SciencesPo
URBAN SCHOOL

DMCC

GLM - 2022

ASSESSING SUSTAINABILITY IN FREE TRADE ZONES:

FOCUS ON THE U.A.E.



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Sciences Po Urban School - Master Governing the Large Metropolis

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Under the supervision of Charles PAULINO-MONTEJO

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01.

INTRODUCTION



DMCC, May 2022, Picture by the group © CC-Zero

CAPSTONE PROJECT AND RESEARCH TEAM

Capstone projects consist of a partnership between private or public entities and Sciences Po Paris Urban School on a topic of interest for the professional partner and relevant to the Urban School's students. In the context of the Masters in Governing the Large Metropolis curriculum, the 2021-2022 Capstone Projects' partners are the French Development Agency (AFD), Association Internationale des Maires Francophones (AIMF), Fédération Internationale de l'Automobile (FIA), Dubai Multi Commodities Centre (DMCC), Sciences Po's Urban School Chair « Cities, Housing, Real Estate », France Ville Durable, Indian National Institute of Urban Affairs (NIUA).

This report presents the results of the capstone project entitled "Benchmarking Sustainability in Free Trade Zones".



Prince ADUFAH

Prince has a Bachelor's Degree in Urban Planning from the Kwame Nkrumah University of Science and Technology. Before the GLM program, he was a contract worker for Digital opportunity Trust and 60 Decibels. His professional experiences include research, urban planning and policy, and M&E. Prince's interest are the built environment, transportation and mobility, smart cities.



Sumedha BOSE

Having secured a Master's in Urban Policy and Governance at Tata Institute of Social Sciences, Mumbai, Sumedha brings her vital research, data analysis and writing skills to the project. Her previous research experience includes urban policy analysis in housing and urban migration.



Rayann DHOUIB

Trained in Sustainable Structures and Materials at the EPF Graduate School of Engineering, Rayann brings a technical understanding to the research project. His previous professional experiences include project management positions in the Construction and Transportation industries in Europe and the Americas.



Kaoutar EL HAJAMI

Trained in Social and Political Sciences at Sciences Po, Paris, Kaoutar allows for a better understanding of the social and political issues underlying sustainable transition. Her previous research work has enabled her to establish problematics around this transition in the particular context of Dubai, a new city attracting more and more businesses and expatriates.

ABOUT THE PROJECT

Background and Overview

This project is a theoretical and empirical assessment of defining benchmarks for sustainable cities/districts through a comparative analysis of sustainable practices within selected Free Trade Zones in the United Arab Emirates. The project aims to identify entities that Dubai Multi Commodities Centre (DMCC) can be benchmarked against, elaborate an approach for benchmarking and recommend indexes for measuring sustainable cities/districts. Furthermore, the research attempts to highlight best practices adopted by DMCC's competitors, which can be implemented in the zone to improve their sustainability practices.

Objectives and Deliverables

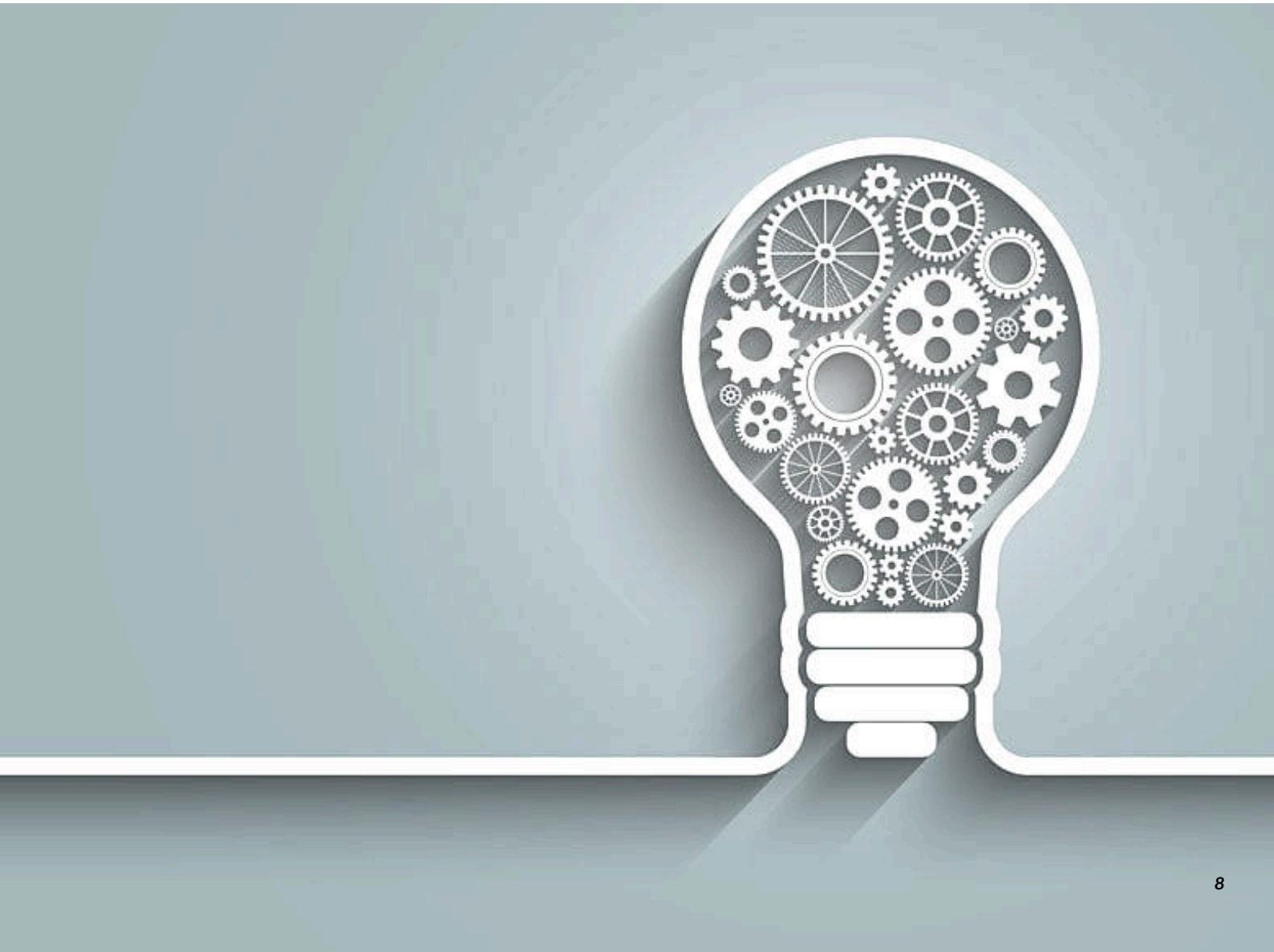
The overall output of this project consists of three deliverables. First, a detailed, comprehensive, peer-reviewed report that sets the theoretical framework of the research defines the context within which DMCC can be benchmarked against other entities identifies major stakeholders to measure DMCC against and demonstrates a proposed benchmarking approach. This report is set to be confidential and only shared and used for DMCC internal use and Sciences Po Urban School's capstone supervisors. This is due to the confidential DMCC material that this deliverable builds upon. Second, this report will be duplicated in an executive-summary style to be addressed to DMCC's top management. Third, the first deliverable will be adapted in a public version shared with all stakeholders who participated in the study, i.e. the interviewees and free zones that agreed to be part of the benchmarking exercise. This deliverable builds upon the first one with only public and not-sensitive information.

Specific objectives

1. Create essential standards and an applicable methodology for measuring sustainability in Free Zones
2. Understand the common and specific vital drivers and mechanisms for sustainability in Free Zones
3. Identify critical competitors (districts/FTZs) of DMCC for the benchmarking exercise.
4. Establish a set of policy recommendations for DMCC for an effective transfer of the leading best practices and lessons learned from competing Free Zones to DMCC

02.

METHODOLOGY



Theoretical Framework

02

General Overview of Sustainability

Since the concept of sustainable development became a global discourse underlined by the 1987 Brundtland Report, it has had a great deal of appeal but a limited specification. Finding a balance in its application in Free Trade Zones (FTZs) and Special Economic Zones (SEZs) is even more difficult. However, several significant proponents and advocates of sustainable development, including the public and private sector and international development organisations, recognise that a combination of environmental, economic and social determinants describes sustainability. In its broad form, sustainable development embodies a "reconciliation of society's developmental goals with its environmental limits over the long term" **(1)**. In the wake of rapid resource consumption and industrialisation, Eco-Industrial Parks (FTZs and SEZs) have become models for reconciling environmental, economic and social dimensions of sustainability, maximising economic and social benefits while minimising environmental impacts. The literature identifies environmental sustainability as protecting the ecological footprint while pursuing economic goals. Economic sustainability embodies production and consumption systems that do not compromise the environment, while the social dimension of sustainability advocates for processes that improve the well-being of people, such as politics and equity.

Acknowledging that different actors are spearheading the sustainable development discourse, our assessment surrounds the efforts of national governments and their corresponding departments and agencies, international development agencies and the private sector. It is in recognition of the direct and significant roles in establishing, legitimising and operationalising Free Trade Zones and their corresponding influence in advancing sustainability in the zone. To this end, their respective roles include:

- **National and Local Governments:** Providing the institutional, legal, regulatory and infrastructural frameworks that establish Free Trade Zones. Since its inception, national and local government administrations have been at the forefront of the sustainable development discourse in their respective countries and regions/provinces.
- **International Development Agencies and Corporations:** Defining goals, targets, strategies and benchmarks for attaining sustainable development through a collaborative approach with other stakeholders. They also provide support and assistance in finance, logistics, and capacity building to firms and local and national governments.
- **Private Sector:** Source of expertise and investment in implementing FTZs and sustainable development.

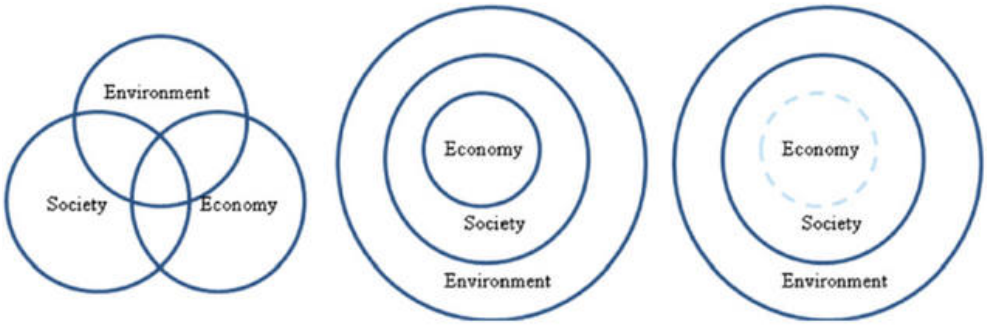
(1) Board Sustain. Dev. 1999. Our Common Journey: A Transition Toward Sustainability. Washington, DC: Natl. Acad.

Theoretical Framework

The many different actors and influences surrounding the definition and conceptualisation of sustainability mean that the concept is subject to the power of interpretation and meaning in shaping policy **(2)**. Consequently, scholars exploring the concept admonish that contradicting priorities and perceptions cast over the smoothness of addressing sustainability issues. We explore two models of sustainability conceptualisation that underlie our framework of analysis to establish some clarity and highlight priorities underpinning sustainability.

The Three-Pillar Model of Sustainable Development

Since the publication of the Brundtland report in 1987, sustainability has been considered commonplace for social equity, economic development and environmental protection. This has become a predominantly accepted notion elucidating that every conceptualisation of sustainability is expected to have an economic, social and environmental dimension **(3)** (See Figure 1). However, the specific relationships between the dimensions have been debatable. The most common relationship between the three dimensions is a diagram of three interlocking rings with sustainability at the centre, indicating that each dimension is independent. Acknowledging the independence of each dimension allows prioritisation of one aspect over the others. It is posited that such perspectives are associated with the reliance on technology to address sustainability issues because the environment is viewed differently from the human society **(4)**. Recent adaptations of the three pillars propose nested rings which place the economy at the centre as a social construct and the environment at the outer rings as an enabler for the other two dimensions **(5)**. Some scholars have argued for eliminating the artificial separation of economics and society by asserting that the relationship between humans and the environment is not reciprocal. Humans cannot survive without the planet, but the planet can survive without humans **(6)**. Hence, human society, including economic activities, can be recognised without distinction. Acknowledging the dependence of human society on the environment highlights the need for an integrated approach toward conceptualising sustainability and the need for an assessment of human activities.



Source:
Rachel Lombardi, D., Porter, L., Barber, A., & Rogers, C. D. (2011)

Figure 1. Conceptualisation of Sustainable development with the three dimensions

(2) Ehrenfeld, J. (2000) Industrial ecology: paradigm shift or normal science? American Behavioral Scientist, 44(2), pp. 229–244
(3) Rydin, Y. (1995) Sustainable development and the role of land use planning, Area, 27(4), pp. 369-377
(4) Rachel Lombardi, D., Porter, L., Barber, A., & Rogers, C. D. (2011). Conceptualising sustainability in UK urban regeneration: a discursive formation. *Urban Studies*, *48*(2), 273-296.
(5) Millennium Assessment (2005) Ecosystems and Human Well-being: Synthesis. Washington, DC: Island Press
(6) Giddings, B., Hopwood, B. and O'Brien, G. (2002) Environment, economy and society: fitting them together in sustainable development, Sustainable Development, 10(4), pp. 187–196

Theoretical Framework

Weak-Strong Sustainability Spectrum

The weak-strong spectrum of sustainability examines the degree to which individuals are expected to change their lifestyles to be sustainable. Weak sustainability is observed as dependence on technology with little changes to personal values and lifestyle and is consistent with the three dimensions point of view. On the other hand, strong sustainability requires a reassessment of personal values and behaviours and is consistent with the nested dimensions of the three pillars (See Table 1). Three stages are identified along the weak-strong sustainability spectrum by Rees (1995). These are 'status quo' (changes to be achieved within current structures), 'reform' (the need for reform without breaking existing societal structures) and 'transformation' (the need for radical transformation to root out fundamental problems in economic and social power structures). The spectrum had evolved from when environmental issues were thought of as the focus, through to the inexplicable recognising of the prioritisation of social and human needs in weak sustainability to further incorporation of equity, equality and futurity in strong sustainability, highlighting the need for radical changes **(7)**. Springett (2003) perceives weak sustainability as managing business risk and ensuring environmental balance within existing structures **(8)** and Ward (2003) highlights the importance of participation and equitable distribution of benefits **(9)**.

Table 2.1. Features of Weak and and Strong Sustainability

Weak Sustainability	Strong Sustainability
Technological fix with minor or no changes to lifestyle choices	**Fundamental reassessment of values and lifestyle choices**
Prioritise economic issues; deal with environmental issues as needed	**Integrated, holistic approach to three dimensions**
Technical progress and optimism	**Technological scepticism and precautionary principle**
Perfect substitution of natural and manmade capital	**Limited substitution of natural and manmade capital**
Manage business risk within existing free-market system	**Transform market system**

Source: Adapted from Lombardi et al. (2011).

(7) Rachel Lombardi, D., Porter, L., Barber, A., & Rogers, C. D. (2011). Conceptualising sustainability in UK urban regeneration: a discursive formation. Urban Studies, 48(2), 273-296. Pg. 277

(8) Springett, D. (2003) Business conceptions of sustainable development: a perspective from critical theory, Business Strategy and the Environment, 12, pp. 71–86

(9) Ward, K. (2003) The limits to contemporary urban redevelopment, City, 7(2), pp. 199–211.

Theoretical Framework

02

Inherent in the spectrum is the view of governments and businesses as supporters of sustainability. These roles of government and the private sector are perceived to be directed by neo-liberal and managerial approaches attaining sustainability through better information to influence consumer behaviours and attitudes and new technologies operating through the market system. This way, transformation is obtained through the existing market structure. This concept of sustainability fits into the activities of FTZs, which emphasise individual autonomy, free market, knowledge, and innovation. The overlapping three pillars of sustainability enable the status-quo approach. For instance, even though technological fixes are initiated in the dimensions with dominant human engagements (society and economy), such fixes do not require a complete reassessment of people's lifestyles. Ehrenfeld (2000) pinpoints a "sustainable paradigm", which are elements of sustainability anchored on technological scepticism, precautionary principles, new forms of responsibility balancing democracy and freedom, and a socially constructed constitution of knowledge **(10)**. The sustainable paradigm is a nested pillar concept recognising humans' dependence on the environment. The paradigm illustrates a systems approach to sustainability and highlights the limited reciprocity between humans and non-human dimensions.

These sustainability concepts are crucial for any analysis of FTZs as they highlight the influences of governments, the private sector and individuals on the interpretation of sustainability and further prioritisation of actions accordingly. Since FTZs have become growing centres of economic and social interactions, achieving a balance between human activities and their impact on the environment through the lens of weak-strong sustainability and the three pillars becomes inevitable.

(10) Ehrenfeld, J. (2000) Industrial ecology: paradigm shift or normal science?, *American Behavioral Scientist*, 44(2), pp. 237

Sustainability in Free Trade Zones (FTZs)

Overview

ree Trade Zones (FTZs) are specialised zones where different and varied businesses and sectors can be developed **(11)**. FTZs, since their inception, have become centres of innovation and economic growth, promoting a comparative advantage in global trade. As drivers of innovation, FTZs promote regional innovativeness as favourable institutional and regulatory frameworks enhance knowledge spillover **(12)**. Additionally, the zones promote the free flow of production capital at reduced cost catalysing economic growth. Several studies have shown that FTZs attract foreign investment (FI) and accelerate regional economic growth through increased exports **(13)**. Other studies have posited that establishing FTZs affects firms' organisational performance **(14)**. FTZs' growing recognition impacts the environment, given that the liberation of trade and capital is noted as fundamental to their operations. Concerns about the relation between FTZs and the environment stem from the construction of FTZs through the formulation and implementation of environmental protection strategies. By combining local factors of production with global technology, FTZs can drive eco-innovation through research and development in sustainable technologies **(15)**. Regardless, studies have also shown the decline in environmental quality with the advent of FTZs. He (2006) establishes that liberation of trade can transform some countries with vulnerable environmental policies into the "pollution haven" of primarily developed countries **(16)**.

Fundamental to the discussions of sustainability in FTZs is the role of FTZ authorities and the private sector. As governing and regulatory organisations, FTZ authorities are expected to formulate and implement environmental mandates and, at the very least, monitor compliance. However, the economic and trade liberalisation nature of TFZs makes it difficult for environmental concerns to be adequately met. The proliferation of FTZs across the globe and the increasing competition to attract several firms compounds this challenge. Hence, private sector commitment to the sustainability discourse becomes essential in FTZs. When corporate strategies are aligned with sustainability, firms are aware of the organisational culture and establish the right fit or sustainable initiatives **(17)**.

(11) Rachel Lombardi, D., Porter, L., Barber, A., & Rogers, C. D. (2011). Conceptualising sustainability in UK urban regeneration: a discursive formation. Urban Studies, 48(2), 273-296. Pg. 277

(12) Seyoum, B., Ramirez, J., 2012. Foreign trade zones in the United States: a study with special emphasis on the proposal for trade agreement parity. J. Econ. Stud. 39 (1), 13–30.

(13) Bambang, H., 2012. The small medium-sized enterprise's characteristic in batam free trade zone that able to acquire debt. Procedia Economics and Finance 76–85.

(14) Song, M., Wang, J., Wang, S., Zhao, D., 2019. Knowledge accumulation, development potential and efficiency evaluation: an example using the Hainan free trade zone. J. Knowl. Manag. 23 (9), 1673–1690.

(15) Aloise, P.G., Macke, J., 2017. Eco-innovations in developing countries: the case of manaus free trade zone (Brazil). J. Clean. Prod. 30–38.

(16) He, J., 2006. Pollution haven hypothesis and environmental impacts of foreign direct investment: the case of industrial emission of sulfur dioxide (SO2) in Chinese provinces. Ecol. Econ. 60 (1), 228–245.

Sustainability in Free Trade Zones (FTZs)

Accompanied by favourable regulatory frameworks and incentives, the private sector is considered a figurehead in achieving sustainability in FTZs. Regulatory frameworks could include Laws to institutionalise incentives and regulations to promote renewable energy or energy-efficient programs considering general good practices towards climate change and incorporating low-carbon aspects into SEZ laws. Low-carbon elements could be required for SEZ approval and designation and for setting energy standards. Farole and Akinci (2011) further highlight that incentives such as corporate tax reductions or exemption; duty-free importation of certain raw materials, capital goods, and intermediate inputs; no restrictions or taxes on capital and profits repatriation; tax relief for foreign workers and executives, exemption from most local and indirect taxes; financial Support and Prioritising R&D funds for projects in a low-carbon, green SEZ, or mass procurement of energy-efficient green products are possible avenues for elucidating private sector involvement for sustainability on FTZs.

Dubai as a Model of Sustainability: Attempts and Challenges

"Dubai is indeed under great environmental pressure. It is, among other things, exposed to water scarcity and extreme heat, with a very energy-intensive economy dependent on fossil fuels and food imports. Climate change could, therefore, be a real threat to the sustainability of the Dubai model. The UAE has already redirected its policies toward meeting certain environmental goals: It has adopted a green building code and has enhanced energy efficiency through smart metering of utilities (Ghazal et al., 2016). The Dubai 2020 World Expo, has planned to have renewable sources generate half of the electricity and to reuse more than half of the infrastructure materials for later construction, thus paving the way toward low-carbon energy systems and a circular economy. It has also diversified its urbanisation profiles. For example, during our research, we had the opportunity to visit the Sustainable City in Dubai. The Sustainable City is an ambitious green, car-free, mixed-use project in which houses are equipped with low-carbon features and consume energy produced on-site from solar parks. However, urbanisation in Dubai is very polycentric or “splintered,” as sustainable residential areas are still enclaves dedicated to specific inhabitants with specific needs and preferences."
- Bastien Vaissade & Kenza Fahim (GLM Study Trip Report, 2021)

(17) Baumgartner, R. J. (2009). Organizational culture and leadership: Preconditions for the development of a sustainable corporation. Sustainable development, 17(2), 102-113.
(18) Farole, Thomas et Gokhan Akinci. Special Economic Zones: Progress, Emerging Challenges, and Future Directions. Herndon : World Bank Publications. 2011
(19) De Jong, M., Hoppe, T. & Noori, N. (2019). City Branding, Sustainable Urban Development and the Rentier State. How Do Qatar, Abu Dhabi and Dubai Present Themselves in the Age of Post Oil and Global Warming? Energies.
(20) Zeljic, A.S. (2018). Polycentric Cities: The Future of Sustainable Urban Growth. Gensler

Sustainability in Free Trade Zones (FTZs)

02

The environmental measures that Dubai has recently adopted signal ecological modernization. They are technical fixes that aim to solve the problem of climate change through technology. This modernization has shown no intention of being accompanied by ecological restructuring — for example, by promoting low-energy lifestyles or shifting to a fully green economy beyond specific projects. Because Dubai's development is profoundly fractured and inconsistent, there is no real city-wide plan for sustainability; the Dubai 2040 plan resembles more of a branding strategy than a climate agenda. As imagined by the municipality, this plan attempts to propose a sustainable, healthy, and green future for the city. Still, it depends on a controversial urban planning law, which would give the city government more authority to implement new projects.

According to the World Bank, the United Arab Emirates has one of the highest energy consumption and carbon emission rates worldwide, with 21 tons per capita. Due to the high temperatures in summer, it is unbearable to stay outside for long periods, and interior spaces are generally heavily air-conditioned. While this energy consumption makes the city more or less comfortable, it also goes beyond basic energy consumption needs with activities far from the reality of the geographical environment, such as indoor skiing.

Demonstrably, Dubai makes intensive use of limited resources. A change in this kind of resource consumption would require a drastic change in habits and behaviours, and it is yet to be proven that the city is ready to engage in this transition. Climate change has already exacerbated the unsustainability of this development model. For example, building in the city requires the constant pumping of groundwater from foundations, even after construction is completed. The city is currently at sea level, making it vulnerable to flooding as it rises due to climate change.

As a home to several FTZs, some of which include Dubai Media City, Dubai Internet City, Dubai Multi Commodities Centre, Silicon Oasis and Dubai HealthCare City, Dubai's development and environmental challenges transcend into the existence and operationalization of these FTZs. Consequently, as will be discussed in subsequent sessions of this report, various FTZs have adopted different strategies for ensuring the sustainable development of their zones. These approaches differ depending on the nature of the zone and the degree of authority they have, especially in the built environment.

Data Collection

The data collection for this project was carried out in two stages. Following is a detailed explanation of the offsite and onsite data collection processes.

Remote Data Collection

Offsite data collection included collecting information from resources that are publicly available on the internet. These included information on the website of the various free zones, published sustainability reports, news articles, and academic journals. We pursued a dedicated LinkedIn outreach campaign to get in touch with various sustainability managers and invited them to have a discussion with us on sustainability in free zones. We also looked at the information provided by various organizations that award free zones on their sustainability practices. We mainly looked at the fDi Strategy Awards for the past few years and secured a copy of their questionnaire to understand better what sustainability aspects are being prioritized by different free zones.

On-site Data Collection

We took a field trip to the United Arab Emirates in May to conduct our onsite data collection. The field trip lasted seven days, and we visited several sites. Namely, we visited the Sustainable City in Dubai and the following free zones - Dubai Multi Commodities Centre, Ajman Free Zone, Dubai Silicon Oasis and Abu Dhabi Global Market. During our visits, we were offered guided tours of the free zones and the various practices they have implemented to enhance sustainability in the zones. Besides that, we could conduct in-person, semi-structured interviews with the respective sustainability managers of each zone. This information was valuable in our research since it allowed us to closely examine how each zone adopts a sustainability strategy in its day-to-day operations.

Limitations of the Project

Following are some of the limitations we faced during the project, which are essential to highlight since they had a significant impact on the project's scope.

- The benchmarking exercise we had initially conceptualised was supposed to compare DMCC with both local and international competitors. However, we did not receive responses from most of the international zones we had contacted. Besides that, onsite data collection was not possible for international competitors due to a lack of time and financial resources. This is why the project's current scope is limited to competitors of DMCC in UAE, but there is scope to replicate the same exercise with international free zones.
- We had envisioned a benchmarking exercise that would compare the performance of various free zones on indicators listed in section three. However, since this data is sensitive, free zone authorities refused to share their exact numbers with us, making our benchmarking exercise more qualitative.

Benchmarking Exercise

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Quantitative Benchmark: Archetype of the Ideal FTZ

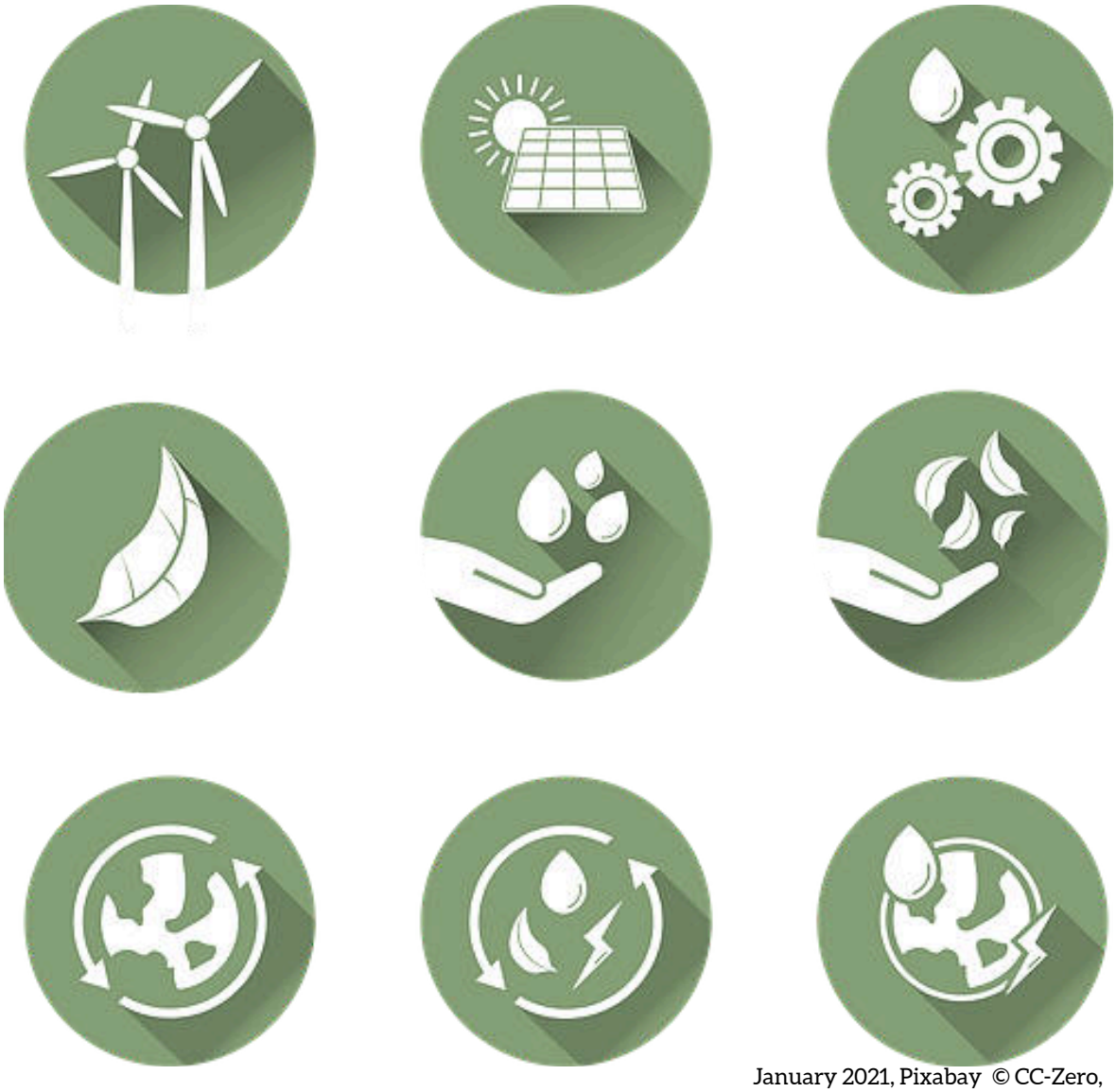
Building upon the literature review detailed in section one, along with the best practices extracted from on-site data collection, the benchmarking exercise proposed in this report introduces a set of indicators to assess the performance of a Free Trade Zone in terms of sustainability. This study acknowledges FTZs as zones that work similarly to a city's district, thus facing the same challenges as an urban district. The following standard has been designed to optimise the economic performance of FTZs while ensuring a sustainable environment for the communities working and living in/around it, as well as reducing the business's impact on the environment. In sum, the Archetype for a Sustainable Free Trade Zone aims at ensuring the best cohabitation of communities, commerce and businesses within a limited urban area.

Qualitative Benchmark: Comparison Tables

We developed qualitative comparison tables from best practices observed and obtained through field visits and interviews with FTZ authorities, businesses, or clients. These benchmarks followed a categorisation of sustainability under Built Environment, Community and Governance, and Private sector participation. These categorisations allowed for building coherence between broad indicators of sustainability identified during our desk reviews and data obtained from the field and became more practical due to limited quantitative data on those key indicators. As such, the comparison tables highlight vital initiatives undertaken by various FTZs and a reaction (synonymous with performance indicators) for each case study.

04.

CASE STUDIES: BEST PRACTICES AND LESSONS LEARNED FROM FTZs



January 2021, Pixabay © CC-Zero,

ABU DHABI GLOBAL MARKET
سوق أبوظبي العالمي



ADGM Model, May 2022, Picture by the group © CC-Zero

ADGM – Abu Dhabi Global Market

Accountability Building Through Sustainable Finance Regulation

ABU DHABI GLOBAL MARKET
سوق أبوظبي العالمي

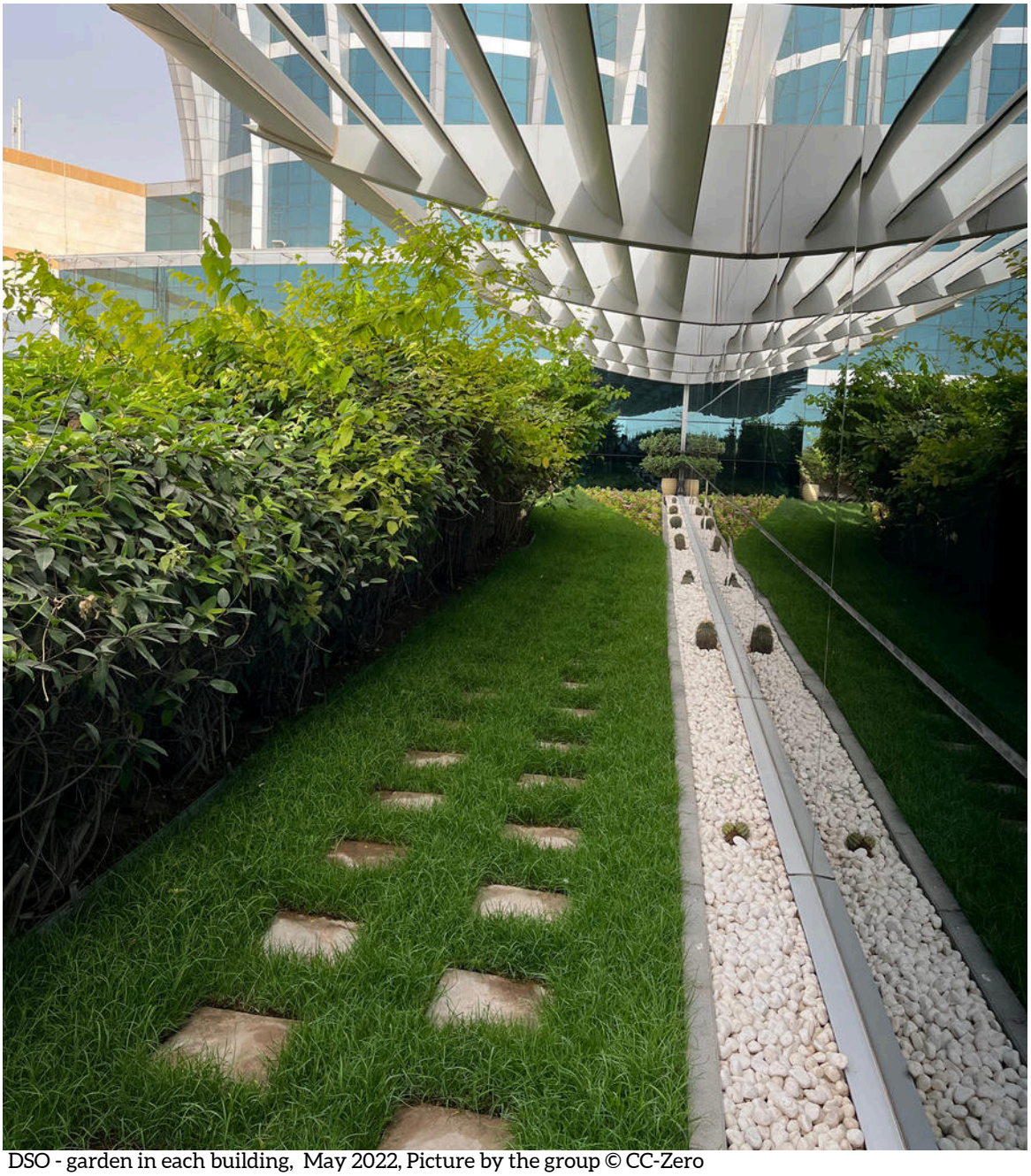
Main Takeaways

- They have no ownership of the built environment.
- The authority acts upon the zone's regulatory frameworks.
- Four pillars for sustainability: Regulation, Cooperation, Awareness, and proper Ecosystem.
- Publication of a 10-principle set of guidelines for Sustainable Finance.
- The signing of a declaration on sustainability from the companies operating in the zone.
- Since the zone mainly operates in a single type of sector (Finance), the academy can provide tailored professional training tackling general sustainability practices in businesses related to the finance sector.

Main Challenges

- None of their buildings is green building certified, but they are working towards improving the sustainability of the main ADGM building. (No equivalent of GBRD in AD). Overall: the zone operates in a regulatory framework that doesn't include sustainability as a primary driver for economic development.
- Motivating companies to engage in the Academy's sustainable finance training, knowing that for now, it is primarily the Academy that approaches the companies. Also, sustainability training is not free of charge for companies.
- There is no follow-up or monitoring mechanism to assess the implementation of the training at the Academy.
- So far, they don't have a concrete plan for enforcing it, but they are looking to increase the accountability of businesses operating under their jurisdiction.

سلطة واحة دبي للسيليكون
Dubai Silicon Oasis Authority



DSO - garden in each building, May 2022, Picture by the group © CC-Zero

DSO – Dubai Silicon Oasis
Tech-driven Sustainability Implemented Through a 'Lead by Example' Model

سلطة واحة دبي للسيليكون
Dubai Silicon Oasis Authority

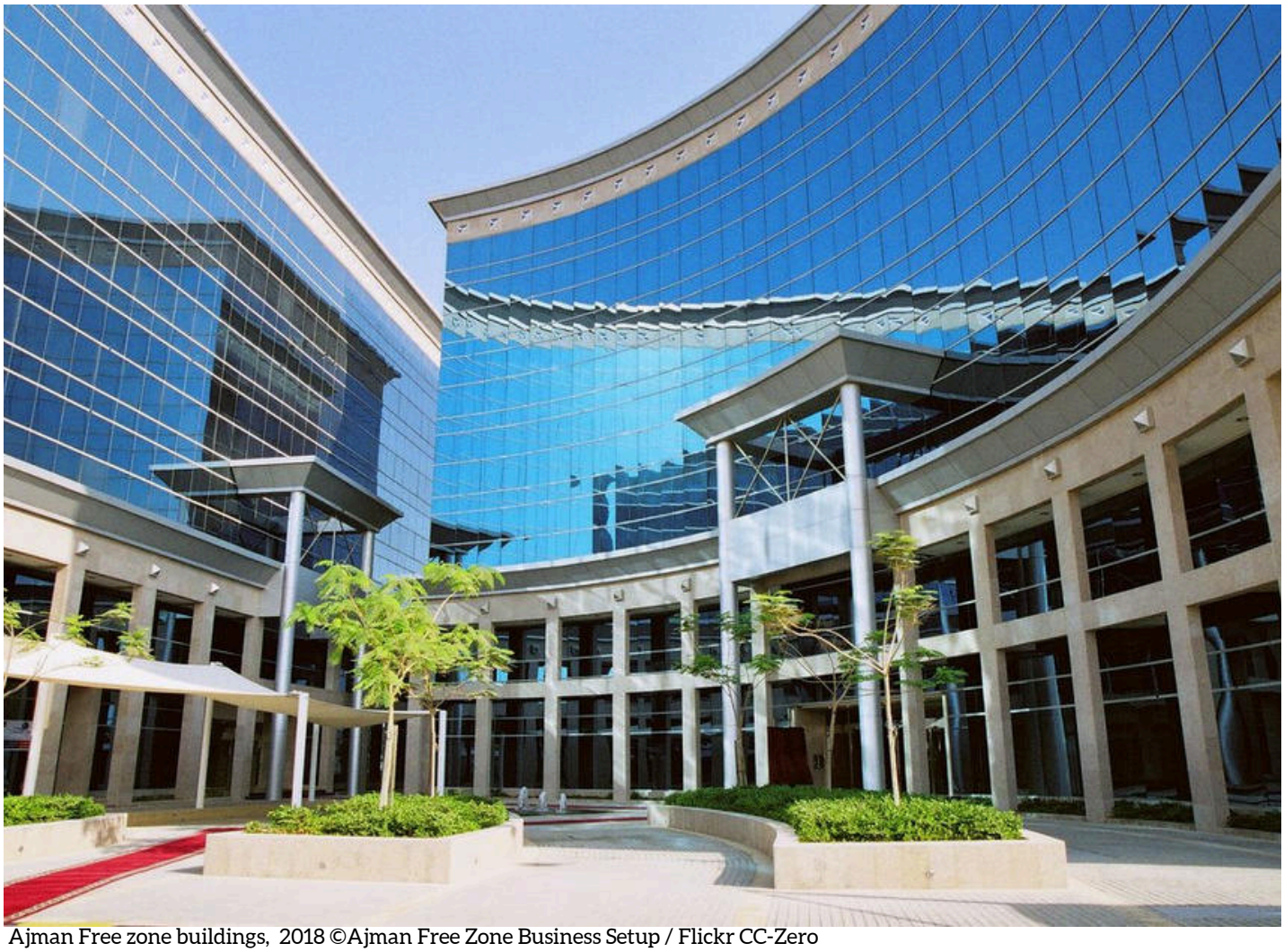
Main Takeaways

- A practical and integrated governance structure allows the zone authority to regulate all aspects of operations in the zone.
- There are strong economic incentives to adopt sustainable measures in aspects such as waste management, building management, etc. These economic incentives motivate management to invest in large-scale sustainability projects.
- Excellent community engagement in the zone is facilitated via a digital application that allows the community to connect with the authority.
- The management has promoted a strong culture of recycling across the zone by not just installing the required infrastructure but nudging people's behaviour through economic incentives for recycling.

Main Challenges

- We need to think of low-tech solutions now that the tech-driven sustainability mechanisms are already in place.
- Lack of transparency surrounding data privacy.
- Lack of transparency on sustainability reporting to the public.
- Management of the collective farm and dispute resolution.
- Although transparent processes and regulations seem to exist, waste management only accounted for 11,27% of diversion in 2020. If it is a good number for Dubai, it is still very low compared to international standards.

منطقة عجمان الحرة
Ajman Free Zone



Ajman Free zone buildings, 2018 ©Ajman Free Zone Business Setup / Flickr CC-Zero

AFZ - Ajman Free Zone

Nudging Businesses Towards a Model of Environmental and Economic Sustainability

منطقة عجمان الحرة
Ajman Free Zone

Main Takeaways

- Supporting and publicly acknowledging the initiatives of partner companies (Sustainability Award) motivates businesses to implement sustainability.
- Essential to find a trade-off between the means available to companies and zone regulation concerning sustainability (cost-intensive changes might not be feasible for companies to apply immediately).
- Providing technical support to businesses will accelerate their transition to sustainability.
- Increasing awareness through the organisation of workshops on recycling and environmental preservation.

Main Challenges

- **The lack of regulation**: They do not have strict regulations that supervise and sanction companies that do not comply with the new sustainable standards.
- **The results in terms of recycling are still low**: We notice low rates of recycled waste AFZ recycles 60%, and the recycled waste percentage of the companies in the zone is 30%.
- **None of the buildings is certified green buildings:** Although the zone is working on building new buildings with the required certification, they are not considering upgrading the old buildings to secure the green building certification.



DMCC model, May 2022 ,Picture by the group © CC-Zero

DMCC – Dubai Multi Commodities Center
Envisioning a Model of Sustainability for Businesses and Community Alike

Main Takeaways

- The efforts to digitize the zone and collect vital data on the zone's environmental and energy performance through dedicated digital platforms are ideal for monitoring the zone's sustainability performance.
- The materiality assessment is a great exercise for understanding the priorities of both internal and external stakeholders. It allows the zone to streamline their resources toward addressing them.
- The progress towards reducing the energy consumption of the zone and improving water management by setting KPIs and monthly goals is a great initiative to enhance the zone's sustainability incrementally.

Main Challenges

- Since DMCC authority only has strict regulatory control over the One JLT tower, implementing their sustainability initiatives is a challenge. It is difficult for the authority to get developers to comply with their regulations since compliance is not mandated.
- There is a high turnover rate for residents living in the zone, creating challenges in building lasting relationships with the community and motivating them to contribute to the zone's sustainability.

THE SUSTAINABLE CITY
by Diamond Developers



The Sustainable City, may 2022 picture by the group © CC-Zero

TSC - The Sustainable City Dubai

Sustainability as a Lifestyle

Main Sustainability features

Sustainability Theme	The Sustainable City Design and Management Approach
Energy	Solar installations, shared electric vehicle charging ports
Waste Management	Solid waste recycling and sorting bins
Built Environment	Biodomes for Urban farms, Landscaping with mini lakes and date palms, micro-mobility (mini electric vehicles), Walkable lanes and community park
Community and Governance	• Community management App: All information from management is decimated through the platform. Residents can also share complaints and feedback. Owners Association: Engages occasionally with management to propose improvements. • Residents Committees: Self-formed by residents to channel grievances and organise activities • The gender split in management: 42% females and 58 females males • The school (IV curriculum from PreK to grade 12 with sustainability embedded). The city serves as experimental grounds for pupils Institute delivering sustainability knowledge through professional training, facilitating research, and initiating startups.

Main Takeaways

- Energy-efficient development anchored on solar power.
- Sustainable waste management through the installation of waste bins and a recycling plant.
- Community and governance structure promotes belongingness and social cohesion and strengthens a shared responsibility.
- Effective communication systems through community management application software and committees.
- They promote awareness and knowledge delivery through education and community events spearheaded by the management team.

06.

POLICY RECOMMENDATIONS



POLICY RECOMMENDATIONS

Enhance companies' accountability

Issuing a Declaration of commitment toward sustainable practices is an efficient tool to enhance business accountability toward more sustainable practices. Implemented on a voluntary basis first, the signatories would publicly disclose their compliance with the zone's commitment to sustainability. Conversely, non-signatories would implicitly showcase a non-commitment towards these issues. Signing this Declaration could become mandatory for new companies arriving in DMCC and gradually be required for already operating businesses. This Declaration, deconstructed into clear guidelines and principles, would allow for a zone-wide homogeneous vision of sustainability.

More transparency on DMCC's action in JLT

DMCC could use a more integrated governance structure to increase its community's (residents and professionals) understanding of the Authority's role and regulatory power. Showcasing DMCC as a more active actor and a leader in the zone's sustainability is an essential driver for implementing new regulations and developing sustainable projects.

Monitor the gains provided by sustainable practices in One JLT

Better monitoring of the gains could be shared with all of the district's developers, building managers, and companies as an unarguable incentive for these stakeholders to implement new standards and policies within their business environment, overall driving the whole zone towards being a more sustainable area. As shown through the case study of DSOA, this "Lead by example" philosophy is an efficient tool to guide businesses into greener practices. However, this process requires some time for implementation because of the work needed to gather, analyze and share the data.

Increase green spaces in the zone

The residents' survey showed that newcomers feel like DMCC is a green FTZ, yet long-timers assess that the zone has suffered from concretisation in the last few years. The presence of green spaces in FTZs, even more in urban areas such as JLT, is unarguably an important element ensuring sustainability for the zone. As the DSOA case shows, introducing green spaces doesn't necessarily mean sacrificing valuable land plots. Indeed, DMCC needs to optimise the existing "free" plots and explore features like green walls or partially turning small parcels of concrete (like unused portions of rooftops or terraces) into green plots. This not only contributes to the overall aesthetic value of the zone but also helps in energy conservation.

POLICY RECOMMENDATIONS

Implementing professional and individual training programs to enhance knowledge and awareness on sustainability and environmental preservation

Residents' surveys and discussions with companies in FTZs showed that apart from the availability of infrastructure, a block to greener practices is the general stakeholders' understanding of what is at stake behind sustainability matters. Thus, the authority must use ADGM Academy's model of an educational program through occasional workshops, including follow-ups and mid-to-long term monitoring of their impacts on individuals and companies. For companies, delivering official certificates in partnership with universities or training agencies can significantly add value to their sustainability commitment.

Develop an open data platform to disclose the companies' performance on sustainability matters to enhance sustainability competitiveness within the zone

This would initially encourage initiatives by emphasizing the positive economic and environmental impacts and create a competitive dynamic between companies by highlighting the best practices regarding sustainability. DMCC fosters diverse business sectors, each industry will focus on different fields, and each company could compare itself to companies operating in the same scope. This would ultimately create a rich database of best practices in terms of green practices that will become examples. This platform can take various forms, such as an open data portal searching for practices according to each company or industry. To encourage companies to be proactive in sharing their data, access to the platform could be granted only to businesses that share their data regularly.

Provide a certification and/or award for companies and residents involved in sustainable practices

As brought up by several stakeholders, adopting sustainable practices in the business environment is mostly a matter of individual habits and behaviour. Thus, as observed in AFZ, granting awards and certification, even only symbolic, encourages individual initiatives towards ecological transition and more sustainable practices. Although it does not have a formal or international value, it encourages competitiveness between companies in adopting cleaner practices.

POLICY RECOMMENDATIONS

Organize and formalize Community Committees by cluster for enhanced community engagement and decision-making

Beyond the new app, residents and company representatives organized in committees would help build a more sustainable ecosystem in the zone. Indeed, as explored through the theoretical framework of sustainability in FTZs, the spillover effect is one of the most efficient drivers for reaching sustainability in FTZs. As a mixed zone, DMCC needs to organize this spillover through discussions between the diverse coalitions that constitute the Community. Indeed, DMCC's residents, companies, and the Authority could have convergent or divergent interests, yet formalizing the exchanges will lead to a more sustainable evolution of the zone.

Launch an application to collect community feedback and disseminate information on important projects and actions in the free zone

As witnessed in TSC and DSOA, a mobile application makes exchanges between the zone's authority and the residents more fluid. This contributes to building effective communication as residents know whom to turn to when needed. It also allows authorities to better regulate and disclose clear information to the community. Moreover, this standard mode of feedback collection allows for centralized data treatment and enhances the community's feeling of their voice being heard.

Strengthen the community's connection through the organization of cluster events and activities

Organizing community events and gatherings around a meal and activities to meet the neighbours to create a social link would ultimately enhance the community's feeling that they belong to a community. Indeed, many residents feel isolated because there is no instance where they can meet and discuss. Moreover, this could be organized by the committee. To illustrate, this could be similar to Neighbours' Day, which allows residents to meet and share a convivial moment.

07.

CONCLUSION



DMCC, May 2022, Picture by the group © CC-Zero

CONCLUSION

The project on assessing sustainability in Free Trade Zones was conducted with the objective of benchmarking DMCC against its top competitors. Our study was limited to the UAE and we exclusively looked at Free Zones in the region. We attempted to deconstruct the concept of sustainability as it applies to Free Zones, and came up with various sub-themes that warranted thorough inquiry. As part of our fieldwork, we visited the UAE and conducted field research by speaking to various Free Zones and district working towards sustainability, in particular, with their sustainability heads. This was complemented by site visits, all of which proved crucial to understanding what various Free Zones are doing with regards to sustainability.

Our findings suggest that DMCC is lacking in its performance on sustainability, in various criteria that we have identified. According to our research, we have identified the governance structure of DMCC as a possible explanation for its limited ability to implement sustainable initiatives in the zone. Considering DMCC does not directly oversee the construction carried out by private developers in the zone, we found a lack of compliance with green building standards for several buildings in the zone. This unfortunately makes the buildings more energy intensive and contributes to the high energy energy consumption of the zone. Zones such as DSO which have greater regulatory authority over private development under their jurisdiction, have fared better when it comes to mandating green building standards for developers looking to build real estate in the respective zones. Furthermore, they have also performed better in reducing energy consumption of the zone as a whole.

The stricter enforcement of sustainability-driven regulations can also manifest itself as an enhancement of accountability. Indeed, in DMCC no clear mechanisms are implemented to hold the fostered companies accountable for their un-sustainable practices. Zones such as ADGM showed that even without very limited control over the built environment, like it is the case in DMCC, an adequate governance structure combined with the right regulatory framework can be drivers of overall better sustainability in the FTZ.

Besides the limitation in regulatory power, we have also identified the lack of participation of important stakeholders, as a barrier to enhancing sustainability in DMCC. Businesses and community residents do not have any active channels to contribute to the discussion on sustainability. In zones where these channels exist and are used for back and forth communication, we noticed greater awareness and knowledge exchange with regard to issues of sustainability. This in turn, motivated the community to contribute more to the zone's sustainability practices, by making individual changes in their lifestyle. Therefore, our findings suggest that DMCC needs to focus on creating a dialogue with its community and encouraging them to contribute to improving the zone's sustainability.

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