessed the attainment of soft power through Abu Dhabi's alignment with the globally recognized brand of IRENA. While simultaneous use of wealth to secure the IRENA bid has been critiqued by Van der Graaf (2012), the award of funds to IRENA has been mutually beneficial to the stakeholders (Renewable Energy Magazine, 2009). We note elements of what Wolman and Page (2002) describe in the behaviour of elites who influence policy circulation through creating strategic assemblages. In light of this, the policy discourses that emerge from such strategic assemblages can potentially retain the particular biases of a limited set of powerful stakeholders.

The Siemens and GE energy collaborations with Masdar reflect power sharing between elite stakeholders, but also reflect power being retained among certain high-level stakeholders which could monopolise certain business streams in the eco-city. Mobility theorists in particular advocate for policies to be mobilised at multiple scales. These high level multi-scaled private sector partnerships between multinational firms and Masdar produce outputs that are solutions-driven and replicable outside the boundaries of Masdar (Capital Business, 2015).

Thus, renewable energy-related knowhow transferred to Abu Dhabi through these mediums and change agents was reminiscent of power sharing, with transfer that took place with speed, and the ability to transcend physical space.

Let us consider power manifested in the transport arena.

### 9.2.4 Power Manifested in the Area of Transport

We witnessed authoritarian power manifested in transport initiatives, when alternative transport modes such as Uber were limited by the government. While Dubai allowed Uber to run, Abu Dhabi's authoritarian political structure curbed the alternative transport option. Similarly, Abu Dhabi's focus on hyper-loop technology whilst wider GCC rail networks were put on hold reflects how authoritarian power controls large infrastructure investments, without requiring public buy in.

The assertion of authoritarian power had positive outcomes during the planning of the new Etihad railway. The negotiating role of the Crown prince and the ruling elite were key to stemming conflicts over land acquisition (Dempsey, 2014).

The overhaul of the former taxi service suggests that the government has succeeded in monopolizing aspects of transport through centralizing the taxi service. The rationale on the part of the transport agencies was to promote higher overall standards and select drivers through a vetting system (Ahmad, 2014b). This however, has negative implications on market-driven transport initiatives.

Beyond transport, power was manifested in the built environment in a number of instances which we now consider.

### 9.2.5 Power Manifested in Urban Design

In the built environment, the assertion of authoritarian power was reflected in the loss of older structures in the city where vibrant communities still thrive, where community spaces and even temporary mosques were gradually phased out as the UPC prioritised uniform design and quality of public spaces (Leech, 2012). The rigid prescriptions of the UPC's design regulations took away some of the natural organic activity of urban spaces that would ordinarily make them unique (Dempsey, 2014). Although comprehensive, the UPC's street design specifications have not adequately planned for the low-income groups that populate existing public spaces unstructured by the UPC's design standards but nevertheless teeming with their own vitality. These are the spaces referred to by Williams (2015, para. 6) as "*places in the city that aren't like everywhere else*". The lack of power-sharing with impacted communities and end-users universally in development decisions has eroded older spaces in Abu Dhabi (Williams, 2015). In contrast, spaces that are culturally important to citizens, and designs that possess the ability to gain soft power were actively pursued (Gudaitis, 2010; Leech, 2012).

We now turn our attention to the findings related to how power is manifested in the realm of housing.

### 9.2.6 Manifestations of Power in Relation to Housing

Emirati housing and the creation of Emirati neighbourhoods emerged as an exercise in nation and identity building. Spatial segregation helped Emiratis preserve their cultural traditions and way of life and was part of the government's social contract with citizens. Emirati housing thus became a priority as witnessed in the aftermath of the Arab Spring (Malek, 2013; McGinley, 2011). Amidst political uncertainty in the wider region, Abu Dhabi's National Housing Program committed to building over 13,000 villas for Emiratis and creating mixed use communities (Abu Dhabi Urban Planning Council, 2011). We witness certain housing-related assemblages being created, and empowered with what McFarlane (2009, p.16) has described as the "*capacity to assemble*". Power sharing around home ownership is limited for non-Emirati segments. Emiratis are permitted to own freehold property anywhere in Abu Dhabi, nationals of Gulf states are allowed to own property in designated investment zones, whilst all other nationalities were granted the right to buy the equivalent of long term leases in multi-story developments, excluding the land itself, in specified investment zones (Barnard, 2014).

Power sharing has not evolved much in the realm of real-estate ownership with the vast majority of developers being state-owned and most real estate concentrated in the hands of a

few master developers often with ties to key members of the royal family (Davidson, 2009a; Oxford Business Group, 2016a).

McFarlane (2009) argues in favour of considering multiple conceptions of power as part of understanding mobility. The role of top-down mandatory policies, and reflected the assertion of power, included a policy that required all public-sector staff with an accommodation allowance to reside in Abu Dhabi (Norwood, 2015). Another mandatory policy that reflected power sharing with developers with positive social impacts was the affordable housing decree to house low-income workers through company-sponsored housing. The heightened demand for shared rooms among many low-income and migrant labour groups prompted the government to respond with an appropriate mandatory policy for this segment. This has implications on power, given that the government is empowering low-income workers, whilst simultaneously preserving the power hierarchy between the employer and employee through the *kafala* (sponsorship) system, and simultaneously creating an income stream for developers who will build the accommodation. However, given the lack of transparency in the government's inspections around compliance, the actual implementation of the housing policy in practice may be difficult to gauge (Fahy, 2016). The unequal power relations that impact lower-income expat groups resemble the old colonizer-colonized dichotomy noted by Allmendinger (2017) and post-colonial theorists, particularly when policies that fail to be implemented as envisioned, are not publicly scrutinized.

Power sharing in the form of the UPC's middle income rental policy, the UPC's efforts to craft a workable affordable housing percentage, the introduction of inclusionary zoning, re-introduction of rent caps, and joint housing and transport solutions are evidence of a shift in the balance of power in favour of low and middle-income home seekers. Developers have also attempted to attract middle-income expats through flexible payment plans, reducing unit sizes and applying standardised units, which represent a change in former business models (JLL, 2015). These trends reveal that both the government and developers have come to the realization that these segments are vital economically and socially. An example of the exertion of power in relation to a mixed-use housing development at Masdar was the failed assemblage of the Swiss Village. The collaboration had to submit to the demands of Masdar and its parent company Mubadala (Schilliger, 2012).

Thus, we come full circle around the assertion of power, and instances of power sharing that take place in a continuous cycle across different planning issues, both strategically controlled within the limits set by Abu Dhabi's authoritarian government.

Let us consider the findings that emerged in relation to the second research hypothesis on inequality.

## 9.3 Inequality-Related Findings

When we consider research hypothesis 2, focussed on persisting inequalities, friction and tension that pervade the transfer and implementation of sustainability principles from elsewhere into Abu Dhabi despite sustainability solutions, at the outset this hypothesis is proved to be true from this research. The imbalance in the population with Emiratis being significantly outnumbered by expat workers, generous subsidies that benefit local citizens, coupled with the pursuit of globalization and modernization have taken place at the expense of social cohesion. Instances of friction that developed around sustainability issues was due to the government not responding to diverse communities' needs in time, the persistence of societal hierarchies, the longevity of the *kafala* system and the lack of non-citizens' voice in decisions that impact them.

Similar inequalities related to the citizen-expat divide are also prevalent in neighbouring Dubai, and other GCC nations (Davidson, 2012a). Low and middle-income expats in Abu Dhabi have been subject to the state ordering where they live, how much they pay for energy and how they travel through a stream of planning policies that are not without their biases. When this is juxtaposed against the wider region, fragmented societies also operate within their own separate '*enclaves*' subject to different sets of social rules and sometimes laws (Hertog 2017, p.9). The embrace of a cookie cutter economic development model regionally in the GCC that put real estate investment, tourism and logistics at the fore for these countries, has created ubiquitous modernist cities across the Gulf States with large numbers of gated communities (Saif, 2017). This also contributes to societal division and inequality. We similarly witnessed recurring divided spaces in MC, Reem Island, the Emirati neighbourhoods of Shahama and Bahia, the industrial neighbourhood of Mussafah, all existing as nuclear spaces (Fahy, 2015a; Gudaitis, 2010; The National, 2016a).

Beyond the fragmented groups of expats, the local citizens also emerged as a heterogeneous population segment. Urban-tribal divisions and regional differences across the GCC (see Kinninmont, 2015) along with a large number of stateless population are contributing factors to fragmented local populations (Reuters, 2012).

The subsidies afforded to local citizens in Gulf states including Abu Dhabi have morphed into new forms of inequality with the passage of time. We noted how local population have benefitted from land and housing allocation, income and business opportunities. Local citizens have become power brokers around a range of services including visas, business licenses, and jobs, thus giving them power over non-citizens (Hertog, 2010). There are distinct contradictions between the progressive global centres the Gulf nations aspire towards becoming, which lie in stark contrast to daily interactions between citizens and foreigners with separate social existences (Gardner, 2008; Hertog, 2017). However, despite these inequalities, the mobile expat populations have found mechanisms to thrive and forge a sense of community (Tatchell, 2009; Vora, 2013).

Inequalities persist given that the sponsorship system benefits local citizens with sources of income and positions of dominance (Gardner, 2008; Khan, 2014; Tatchell, 2009). Whilst, the *kafala* system can be seen as an infringement of labour rights, from the perspective of those enforcing *kafala*, the practice is justified since restrictions on the mobility of migrant labour prevent them from absconding (Tatchell, 2009). We witness the reasons for persistent inequalities in the complex dualities that accompany the recruitment of migrant labour in the region. Foreign expats higher up on the income hierarchy in Gulf states are also transient and do not have a path to citizenship, being subject to labour bans thus perpetuating the cycle of impermanence among large segments of the population (Gardner 2008; Leonard, 2003; Vora 2013).

Let us consider historical factors that have influenced inequality in Abu Dhabi.

### 9.3.1 Inequalities in Abu Dhabi linked to Historical Factors

The research revealed that Abu Dhabi is a city of paradoxes with persisting inequalities and extreme poverty that exist side by side with extreme wealth (Ahmad, 2015a). Inequalities experienced by certain groups of stakeholders in Abu Dhabi across non-citizen status and

nationality have parallels to the moral, political and social concerns linked to colonial legacies (Bhabha, 1994; Hall and du Gay, 1996; Said, 1978; Spivak, 1988).

Colonial attitudes are particularly difficult to uproot, as noted by Allmendinger (2017), inequalities and contemporary forms of oppression are perpetuated given that Emiratis continue to leave the running of vast sections of the economy in the hands of foreign workers. The colonial legacy of the British that paid little attention to developing education, health and related infrastructure also impacted local citizens who lacked skills and training to undertake the massive modernisation needed. In some ways, these deficiencies are still being faced by the population today, manifested in the local citizens' preference for work in the public sector, and not in the private sector, reliance on income from non-work sources (e.g. local sponsorship) and a lack of education and experience suited to the private sector (Hertog, 2014, Tatchell, 2009).

The distribution of subsidies in Abu Dhabi is still problematic. Despite some positive developments as noted in fuel subsidies, subsidies are still prevalent in Abu Dhabi in the form of access to stable public-sector jobs, subsidised utilities, a high quality of life, state-funded housing and access to housing loans as part of the widespread benefits handed to citizens (Crot, 2013; Sillitoe, 2014).

### 9.3.2 Inequalities at the Institutional Level

The issue of Emiratization was a priority for Masdar, and led to further positive outcomes such as encouraging female and youth employment. While the creation of Emirati-centric training and leadership programs contributed to increasing the Emirati presence at Masdar, the additional investments in training for Emiratis was consistently higher than expats, indicative of efforts to boost the career development of Emiratis (Masdar, 2016a). Thus, such programs have dualities attached to them, as some groups benefit more from them than others.

Similarly, the UPC also had a high rate of Emiratization of over 70%, and increasing levels of female employment (Abu Dhabi Urban Planning Council, 2017d). However, Dempsey (2014) noted instances where Emirati planners' careers were fast-tracked at the UPC despite their lack of experience, thus placing new planners on a similar footing as experienced North American and European planners, in a work environment where nationality played a role in career

progression. The built environment was where a physical embodiment of persisting inequalities was most visible.

### 9.3.3 Inequalities Persisting in Urban Design

We witnessed divided public and private spaces within Abu Dhabi reflective of social hierarchies. State-of-the-art complexes for higher income expat professionals have emerged, as well as middle and low-income neighbourhoods whilst spaces for migrant camps are relegated outside the city limits in keeping with societal hierarchies (Dempsey, 2014; JLL, 2015; Mascarenhas, 2012). Promoting ideas such as societal mixing through planning solutions is challenged due to the need to culturally preserve the traditions of the Emirati community (Tatchell, 2009).

Alluding to the issues of social inequality, Dempsey (2014, p.119) asked a poignant question, "*Did Abu Dhabi want to become a sanitized playground for the rich*?" Ouis (2011) similarly noted her concerns over socio-spatial segregation. For example, both Emiratis and some high-income expatriates preferred living in gated communities with cultural and community amenities (Tatchell, 2009). As we noted in Chapter 8, interactive processes around neighbourhood revitalization were focussed on Emirati neighbourhoods such as Shahama and Bahia (Gudaitis, 2012). The comments by a Canadian planner in the early days of the UPC's existence showcased how the UPC was focussed on how local citizens in particular experienced the built environment (Cormier, 2015). While the UPC sought to emulate the local town hall concept of the *majlis*, the concept has not been particularly inclusive of all segments. Scheduled consultation processes are also a costly process, and there is limited data on how this is taking place uniformly. In 2016, the Abu Dhabi Municipality (ADM) resorted to neighbourhood surveys in less affluent neighbourhoods such as Mussafah in an effort to improve community facilities. While this was a positive move toward understanding the needs of low-income neighbourhoods, on the other hand, the issues that emerged from the survey were indicative of troubling urban issues that poorer primarily non-Emirati neighbourhoods contend with (The National, 2016a).

The design and development criteria varies across neighbourhoods in line with where inhabitants are placed on the societal hierarchy. Although the heterogeneous expat population in Gulf states has contributed significantly to growing Gulf economies, the built environment

has struggled to incorporate the needs of the majority (Gardner, 2008). An example of persistent inequalities was witnessed in the tearing down of old mosques that displaced sites of community gathering such as the Al Markaziya mosque that impacted mainly the low-income worshippers, who lost an important facet of their social and religious lives (Leech, 2012).

### 9.3.4 Inequalities Linked to Transport

Inadequate accessibility to public transport have resulted in the social and economic exclusion of some groups. The societal divide in the transport sector in Abu Dhabi is particularly evident in bus use. The cracking down on illegal transportation that emerged in unconnected areas primarily serving low-income expat in response to bus fare increases has implications on persisting inequalities (Ruiz, 2014c; 2015). In addition, the increase in taxi fares in 2017 (Agarib, 2017) also tends to disproportionately impact middle and lower income segments of the population who cannot afford their own cars.

The increase in state-of-the-art smart transportation technology has tended to benefit the population segments able to afford cars and smart phones (Ruiz, 2014a). In the case of the overhaul of Abu Dhabi's taxi fleet we witnessed limited and unequal concessions made to accommodate drivers of the old taxi fleet, with Emiratis receiving a distinct priority (Ahmad, 2014b). Thus, the needs of some groups have been addressed while other communities still face daily challenges in accessing a range of transport options.

The failed taxi village plans also impacted the community of taxi drivers who awaited the project's completion. Their needs were given lower priority than others by the decision-makers given factors such as the Arab Spring that occurred during the same time frame. The example is reflective of the reality of some policy transfer and knowledge production opportunities that are curtailed for political reasons and priorities in an opaque decision-making context.

Inequalities were also persistent in the area of housing.

### 9.3.5 Inequalities that Permeate Housing

Following trends in the area of urban design, housing was sub-divided across class, social power, ethnicity and nationality (Tatchell, 2009; Mascarenhas 2012). Most affordable housing

for expats, particularly in newer communities, is located far from downtown Abu Dhabi, where public transport does not extend. Some examples are Khalifa B, Mohammed Bin Zayed and Mussafah (Flanagan, 2015; JLL, 2015). The provision of Emirati housing and the creation of state of the art Emirati neighbourhoods contrast many existing expat centric neighbourhoods many of which are facing urban problems (JLL, 2015; The National, 2016a). Despite the UPC consulting with developers in 2016 toward the creation of a new affordable housing policy and an accompanying housing manual, by the end of 2017 the UPC had not yet announced what the minimum percentage would be, indicative of the ongoing debate and negotiations around affordable housing in the interim.

We are increasingly aware of the global-local binary, and cultural and political factors that come into conflict with policies that favour modern housing and leisure developments, an anomaly in the local context. MC's housing options prioritized internal exclusiveness and a lack of diversity given that the 500 initial homes were leased to corporations and educational institutions affiliated with Masdar (Laylin, 2014). However, the planners have incorporated more housing allocations in MC's second development phase in order to attract a greater diversity of residents (Masdar, 2016b).

The housing challenges faced by the expat community is linked to the communities' temporal existence, in turn dependent on employment uncertainty that in turn impacts the contested nature of the housing space with many chained to a cycle of debt and poverty in Abu Dhabi (Unnikrishnan, 2017). Urban issues such as illegal sub-lets, overcrowding and the subsequent public health and safety issues that were not systematically tracked down by authorities (Ahmad, 2015a) contribute to persistent inequalities.

Finally, we consider the findings related to inequality in relation to energy.

### 9.3.6 Persistent Inequalities Related to Energy

Despite supply generation and nascent demand management, the unequal pricing of electricity for Emiratis and expats and the use of wealth to buy soft power and stakes in global projects, signal inequalities that other less powerful stakeholders face. According to the 2017 rates, Emiratis will pay 6.7 fils per kilowatt hour whilst expats pay 26.8 fils per kilowatt hour (Dajani,

2016). While energy subsidies to society have recently decreased, they are not excluded in entirety, reflective of the duality between the rentier contract honoured by the state, and the energy security goals of the government pressured by decreased oil prices and overconsumption. Given the political nature of energy-related issues, public feedback or participation in this area tends to be limited despite end-users being impacted by increasing utility costs.

Having considered the diverse planning issues we learn that normative perspectives on justice and fairness put forward by Healey (2013) are not applicable in the same manner in Abu Dhabi, given its political complexities. Graham and Marvin's (2002, p.195) description of attributes that allow stakeholders to be empowered including their ability to '*exercise social and economic power*' and '*extend their influence over space*' for the most part does not take place readily for low and middle-income expats in Abu Dhabi.

We now shift our attention to examining the findings related to Knowledge Production.

## 9.4 The Politics of Knowledge Production

Let us consider Research Hypothesis 3 which states that knowledge production and hybrid adaptations of policies or as noted by McCann (2011, p. 144) – 'parts of everywhere', have positive impacts on mobilizing sustainability into Abu Dhabi.

This research found this hypothesis to be partly true. While positive impacts such as the application of imported concepts and local knowhow to solve planning issues in most cases were observed with respect to mobilizing sustainability in Abu Dhabi, in other cases the knowledge transfer was short lived, and tensions arose amidst local, regional and global stakeholders. The manner in which sustainability is interpreted and re-politicised in the authoritarian context of Abu Dhabi is complex.

Let us situate Abu Dhabi among regional aspects of sustainability-related knowledge production.

### 9.4.1 Developments in Sustainability-related Knowledge Production in the GCC and Abu Dhabi

In the GCC, conferences and events related to sustainability have thrived due to their ability to generate income, encourage business travel, hospitality and leisure in line with wider economic diversification goals, in addition to exchanging industry-specific knowhow. This is in line with views by mobility theorists who considered conferences to be unifying spaces to advance local and international learning (McCann, 2011; McCann and Ward, 2010; Prince, 2010). However, the focus on elite and educated change agents at conferences has meant that they are not always inclusive events, in line with a similar argument by Larner and Laurie (2010). The World Future Energy Summit organizers in Abu Dhabi remedied this in part, by making the exhibition spaces for large conferences open to the public, whilst main conference debates were private and came at a cost (Mascarenhas, 2012).

Regionally in the GCC, Islam has played a role in encouraging local adaptations of corporate social responsibility, socially responsible investing, and custodianship over natural resources through the concept of '*zakat*' (Arabic for alms-giving) (Sillitoe, 2014; Wilson, 2009; 2014). Given the authoritarian political context, the monarchies in Gulf states emerge as controllers of knowledge, research and ideas around sustainability (Davidson, 2012a). Abu Dhabi has not been much different in this regard, given that the overwhelming majority of sustainability directives have been government-driven.

In considering the impact of Dubai on sustainability initiatives in Abu Dhabi, we note parallel initiatives where multiple sustainability knowledge transfers are taking place. A number of Dubai's sustainability initiatives are income driven, and represent a middle ground between being able to meet sustainability criteria as well as generating future income, key priorities in the era of late rentierism. In this regard, Dubai's initiatives perform both a complementary and competitive role in relation to Abu Dhabi's sustainability measures. Consultants and sustainability experts within the region continue to facilitate vital knowledge exchanges at the inter-emirate and GCC level (Interviewee Z, Sustainability Professional, 2017).

Let us now consider specific elements of knowledge transfer at Masdar and the UPC.

### *9.4.2 Knowledge Transfer at the Institutional Level*

We witnessed a trend of mobile sustainability-centred networks that are orienting themselves along a global agenda at Masdar. The work of MIST has been a positive factor in its role as a

hub for community activity, research and development, housing and technology solutions, however, it is still an outcome of elite-centred policy transfer since it primarily favours the academic and business elite. Karvonen and van Heur (2014, p.386), critique similar knowledge laboratories for being "*constructed spaces*". MC, especially where MIST is located, does resemble a locale for learning and experimentation, but not a thriving city in the true sense. Thus, it becomes a '*constructed*' (ibid) space in line with the above arguments, and given that its resources are subject to controls by its parent company Mubadala and on a wider level by Abu Dhabi's leadership (Masdar, 2015).

MIST played a crucial role in setting up the framework for one of Masdar's high profile partnerships, the Biofuels consortium. The initiative was scaled up when the Abu Dhabi government took on a strategic role given the national and international economic potential of the project. Despite the risks associated with biofuels being untested, the diverse experiences and resources of each of the collaborators can be likened to Haas's (1992) concept of "*epistemic communities*" that point to the importance of learning that emanates from global networks of key stakeholders involved in simultaneously solving local and global problems.

Avenues such as the Zayed Future Energy Prize and its growing international community of prize winners have been avenues for knowledge production. Similarly, social outreach programs with women such as the WiSER program and MIST's Young Future Energy Leaders (YFEL) program have positive implications for human capability at Masdar in the future. The participation of new stakeholders such as research platforms at local universities, the efforts of local NGOs such as Road Safety UAE in Abu Dhabi toward sustainability, the role of the Emirates Green Council, represent how civil society and the local community of residents have embraced aspects of collective capacity building and formed learning assemblages around sustainability.

Technology also spurred knowledge creation through new databases, online apps, tools, smart meters etc. being employed across various initiatives. The UPC's spatial planning web portal, for example, promoted Abu Dhabi as a global city and aided the UPC's collaborations with external stakeholders (Abu Dhabi Urban Planning Council, 2015d). Similarly, Masdar employed new technology in its reporting tools that it has shared with multiple stakeholders (Masdar, 2016a). However, going forward the real challenge will be devising ways to analyse

and manage large volumes of data given concerns around data quality, security and validity (Yigticanlar, 2016).

The UPC's consultants Clarion Associates incorporated culturally-aligned specific design elements into the Estidama framework while Norman Foster's architects engaged in similar research whilst designing MC (Clarion Associates, 2008; Kingsley, 2013). These developments resonate with arguments by Frampton (1983) who called for relating universal and global concepts to the specificities of the local context. The presence of local Emirati planners at the UPC made it possible for the infusion of local ideas and experiences in addition to the North American influences at the UPC (Bouyamourn, 2015a; Dempsey, 2014). Planners and teams of consultants at the UPC focussed on the initial hard transfer of best practices, but also on the soft transfer of experts' skills, and spreading the message of Estidama through training programs and conference presentations. Policy transfer implemented by the UPC is reflective of traditional policy transfer elements around emulation and lesson-drawing noted by Dolowitz and Marsh (1996; 2000) and Rose (1991; 1993) given various elements of Estidama were inspired by the Leadership in Energy and Environmental Design (LEED) guidelines. By encouraging learning in the international GIS community and being recognised internationally for its spatial planning technology (Abu Dhabi Urban Planning Council, 2017c), there is evidence that the UPC has promoted learning at multiple scales.

McCann (2011), Prince (2010), Ward (2006) and other mobility theorists, focus on the purposive gathering of people, institutional capacities, expertise, models, techniques and technologies, and political power associated with *both* local and external assemblages. We witness both Masdar and the UPC engaging in both kinds of assemblages in line with a specific rationale at a given point in time.

Let us consider findings related to knowledge production around urban design which witnessed complexities.

### 9.4.3 Dualities of Knowledge Creation Related to Urban Design

The speed with which Abu Dhabi embraced modernisation related to planning and development reflects aspects of "*fast policy transfer*" (Peck and Theodore 2015, p. xv). However, these planning decisions had long term consequences on land use and design that are still being experienced (Nelder, 2014). Foreign planners produced a unique representation of

the city that reflected their perspective and ideas of what the city would look like, how it would grow and who would live there. Over a span of time, waves of diverse foreign planners influenced the type of solutions that emerged which gradually did away with traditional land use patterns. The emulation of Vancouver as a role model however, was not without its shortcomings as discussed in Chapter 5. Nevertheless, aspects of design from North America were combined with elements unique to the local context and showcased new knowledge that incorporated local needs.

As planning values evolved, the changes witnessed over successive waves of development in Abu Dhabi contributed to valuable local knowhow, in line with Healey's (2010, p.386) assertion in favour of the "*continual review, re-assertion and re-interpretation*" of planning concepts in line with human activity. In particular, planning knowledge that was culturally or identity related had a higher propensity for being mobilised (Larry Beasley and Associates Inc., 2015; Abu Dhabi Urban Planning Council, 2017d). The preservation of urban design elements of local neighbourhoods and Masdar's re-use of traditional wind towers were noted examples.

In a proactive effort to co-produce knowledge locally between foreign and local stakeholders, the UPC developed planning curricula in local universities and created training and internship opportunities targeted specifically at Emiratis (Abu Dhabi Urban Planning Council, 2016b). These initiatives ensure that knowledge production and policy learning are ongoing processes.

A multi-layered and multi-faceted decision-making process that adapted North American design practices to Abu Dhabi, educated external stakeholders and also incorporated community feedback at specific junctures was a positive outcome from the implementation of the UPC's design manual (Abu Dhabi Urban Planning Council, 2013b).

Let us consider the findings around knowledge production related to energy that had mainly positive political, economic and soft power-driven outcomes, but were not free from contestation given that energy initiatives are mainly government-driven.

### 9.4.4. Knowledge Production Related to Energy

The transfer and implementation of alternative energy policies produced knowledge and learning accompanied by political, economic, and soft power opportunities. A clear preference

for supply side initiatives around alternative energy existed. Masdar played an important role in helping reinforce Abu Dhabi's position as a regional leader in deploying renewables. The total investment in clean energy culminated in 1.7 gigawatts of power deployed or under development globally (Energy Boardroom, 2016). The Abu Dhabi Fund for Economic Development's involvement in the investments along with Masdar signals that both economic and political rationale are a part of the renewables scene, an example of the blurred boundaries between political and economic rationale.

Knowledge that emerged from understanding the negative economic and social impacts of subsidised fuel, contributed to solving energy and transport solutions simultaneously. The adaptation of energy efficiency concepts in the local oil industry, such as the Al Reyadah carbon capture project between Masdar and ADNOC (Energy Boardroom, 2016) are a vital form of incorporating new ideas into existing industry processes. This is in line with assertions by policy transfer theorists such as Bennett (1991), Dolowitz and Marsh (1996) and Rose (1991; 1993) who have noted the importance of solving problematic domestic issues, by ensuring that place and context specific elements are employed.

A positive element of knowledge sharing between government agencies and the private sector was the creation of energy service companies (ESCOs) to increase energy demand management opportunities. Private sector partners such as Siemens and GE, the UPC in collaboration with developers, as well as other government bodies and NGOs also co-produced knowledge. These actors and adaptation processes were made possible by assemblages of knowledge networks. Energy-related knowledge in Abu Dhabi is gradually being co-produced as part of an experimental governance processes (Abu Dhabi Department of Economic Development, 2017).

Masdar embarked on solutions-driven learning based on trial and error in the field of alternative energy. As a physical embodiment of sustainability and hub for commercializing renewable energy, MC plays an important role in initiating global and regional partnerships. However, developments in Dubai reveal that the two emirates share complementary energy conservation and supply-side initiatives, which could be subject to duplication in the future if strategies that allow for resource collaboration, knowledge transfer and data-sharing are not implemented. A joint initiative toward the construction of Dubai's solar park between Masdar and Dubai's

DEWA is reminiscent of energy solutions bridging the territorial divide, and representing knowledge transfers at the inter-emirate level. At the regional level, while the UAE grid is now connected to the GCC grid, a regional power market that facilitates the trading of power does not yet exist (Oxford Business Group, 2016c). Thus, territorial aspects of energy have prevailed over regional cooperation, whilst inter-emirate collaboration in the UAE has attempted to bridge territoriality toward sharing and producing new energy solutions.

At the regional level in the GCC, knowledge related to green building, the growth of green jobs, demand for foreign consultants, local training programs and increased awareness among diverse stakeholders can be avenues for bridging territoriality given that these aspects fall within the political aspirations of the Gulf states.

The tendency for politically and economically-motivated assemblages around energy have taken precedence over other initiatives in the local context.

The findings on transport-related knowledge production were also contested in the local context.

### 9.4.5 Knowledge Production around Transport

The growing demand for transport options in Abu Dhabi was a factor of urban sprawl and preferences for low-density housing that placed additional pressure on transport services. One of the major lessons gained from mobilising sustainability were the inherent overlaps between housing and transport that the UPC and DOT addressed.

Public transport related knowledge production in Abu Dhabi have been linked mainly to buses given that other mass transit systems have been delayed. Automated card systems, price sensitivity among users and the use of renovated bus shelters are aspects the DOT is tracking to determine factors associated with bus usage. In addition, the DOT also considered energy-efficient options such as battery powered buses (Ahmad, 2013). Private sector planning firms in Abu Dhabi helped adapt global best practice solutions to the local context (Atkins, 2017). These developments reflect multiple synergies between diverse actors working on transport, and are evidence that technologically-related transport solutions transferred at a rapid pace. Local applications of technology include apps that steer motorists away from traffic jams, assist

in finding parking systems and optimal routes to their destination. In addition, advanced speeding technology has been put in place. However, technological solutions cannot replace the human enforcement and police presence that are essential to curb speeding and bad driving practices (Al Ramahi, 2017). The complex interactions between technology and local nuances that impact driving attitudes have the capacity to generate new knowhow in the local context.

The work of the UPC overlapped with DOT initiatives in the agencies' potential to spur housing and transport solutions such as TODs which encourage neighbourhood liveability, decrease urban sprawl, encourage shared usage of vehicles and access to transport options (Besser & Dannenberg, 2005). However, Emirati cultural preferences for low-density housing have in the past inhibited the success of TODs (Dempsey, 2014). The knowhow gained from failed transfers, is also valuable, in that TODs could be targeted more at non-Emirati communities in the future.

Knowledge was also gained from Dubai's investment in a metro-system, additional buses, trams and water taxis toward an integrated transport system (Deloitte, 2015). In the area of transport, Abu Dhabi signed an agreement with the U.S. based Hyperloop Transport Technologies, after a similar announcement made in Dubai in 2016 (Reuters, 2016). Thus, Dubai also propelled the search for state-of-the-art transport knowhow and initiatives in Abu Dhabi.

Masdar tested the viability of electric vehicle technology in the local context through a collaboration with Mitsubishi. While the electric vehicle project was successful in finding technical solutions that worked in the local climate, the adoption of smaller electric vehicles will still be a challenge given the culture of car-dependence and preference for larger vehicles in the local context. Healey (2015b) contends that planning practices develop and flourish amidst local interpretation and practice. The use of electric vehicles in public transport may be locally adapted solution that works in future. Similarly, local adaptations of proven concepts that prioritised local needs and climate such as air-conditioned transit, walkways linking stations, ride-sharing for designated areas were positive new knowledge gained.

Given the parallel developments around transport in the GCC states, and similar societal divisions, MIST's recommendations for class centric transport options could have regional

applications. Other class-centric transport systems are already in effect beyond Abu Dhabi, such as Oman's *Baiza* buses, a functional blend between shared taxis and transit buses that is also plagued by slow boarding and unreliability (Abdel Raouf and Luomi, 2015). Thus, class-centric transport solutions may be a way forward to encourage public transport despite the negative implications associated with perpetuating the existing societal divide.

The area of housing also witnessed successful adaptations of co-produced knowledge by local and foreign actors.

### *9.4.6 Co-produced Knowledge Around Housing*

Emirati housing featured some innovation inspired by North-American design principles that propagated walkable, mixed use neighbourhoods, proximity to transit, with requisite community amenities along with town planning principles inherent to the local context (Clarion, 2008). Dolowitz (2003) and Dolowitz and Marsh (1996) concurred that inevitably policies would be transferred in varying degrees, as a process of local adaptation and modification occurred. By simultaneously incorporating *fareejs* (small neighbourhoods), *barahaats* (small-scale informal community spaces), *meydeens* (formal community spaces) and *sikkaks* (pedestrian paths) into neighbourhood design for Emirati homes the UPC solved multiple social, cultural and economic dilemmas (Abu Dhabi Urban Planning Council, 2010a). Rose (1991, p. 22) refers to the "*hybridization*" of solutions combining both cultural and social needs with urban design principles to maximize the effective use of space. The hybrid principles evident in Abu Dhabi's Emirati housing projects served as role models for the Saudi government that sought inspiration from visits to Aldar's Al Falah community (Abu Dhabi Urban Planning Council, 2011).

The creation of joint housing and energy efficiency solutions was a positive outcome of transferring knowledge. This was noted in MC's pilot project on eco-villas for Emiratis where new knowledge was gained in real time by tracking the energy usage of an Emirati family occupying the villa (Emirates 24/7, 2017). MC's planners, in particular, have placed emphasis on future housing with 62% of the city zoned for residential use, signifying the planners' desire to attract a wider community of residents to the city. Toward this end, the second phase of Masdar's master plan has various commercial, educational, retail and residential projects planned with links to metro and light rail, in addition to community and cultural amenities such

as open spaces and mosques. The recognition of the vital overlaps between housing, transport and urban design in the eco-city offer Abu Dhabi a role model in how to incorporate sustainability and planning goals simultaneously.

The UPC also addressed sustainability and planning goals simultaneously through the creation of a centrally managed property database that brought together the UPC's planners, Pearl Qualified Professionals (PQPs) (design professionals who have passed the Estidama exam), sustainability experts from private consultancies, and developers to promote greater transparency on existing and future projects. We also witnessed several efforts to amass community feedback by the UPC in the form of household surveys (Middle East Construction News, 2015b).

The UPC underwent a process of policy learning from the delays in implementing its middle-income housing policy. By understanding the wider context within which networks and policies operate, obstacles to policy learning became clear (Evans, 2013). Cascading housing policy down to the local level required the consideration of local needs and responses of impacted stakeholders to effectively bring about change through practice. Given the imbalanced attention to some segments by the authoritarian political system, the initial imported housing solutions were not applicable given the prevailing political context. Thus, we are drawn to the differing political and social ideologies that differentiated housing policy solutions rooted in North American precedents with Abu Dhabi's local context in line with explanations for transfer failure put forward by Dolowitz and Marsh (2000). In Abu Dhabi, the delays in implementing housing policies revealed nuances of the local context. By 2015, developers were finally able to unveil middle-income housing five years post the initial policy (Fahy, 2015c). The UPC's outreach to developers in this regard yielded positive outcomes bringing together the different stakeholders into a common discussion. However, James and Lodge (2003) argue that policy changes should not be equated with being a success or failure, noting the tendency for conflation of these separate and distinct elements, given that other forms of policy making exist beyond transfer processes. Thus, the non-transfer or initial failure of the housing policy, may not have been a failure when considered among wider UPC-developer relations that impacted policy making, beyond Estidama housing regulations. Similarly, it is premature to hail the UPC's negotiations with developers to be a success, without examining the developers' track record on affordable housing provision in the long term.

Abu Dhabi's pursuit of pursuing a knowledge economy and commitments to a green growth agenda were largely politically motivated. From the research, it became evident that certain ideas were strategically chosen and transferred. Most often these have had a political, soft power and economic rationale. We witnessed this in relation to Emirati housing, public participation etc. We also witnessed cases of non-transfer of policies in the case of Swiss Minergie standards, and incomplete transfer in the case of Masdar's adoption of One Planet Principles, Abu Dhabi's failed taxi village and Masdar's Swiss Village, which were impacted by the exertion of power and top-down decision-making linked to the authoritarian context.

Given that mobilising sustainability concepts among a diverse set of stakeholders in Abu Dhabi continues to be a challenge considering the final research hypothesis on governance will shed light on the findings that emerged from solutions-driven assemblages.

### 9.5 Governance-Related Findings

Let us consider research hypothesis 4 which states that solutions-driven assemblages of institutions and individuals are contested governance processes as an outcome of nuances of the local context. At the outset, this hypothesis was found to be partially true, over the course of this research. Governance processes were contested in the longer term as a result of a number of factors inherent to the local context. These include competing interests of a limited set of powerful stakeholders, divergent meanings of sustainability for different stakeholders, opaque political systems that mask accountability and transparency in an authoritarian state, and other local contextual factors related to authoritarianism and rentierism that hampered attempts at collaborative governance among assemblages of actors and institutions operating across different scales. However, positive instances of collaborative governance also emerged as a result of interactions among global, regional and local actors engaged in transferring and implementing sustainability in Abu Dhabi.

Local nuances in the context of Abu Dhabi such as informal power-bases among elite stakeholders, a culture of patronage and brokerage, evolving state-society relations, and inequities that persist, are nuances of the local context that create both a need for Gulf governments to engage in governance processes and create sustainability-related assemblages but also present distinct challenges in implementation. Quests for soft power in the GCC also

drove the creation of international assemblages around projects that had local, regional and global significance. Varying national circumstances at the GCC level have limited wider co-operation at the regional level (Al Sarihi, 2016). Thus, the territorial findings around governance within Abu Dhabi told an important piece of the story on the politics at play. Let us consider findings at the institutional level of Masdar and the UPC.

### 9.5.1 Governance Findings at the Institutional Level

At the institutional level, Masdar and the UPC were able to galvanize new local, regional and international assemblages many of which thrived over time. They also focussed on internal institutional building, improving internal capacity and skills development, integration of teams and departments, stakeholder involvement and improved CSR reporting in Masdar's case. Mobility theorists and some policy transfer theorists such as Evans and Davies (1999) pointed to the importance of governance-supportive attributes within multi-level network exchanges (see McCann and Ward, 2011; Prince, 2010; 2016). Lessons from the two organizations' unique institutional contexts prepared them for more nuanced exchanges with their external stakeholders, however nuances of the local context and external criteria also challenged the institutions' successful attempts at governance.

### 9.5.2 Positive and Contested Institutional Governance at the UPC

Positive changes at the UPC were identified in its revised internal strategy and focus on corporate governance. As part of instituting the next generation of Emirati planners, the UPC has instituted other human capital programs that identify employee strengths and develop leadership (Abu Dhabi Urban Planning Council, 2015c, 2015d). The UPC ensures that Emiratis are continuously being empowered through opportunities to expand their skills, knowledge and leadership. Where the actions of the UPC supported wider political rationale, it was evident that governance processes were facilitated at a quicker pace. Internal governance at the UPC was also contested with the transience of foreign planners, and instances when local planners without adequate experience or training were placed in senior positions (Dempsey, 2014).

The UPC works closely with other government teams to embed sustainability principles on a wider scale by formally integrating spatial and other project data on current and future projects. (Abu Dhabi Urban Planning Council, 2015f). The Pearl Rating System has become one of the UPC's external policy transfer mechanisms and represents a governance success story on the

one hand, however, it is also partially contested given the lack of transparency and limited public scrutiny on Estidama applications that do not meet the mandate. Estidama is a primarily government-led program tied to practical, political and economic rationales that prioritizes new builds (Cugurullo, 2013). Given that Estidama applies to new builds and not retrofits of existing structures, the role of Estidama is rather limited. The UPC has embraced an incentive-driven model of sustainability, with an emphasis on low hanging fruit. However, retrofit solutions and existing building sustainability are being explored by several local stakeholders in Dubai and Abu Dhabi (Hopkinson, 2015).

### 9.5.3 Positive and Contested Institutional Governance at Masdar

The institutional structure of Masdar with its quasi-government status is reflective of blurred lines that exist between the public and private sectors (Davidson, 2009a). Whilst Masdar has benefitted from its quasi-government status receiving its seed investment of $22 million, it is primarily profit- centric. Masdar's direct ties to Mubadala put it under its control, and also makes Masdar vulnerable to external market fluctuations that impact Mubadala (McAuley, 2016).

While some of Masdar's collaborations successfully met their objectives, others ran their course and became inactive subject to external stimuli, changing internal priorities and other criteria inherent to the local context. This was noted in Masdar's initial commitment to One Planet Living (OPL) which was superseded by other institutional priorities (Crot, 2013, Emirates Wildlife Society, 2008). Evans and Davies (1999), Newman (2017), Page (2001), and Dolowitz and Marsh (2000) have noted value in learning from non-transfer or incomplete transfer of policies and lessons. The changing priorities of Masdar are part of wider authoritarian and rentier political structures that allow commitments made to one set of guidelines to be replaced with another, in line with changes in the leadership's visions. Wood (2016) has noted that the movement of both policies and actors is temporal as a result of evolving social, economic and political conditions across time and space, which Masdar also faced as a result of external factors such as global financial crisis and lower oil prices.

Masdar recognised the importance of aligning internal teams and agendas, and it introduced sweeping internal governance changes such as its commitment to the Global Reporting Initiative and the delivery of annual sustainability reports in response to demands for

transparency and accountability by external stakeholders. Masdar's reporting actions, commitment to compliance assessments and third-party audits have worked to improve the interconnections and interaction between people, institutions, policies and places, actions that are in line with ideas proposed by McCann (2010, 2011), Peck and Theodore (2010), and Ward (2011) to more effectively mobilise policies. Masdar also serves as a role model to the local private sector who are being incentivised by the government to become more transparent in their reporting (Rettab et al., 2009).

Let us consider aspects of positive and contested governance across the four planning and sustainability themes.

### 9.5.4 Positive and Contested Governance Related to Energy

Energy-related collaborations internationally and regionally were successful because they were politically valuable from a soft power perspective. While collaborations around demand management among regulatory agencies have been a positive trend, real change could take place in terms of associated cost and efficiency benefits through privatisation (The Business Year, 2017). However, the shift to privatisation is a contested issue given the political implications of removing subsidies entirely and monopolies held by the government around distribution. Regionally, similar tensions were evident with GCC nations preventing private sector utility companies from dislodging government monopolies. Varying business cases in the region around energy saving also contribute to contested governance related to energy (Halligan, 2016).

With renewables providing a minimal share (around 2.5%) of the emirate's overall electricity (Krane, 2014), Abu Dhabi still remains far from meeting its 7% renewable energy goal given the mismatch between demand and supply, linked in part to the intermittent nature of renewables (Azar, 2016).

Esidama energy efficiencies are a long-term policy solution, given that they contribute to demand management. However, concerns related to increased costs, project delays, pressure from clients to meet completion timelines, the need to hire and train sustainability experts added to tensions in Estidama's implementation (Azar, 2016; Interviewee X, Former UPC Planner, 2017; Khater, 2013; Mascarenhas 2012). The blurred boundaries between developers and powerful elites allowed powerful developers to evade UPC requirements (Dempsey, 2014).

The trade-off between pursuing resource efficiency in new builds versus preserving and retrofitting existing structures, is one of the planning dilemmas that faces Abu Dhabi today.

Despite initiatives to increasingly provide for different segments, housing also exhibited aspects of contested governance.

### 9.5.5 Positive and Contested Governance Related to Housing

We witness more inclusion of diverse stakeholders around investor protection in the example of the 2015 real estate decree that featured an assemblage of diverse stakeholders including investors, owners, occupiers and the Department of Municipal Affairs (DMA) who were empowered to hold developers accountable for completing and delivering projects. Healey (2004) and Jessop (2003) note the importance of understanding factors that increase the scope and longevity of an assemblage, or conversely, those that contribute to the failure and demise of the assemblage. In particular, Abu Dhabi's leadership played a vital role in using the decree to promote a more transparent and buoyant real estate market. However, tensions associated with developers who may fall behind on construction, the power wielded by developers and the lack of clarity for investors on cases where a breach of contract has occurred, are telling of problematic nuances in the local context (Dempsey, 2014; El Tahir and Bowman, 2015; Rahman and Diaa, 2015).

Spatial segregation and the lack of social mixing counter the positive governance processes related to housing. Emiratis for the most part tend to prefer living in gated communities. State-of-the-art complexes for higher income expat professionals have emerged, as well as middle and low-income neighbourhoods, whilst spaces for migrant labour camps are relegated outside the city limits in keeping with societal hierarchies (Dempsey, 2014; Mascarenhas, 2012).

While assemblages between the UPC and ADHA on the provision of Emirati housing were a positive development given that they fostered community spaces that met the needs of tribes and families, the process was contested by several complexities including the heterogeneous nature of the Emirati population's needs, urban tribal divisions and the growing stateless population. The continuous expansion of low-density Emirati communities in Abu Dhabi runs the risk of spawning unconnected fledgling communities, contributing to urban sprawl. The attention to design and community needs in state-of-the-art Emirati neighbourhoods contrast

poor expat centric neighbourhoods many of which are facing urban problems (JLL, 2015; The National, 2016a).

The UPC has encouraged developers to include schools, hospitals, mosques and related infrastructure in the planning stages of new communities (Abu Dhabi Urban Planning Council, 2010b). We learned that not all developers have the capacity to address the diverse housing demands of the growing population. The housing market needs incentives from the government in the form of lower land pricing and associated taxes and transaction costs to spur developers to provide housing options across a range of price points (Interviewee H, Former Banker, Local Bank, 2012).

Reem Island represented a relatively successful experiment around multi-stakeholder governance of master-planned communities. The UPC negotiated with developers on an affordable housing figure of 20% of housing offerings on Reem Island. However, we witness elements of contested governance in the long term when several Reem properties have been handed over by the developers to third party property managers which proved to be a weak link in the otherwise successful governance process (Ahmad, 2015b).

The fragility of the assemblage created between the UPC and developers encompasses characteristics of assemblages noted by Ong and Collier (2005) who note the instability and heterogeneous nature of assemblages. The governance process was also lengthy and costly, lasting over seven years with Buniya requiring a cash infusion of $1.36 billion to complete its work (Al Subaihi, 2016; Zawya, 2015).

Amidst these contested issues, culturally appropriate Emirati housing by the UPC and Masdar, the consideration of affordable housing for low and middle-income expats who form the majority population and the encouragement of providing community infrastructure solutions with housing by the UPC and Masdar were positive examples of governance.

The natural inter-linkages that the UPC and DOT shared over planning and transport leads us to consider governance related to transport.

### *9.5.6 Positive and Contested Governance Processes around Transport*

Assemblages between government agencies, Masdar, the private sector and civil society through joint committees that ensure Abu Dhabi's 20-year transport plans were both culturally and physically accessible. Tensions arose when the interests of powerful stakeholders collided such as those between government agencies and developers and the mind set of residents who needed to be convinced of the benefits of public transport. Government agencies also faced difficulties in convincing developers to include public transport connections in cases where developers owned land (Public Sector Excellence Magazine, 2015b). The need to balance operating costs, customers' ability to afford transit, decreasing ridership on buses, the rise in illegal taxis and increasing demand for transport in neighbourhoods on the outskirts of the city continue to challenge the DOT (Ruiz 2014a, 2014c, 2015).

Finally, I discuss some governance contestations in relation to urban design.

### *9.5.7 Contested Governance Related to Urban Design*

The advances in urban design governance processes among the UPC and DOT were evidence that the agencies recognised the importance of their overlapping roles in providing multi-modal transport and safer, walkable streets (Abu Dhabi Department of Transport, 2009). However, this continues to be countered by local attitudes to driving and unsafe driving practices despite proactive awareness initiatives such as Road Safety UAE.

Divided spaces that reflect social hierarchies, the preferences for low-density housing discussed earlier in the chapter contribute to contested governance related to urban design. Foreign planners faced challenges to their own value systems when faced with existing social hierarchies and exclusions of some groups from decision-making (Dempsey, 2014). Urban design was a realm for displaying outward statements of identity, Islamic heritage, and a physical embodiment of the state's social contract with its constituents and foreign workers.

Having summarised the findings, let us consider the value of the methodology employed in this research.

## 9.6 Value of a Qualitative Methodology

The methodological chapter documented the implications of a mixed methods approach that included a case study and thematic analysis. It outlined four research hypotheses that arose from the collection and analysis of the empirical data, and theoretical ideas from the literature on policy mobility, transfer and related governance. The combination of data sources and retrieval techniques sought to minimize the limitation of a single method of data collection, and allowed for forms of triangulation to take place. I sought different perspectives on the issues to provide a balanced and objective account of the phenomena. I analysed overlaps between theory and data-driven codes, the frequency of the codes and created relevant code clusters. This process of qualitatively framing, deconstructing and conceptualizing the transfer and mobilisation of policy at multiple levels and varying degrees through detailed narratives contributes to maximising information, an aspect that Lincoln and Guba (1985) consider to be an important characteristic of qualitative enquiry.

## 9.7 Limitations of the Research

While a mixed methods approach helped triangulate the data, the nuances of the local context were reflected in the majority of the data possessing a positive bias. I had to purposefully search for data sources that were balanced with both positive and negative critiques of the issues. A range of data sources helped remedy this, particularly from foreign documentary evidence.

Due to the time lapse between my fieldwork and the final write up, the interviews conducted at the time, reflected perspectives and events related to that time period. I have attempted to remedy this, by following up with interviewees and was able to get updates from five interviewees prior to the final write-up, which allowed for more current perspectives to be reflected in the research. Thus, I have presented a combination of interview data from 2010-2012 and 2017.

While the research is not generalizable on a global scale given its qualitative nature, the lessons from Masdar and the UPC exhibit locally adapted solutions that address pressing urban issues that are applicable elsewhere in the GCC, where a similar economic, environmental, cultural,

social and political background is shared. Although the external validity of the research is limited, Yin (2003) notes that theoretical generalisation afforded by case studies can relate to larger concepts, which is applicable here.

I set boundaries around my discussion of the region. I made a purposeful choice not to widen the boundaries beyond the GCC given the political differences elsewhere in the Middle East whilst the GCC nations shared a common rentier and authoritarian background. My exclusion of positive sustainability initiatives elsewhere in countries such as Lebanon, Jordan and elsewhere in the Middle East is not meant to undermine their importance.

While I have discussed several examples of sustainability being pursued elsewhere in the GCC, my intent was not to pursue an intra-country comparative analysis, instead the regional data has been included to position Abu Dhabi's sustainability initiatives in relation to regional trends. The inclusion of these countries is related to ideas proposed by mobility theorists in considering relational aspects of policy transfer.

While I have noted the importance of the Dubai effect on Abu Dhabi's sustainability journey, further analysis of the impacts of replication of sustainability initiatives, differences in leadership perspectives and how co-ordination between the neighbouring emirates can be encouraged to lessen the duplication of sustainability initiatives, will be valuable.

Similarly, while I uncovered a few examples of the role of civil society outside of active participation in industry conferences and philanthropy, awareness initiatives and research collaborations in academia; research that explores the role of civil society over time is warranted, particularly given the nascent initiatives in place. It is possible that NGOs may hold the key to overcoming the lack of regional sustainability driven collaborations as witnessed in the success of the Emirates Green Building Council.

Similarly, there are also laudable policy transfer and governance processes at play related to environmental protection (AME Info, 2014), that are worthy of their own separate study and exist in parallel to the urban problems that emerged from the data.

While I have addressed the issue of migrant labour in a limited way in the sections on inequality, the issues of this segment are extremely complex.

Islam emerged in a limited manner in the research, in aspects of the built environment through mosque demolition and re-development, spatial planning in the form of gender-specific spaces, CSR in the form of *zakat*, and in the secular hierarchies (Sunni versus Shia) as noted in Chapter 4. Given that Islam continues to be interwoven into cultural and spatial responses of planners, its future role in mobilising policies is not to be undermined.

Another issue gradually gaining traction in Abu Dhabi is the preservation of historic structures. While I have addressed the dualities of creating state-of-the-art new structures and preserving cultural icons and local architecture in my discussion on Emirati housing patterns and the preservation of older streets and community spaces in downtown Abu Dhabi, governance processes in this regard are worthy of exploration in greater depth.

## 9.8 Conclusion

Abu Dhabi and its sustainability driven institutions, including Masdar, the UPC and their partners, have attempted to solve critical planning issues in the local context. We have come to realize that each of the issues of power, inequality, knowledge production and governance have been associated with positive and negative implications for mobilising sustainability. These interrelated and interdependent factors are situated amidst historical, political, economic, geographical and social factors that prompted the transfer and mobilization of sustainability concepts from elsewhere into Abu Dhabi. We witnessed creative transfer mechanisms, the hiring of expert change agents and consultants, the use of rentier wealth to fund conferences, promote CSR and corporate governance, the creation of economic free zones, mandatory sustainability policies such as Estidama, the institution of awards and prizes across different sustainability areas.

We have traced a path around various local, regional and global knowledge-producing assemblages in relation to Abu Dhabi. An increasingly diverse set of stakeholders have been involved in unique forms of governance related to implementing sustainability. We witnessed developers and the UPC engaging in consultation and collaboration on improved housing and infrastructure solutions, we noted the empowerment of low-income expats through improvements in access to affordable housing and transport. The assemblages among the diverse stakeholders impacted by sustainability concepts and solutions, included not just

institutions at the forefront of sustainability initiatives but also local citizens and expats of different incomes and nationalities. Given the nuances of the local authoritarian, rentier context, we also noted clear differentials, tensions, nuances of power and inequalities that accompanied the transfer and mobilisation of sustainability concepts. The top-down control and monopoly held by the government over aspects of housing, transport, energy and urban design, coupled with difficulties in eroding the culture of subsidies, the tensions caused by the population imbalance, the transience of the expat population, persisting attitudes from the colonial past, societal attitudes that counter sustainability solutions, power wielded by elites including certain multinational private sector firms, and the often blurred boundaries between government and business interests in the local context have contributed to persisting tensions and inequalities.

Thus, we uncovered different meanings and experiences associated with the transfer and mobility of sustainability concepts at multiple levels over the course of this research. Internationally, there were instances of Abu Dhabi's energy solutions being shared with global collaborators, and the recognition of the UPC's design tool in international planning circles was also evidence of the global-local connect. Masdar and its energy initiatives have expanded across multiple levels in the UAE, regionally and globally. This has allowed Masdar and Abu Dhabi to both become globally competitive in the renewable energy space. In contrast, Masdar's housing, transport and urban design features have so far had limited impact outside MC's boundaries, particularly when compared with its contributions to renewable energy knowledge production and governance.

Housing and transport solutions co-produced by assemblages of government agencies, developers and residents in some cases, must counter political, social and cultural tensions that result in divided spaces. The politics that accompany the transfer and mobilisation of sustainability concepts has varied across different issues and population segments and is accompanied by competing interests and stakeholder biases. The pursuit of Emirati housing despite the accompanying challenges of the needs of the heterogeneous Emirati population have resulted in culture-specific and climate adapted housing and community facilities. This is in line with Healey's (2013) assertions on situating planning ideas in the specific local context by considering aspects of localised, collective capacity building. The creation of the UPC's urban design manual also revealed attempts to promote safer streets, and increased opportunities to walk and bike, and emerged as a more inclusive area of sustainability.

There is still scope for more collaboration around sustainability-related efforts at the GCC-level, and the work of NGOs. The global private sector can play a more active role in this regard. Within housing and transport, international planning consultancies have already been vital change agents responsible for transferring housing and transport solutions regionally in the GCC. While Abu Dhabi has been a front runner in sustainability amongst its neighbours, Dubai played an influential role at the UAE level with a number of parallel and in some ways, competing sustainability developments, whilst Qatar and Saudi Arabia, in particular, displayed creative solutions at the wider GCC level across areas of transport, housing, as well as housing finance, supply-side energy production and green building initiatives and conference-hosting.

Internal institutional governance was also a relatively local issue, with global implications noted in the decreasing number of Western change agents over time as Emiratization levels increased at Masdar and the UPC, and local implications in the development of leadership and training opportunities to promote self-sufficiency.

The resulting governance processes and assemblages of stakeholders at multiple levels created new knowledge and avenues for learning and participation by diverse stakeholders including the private sector, civil society, women, youth and residents. While some solutions were focussed on citizens, some solutions such as the changes posed by the UPC's design manual, expansion of walking and public transport services and affordable housing negotiations on Reem Island impacted a variety of population segments. The collision of globalising forces and the political and cultural nuances of the local context have resulted in globalisation being prioritised in some cases as noted in the embrace of technology, energy collaborations with economic potential and gated modern real estate developments, whilst, political and cultural priorities were also prioritised given that oil wealth, authoritarianism and the social contract with citizens underlie mobile sustainability concepts in Abu Dhabi particularly related to energy pricing, Emirati housing, the pursuit of low-density housing versus transit-oriented developments, and culturally-rooted urban design.

Some assemblages thrived, particularly those rooted in economic gain and soft power such as the Biofuels consortium, the bid to host IRENA, and collaborations among government agencies to launch transport and urban design improvements. Assemblages created around social issues related to housing provision such as the governance process on Reem Island, the UPC's engagement with developers to promote accountability around Estidama requirements, RoadSafety UAE's engagement with the private sector and residents also met with some

success, however, it is the continuation of such initiatives in the long term that will be vital. Other assemblages such as the Swiss Village, the proposed taxi village, the assemblages of North American planners in the UPC's early days and other Masdar initiatives ran their course or remained a limited interpretation of the original concept. The fluid state of Abu Dhabi's sustainability scene, impacted by a diverse set of heterogeneous stakeholders, mean that planning is a continuous process of charting out the evolving needs of diverse stakeholders and balancing them with the nuances of the political context. Economic gain and the quest for soft power continue to sit in the driver's seat, churning the wheels of Abu Dhabi's quest for sustainability.

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# 11. Appendix

## 11.1 Appendix 1

**Model Interview Template**

1.  What is your organisation's rationale for pursuing sustainability?

2.  How has your organisation been able to balance the complexities of sustainability?

3.  What are the current priorities of your organisation's sustainability agenda?

4.  Who is responsible for deciding how your organisation's sustainability agenda is shaped?

5.  What changes to your organisation's sustainability agenda can you anticipate in the near future given the current market climate?

6.  Can you elaborate on your organisation's institutional structure? Are there institution-wide projects that connect different teams?

7.  What projects are you currently involved with and how do they contribute to the overall sustainability agenda at your organisation and elsewhere in Abu Dhabi?

8.  In what ways has the Abu Dhabi government supported sustainability-driven institutions in Abu Dhabi?

9.  What aspects from the local context influence your organisation's sustainability agenda from your perspective?

10. How has your organisation engaged in collaborations with its base of stakeholders?

    MC stakeholders: private sector, architects and planners, venture capitalists, engineers, contractors, students, professors, the general public, government agencies

    UPC stakeholders: developers, general public, government agencies, architects, planners, contractors, consultants etc.

11. What steps has your organisation taken to widen its stakeholder base?

12. Can you elaborate on any collaborations you have been involved in?

13. Which collaborations have been crucial to the success of sustainability-driven institutions in the long run, and your organisation in particular?

14. What factors in your view contribute to the success of sustainability-driven collaboration?

15. What role does your organisation play in a typical collaboration?

16. How are common goals and agreements among collaborators arrived at?

17. How are collaborations preserved in the long run? In your experience which ones have stood the test of time and why?

18. Industry conferences such as WFES, Cityscape Abu Dhabi, the Emirate Green Building Congress etc. are increasingly drawing groups of sustainability professionals together. In your view what is the role of such conferences and other platforms for knowledge sharing in advancing Abu Dhabi's and also your organisation's sustainability agenda?

19. Are there other knowledge sharing and skills development opportunities that your organisation engages in?

20. What sustainability best practices from other countries are particularly relevant to your organisation at the moment?

21. Is the embrace of sustainability concepts from other countries voluntary in nature or are there other factors at play? eg. regional competition, globalization etc.

22. What challenges do you face in your existing role in implementing sustainability concepts in the local context?

23. Have some sustainability concepts been adaptable locally? What particular lessons emerged from the local application or failure to implement certain policies?

24. Conversely, have certain sustainability concepts been adapted relatively smoothly? Why might this be?

25. What measures have been taken to adapt sustainability concepts to the local context of your organisation?

26. Can you give me some examples of internal governance processes at play that allow your organisation to meet its sustainability goals?

27. How does your organisation and its teams engage in outward governance with other institutions implementing sustainability?

28. Have such governance endeavours been a challenge to implement?

29. What are the hallmarks of governance networks in the local context?

30. Can you elaborate on any governance networks you have been involved in? How did these networks evolve?

31. Have there been attempts to encourage new voices into the sustainability scene beyond designers, architects, researchers, engineers, private sector partners, NGOs, government agencies?

32. Governance processes are still nascent. However, could you, from your experience on the ground, comment on the ongoing success of such governance networks that your organisation is involved in over the long term? What is working?'

33. Can you suggest alternative collaborations among diverse stakeholders, beyond the work of your organisation, that can impact sustainability in Abu Dhabi?

**11.2 Appendix 2**

**Excerpts from Field notes and Observations in Abu Dhabi: 2010-2012**

Despite the UAE being an Arabic speaking country, English was the dominant working language between stakeholders from different nations in the local context, and also given that foreigners made up the majority of the population. This factored into most of the data being accessible in English. The English content mirrored the Arabic content since the institutions themselves strove to provide much project data in both languages. Masdar and the UPC both provided bi-lingual content (Arabic and English) as part of outreach to their diverse range of multinational stakeholders.

The harsh summer climate in Abu Dhabi is a deterrent to many practical sustainability initiatives such as encouraging public transport, reducing car dependence, and reducing energy consumption, given the need for air-conditioning in the harsh summer months.

**Personal Observations from 2010 Visit to Masdar City**

Masdar City is situated in close proximity to the Abu Dhabi airport. There is not much else in the surrounding vicinity giving the impression it is an isolated development. As of now, it is very much a construction site, with tracts of open desert, and walled fences securing the pilot projects the scientists at the research institute are working on. The staff in Masdar's headquarters sit in air conditioned portable cabins while they wait for construction on more permanent office space to be built. The public areas have colourful billboards and graphics on project plans. I am told that there will noticeable changes in the development by the same time the following year.

**Visit to Masdar City 2011 and 2012**

The central plaza within the university campus has signs of a vibrant academic community amidst state-of-the-art university buildings that feature student housing, research labs and other learning spaces. Students and visitors congregate around the retail areas and cafes that are on-site. A gradual implementation of efficient design features is noticeable on site. MC's urban design has a notable balance of shade, green spaces and mixed-use buildings with variable densities that aid walkability. On-site retail spaces also have wide sidewalks with shaded places to sit and street trees that are very much in line with the UPC's urban design standards. In contrast, the area around the MIST campus was mostly a construction site giving the sense that the otherwise community-centric campus was plonked in the middle of nowhere. Masdar's state-of-the-art personal rapid transit system operating on the MIST campus has queues of people waiting to ride the short loop around the campus. Most of them are visitors from the WFES conference who have not ridden the futuristic transport before, this contributes to an air of excitement and anticipation as people wait to board the rides which are free. It does feel as though many visitors are not connected to the city in an academic or business relationship and consider the visit to be an experience in a sustainability theme park. There is a general, but not heightened, interest in sustainability from these outsider visitor groups, some of which are families with young children, mainly keen to explore the futuristic transportation rather than explore other aspects of the city.

In 2012, much of MC was still in construction, though key structures within the university and clean tech cluster were constructed at the time. MC continued to be in a state of ongoing

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construction, still representing a walled, isolated space from an external perspective, as noticed in previous visits.

Riding on Masdar's limited service PRT system on the main MIST campus was a somewhat surreal experience that involved sitting with strangers in a small pod, with a voice activated protocol talking to us, almost like a computerised cable car, but on land. I am not sure that I would enjoy riding in one all the time. It gave me a glimpse of the futuristic scenario visitors, employees and residents will experience in the city. I also rode the electric cars between the ADNEC centre and Masdar on one of the I-Miev electric vehicles, the result of Masdar's partnership with Mitsubishi. The ride to Masdar amidst Abu Dhabi's fast moving traffic and expansive highways felt a little scary at times in the small electric vehicles. I wonder how residents will make the transition to these compact cars amidst the array of gas guzzlers that populate Abu Dhabi's roads at present. Nevertheless, just having people stop and stare at the electric cars is education enough, in a local context where they are rare.

Observations at the World Future Energy Summit (WFES) provided a first-hand perspective into the way networks of stakeholders involved in sustainability interacted in a conference setting. Conferences emerged as an important vehicle for transferring and mobilising sustainability concepts.

**Excerpts from Personal Observations January 17th– 20th 2011, WFES**

The themes of generating alternative energy to support national and federal level carbon footprint initiatives featured high on the conference agenda of the World Future Energy Summit, with several high-level discussions planned among international country leaders. In particular, the themes of policy, business, future energy, technology and finance were hot topics.

English was the dominant language at the conference. Some conference material and related press material was also available in both English and Arabic. At the centre of the bustling exhibit space was the Masdar exhibit which was among the largest on the exhibition floor. It was evident that quite a lot of money and care had been put into its design which resembled a white spaceship with a blue fluorescent glow. Each of the business units was represented in single pods with representatives placed strategically to interact with the attendees. Interactive display screens, live models of the city, reports and brochures were all available at the Masdar booth. The Masdar Institute area was abuzz with many young students and professors taking photographs and networking with young people from around the world who were part of Masdar's Young Future Energy Leaders Programme. Masdar's main partners such as GE, Siemens, Scheider Electric also had large interactive booths. The hall was divided across exhibitions from countries around the world.

Beyond the main WFES Summit formal sessions, roundtable discussions, and a number of peripheral events, industry and investment seminars, and corporate meetings took place.

**Masdar Theatre**

The Masdar Theater was an active learning and knowledge exchange hub throughout the conference. It was situated within the Masdar booth in the main exhibition area and offered a series of presentations that included its business units Masdar City, Masdar Power, Masdar Carbon, Masdar Capital, and the Masdar Institute. Masdar's private sector partners, research partners, and government agencies such as the UPC also conducted presentations in the Masdar Theatre. There were presentations on the Zayed Future Energy Prize. About 10 different presentations took place per day within the space on clean energy, green products, Masdar city's special economic zone, research initiatives, design specifications, policy initiatives and private sector collaborations. Informal conversations with attendees from the general public, as well as conversations with Masdar Institute students, and staff in attendance from other Abu Dhabi government agencies and local non-profit representatives, gave me a glimpse of the varied perspectives and concurrent sustainability initiatives in the local context (Mascarenhas, 2012a).

Mohammd Al Fardan, a Manager at Masdar City described Masdar City's role as a living laboratory to test innovations in clean energy, develop green products with the objective of providing residents with the highest quality of life for the lowest environmental footprint. He noted Masdar City's tax-free special economic zone, with 100% foreign ownership allowed. Alan Frost, the Director, Masdar City, reported on challenges in building Masdar City, including difficulties associated with system integration and implementation that resulted in design changes. He stressed that building choices and the creation of green infrastructure and sustainable communities is vital. Frank Wouters, the Director of Masdar Power commented on the increasingly important role the Masdar Institute will play in educating a next generation of energy decision-makers and described Masdar's efforts to support growth in the renewable energy industry globally. Wouters commented on scaling up the initiatives to include developing countries as part of new energy initiatives. He noted opportunities in areas such as education, energy service companies, technology providers and funding, which existed but tended to be fragmented. He called for a more integrated approach to deploying alternative energy solutions and noted Masdar's activity in this area. The audience responded favourably citing the decreasing cost of solar power was an enabling factor for new players to enter the market. Some asked how they could get access to more information on Masdar Power projects and collaboration opportunities.

Dr. Nawal Al Hosany, Masdar's Associate Director of Corporate Responsibility explained the legacy of the prize has a value of US$ 4 million and $1.5 million and was awarded to Vestas, Denmark, Barefoot College, India, First Solar, US, and 7th Generation Advisers, US. runner-up awards of US$ 350,000 each went to E+Co based in the US and the Rocky Mountain Institute, also based in the US.

Mohammed Al Bader of Masdar Capital commented on the role of the Masdar Capital team on investment opportunities within Masdar's portfolio that span carbon capture, alternative energy, waste energy, waste water treatment and water technology. He noted the huge opportunities for Masdar in Asia in the coming years. Masdar Capital's investment mandate involved looking into the quality of the companies' management, technology and intellectual property driven technology. He described the importance of assessing new markets, forecasting financial models, new and emerging technologies and sub-sectors within the clean tech industry as well as looking for timely exit strategies. He showcased Masdar's two clean technology funds, and opportunities that allow start-up-funds to be scaled up.

John Madden, a Senior Planner from the UPC did a presentation on the Estidama Pearl Rating System directed toward developers, architects, planners, and the general public. He noted the achievements of the mandatory rating system and its endorsement from the highest levels of the leadership. Estidama, a mandated policy to create a new sustainable framework for Abu Dhabi Plan 2030 infiltrates every level of government, and is integrated into the UPC's process and the way it conducts business with external stakeholders. The rating system was geared to two typologies, at the community and the building level. Mr. Madden noted the cradle to grave operations at play, including the energy efficiency goals of the policy that included good design practices, reducing energy demand among consumers, energy monitoring and reporting, reducing carbon emissions, having less energy intensive desalination processes and improving the overall efficiency of building systems. Master planned communities would also receive Estidama ratings. The policy was geared toward the climate of Abu Dhabi and catered to the unique cultural and regulatory environment. An integrated development process ensured early agreement among the diverse stakeholders. All private developers were mandated to receive at least 1 pearl, government buildings were slated to receive 2 pearls, and optional and voluntary credits between 3-5 pearls for those who go beyond the mandatory requirements. Madden stressed the cost benefits to developers in the audience, and the availability of tools through the UPC's interactive website to meet the required and optional credits. The UPC and its municipal partners continue to expand different types of training and outreach.

The presentations and more importantly, the question and answer session post-presentations allowed me to understand the industry culture in Abu Dhabi. Participants wanted to know how the projects pertained to them, as private sector partners, as government agencies, developers, academics, students, and residents. The conference was key to opening up my thought process to the vital role conferences played as key policy transfer and also as governance platforms in the local context, given the potential for network formation among like-minded groups of experts.

In general, I observed a healthy curiosity from the external stakeholders about the initiatives of Masdar and its partners, with a tendency of minimal criticism of aspects of the presentations in these public sessions. This could potentially be attributed to the fact that Masdar hosted the event, and raising criticisms in a public setting seemed untoward in the local authoritarian context. Rather, the audience was focused on networking, asking questions from their industry perspectives in a bid to understand how business opportunities and collaborations could grow in the future.

The responses of the audience from this session were particularly interesting. Some developers were concerned about how to meet the Estidama mandate. They raised issues such as being half way in the middle of lengthy projects and negotiations that would get further delayed by having to incorporate Estidama. Another developer asked about the costs related to having to hire people trained on sustainability criteria. John Madden encouraged them to attend the UPC's free training sessions and emphasized the open door approach the UPC had on advising people on their individual concerns about meeting the mandate. He emphasized that achieving a one pearl rating added just about 1.5% to the building costs whilst in the long term the water savings for developers were in range of 20% whilst energy savings were in the range of 25%.

The UPC's intent to engage with the wider set of stakeholders including developers, other government agencies and the public over the launch of its Estidama mandate became evident. Overall during the question and answer session post-presentations participants wanted to know how the Estidama mandate pertained to them, as private sector partners, as government agencies, developers, educators, students, and residents. The diversity of the audience in terms of nationality and profession was striking, particularly when people introduced themselves around the room for some of the smaller discussions. It was reflective of the fact that sustainability cuts across the interests of a wide set of individuals and institutions. The external stakeholders were interested in the initiatives of Masdar and its partners, with minimal criticism of aspects of the presentations in these public sessions. This could potentially be attributed to the fact that as Masdar hosted the event, raising criticism in a public setting seemed untoward in the local authoritarian context. Rather, the audience was focused on networking, asking questions from their own industry perspective in a bid to understand how business opportunities and collaborations could grow in the future. Informal conversations with attendees indirectly involved with Masdar, as well as conversations with Masdar Institute students and professors, and staff in attendance from other Abu Dhabi government agencies and non-profits, gave me a glimpse of the varied perspectives on sustainability in the local context.

In addition, companies such as Siemens and Schneider Electric sponsored their own speaker series. At the Siemens speaker series Osman Ahmed, the Head of global collaboration stressed the importance of the Masdar Siemens partnership, and likened it to human systems. smart grids in accommodating the intermittent power supply from wind and solar; necessary technical and policy conditions; demand response; distributed generation and micro-grids; smart metering; and obstacles impeding smart grid growth. He emphasized how smart grids can help consumers moderate their energy consumption.

**Swiss Pavilion**

The Swiss Pavilion was a lavish exhibition space filled with 40 Swiss companies as WFES exhibitors, using the opportunity to present their services and forge new contacts. The Swiss Village project still looked to be on track given the large number of dignitaries and Swiss companies represented at the Swiss Pavilion at the World Future Energy Summit in 2011 and 2012. My conversation with a Swiss Clean tech representative was very insightful about the hopes for the project.

There are valuable opportunities associated with bringing together diverse government and private sector stakeholders together in small groups of twenty or less to debate and discuss local perceptions, current initiatives and applications of sustainability. The stakeholders included architects, clean technology investors, private sector partners, suppliers, non- profit groups, government agency employees and academics who engaged with Masdar staff and other guest speakers including planners from the UPC and private sector partners of Masdar.

**Excerpts from Personal Observations, Downtown Abu Dhabi**
**Time Frame: December 21st – 25th, 2011; January 18-19th, 2012**

**A Diversity of Construction**

Housing in Abu Dhabi is sub-divided across class, social power, ethnicity and nationality, with separate areas catering to Emiratis and expatriate residents. High end, luxury gated communities at Al Raha Beach, for example, in stark contrast to cramped apartments in poor quality buildings in downtown Abu Dhabi. The city has stark differences in its building stock with old and new structures in close proximity. While walking along what was called Salam Street, now renamed Sheikh Zayed Bin Sultan Street I passed the main modern shopping area. This long thoroughfare goes all the way to the Corniche road and most of the construction is high density apartment blocks.

Visits to landmarks such as the Emirates Palace and the Zayed Mosque reveal modern opulence contrasted with the traditional opulence. Everything about Abu Dhabi seemed to be over the top. The diversity of tourists at these sites revealed that this part of the government's economic diversification into tourism was thriving. The beauty of the Zayed mosque was a testament to the vision of Sheikh Zayed who personally planned the construction of this architectural masterpiece with its white marble, luxury chandeliers, Persian carpets, ornate carvings and inscriptions on the walls and ceilings. It was clear that rentier wealth was being spent on a diversity of projects.

Modern structures such as the Abu Dhabi mall adjacent to the waterfront have replaced older shopping areas. However, the older shops between Hamdan and Electra street and between Hamdan and Khalifa street are still in operation selling fabrics, clothes, souvenirs, sport goods, etc.

**Traffic Conditions**

The inner roads between the superblocks have mostly small shops and eateries run by the Asian expatriate population. The majority of the residents walking on the streets adjacent to the superblocks appear to hail from the Asian sub-continent, other Arab countries and the Philippines. The crowded superblocks dominate downtown Abu Dhabi in the downtown area. The residences and businesses are bordered by multi-lane highways some 8 lanes wide with oncoming traffic at high speed particularly during the rush hour. While there is a network of internal streets they are congested with limited exits and access roads, making it difficult for pedestrians to navigate the direction of oncoming cars. The right turn lanes are also extremely wide which allow cars to speed at turning points which are extremely hazardous for pedestrians. The safer option is to get in a car/taxi or use the public bus system to avoid the hazardous conditions for pedestrians. I took a taxi to the neighbourhood where St. Joseph's church is located, it was another Asian expat stronghold. Large numbers of Indians and Filipinos were noticeable in this area. There were crowds of people waiting for taxis and buses, evidence that this area was frequented by low and middle-income groups who did not own cars.

The public bus system run by the Abu Dhabi DOT operates state-of-the-art buses used mainly by people from the middle and low-income strata. The gender imbalance in Abu Dhabi is quite noticeable on public buses with the majority of the riders being men from the Indian

subcontinent, whilst some low/middle income expat women occupy the first two rows of seats closest to where the driver sits. It appears that there is still some social stigma that prevents other residents from wealthier income segments from using the public bus system. Those groups prefer to use the taxi system and their own cars which offer greater privacy and convenience.

The need for transportation policies and housing policies across different income groups became apparent from walking around and exploring neighbourhoods in downtown Abu Dhabi. Informal conversations with expat commuters on local bus rides gave me some insight into people's daily issues such as the high cost of living, transport and uncertainty of expat life in Abu Dhabi.

# 11.3 Appendix 3

# Conceptual Maps Linking Diverse Strands of Data



*Figure 21:Conceptual Map of Mediums of Policy Transfer in Abu Dhabi*
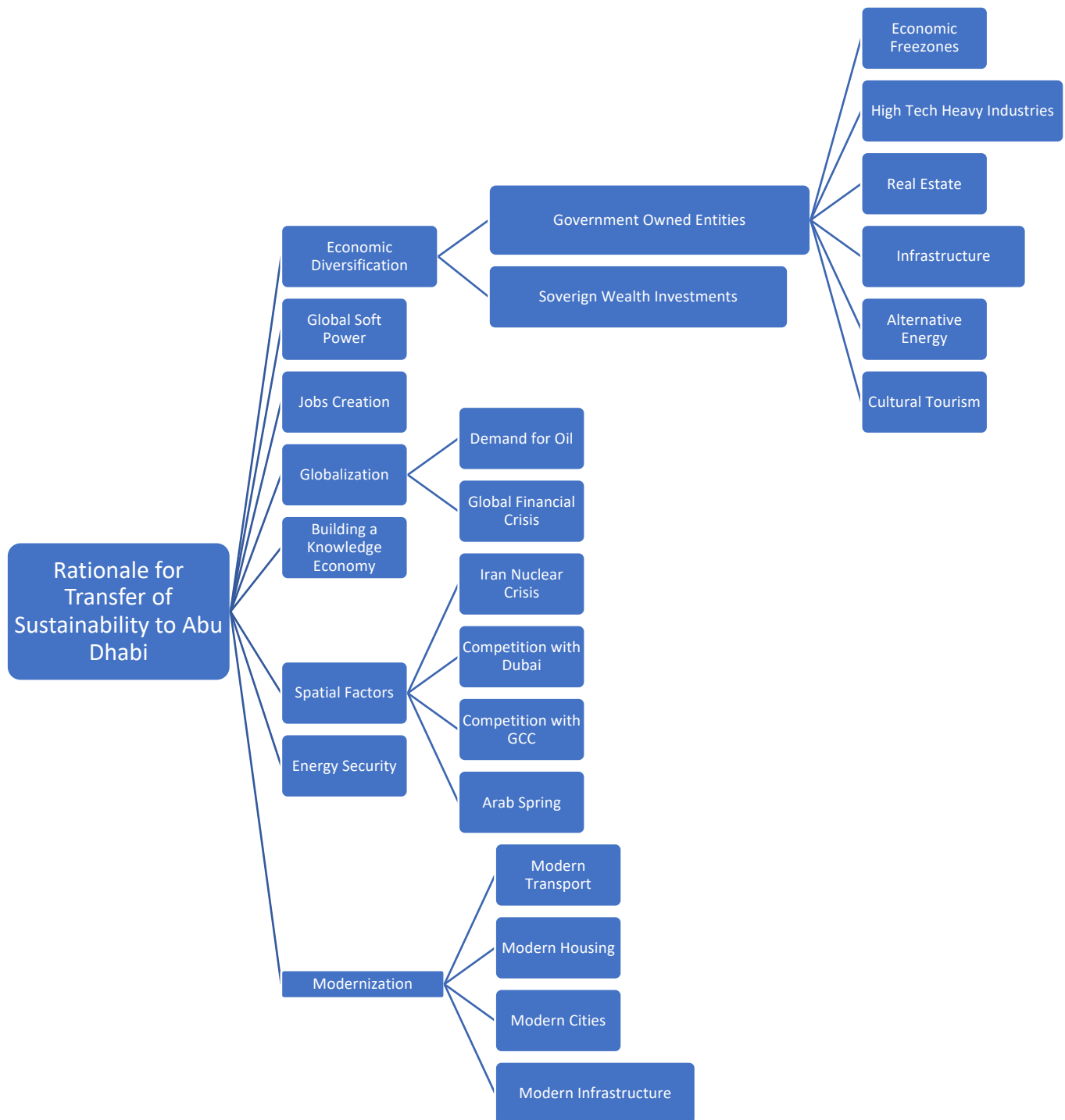
*Figure 22:Conceptual Map of Rationale for Transfer of Sustainability to Abu Dhabi*

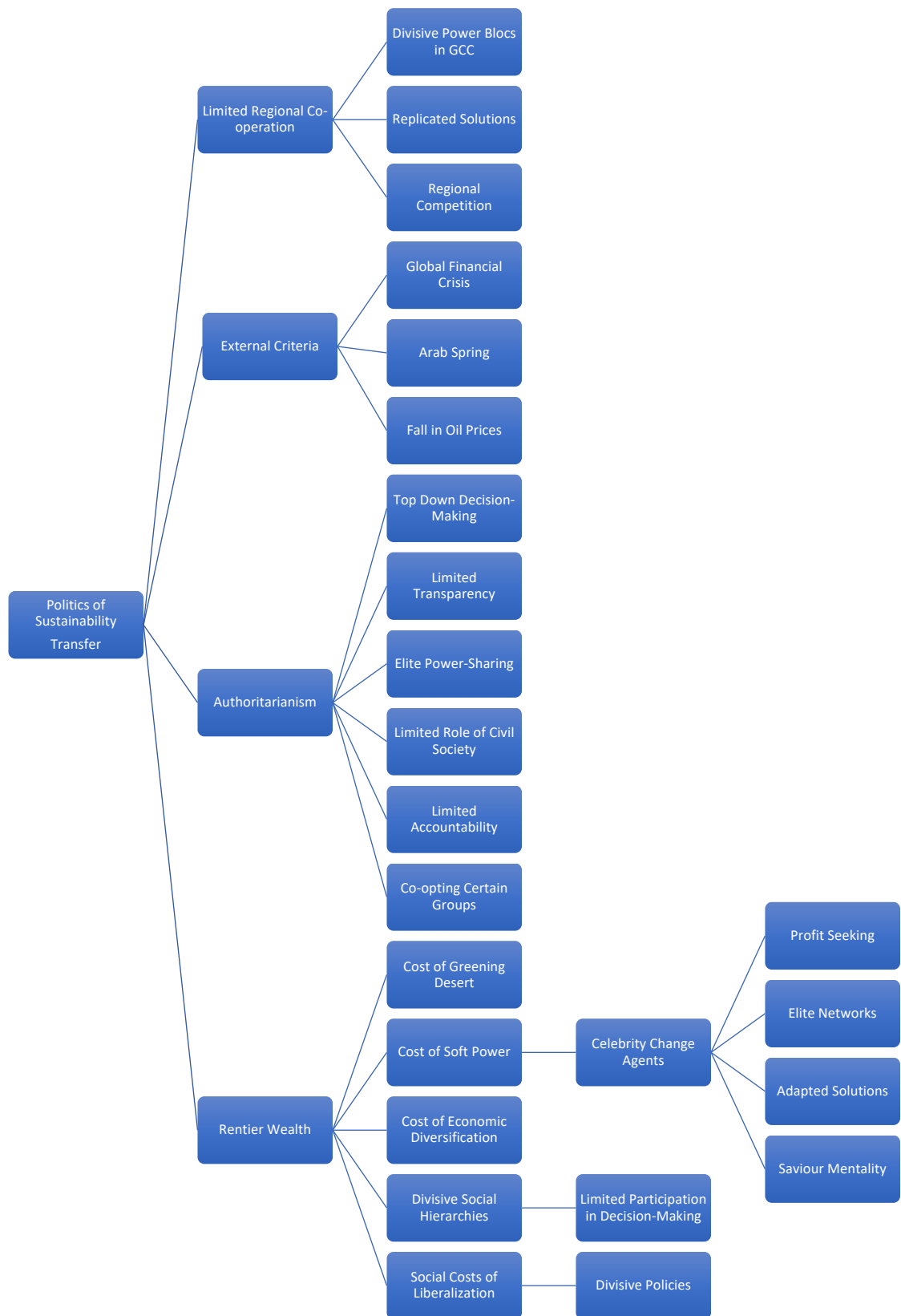*Figure 23:Conceptual Map of Factors Contributing to the Politics that Accompany Sustainability-related Policy Tranfer in Abu Dhabi*
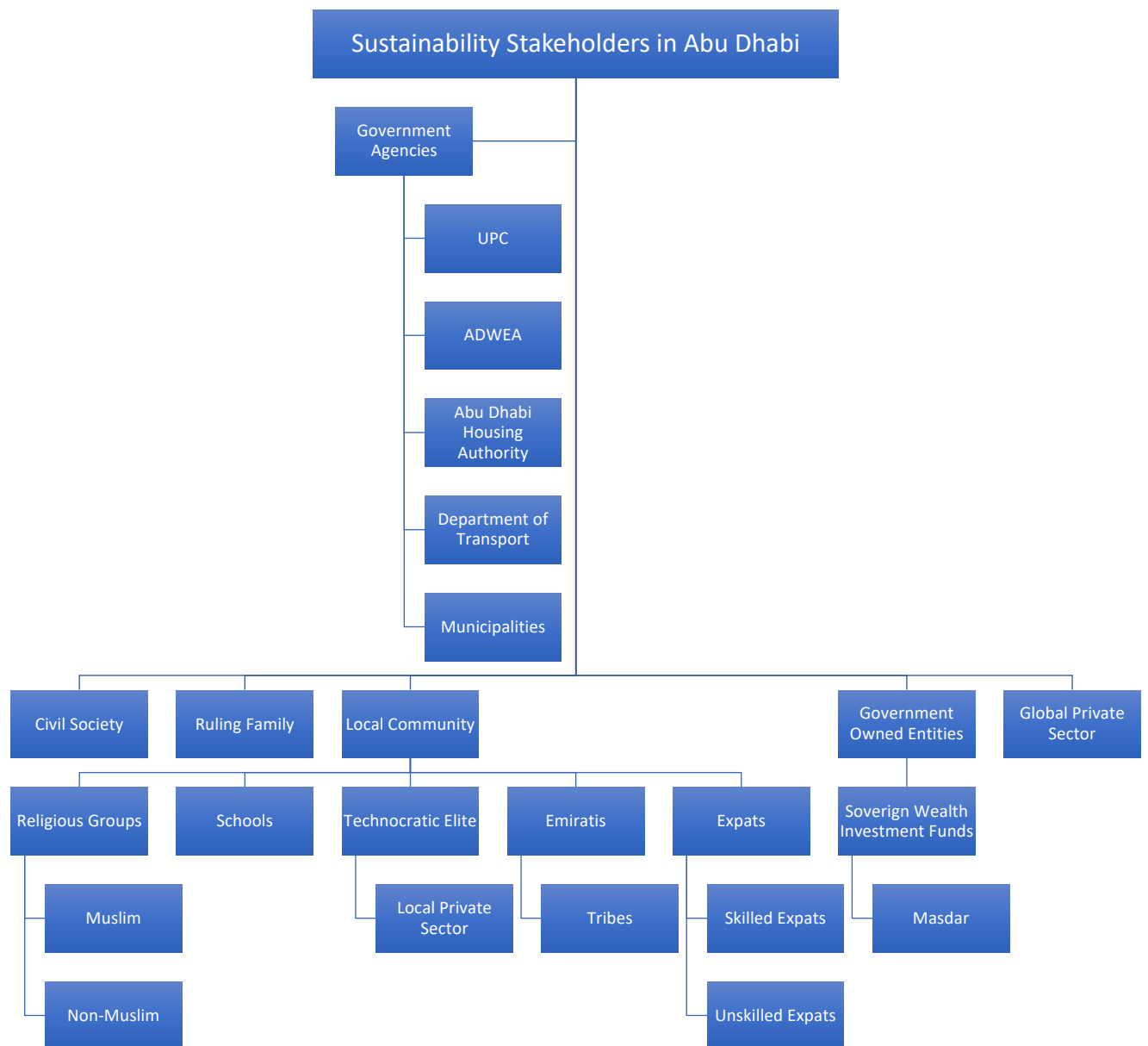
*Figure 24:Conceptual Map of Stakeholders Involved in Sustainability-related Policy Tranfer and Mobilization in Abu Dhabi (related to this research).*
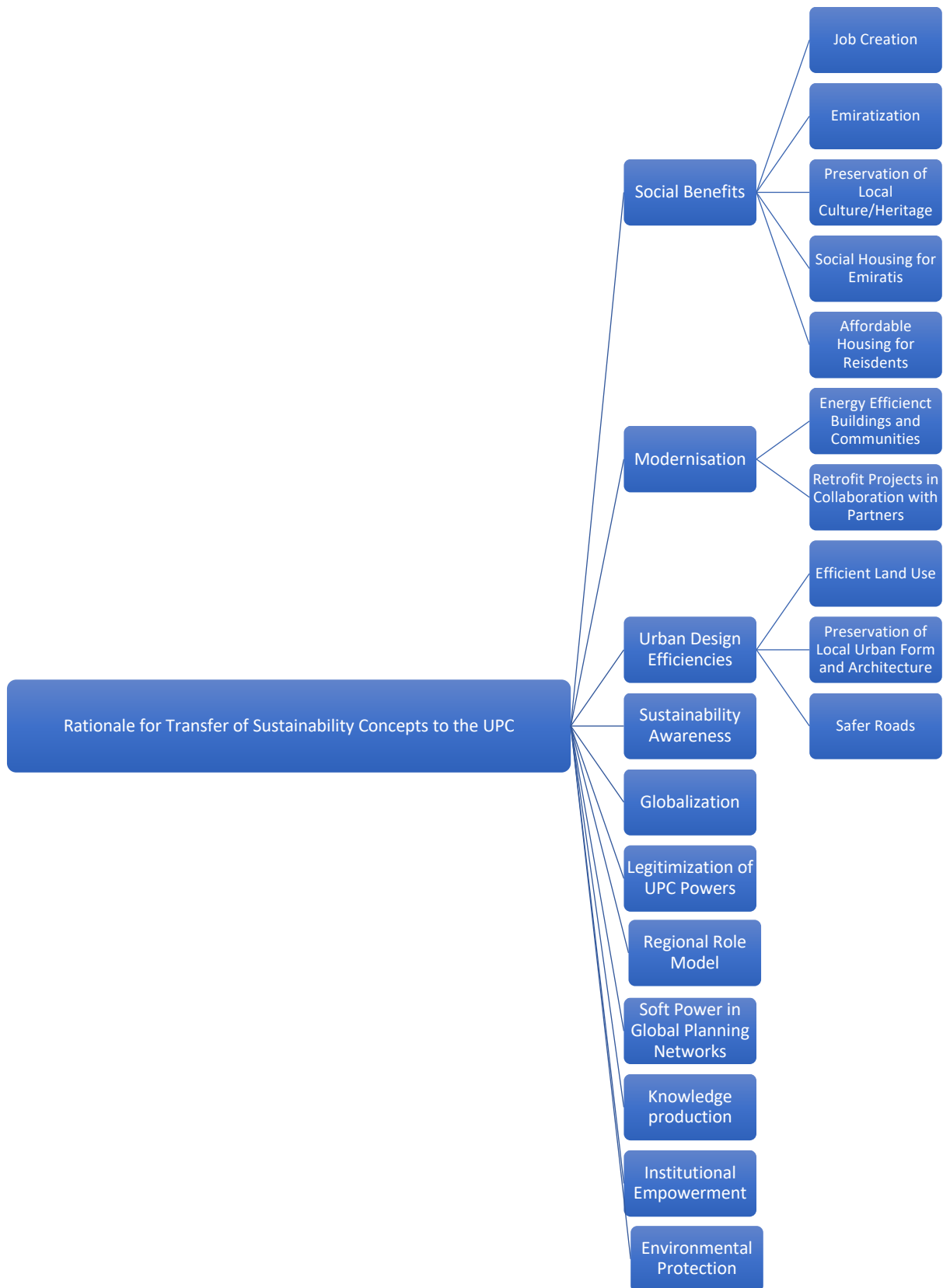
*Figure 25: Conceptual Map of the Rationale for the Transfer of Sustainability Concepts to the UPC*

*Figure 26:Conceptual Map of Policy Transfer Mechanisms and Outcomes at the UPC*
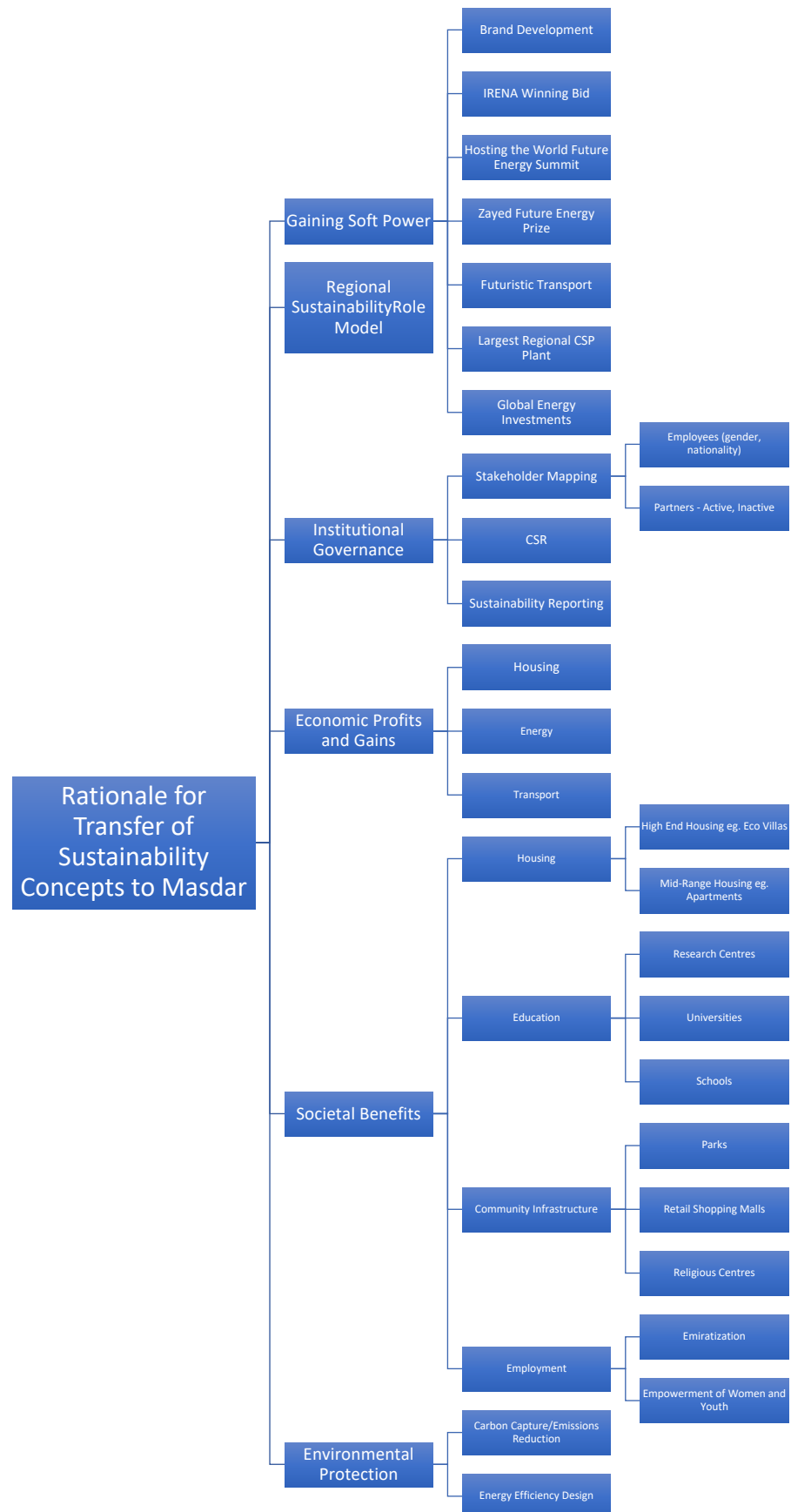
*Figure 27:Conceptual Map of the Rationale for the Transfer of Sustainability Concepts to Masdar*

*Figure 28:Conceptual Map of Policy Transfer Mechanisms and Outcomes at  Masdar*
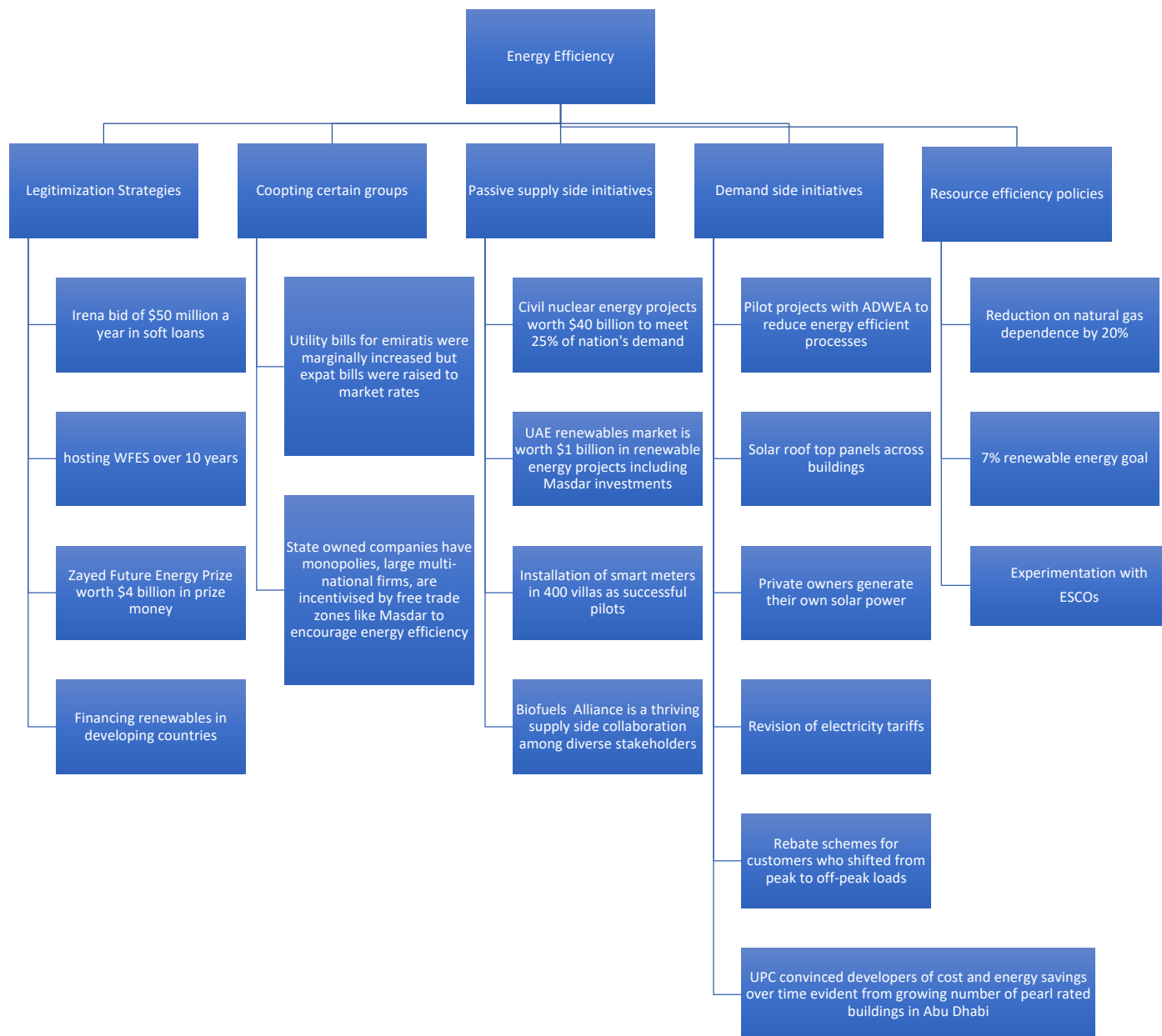
*Figure 29:Concept Drawing on Politics and Interpretations Related to Implementing Energy Solutions*

*Figure 30:Concept Drawing on Politics and Interpretations Related to Implementing Housing Solutions*
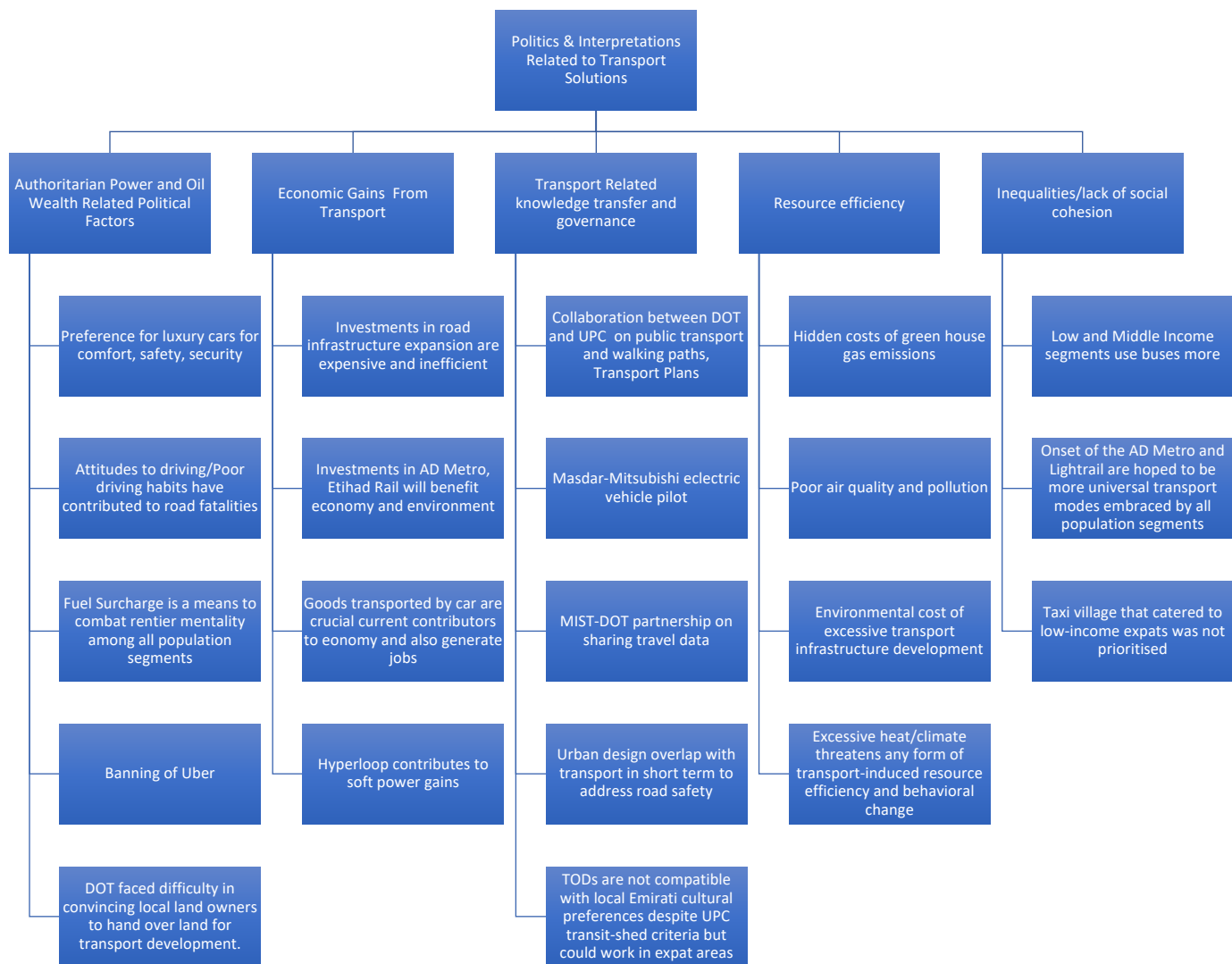
*Figure 31:Concept Drawing on Politics and Interpretations Related to Implementing Transport Solutions*

Urban Design

**Resource efficiency**
- Walking and Biking Lanes will contribute to resource efficiency
- Moving utility lines directly under roads was pursued toward resource efficiency
- Masdar's pursuit of design efficiency to achieve resource efficiency

**Culture and heritage /hybrid best practice**
- Land use based on demographics and societal hierarchies
- Loal climate adaptation- Minimum shading requirements
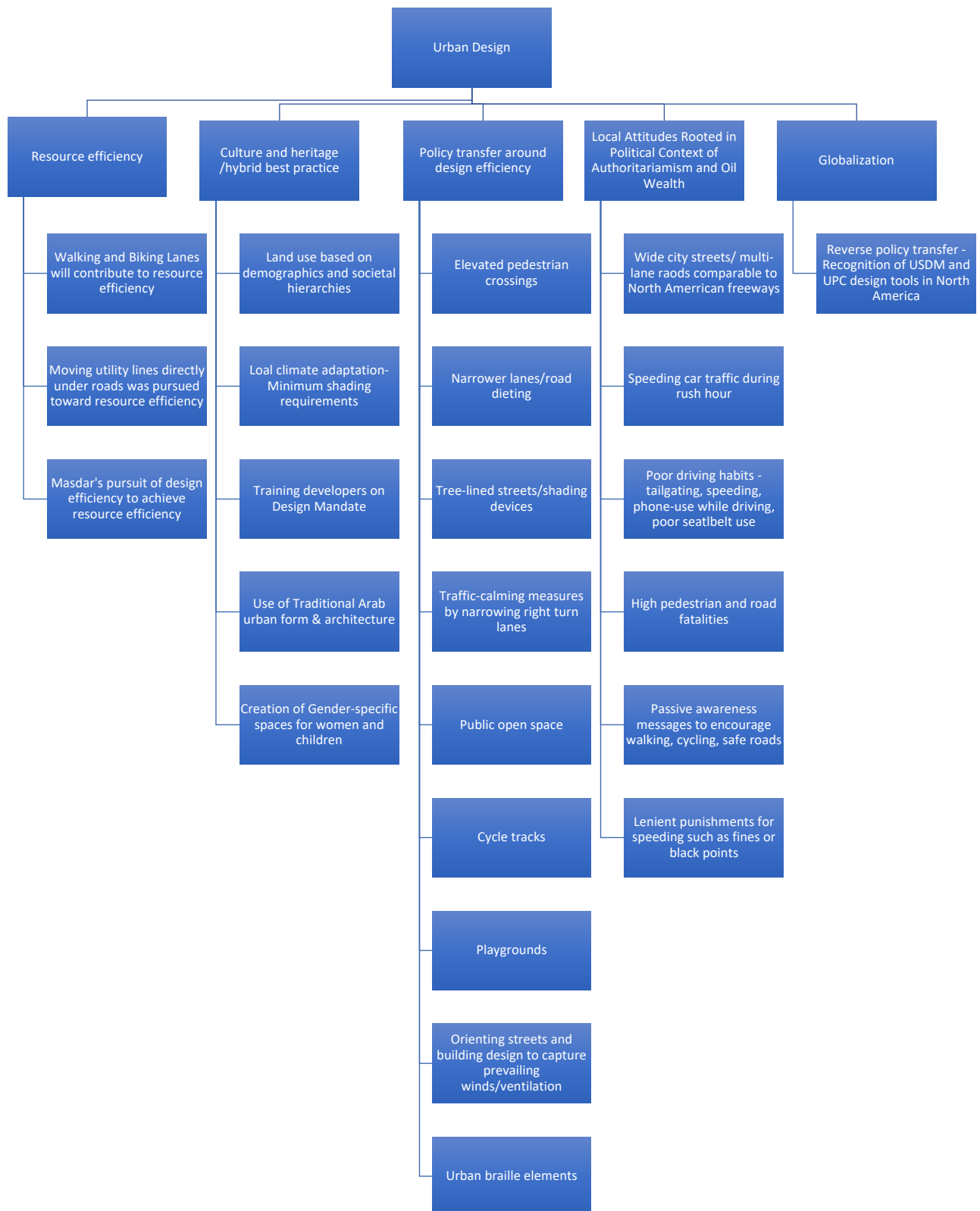- Training developers on Design Mandate
- Use of Traditional Arab urban form & architecture
- Creation of Gender-specific spaces for women and children

**Policy transfer around design efficiency**
- Elevated pedestrian crossings
- Narrower lanes/road dieting
- Tree-lined streets/shading devices
- Traffic-calming measures by narrowing right turn lanes
- Public open space
- Cycle tracks
- Playgrounds
- Orienting streets and building design to capture prevailing winds/ventilation
- Urban braille elements

**Local Attitudes Rooted in Political Context of Authoritariamism and Oil Wealth**
- Wide city streets/ multi-lane raods comparable to North Amerrican freeways
- Speeding car traffic during rush hour
- Poor driving habits - tailgating, speeding, phone-use while driving, poor seatlbelt use
- High pedestrian and road fatalities
- Passive awareness messages to encourage walking, cycling, safe roads
- Lenient punishments for speeding such as fines or black points

**Globalization**
- Reverse policy transfer - Recognition of USDM and UPC design tools in North America

*Figure 32:Concept Drawing on Politics and Interpretations Related to Implementing Urban Design Solutions*

# 11.4 Appendix 4

**11.4 Appendix 4**

**Sample Interviewee Consent Form**

**Date:**

Research Topic: Implementation of Sustainability Initiatives in Abu Dhabi

Research Investigator: Prianjali Mascarenhas

Research Participant's Name:

Research Participant's Title:

Research Participant's Organizational Affiliation:

**Consent to Participate in Research:**

I have agreed to participate in research conducted by Prianjali Mascarenhas toward her Phd. in Urban and Regional Planning at the London School of Economics and Political Science on the topic of sustainability initiatives being implemented in Abu Dhabi.

I understand my participation is voluntary. Interview notes, quotes or comments that are included in this research will not be attributed to me personally. The researcher will use a generic title and organisational affiliation in connection with this interview.

**Name of Interviewee:**

**Interviewee Signature:**

**Name of Interviewer:** Prianjali Mascarenhas

**Interviewer Signature:**