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Introduction

Lebanon public institutions are part of what is called the Lebanese State, a unitary parliamentarian republic form of government. However, it is also ruled by a set of informal understandings between dominant communitarian political factions under what some researchers call a consociationalist regime. This brings a layer of informal rules of government that are politically recognized but also continuously contested in the everyday life of public institutions. Different political factions dominating different ministries tend to develop sectorial policies and strategies with little concern for inter-sectorial governmental coordination. At time of writing this report, the cumulative effects of the "economic meltdown" crisis, the Covid-19 pandemic and the aftermath of the Beirut port blast on August 4, 2020 catastrophe have driven more people into poverty, vulnerability and harm's way. Moreover, beyond the growing scope of the demand, these crises raise new types of threats that require different expertise to address. Additionally, these crises that – for now - seem lasting erupted in a moment of deep political crisis at the regional geopolitical and national levels. More directly related to government engagement, these crises have considerably weakened the Lebanese Government legitimacy. The large discontent and uprising of October 2019 all over the country has given a massive blow to the popular representation of political parties and by extension the governments that represent them. The present situation is quite blurry and raises critical questions as to the future of Lebanon. However, we believe that despite everything there is a need for enhanced engagement with public institutions. In fact, public institutions have both a political and administrative nature. They are tools of government in the hand of the legitimate political authority. But they are also administrative structures allowing the resolution of many issues that affect the daily lives of thousands of people. Hence, despite the crisis of legitimacy that the leading political forces are facing, public institutions hold a vital role for successfully reaching vulnerable populations and sustaining development.

Contents

List of Abbreviations

AFD	Agence Française de Development
AFDC	Aid to Families with Dependent Children
ALMEE	Association Libanaise de Maîtrise de l'Énergie
APUR	Atelier Parisien d'Urbanisme
ARAL	Assistance to the Rehabilitation of the Lebanese Administration
AUB	American University of Beirut
BCC	Beirut Creative Cluster
BCCL	Banking Control Commission of Lebanon
BDD	Beirut Digital District
BDL	Banque du Liban
BRT	Bus Rapid Transit
BTVL	Bureau Technique des Villes Libanaises
CAA	Clean Air Act
CAS	Central Administration for Statistics
CBD	Convention on Biological Diversity
CBO	Community-Based Organizations
CCCU	Climate Change Coordination Unit
CDR	Council for Development and Reconstruction
CEDAW	Convention for the Elimination of All forms of Discrimination against Women
CEDRE	Conférence Economique pour le Développement, par les Réformes et avec les Entreprises
CEDRO	Country Entrepreneurship for Distributed Renewables Opportunity
CEP	Committee for Employment of Palestinian Refugees
CFUWI	National Committee for the Follow up of Women's Issues
CHUD	Cultural Heritage and Urban Development
CIP	Capital Investment Plan
CNRS	National Council for Scientific Research
CoM	Council of Ministers
COWP	Counseling Office for Women in Politics
CRDTA	Collective for Research on Training and Development – Action
CUA	Central Urban Area
DGU	Directorate General of Urban Planning
DRI	Democracy Reporting International
DRM	Disaster Risk Management

DRR	Disaster Risk Reduction
DRRM	Disaster Risk Reduction Management
EDL	Electricité du Liban
EDZ	Electricité du Zahle
ETF	European Training Foundation
EU	European Union
FAO	Food and Agriculture Organization
GBA	Greater Beirut Area
GDP	Gross Domestic Product
GFDRR	Global Facility for Disaster Reduction and Recovery
GHG	Green House Gases
GIS	Geographic Information System
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GoL	Government of Lebanon
GPS	Global Positioning System
HCUP	Higher Council for Urban Planning
HRW	Human Rights Watch
IBA	Important Bird Areas
ICT	Information Communication Technology
IDAL	Investment Development Authority of Lebanon
IFI	Issam Fares Institute
IFL	Institut Français du Liban
ILO	International Labour Organization
IMF	Independent Municipal Fund
IMPACT	Inter-Ministerial/Municipal Platform for Analysis, Coordination and Tracking
INC	Initial National Communication
INGO	International Non-Governmental Organization
IO	International Organization
ISWM	Integrated Solid Waste Management
ITS	Informal Tented Settlement
LARI	Lebanese Agricultural Research Institute
LBP	Lebanese Pounds
LCEC	Lebanese Centre for Energy Conservation
LCRP	Lebanon Crisis Response Plan
LEDO	Lebanese Environment and Development Observatory
LGBC	Lebanese Green Building Council

LRA	Litani River Authority
LTE	Long-Term Evolution
MENA	Middle East and North Africa
MISCA	Management and Information System for Climate Action
MIT	Massachusetts Institute of Technology
MoA	Ministry of Agriculture
MoE	Ministry of Environment
MoET	Ministry of Economy and Trade
MoEW	Ministry of Energy and Water
MoIM	Ministry of Interior and Municipalities
MoPWT	Ministry of Public Works and Transport
MoSA	Ministry of Social Affairs
MoT	Ministry of Telecommunications
MoYS	Ministry of Youth and Sports
MRR	Mapping of Risks and Resources
NAMA	Nationally Appropriate Mitigation Action
NAP	National Action Plan
NBSAP	National Biodiversity Strategy and Action Plan
NCE	National Council for the Environment
NCOD	National Council on Disability
NEEAP	National Energy Efficiency Action Plan
NEEREA	National Energy Efficiency and Renewable Energy Action
NEO	National Employment Office
NGO	Non-Governmental Organization
NLWE	North Lebanon Water Establishment
NPMPLT	National Physical Master Plan of the Lebanese Territory
NPTP	National Poverty Targeting Program
NSSF	National Social Security Fund
NUP	National Urban Policy
NWSS	National Water Sector Strategy
ODI	Overseas Development Institute
OEA	Order of Engineers and Architects
OECD	Organization for Economic Co-operation and Development
OGERO	Organisme de Gestion et d'Exploitation de l'ex Radio Orient
OMSAR	Office of the Minister of State for Administrative Reform
OPRL	Offshore Petroleum Law

OWL	Other Wooded Land
OXFAM	Oxford Committee for Famine Relief
PHI	Public Housing Institute
PPP	Public-Private Partnership
PwD	Persons with Disabilities
R&D	Research and Development
RSC	Remote Sensing Center
RTO	Regional Technical Offices
SDC	Social Development Center
SELDAS	Strengthening the Environmental Legislation Development and Application System in Lebanon
SME	Small and Mid-Size Enterprises
Solidere	The Lebanese Company for the Development and Reconstruction of Beirut Central District
SPAMI	Specially Protected Areas of Mediterranean Importance
SPNL	Society for the Protection of Nature in Lebanon
SWM	Solid Waste Management
TEDO	Tripoli Environment and Development Observatory
TRA	Telecommunications Regulatory Authority
TSEZ	Tripoli Special Economic Zone
UCF	Urban Community of Al Fayhaa
UCL	University College London
UN	United Nations
UNDP	United Nations Development Program
UNEP	United Nations Environment Program
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
UNFPA	United Nations Population Fund
UN-	United Nations Human Settlements Programme
UNHCR	United Nations High Commissioner for Refugees
UNIDO	United Nations Industrial Development Organization
UNRWA	United Nations Relief and Works Agency for Palestine Refugees in the Near East
UoM	Union of Municipalities
UPLoAD	Urban Planning and Local Authorities Development
URC	United Nations Environment Program RISOE Center

US	United States of America
USAID	United States Agency for International Development
USD	United States Dollars
UTDP	Urban Transport Development Project
VNG	International Cooperation Agency of the Association of Netherlands Municipalities
WASH	Water, Sanitation and Hygiene
WHO	World Health Organization
WIF	Women in Front
YFYP	Youth Forum for National Youth Policy
YLP	Youth Leadership Program
YWCA	Young Women's Christian Association

1 - SUSTAINABLE URBAN DEVELOPMENT FOR SOCIAL INCLUSION AND ENDING POVERTY

1.1. Social Inclusion and Ending Poverty

1.1.1. Eradicate Poverty in all its Forms

In 2020, the World Bank estimated that 55% of the Lebanese population was trapped in poverty and struggling to meet bare necessities, i.e., almost double previous year's rate of 28 percent. Following a longstanding decline in foreign reserves, a 14-day banks closure, a hidden haircut on deposits, a state default on a USD 1.2 billion Eurobond debt, the Lebanese pound lost 80% of its value, and the year-over-year price increase for July 2020- July 2019 reached a record high of 91% (UNDP, 2020). More particularly, the 2020 economic crisis has negatively affected Lebanon's middle-income group that earns between $14 and $34 per day. This group has contracted from over 57 per cent of the population in 2019 to less than 40 per cent in 2020 (ESCWA, 2020).

The National Poverty Targeting Program (NPTP) uncovered that poverty rates are the highest in North Lebanon (41%) and the Bekaa (29%). In Mount Lebanon the rate is 16%, while poverty in Beirut is significantly lower than the average in the country (GoL & UN, 2020). The NPTP had identified 237,936 Lebanese living under the extreme poverty line. According to OCHA, the share of Lebanese population under the US$5.50 international poverty line is estimated to have risen by 13 percentage points by end of 2020, and is expected to further increase by as much as 28 percentage points by end 2021[1].

Over the past century, rural exodus in Lebanon has led to rapid urbanization and has affected demographic growth; it was accompanied with the displacement of other nationals fleeing from conflict in neighboring countries. Geographically, urbanized areas expanded from 221 km2 in 1963 to 741 km2 in 2005 and are expected to reach 884 km2 in 2030 (UN-Habitat, 2018). Beirut, Tripoli, and Saida agglomerations have been the main recipients of Lebanon's migration patterns (MoSA, 2011). In general, poverty has been tending to concentrate in central areas of large agglomerations, especially in core city centers.

Poverty is also exacerbated by the different influx waves of refugees. In fact, Lebanon has received refugee populations since the 1920s. Some of the camps hosting refugees—especially Armenians, Syriacs and Palestinians—have constituted Lebanon's very first informal neighborhoods (UN-Habitat, 2018). Informal settlements have constituted high densities and featuring minimal building qualities with poor infrastructure services that are rarely maintained by local authorities (UN-Habitat & UNHCR, 2014).

[1] https://reliefweb.int/report/lebanon/lebanons-economic-update-october-2021

Moreover, by 2015, Lebanon became host to more than 1.4 million Syrian refugees, the highest refugees per capita in the world, with a ratio of 1 refugee to every 3 Lebanese. This influx of displaced population has increased Lebanon's population density by about 37% from 400 to 520 person/km2, and resulting in many social as well as environmental stresses on the urban settings (UN-Habitat, 2018). The Syrian conflict impacted Lebanon's economic and social growth, deepening poverty and exacerbating pre-existing development constraints. At the end of 2015, the crisis had cost the Lebanese economy an estimated US$18.15 billion (GoL & UN, 2020). According to UNHCR, the poorest regions of Lebanon are hosting 86% of the refugees from Syria, causing increased poverty and social tensions between host communities and refugees.

In Lebanon, UNHCR and other international organizations have taken the lead in responding to the Syrian Crisis. UN agencies have established response plans and supported the Lebanese Government in developing the Lebanon Crisis Response Plan 2015-16 (LCRP) that aims to serve the needs of the vulnerable host and Syrian refugees. The Government also established an inter-Ministerial crisis cell facilitating service provision through public institutions. In this context, the Mapping of Risks and Resources had identified 251 vulnerable localities hosting Syrian refugees that were targeted with the aim of creating 7,530 short-term opportunities, 50 per cent of which should benefit displaced Syrians and Palestinian refugees (GoL & UN, 2020).

More than 180 Social Development Centers (SDCs) affiliated to MoSA, serve today as the primary link between the government and the vulnerable population (MoSA, 2011). SDCs are mandated to plan for development, optimize local resources, undertake field assessments, develop local action plans, study development projects that fall under the SDCs' geographic scope of work, and coordinate with public and private bodies.

On the other hand, the Emergency Social Safety Net (ESSN) is a US$246 million 3-year project that will provide cash transfers and access to social services to extreme poor and vulnerable Lebanese populations affected by the economic and COVID-19 crises. The ESSN is the World-Bank support to Lebanon's NPTP. It introduces a large-scale coverage as well as new added features and improvements to the NPTP (World Bank Group, 2021).

The Economic and Social Fund for Development (ESFD) is a governmental body dedicated to alleviate poverty in Lebanon through the creation of employment opportunities and through the improvement of living conditions in disadvantaged communities. Having started its activities in 2002, ESFD has financed thousands of SMEs and private projects, provided empowerment initiatives for more than 700 communities, supported more than 300 hosting communities in the

context of the Syrian refugees' crisis, and provided support to more than 230 agricultural cooperatives[2].

1.1.2. Address Inequality in Urban Areas by Promoting Equally Shared Opportunities and Benefits.

Lebanon is one of the most unequal countries in the Arab world. Poverty tends to be higher among marginalized social groups, including persons with disabilities (PwDs), the elderly, female-headed households (often widows), migrant workers and refugees (Abed et al., 2020). Recently, the inequality has exacerbated following the current crisis between those that saw their incomes melt with the economic meltdown and the fall of local currency value, and those that are connected to international economy and funding and have their incomes in foreign currency.

Inequality is very visible in urban areas with important urban development differences between areas connected to globalization economy networks and those that are not. A bad access to services is the manifestation of these inequalities; it contributes to the development of informal networks and markets to compensate for unmet needs (UN-Habitat, 2018). On the other hand, emigration has increased demand on high-end housing for local residence or as a speculative investment, resulting in large compounds, agglomerations, and dispersed housing development. Furthermore, several laws and policies have largely resulted in urban sprawl in some areas (peri-urban areas), and high densification in others (such as Beirut central areas) (CDR, 2016).

Municipalities in central areas face considerable challenges from speculative real-estate pressure that is leading to densification and the gradual disappearance of public and green spaces (ibid). There are no urban policies in Lebanon, let alone those dealing with urban inequality. Actions and projects that address urban poverty are often initiated and funded by international organizations and agencies, in specific contexts such as the Syrian crisis or the Beirut Port blast. In the context of the Syria crisis response, international humanitarian has funded actions in vulnerable neighborhoods (251 cadasters), many in urban areas (UN-Habitat, 2018). Many other initiatives took place following the Beirut Port explosion. In fact, in August 2020, the explosion of the Beirut Port, that wrecked several residential districts within a 5 km radius, has left more than 300,000 people displaced (UNDP, 2020). Particularly, refugees and migrant workers living in severely damaged areas have become homeless.

Inequality is also aggravated at the environmental level, as differentiated impacts of pollution (especially from solid waste and wastewater) often superpose with poverty geography in urban areas. In fact, large dysfunctional infrastructures of solid waste management and wastewater

[2] http://esfd.cdr.gov.lb/

treatment are often present in the close vicinity of informal or popular neighborhoods in cities, heavily affecting the quality of life in these areas.

1.1.3. Ensure equal access to public spaces including streets, sidewalks, and cycling lanes.

The urban development model fueled by real- estate speculation has led to the minimal production of new public spaces and the privatization of many existing public spaces, especially the seashore. In fact, the Lebanese Coastal Zone suffers from uncontrolled urban sprawl and unplanned development that can be seen through the private beach complexes, landfills, breakwaters, and private marinas, which hinder public access to the seashore.

In large cities, public initiatives that provide public space for walking and cycling are often rare. The green spaces and soft mobility project (Liaisons Douces) by the Municipality of Beirut represents a unique project that articulates the creation of different scales of public and green spaces, and the pedestrianization of the city streets. However, the project has not yet been implemented to date.

Sustainable urban transport interventions have not been integrated into road design and transport policy in Lebanon. The focus remains on car mobility, leading to the marginalization of soft mobility (CDR, 2016). Walkability is hence very difficult, and cycling is nearly absent due to limited sidewalks, their occupation by parked cars and overcrowding with trees, light poles and barriers, and to the absence of dedicated bike lanes.

In the last two decades, many municipalities all over the country have engaged in the production of public spaces, especially parks and gardens.

However, many are not well located as they are built on public land, often on the fringes.

However, due to the lack of financial resources and human capacities, municipalities have difficulties of sustainable management of these public spaces over the long run.

According to Baroud (2017), 56.4% of PwDs aren't able to access health care centers due to structural barriers: lack of ramps, elevators, and special equipment. Moreover, no budgets are allocated to adapt and equip buildings, public and private places for the public use by PwDs. This leaves adaptations of the built environment entirely reliant on individual or civic initiatives (Combaz, 2018).

In the last few years, and due to perception of insecurity and linking it to the presence of large Syrian displaced populations, many municipalities have engaged in controversial discriminatory curfews for Syrians in public spaces. The vast majority of these curfews were imposed by municipalities and were seen as discriminatory, as they were imposed specifically on refugees, being the source of security concern (UNHCR et al., 2020).

1.1.4. Enhance social inclusion of vulnerable groups (women, youth, older persons and persons with disabilities and migrants).

Women: Women in Lebanon constitute 51.6% of the total population, with a literacy rate of 91.8%. The number of women participating in the labor force has shown an increase in the past decade; where the rate peaks at 47% for 25–29-year-old. Women do far more domestic and care work than men in Lebanon. The lockdown measures and school closures under COVID-19 have amplified this dynamic, adding to women's job homeschooling, caring and cleaning; maintaining a job is increasingly becoming a difficult task under these circumstances (UN Women, 2020).

Lebanon ranks 145 out of 153 countries in the World Economic Forum Global Gender Gap Report, due to low rates of women's economic and political participation and patriarchal socio-cultural norms (UN Women et al., 2020).

The National Council for Lebanese Women has prepared the official Lebanese report on the implementation of the Convention for the Elimination of All forms of Discrimination against Women (CEDAW). In 2013, after five years of lobbying, civil movements, supported by local NGOs, were able to achieve parliamentary approval over a draft law granting women protection against domestic and gender-based violence. A new law on domestic violence was passed in 2014; however, the law does not present clear and sufficient measures to fight domestic violence. Women Transferring Nationality to their Children is still not allowed (Beyond Group, 2016).

Youth: defined as the population between 15 and 29 years old, they are the active and dynamic force of the country constituting 27% of the Lebanese population and 41% of the labor force.

In terms of geography, they are distributed almost evenly between rural and urban areas. Lebanon suffers from high rates of migration and emigration that largely affects the youth population. Youth tend to migrate from rural areas to the cities and emigrate to the Arab Gulf, US, and European countries among others to seek better living and working conditions. In 2020, following the cumulated crisis, a study on a sample of 1800 Lebanese aged 18-35 years showed that 29.7% of the young respondents stated that they have seriously considered migrating from Lebanon, compared to 70.3% who did not (Information International, 2020). Youth movements have recently become very active in demanding their full rights and participation in decision-making. A recent example of youth participation is the creation of the Municipal

Council for Youth in Saida. Furthermore, youth are increasingly involved in creating new initiatives and NGOs stemming from their commitment to cause positive change in the society[3]. An important leap in youth policy was the launching of the Youth Forum for National Youth Policy (YFYP) by the Ministry of Youth and Sports (MoYS)[4].

Elderly: The percentage of elderly in Lebanon has increased from 6.7% in 1996 to 10% in 2007, according to MoSA. About 65% of elderly are aged between 65 and 74 with higher percentages among men than women. In Lebanon, the share of population aged 60+ is expected to reach 20% by 2030 (UNFPA & Arab States Regional Office, 2017). The lack of social security for older people is reflected in the high levels of poverty in older age, which can be expected to continue to increase in the context of the ongoing economic crisis. Amongst Arab states, Lebanon is the fastest ageing country, has the highest proportion of older people and the highest life expectancy. The proportion of those aged 65 or older is currently estimated at approximately 10 per cent of the population. According to the World Health Organization (WHO), life expectancy is estimated to be 78 years for men and 82 years for women. The combination of an underdeveloped pension system and the declining familial support, leave most Lebanese without income security in older age (Centre for studies on Aging et al., 2020). A National Commission on the Ageing was established in 1999 by the MoSA to provide consultancy on elderly matters. The Commission has submitted draft laws to the Council of Ministers for legislations; among them are reforms on pension schemes, health coverage, and medical support and financial support for the elderly.

Children: The prevalence of Lebanese working children tripled between 2009 and 2016, from 1.9% to 6%. Boys are more likely to be engaged in child labor than girls. In 2003 and later in 2012, the Government issued Decree 8987 (2012), which prohibits the employment of children under 18 years of age where such work could "harm their health, safety or morals, or limit their education." In 2013, the Ministry of Labor, committed to eliminating the worst forms of child labor as per the International Labour Organisation (ILO) recommendations; it presented its strategy in the National Action Plan (NAP) (ILO, 2017). In 2017, the action plan was revised to include Syrian refugee children and set a goal to eliminate the worst forms of child labor by 2020 (GoL & UNHCR, 2017). Recently, COVID-19 response by the government has included complete closure of schools disrupting children's routines and support systems. Hence it is expected that risks including child abuse, neglect, violence and exploitation may arise due to the absence of childcare and support (Save the Children, 2020).

[3] At this level, successful youth organizations have created programs for youth training on leadership, conflict resolution, team building, participatory action, cultural exchange, and effective social communication.

[4] YFYP is composed of Lebanese youth NGOs and youth wings of political parties and serves as a meeting space for Lebanese youth from different backgrounds to initiate dialogue that addresses common needs and ambitions, and to demand for a youth policy.

Persons with disabilities: Law 220/2000 is one of the Lebanese government's most important achievements to improve the livelihood conditions of people with disabilities in Lebanon. It is considered as the most progressive in the Middle East region. It stresses the right to participation, moving away from the previous charity-based model of exclusion. The law provided a mechanism for the formation of the National Council on Disability (NCOD). According to the Central Administration for Statistics (CAS), there are no statistics on the disabled population in Lebanon. However, the Lebanese government has started to issue the disability card in 1990s. The total number of registered persons with a disability– taking into consideration the reluctant registration- is 103,200. The gender distribution is: 62% male or 50,186 and 38% female or 30,517 persons. However, the holders of a disability card are only entitled to coverage of some assistive products, certain tax exemptions and free health care, but in practice health providers often do not accept the card (Center for Studies on Aging et al., 2020). According to MoSA, most working PwDs are employed in the public sector. Few others are employed in private sector but the vast majority earns their living by being either self-employed or in the informal sector. Law 220/2000 addresses also the responsibility of the society and Government to minimize social and political obstacles for PwDs and eliminate all forms of discrimination against them. In 2011, an Accessibility Implementation Decree was adopted by the Government obligating any new public building or space for public use to ensure access for PwDs. Even old buildings had to adapt to PwDs based on this decree. As an alternative, Municipalities provide PwDs with parking lot certificates. Moreover, in May 2020, Law 71/2020 was issued changing the name of PwD to People with Special Needs.

Foreign displaced populations: As of 31 December 2019, UNHCR had registered 914,648 Syrian refugees in Lebanon, of which 52% are women and girls (UNHCR). However, there are likely a high number of refugees who are not registered given that UNHCR suspended registration in May 2015 following a Government decision. The majority of Syrian refugees are living in difficult socio-economic conditions with limited livelihood resources. Educational level of the refugees is generally low. As workers, Syrians are mainly engaged in agriculture or in personal and domestic services and in construction. These jobs provide little income and no security or protection. Many aspects of Syrian Refugees life are regulated by the General Security Directorate[5]. Their legal status in the country forces most refugees to enter the labor market illegally (OXFAM & AUB, 2016). UN agencies have established response plans and most recently supported the Lebanese Government in the development of the Lebanon Crisis Response Plan 2015-16 (LCRP), a strategy that aims to serve the collective needs of vulnerable host and Syrian refugee populations[6]. Also, many aspects of Palestinians' life are regulated by the General Security Directorate: There are extreme restrictions on Palestinian refugees in Lebanon in terms of access to public schools, property ownership, and employment. The great

[5] Syrians are required to pay $200/adult/six month for a renewal of their residency permit (different from a work permit) which gave them a right to remain legally in the country. Not having a residency permit has implications for the mobility of household members.

[6] For instance, Syrian refugees can access health and education services through the local SDCs in their areas, as per the agreement between UNHCR and MoSA.

majority of Palestinian refugees live under harsh living conditions with high poverty rates, and inadequate living conditions, in addition to being subject to discriminatory laws and regulations (ILO & CEP, 2012).

Moreover, access is even harder for Palestinian refugees from Syria (PRS). They are required to obtain an entry visa in Damascus or hold a pre-existing residency permit before arriving in Lebanon. Unlike Syrian refugees, PRS cannot access public services offered by MoSA, while UNRWA[7] – which services are already stretched- is expected to support them (ibid). In fact, there is no recognition of refugee status rights since Lebanon did not sign the UN Refugee Accords.

Migrants: Migrant workers tend to concentrate in certain areas with affordable housing markets and transportation services. Relevant organizations and initiatives in Lebanon[8] have been supporting the migrant domestic workers in Lebanon. In fact, over 250,000 migrant women are employed by private households in Lebanon in tasks such as cleaning, cooking, and caring for children and the elderly. A standard contract, known as Kafala, defines the basic parameters for the employment relationship, where the employer wields a great degree of power in controlling the living and working conditions of the migrant worker. The legal and policy framework covering the basic human and labor rights of migrant domestic workers in Lebanon doesn't respect ILO Domestic Workers Convention, 2011 (No. 189) nor the Fundamental Principles and Rights at Work. Several governmental committees and draft policies were formed regarding this issue, but none has passed into law.

Overall, MoSA plays an important role – in collaboration with local and international NGOs- in providing the leadership role supporting and empowering vulnerable categories. It has a lead role in the Syrian crisis response, as well as a lead role in developing a national strategy that addresses violence and abuse targeting women and children. In partnership with the Higher Council for Childhood, and the Higher Council for Women, MoSA has addressed issues related to children trafficking, and it continuously supports nursing homes and elderly care centers. Along with MoPH. Social Development Centers as well as clinics, primary healthcare centers and nurseries affiliated to MoSA and MoPH, play important roles in providing services to vulnerable populations.

[7] UNRWA works with community-based organizations (CBOs) to strengthen Palestinian refugees' capacity to formulate and implement sustainable social services for their communities, mainly providing education and health services.

[8] Such as Kafa, Consortium and The Domestic Workers Union

1.2. Access to Adequate Housing

1.2.1. Ensure access to adequate and affordable housing

Access to adequate housing is also an aspect of inequality, as a result of the absence of effective urban and land policies, combined with weak urban planning and poor service delivery (UN-Habitat, 2011). In fact, Lebanon's housing law (58/1965) affirms the state's responsibility in facilitating access to housing for middle or low-income Lebanese and recognizes therefore the "right to housing". As for local authorities, they are mandated to provide shelters by the law 118/1977 (Fawaz et al., 2017). Old rental control law has been declared through rental Laws 159/1992 and 160/1992.

However, rent control was ended by the Lebanese parliament in 2014 (Kanafani, 2019), in order to liberalize rents and terminating "old leaseholds" (Marot, 2015; Ashkar, 2015). Moreover, a timeline was set to gradually implement the abolition of the old rental control law. However, not fully implemented due to prevailing situation.

The number of primary residences in Lebanon was estimated at about 1,266,700 residences in 2018–19, where the highest concentration of primary residences was observed in Mount Lebanon (44.4%), followed by North Lebanon (12.1%), and South Lebanon (11.7%) (CAS, 2020). In the case of the capital, Beirut, the majority of the residential parks was constructed before 1975[9] (ibid), and is facing lack of maintenance, renovation, and sometimes over-occupation (Marot, 2018).

Constructions are subject to the construction law and its amendments, in terms of seismic resistance, fire prevention and incentives for buildings' isolation. Article 10 of the implementation decree of the construction law explains how Safety, Public Health and Architectural Perspectives should be taken into consideration (Lebanese Parliament, 2004). However, the law is limited as it states that exceptions can be given by the DGU, without defining the tools permitting those exceptions. Moreover, according to New Public Safety Decree 7964 issued in 2012, more safety measures were imposed, namely for large projects such as hospitals related to various public safety norms. To this end, OEA and DGU established control offices to ensure the application of the decree. Nevertheless, despite being an earthquake-prone country, Lebanon has a significant number of buildings that do not have appropriately secure and solid foundations that could withstand seismic hazards.

[9] In Beirut, 59.3% of primary residences are at least 49 years old, while 26.4% are 25 to 49 years old. In other governorates, homes with at least 25 years constitute only one percentage of between 32% and 43%. This same scenario is valid for housing aged 15 to 24 in most governorates, with a ratio between 18 and 20% (CAS, 2020).

Conventional Lebanese construction methods aren't energy-friendly, as most construction materials and design solutions require high electrical usage for heating and cooling, which aggravates climate change and heat island effect in Beirut, and leads therefore to a vicious cycle based on energy dependency (Kaloustian & Diab, 2015). OEA also advocates green constructions.

In fact, two types of projects are concerned and cannot get a construction permit without implementing green solutions (at least solar energy): the "grands ensembles" and the buildings having facade larger than 40m.

The Lebanese Green Building Council (LGBC) and the Association Libanaise de Maîtrise de l'Énergie (ALMEE) have developed standards for sustainable building requirements that are specific to Lebanon. All these guidance are still highly optional. In the case of large projects, the DGU imposes additional constraints regarding environmental and accessibility issues (Houri, 2020).

Although covid-19 has negatively impacted the Real-Estate market worldwide, Lebanon's case has been worsened as the extremely liberal real-estate market and speculation have led to considerable rise in prices in urban areas making housing purchase extremely difficult for middle and low-income households, along with the presence of an oversupply of high-income housing. As of 2019, the collapse of the banking system has led many individuals to retrieve their savings and invest in real-estate; however, this might be a temporary momentum linked to the dynamics of the present crisis, as vacant housing units are still very abundant in Beirut (Beirut Urban Lab, 2020; Le Commerce du Levant, 2020).

The arrival of the displaced Syrian population has put additional pressure on all urban centers housing market pushing many refugees, migrants and urban poor to settle in informal settlements – either on the outskirts of the city, or in overcrowded neighborhoods within the city, and often in urban housing with precarious tenure conditions, deteriorating living conditions and inflated prices.

In this context, according to (VASyR, 2021), most of the Syrian refugee population in Lebanon lives in urban areas, cities and villages as they were not allowed by the government to settle in formal refugee camps to prevent their permanent presence in the country. However, some others live in spontaneously set-up tented settlements throughout the country. Thus, Shelters occupied by refugee households are classified into three categories: residential, non-residential and non-permanent. Inappropriate dwellings ratio varies between the different governorates, as it is equal to 0.1 in Beirut, North Lebanon, South Lebanon, and Nabatieh, 0,2 in Mount Lebanon and

Baalbeck-Hermel, 0.5 in Bekaa and 0.6 in Akkar[10] (CAS, 2020). According to UNHCR, 59% of Syrian refugees live in apartments and houses, 20% in substandard shelter (garages, worksites, unfinished structures, etc.), 18% in Informal Tented Settlements (ITS), and 3% in collective shelter; 17% of those living in rented apartments and houses live in overcrowded conditions, amounting to 55% living in vulnerable conditions (UNHCR, 2015). As for Palestinians, they live in camps that do not meet the criteria of adequate and livelihood environment (infrastructure, sewage, water and sanitation, electricity, the green spaces, public services, and proper urban planning) (Houri, 2020).

Buildings' vulnerability isn't exclusively related to informal neighborhoods in urban areas, as heritage buildings are also vulnerable and have been lost to real-estate speculation or progressive decay since no regulations impose maintenance, which leads to deterioration and amplifies the risk of collapse, especially that land value is more profitable than the possible rental value of constructed buildings (NAHNOO, 2020; Marot, 2018). In fact, following the new rental law of 2014, numerous old buildings – which did not use the full exploitation quotient permitted by the new zoning laws – became an interesting investment opportunity for developers in the area. This is largely the case of old buildings with high real-estate value in central areas of Beirut[11] for example.

Some faith-based organizations associated with religious institutions provide low-cost and affordable housing for their community, by building large housing complexes- mainly on the outskirts of the Beirut metropolitan area- on their vast real estate properties. The development of the supply of affordable housing also involves some local authorities, as is the case for example of various municipalities in the region of Jezzine which have developed affordable housing projects in partnership with the private sector or churches, to offer units at prices 30 to 40% below the market price (World Bank Group, 2013).

Another example can be cited in this context, that of the Khan Al-Askar project in Tripoli, where the municipality of Tripoli, through the CDR, benefited from World Bank financing for the "Cultural Heritage and Urban Development" project (CHUD) for Tripoli which aims to move the squatters from the monumental building of Khan Al-Askar to a new housing complex.

Buildings are also vulnerable to disasters. Large parts of Beirut City were ruthlessly damaged after the 4 August 2020 blast, and around 300,000 to 350,000 individuals living within 3 km of the explosion's epicenter were directly impacted within the damaged area. Critical social and

[10] These figures are subject to an error above 20 per cent (CAS, 2020).

[11] More than 85 per cent of Beirut's residential stock has been constructed before 1993, and 59 per cent has been constructed before the 1970s (CAS, "Central Administration of Statistics- About Lebanon.").

basic infrastructure has been deteriorated and incapacitated, counting 72,265 apartments across 9,700 buildings13, with costs from destruction and damages to housing between USD 1.9 billion and USD 2.3 billion, unevenly distributed across families. In fact, low-income impacted households constitute 64 per cent of the total affected population (Shelter Sector, 2020; OCHA, 2021, Save the Children, 2020). While several households continue to live inside their damaged homes (for fear of not being able to come back), others have been displaced or temporarily relocated to other areas within the city or not. Some have even emigrated abroad; as a result, the housing stock and economic activity in Beirut city center are slow to resume or have completely stagnated; in fact, Real Estate sector losses to the economy are estimated at USD 1-1.2 billion (Ibrahim, 2020; World Bank Group et al., 2020). Many actors were involved in the damage assessment and in providing help to the affected community (such as the UN's Shelter sector, the municipalities of Beirut, the municipality of Burj Hammoud, UN-Habitat, UNESCO, and OEA).

1.2.2. Provide access to sustainable housing finance options

The Lebanese state hasn't been involved historically when it comes to affordable housing, as it didn't invest in housing provision and restrained from direct intervention in land markets; however, there are several schemes aiming to improve middle class access to housing, such as the creation of the Ministry of Housing and Cooperatives, the housing bank in 1977, and the Independent Housing Fund in 1980. The creation of the Public Corporation for Housing (PCH) in 1996 ensured access to housing finance such as housing loans, cooperative long-term loans, leasing and several saving and borrowing for housing projects (CDR, 2016; Houri, 2020).

The housing loan was "replicated" in banks, military cooperation, and in other cooperation, noting that those loans are under the supervision of the PCH. However, the housing cooperatives are no longer as active, since the General Directorate of Cooperatives was affiliated to Ministry of Agriculture, which has affected housing cooperatives and the Independent Housing Fund.

The PCH provided more than 50,000 loans between 1999 and 2013 and most of them were given for apartment units in Beirut and Mount Lebanon, noting that the demand for loans has exponentially grown since 2006 (Clerc, 2013, UN-Habitat, 2016b; Houri, 2020). The PCH wasn't taking into consideration the most vulnerable; indeed, the loans were mainly granted to persons and households with an upper average income. These assisted housing loans were suspended in 2018. Hence, these loan programs did not meet the needs of the lowest income groups or the majority of the population, which led PHI

to develop other programs to ensure greater inclusion of these populations, including one main strategy of encouraging rental systems with option to buy, which are based on Law 767/2006, recognizing and legalizing rental with option to buy. However, starting march 2018, all PCH loans were no more available. In fact, it was one of the early signs of the 2019 crisis.

In figures, Lebanon has today around 22 housing cooperatives with some being successful (belonging to the waqf or to politicians). In fact, the GoL didn't follow on their activities, to verify annual declarations, the managements, the organizations, etc.

Added to the PHI, the Housing Bank that is 10% public constitutes another major provider of housing finance by providing loans with higher ceilings to middle class households (CDR, 2016; Housing Observatory, 2018). In 2018, there were about 138,000 housing loans in Lebanon[12], from which 65,000 are loans subsidized by the PCH (ibid).

Also, housing can be provided through Banque du Liban (BDL) backed housing loans via commercial banks, but similarly non-available since 2019. In fact, BDL has been interfering in the real-estate market for two decades or more, however for the benefit and interests of the banks and developers by the financialization of housing market. This has been carried out not only at the expense of the broader economy, but also at the expense of a fundamental right enshrined in the Universal Declaration of Human Rights, the right to housing (Housing Observatory, 2018).

It is incontestable then that these modes of funding do not touch on the most vulnerable households. Moreover, with the actual economic crisis, the rental sector is being more and more demanded and the culture of the society is changing when it comes to have a home as people are now willing to rent homes instead of owning them. Therefore, people in urban areas tend to rent housing units in the most affordable sections of cities where are grouped migrant workers, Syrian displaced families, and low- income Lebanese families (UN-Habitat & UNHCR, 2018). Therefore, informal neighborhoods are rising with poverty especially that the housing sector doesn't comply with the needs of the population.

Nevertheless, other institutions- such as DGU, CDR, the Order of Engineers and Architects (OEA), and local authorities- can be involved to find solution to the housing crisis, but till date no policy has been made in this regard. NGOs are also involved; for instance, in Sour, the fishermen cooperative succeeded in securing land and developing an 84-unit housing project near the old port of Tyr with the funding from donors (CDR, 2016).

In short, the feasibility of inclusive housing in Lebanon depends on several factors including the legal feasibility which could constitute one of the simplest obstacles; indeed, it is possible to impose inclusion restrictions on new developments today according to Article 13 of the Building

[12] It's important to note that with the current economic crisis, where jobs, job opportunities and pensions are shrinking, many families are complaining about their inability to make monthly loan payments (Housing Observatory, 2018).

Law (636/2004) which allows local authorities to refuse to provide a building permit when 'a project threatens the "public good"[13]. Also, city councils have the power to demand a review of zoning codes and to impose requirements for inclusion in land use regulations in specific neighborhoods and / or entire cities; however, to date neither municipal authorities nor planning agencies have formally considered such a requirement allowing for social inclusion.

1.2.3. Support security of tenure

Rent control, a system that regulates the real estate market, was created in 1939 and was considered as one of the main social safety pillar for low-income households, besides the fact that it ensured a relative social mix in many districts of Beirut (Marot, 2015). This system was renewed in 1992 at the end of the civil war in order to prohibit the growing value of the rent for tenants who have contracts prior to 1993. However, April 1 2014 was marked by the end rent control after the vote of the Lebanese Parliament, which favored the liberalization of the rental market and abolishes "old leaseholds" (Ashkar, 2015; Clerc, 2015; Fawaz et al., 2017; Marot, 2015; UN-Habitat, 2018). This "new rent law" provides a public fund to support the most vulnerable social as the Fund covers the difference between market and subsidized market rates for tenants (Fawaz et al., 2017).

"Old rents" law has provided stability and protection to most of the residents in neighborhoods facing a high demand on housing market, especially during the real-estate boom of the 2000s that hit the country's capital the most[14] (Ashkar, 2015; Clerc, 2015; Fawaz et al., 2017; Marot, 2015; UN-Habitat, 2018). However, this wasn't enough, since due to the sharp devaluation of the Lebanese currency in the 1980s, property owners seeking financial profit were eligible, according to Article 8-c of the Law 160/1992, to demolish buildings and to reconstruct new ones, which endangered heritage houses and displaced many residents using old rents (Ashkar, 2015).

Few policies have been proposed by the state when it comes to housing, which is not only considered as a lack, but as a form of "Institutionalized neglect" (Kanafani, 2019). The law addressing the housing crisis after the blast in Beirut has excluded defaulters before 7/1/2020 and ignored the need to protect the social fabric, communities and local ways of life that were severely affected by the explosion; also, although exemptions from municipal fees

[13] In the absence of a clear definition of 'public good', municipalities have the power to view rapid gentrification and / or large-scale forced displacement as a serious threat to communities and therefore to balance negative effects of large-scale urban transformations by imposing a percentage of affordable housing as a precondition for obtaining a permit (Fawaz et al., 2017).

[14] Beirut has been the scene of an intense urban regeneration process based on unplanned and private initiative since the early 1990s which was accelerated in the 2000s via the use of two instruments: the monetary policy and the credit facilities of the Central Bank, and the legislative and regulatory framework that favored the rapid growth of banking and real estate activity (Marot, 2015).

were given to the affected residents, no immunity was given to protect residential rights in leased buildings, which fueled the acceleration of evictions[15] especially that people are being forced more and more to evict their houses[16] due to the accumulation and/or late payment of rental fees (ALEF et al., 2020; PUBLIC WORKS STUDIO & Legal Agenda, 2020; The Right to Housing under construction Coalition, n.d.; NRC et al., 2020; Saksouk & Bekdache, 2020; UNDP, 2020).

On another note, inequalities in right to housing can be seen in inheritance since it depends on communitarian personal status laws in Lebanon, leading to varied inheritance laws especially when it comes to women and more specifically Muslim ones (Charafeddine, 2014). In addition, Lebanese women cannot grant citizenship to their children when married to non-Lebanese, so their inheritance is subjected to non-Lebanese jurisdiction. The situation is even more complicated for those women married to Palestinians who are denied the right to own any property in Lebanon; thus, the husband and the children cannot have the right to any property or land in their inheritance (Mansour & Abou Aad, 2012).

1.2.4. Establish slum upgrading programs

In Lebanon, slums have a long history dating back to the French Mandate period (1923-1943). Slums further developed in the urban boom of the 1960s and 1970s, and were consolidated during and after the Civil War. Slums primarily serve the need to house large numbers of incoming labor force, refugees, and/or displaced populations.

The quality of their dwellings differs as Syrian and Palestinian areas face restrictions on construction and are usually closely monitored by municipalities and the security services. According to UNHCR, over one-third of households continue to live in overcrowded conditions of less than 4.5m2/person. The distribution of Syrian refugee households across the main shelter types is as follows: (69%) living in residential structures, 20% in non-permanent shelters and 11% in non-residential structures. However, Shelter conditions have not improved from 2018 and over half (57%) of Syrian refugee families are living in shelters below humanitarian standards and/or shelters in danger of collapse (UNHCR et al., 2019).

The Lebanese State has not recognized slums until today, and maintains the need for their dismantling. Officially, these areas do not benefit from access to the most basic urban services (water, electricity, and sewage networks), however, in practice, this is not always the case.

[15] To avoid eviction, old tenants buy insecure houses since they can't afford better with their budget, which leaves them vulnerable to any threat (Housing Observatory, n.d.).

[16] In refugee camps, the suspension of UNHCR's assistance to refugees on the basis of unclear criteria for receiving assistance has played a role in the evictions of refugees (ALEF et al., 2020).

In the case of Palestinian camps, UNRWA is the main actor legally responsible to contributing to servicing the camps. Its actions focus, however, more on social, educational, and health issues than the physical environment. There are efforts to provide services to these areas in the frame of international development and humanitarian support to Lebanon. Syrian informal settlements and gatherings have been in the last decade the primary targets of this support. The latter includes mainly the health, social, education, WASH and shelter sectors.

An important controversial issue is the refusal of Lebanese public authorities to link these thousands of informal settlements to public infrastructures in order not to allow them long-term establishment. However, and due to aggravated environmental crisis that resulted from informal settlements' disconnection from public networks and the insufficient alternatives, central and local authorities are becoming relatively more flexible in collaboration with the humanitarian agencies and organizations, in the aim of addressing water and sanitation issues through new alternatives. Some municipalities in big cities have also tried to alleviate the difficult infrastructure situation in certain informal neighborhoods in their areas. However, Local authorities' position towards slums varies

from one Municipality to the other. Some municipalities have engaged in efforts to enhance the condition of slums within their constituency, while others don't have any specific management strategy for refugee camps, despite the assistance they receive from humanitarian agencies. In fact, many local authorities benefit from considerable aid because of the high number of displaced Syrians on their territory; while 60% of the municipal unions consider Syrian refugees an "additional burden" as far as waste generation and management are concerned, only 13% of them have a specific waste management strategy for refugee camps or the areas of concentration of Syrian refugees (DRI, 2019b).

On another hand, Lebanon's public institutions practically never addressed the security of tenure in informal neighborhoods. In the Palestinian camps nevertheless, there are informal propriety and use deeds that are issued by locally recognized Palestinian authorities, allowing the development of an informal housing market in the camps.

1.3. Access to Basic Services

1.3.1. Access to safe drinking water, sanitation, and solid waste disposal

Lebanon holds several water resources such as 16 perennial rivers and 23 seasonal ones, more than 2,000 springs, wetlands, and dams accumulating to 2-2.7 million m3/year. In addition, the underground water is an important resource

that contributes to 50% of irrigation water and 80% of domestic water. However, this important "water tower" in the Middle East reached the international benchmark of water distress (1

million m3/capita/year), and that with a water quantity used around 1.1million m3/capita/year (World Bank Group, 2009). The overexploitation of underground water, as well as the steep topography of the majority of Lebanese rivers, has led to loss of water resources. Moreover, Lebanon suffers from disparities in access to water between regions. In total, water is available to 79% of the population only, where Beirut holds a ratio of 87% and the southern suburbs of the city 66%.

Water availability in Lebanon has been decreased at about 429 m3 /capita/year (i.e. equivalent to 32%) between 2011 and 2016 (Shaban, 2020).

Groundwater is facing considerable pollution risks due to infiltration of agricultural pesticides, wastewater seepage from septic tanks, and the rise of seawater levels in wells in coastal areas.

The domestic water network encounters various menaces in the quality and quantity of water.

As per the quantity of water, the network suffers from a capacity loss that reaches 40% due to leakages in the infrastructure. In Beirut, the service ranges from four hours per day in summertime to six in wintertime, and from six to eleven hours per day in Mount Lebanon.

Intermittency rates in the southern suburbs are closer to those of Beirut (Verdeil, 2018). South Lebanon experiences water shortages all year round, mainly due to electricity cuts (Gharios, Farjallah, 2020). However, with an invoice collection rate of 52%, NLWE is able to support more than half of its operating and maintenance costs, providing 24 hours of potable water supply per day; the city of Tripoli is exemplary as far as Lebanon is concerned. The municipality is the only one to have tested a PPP experience for the management of drinking water (ibid).

The following table presents the balance between the water supplied and the water needs by the water establishments for the years 2020 and 2035, as calculated by the MoEW. These deficits are a result of unexploited resources, supply inefficiencies and weak demand management.

As per the quality of water, it has been reported that waterborne diseases (like Dysentery, Hepatitis, and Typhoid) are found all around the country, as the public water network suffers from erosion and risks of contamination from the surrounding sewage network. This low quality of water influences not only health but also households' budgets that need to buy alternative water. In fact, this water shortage is compensated by purchases from the private sector or informal sources, such as bottled water, trucked water, and wells. The latter spread with the majority is illegal and utilized for both agricultural and domestic uses. This omnipresence is amplified by the corruption and the absence of control. Drilling water wells is a common phenomenon in Lebanon to compensate water shortage. These wells, which are mostly private

ones, can contribute to a considerable range, which is in average equal to 1/3 of water needs. These wells are widespread in the urban/or densely rural areas, such as in Beirut and Zahle (Shaban, 2020).

Water expenditures are integrated in the households' budgets. It presents regional differences, for example in Beirut, expenditures reach 3-5% of the household budget according to (MoE et al., 2010). Despite the fact that costs may differ significantly between areas within the same establishment due to pumping and networking costs, the price remains the same although the costs of each establishment are based on many different socio-economical and financial factors (Gharios, Farjalla, 2020).

Even though sewage systems are present all over Lebanon, coverage inequities exist between central and peripheral areas. For example, the connection rate of households to sewer systems is highest in the agglomeration of Beirut (98%), and drops to 42% in the South, 41% in the Beqaa, 35% in Mount Lebanon (ibid). Therefore, Lebanon's infrastructure is not satisfying the minimum sustainability requirements. It is challenged as well by the increase in demand and the inability to respond to it. Alternative wastewater disposal systems such as open-air canalizations and septic tanks exist in many peripheral and rural areas in the country. This issue is mainly due to fast urbanization during the war and post-war periods, in addition to a lack of resources and capacities of local authorities to invest in adequate infrastructure. These alternatives bring the majority of domestic wastewater to running rivers and seas and reach the groundwater through defective septic tanks, therefore contributing massively to water pollution in the country.

The Syrian crisis altered water and wastewater management in the country. Indeed, water demand increased by 8-12%, and illegal connection to water networks makes up 5% of the network's capacity. In terms of wastewater, its production augmented 8% to 14%, mainly in the Casas of Zahle, Baalbek, Akkar, and Baabda. In the Bekaa, wastewater rose from 12% to 19% (UN-Habitat & UNHCR, 2014), therefore affecting natural resources such as the Litani River Basin area. Moreover, the overloading and absence of public sanitation amenities emerged as a crucial hygiene issue, and an environmental crisis appeared to be generated in the informal tented settlements. This has led concerned NGOs and IOs to intervene through large investments in WASH projects.

The law 221/2000 reconfigured the public water sector. As such, 22 autonomous local water offices were merged to create four regional public establishments. The law also included wastewater management as part of the responsibilities of the water establishments. It also allowed for private-public ventures in order to develop new infrastructure and services. However, the institutional and legal framework envisaged have not been effectively implemented, with key decrees (especially those in support of Law 221) still missing and major

revisions needed for the recently passed Water Code (Gharios et al., 2020). On April 13, 2018, the Water Code was promulgated under Law 77. This event coincided with the CEDRE Conference held in Paris on April 6, 2018 (ibid). The water code provides for the establishment of a National Water Council that would serve as an institutional structure reporting to the Prime Minister and would be responsible for developing a national water management strategy. The law also suggests the formation of a "water police" who would be in charge of enforcement. However, it is difficult to take this step seriously when we know that the environmental police created in 2016 (decree 39-89) have, to date, recruited no-one.

Today, the chief government authority responsible for water and sanitation in Lebanon is the MoEW under which operate four water establishments, working alongside other actors and institutions. Other actors and stakeholders, with no clearly defined mandates are also involved. This has led to confusion and at times contradictory responsibilities.

Lebanon's National Water Sector Strategy (NWSS), drafted between 2008 and 2010, and approved by the government in 2012, represented a necessary and important step in the development of the Lebanese water sector. However, it remained a non-binding executive order that did not impose any legal requirement on public or private entities to take actions to implement it (Oxfam, 2017).

Recently, the Ministry of Energy and Water Resources has established a long-term plan for surface water development within the horizon of 2030. This was by proposing 18 dams, 23 lakes in the entire Lebanon, and 2 regulation weirs in the Bekaa Plain that would serve as spillways. The distribution of these dams is evenly all over the entire Lebanon. The capacities of the proposed dams vary between 4 and 128 million m3, while those of lakes vary between 0.35 and 2 million m3 (Shaban, 2020). However, there is a significant debate on dam's construction in Lebanon, as it is known that Lebanon's topography and geology are not suitable for constructing dams and particularly with the seismic conditions that threaten dams' stability. Geopolitical conflicts and lack of sufficient funding are also additional reasons compromising this plan.

Several international organizations are helping to increase the capacity of Lebanese institutions such as the MoWE, water establishments, LRA, and Municipalities, by means of funding infrastructure, initiating training and technical assistance, and that to deal with water quantity and quality challenges. Also, many NGOs intervene in vulnerable regions like informal neighborhoods, informal settlements, and areas hosting large numbers of refugees.

As for the Solid Waste Management, the challenge in Lebanon is exacerbated by population growth, refugee influx, rapid urbanization, decreasing availability of land, and changing

consumer patterns (DRI, 2019b). In 2013, Lebanon generated an estimated 2.04 million tons of waste, with an estimated increase of 1.65% per capita per year (according to a 2010 estimation). Projections in 2010 estimated that the amount of waste would increase to 4.45 million tons by 2024. Lebanon continues to lack sufficient solid waste management facilities that has resulted in the continuation of dumping in open sites throughout the country. Estimates indicate that there are nearly 900 open dumpsites. Widespread and uncontrolled dumping causes a range of environmental impact on air, water and land, resulting in serious public health risks for vulnerable local communities (GoL & UN, 2020).

The adoption of Law 80/2018 on Integrated Waste Management Systems has clarified roles and responsibilities of stakeholders and laid the foundation for the approval of the Integrated Solid Waste Management (ISWM) Road Map on August 27, 2019 by the Council of Ministers (CoM). The Road Map identifies the infrastructure gaps and needs of the sector (GoL & UN, 2020). The enactment of the ISWM Law No. 80/2018 constitutes a significant step towards waste sector reform but many legal elements are still missing to ensure sustainable SWM financing and institutional backstopping on technical matters (DRI, 2019b).

1.3.2. Access to safe and efficient public transport

motorized vehicles only, since there is no appropriate infrastructure for non-motorized vehicles in Lebanon (e.g. bicycle lanes, safe storage space, and convenient and affordable bike rentals) and the former rail network, currently abandoned (MoE & UNDP, 2016). The majority of the road-motorized vehicles are privately-owned passenger cars. According to the 2012 vehicle fleet database, there is a total of 1.58 million registered vehicles in Lebanon (MoIM, 2013).

Mass transport consists of public and private buses, minivans and exclusive and shared ride taxis, all operating on an ad-hoc basis without any coordination, resulting in very poor occupancy rates of about 1.2 passengers per vehicle for taxis, 6 for vans and 12 for buses (MoE et al., 2015). This reality is due in large part to the chaotic, inefficient and unreliable management of the transportation sector, preventing the modernization, adaption and growth of the public transport, in harsh competition with private operators controlling the transport economy in the country. For example, the system is oversupplied with 50,000 taxi licenses (known as “red plates”), where an estimated 17,000 of these are illegally procured and operated (ibid).

There is a total absence of railways transportation that could constitute an important mobility infrastructure. Rail networks used to exist in Lebanon decades ago[17]; nowadays they are no longer functional, and the remains of their physical structures- where present – are derelict.

[17] Lebanon used to operate four rail lines: (1) Beirut-Damascus, (2) Naqoura-Tripoli, (3) Tripoli-Homs and (4) Rayak-Aleppo (MoE et al., 2015).

Lebanon has around 22,000 km of roads, 30 percent of which are classified and fall under the authority of the Ministry of Public Works and Transport (MoPWT) as international, primary, secondary, and local roadways while the remaining 70 percent are non-classified roads governed by municipalities (MoE/LEDO, 2001). More than one third of the road network is in poor condition. In fact, Lebanon ranked 124th in terms of quality of roads amongst 138 countries, according to the 2016-17 Competitiveness Index of the World Economic Forum. The Ministry of Public Works and Transport (MPWT) estimates that only 15% of roads in the main network are in good condition, while 50% are in fair condition and the remaining 35% are in poor condition. At present, there are no dedicated road fund or road user tariffs to charge road users equitably and to fund maintenance and expansion of the roadway network (MoE & UNDP, 2016).

Urban areas, and particularly Beirut and greater Beirut suffer from high levels of daily traffic congestion and vehicular queuing, due to high numbers of private cars, absence of adequate public transportation, and poorly designed infrastructure. Indeed, urban sprawl and commuting from/to the peripheries on a daily basis with thousands of cars entering central areas each day despite pollution and traffic congestion is an important factor contributing to this phenomenon. However, in an attempt to assist in reducing traffic congestion and inform drivers of the conditions of roads, the national Government has established the Traffic Management Center, created by a partnership between the civil society with the Commission of Traffic Management, the Directorate General of Internal Security Forces, and the National News Agency. This Center reports traffic congestion routes, accidents, landslides, floods, and bottlenecks. It operates 24 hours a day and receives reports from the civil society and the internal security forces.

Transportation causes serious air pollution problems. The high number of cars and long trip durations compared to the distance of the trips cause high consumption of gasoline. High car ownership rate have caused the transport sector to constitute more than 60% of national oil consumption in 2008 (International Energy Agency, 2008). A study by the World Health Organization (WHO) and MoE shows that this instigated very high levels of Ozone and other primary pollutants (PM, CO, Pb, NO2), which exceed the ambient air quality standards. The cost for business is significant due to stress and the

lost time spent in traffic. Economically speaking, the business environment is in general affected by the presence of a poor infrastructure and a frail road network. In fact, the cost of road congestion is estimated at $2 billion/year (near 4% of GDP) (Mikhael & Chami, 2017).

Road accidents are the main safety concern in Lebanon due to their frequency, and this is due to the irresponsibility of drivers, the deficiency of vehicles, the lack of pedestrian safety measures and the absence of road maintenance. In fact, pedestrian-related accidents are the first cause of mortality for children and youth under 19 years old in Beirut. The parliament passed a new

traffic law in 2015 addressing various aspects related to road safety with more strict mechanisms put in place to ensure that citizens abide by this law.

The public transport sector suffers from major organizational and technical problems such as the lack of national transport strategy, government planning, enforced traffic regulation, and an efficient, reliable, well maintained and environmentally friendly public transport fleet. The service includes an oversupply of low- quality service-taxis, and a number of buses, minibuses, and mini-vans whose numbers have increased threefold from 1994 to 2005. The service is unreliable because it neither runs on a specific schedule nor on dedicated lanes. Beyond technical aspects, the service is highly dependent on a mosaic of territorial, sectarian, and/or family power groups (Samaha & Mohtar, 2020).

The CDR launched the Urban Transport Development Project (UTDP) for Greater Beirut, which aims enhancing Beirut's urban transport system on the operational and economic levels. Several new road projects, including rehabilitation works and the construction of tunnels and bridges, have been implemented in the last few years. The UTDP introduced a traffic management organization component with measures implemented and initiatives setup to control traffic. Moreover, potential future projects such as the rebirth of the train network that links coastal cities could be implemented in the near future, however the current project is planned to serve only regional linkages. In the last few years, the implementation of a Bus Rapid Transit (BRT) System has been identified as one of the potential investments to improve mobility and traffic circulation. The BRT system network will consist of three lines at the level of the three entrances to Beirut. In the first phase, the proposed Project addresses the Northern Entrance. The remaining two entrances will be studied at later stages (CDR, 2017).

Municipalities in many large agglomerations take a significant role in addressing road safety issues and improving street quality through the execution of sidewalks, parking lots, and speed bumps, road signals, and sidewalks protection. Transport issues usually surpass Municipalities' capacity of control and intervention. However, some undertake transportation projects such as the 'Liaison douce' project developed by the Municipality of Beirut, and providing a mobility strategy with bus, pedestrian and biking lanes.

However this project is still not implemented yet. In few case, some municipalities launch initiatives to address soft mobility, such as the example of Jbeil Municipality that resorted to electric cars providing visitors with tours. Nonetheless, these initiatives are vary rare, and do not necessarily relate to a mobility strategy. Some NGOs have tried to encourage people to use public transportation and are advocating the use of public transport, such as buses and trains. They also promote alternative means of transport that would help reduce the traffic problems, such as park and ride strategies and carpooling.

1.3.3. Access to modern renewable energy

With the absence of a national strategy and the lack of studies in regards of energy uses and changes, Lebanon is one of the few countries that still depend on Heavy Fuel Oil and Diesel Oil for electricity production. The country imports 93% of its total primary energy supply as oil, an economically and environmentally alarming percentage (IFI, 2018). Electricity generation in Lebanon is almost completely covered by imported petroleum products, consuming around 50 percent of Lebanon's imports of fossil fuels (Shihadeh et al., 2013). Electricité du Liban (EDL) was founded by decree 16878/1964 and monopolized the electricity sector. The Litani River Authority and a few other private companies were held responsible for generating hydroelectric power from dams. Despite the large amounts invested, EDL has never been able to provide a full coverage, hence opening for the advocating of the privatization as a solution for the electricity crisis. Despite the approval of the related Law, there was no consensus between the relevant governmental stakeholders on issues of privatization and regulation.

There are seven thermal power plants and six hydroelectric plants, in addition to the public and private diesel generators that are used to compensate the supply deficit. In fact, EDL has been implementing an electricity rationing scheme to balance limited production capacity with consumer demand. This scheme reflects a significant level of inequality in the country, as the least developed and poorest regions in Lebanon- and particularly the rural areas- carry the burden of the highest number of outage hours, in contradiction to development norms (IFI, 2019). According to ESCWA, thermal power plants responsible for 91.9 per cent of generation are mostly spread along the coast, with uneven distribution of capacities.

The use of private generators is an informal electricity production source that fills the gap of insufficiency of electricity provided by EDL. According to a recent World Bank study, the total number of diesel generators in Lebanon ranges between 32,000 and 37,000, mostly dispersed in dense urban areas. In 2018, private diesel generators produced around 40% of Lebanon's entire demand (ibid). The case of EDZ is unique as an electricity concession holder; when EDL electricity is available, EDZ simply acts as a distributer; while it undertakes its own generation when EDL electricity is not available. EDZ covers the city of Zahle and 16 surrounding villages. EDZ's technical losses stand at only 5%; it collects 100% of bills and is profitable while providing electricity at an overall cost no higher than the average paid by households to private generators in other areas (Ahmad et al., 2020).

Exploration for oil and gas in the Lebanese offshore has made important progress in the past decade. International companies working under licenses issued by the Lebanese government undertook a number of marine geophysical exploration campaigns. This resulted in the acquisition of a large, high-quality dataset from the seafloor subsurface (Elias, 2016). Exploration of the Lebanese offshore occurred at a time when significant hydrocarbon discoveries were made offshore the Palestinian and Cypriot coasts south of Lebanon. Reports

published by foreign and international agencies and oil companies contained large estimates of resources present in the Levantine offshore (ibid). According to some references, Lebanon has 95.9 trillion cubic feet of gas and 865 million barrels of oil in just 45 percent of its economic waters; enough to ignite the closed Mediterranean region. However, Lebanon is facing attempts of encroachment from three different fronts; Israel, Syria and Cyprus.

In April, 2020, and following the exploration of block 4, one of the 10 Lebanese blocks, the minster of energy announced that the country's first foray into hydrocarbon exploration had found no commercially-viable amount of gas to develop, and that a larger find may be present elsewhere in Lebanon's waters. The offshore petroleum law (OPRL), or Law 132/ 2010 is the primary text governing the oil and gas sector in Lebanon; it is considered to be short on details and leaves modalities to be defined in regulations and contracts, thus undermining the parliament's role in the legislative process and leaving a large margin for the government to negotiate with oil companies (Atallah & Ezzeddine, 2019a).

Meanwhile, the average annual deficit of EDL is estimated at USD 1.5 billion. The inability of the State to finance the development and maintenance of infrastructure will lead to its degradation and possibly to its collapse. Sociopolitical factors such as communitarianism and corruption also affect accessibility and quality issues. Along with the deficit and the corruption, the sector suffers from the lack of sustainable strategies, favoring the over-exploitation of non-renewable resources, which also results in high level of pollution with dangerous consequences on health and the environment.

On the other hand, there is a growing green energy market used for residential consumption, but mostly by agriculture and industry. At the national level, around 10% of the produced energy is generated through renewable energy sources, mostly hydropower, with a minor contribution from solar energy (MoEW et al., 2020). Many NGOs are also active at the level of promoting clean domestic energy such as the Association Libanaise de la Maîtrise de l'Énergie (ALMEE) and the Lebanese Green Building Council (LGBC). However, without legislative initiatives by the Government, Lebanon was delayed in reaching its target of 12% renewable energy by 2020.

The Lebanese Centre for Energy Conservation (LCEC) is another body affiliated to the MoEW that develops and implements RE and EE policies and projects. Other major supporters are the UNDP and EU funded projects, namely the CEDRO project that has implemented many EE and RE projects mainly in large institutions such as municipalities, hospitals, and schools. The LCEC has developed the first NEEAP for 2010- 2015 in accordance with the policy paper. It was adopted by the Council of Ministers in November 2011 and included 14 initiatives (Berjawi et al., 2017).

The financing scheme, National Energy Efficiency and Renewable Energy Action (NEEREA), was implemented in 2010 by Lebanon's Central Bank (BDL), supported by the EU, to provide incentives for green energy projects in the shape of interest- free, long-term loans provided by commercial banks to end users. The loans' upper limit is $20 million and is offered at an interest rate of 0.6 percent for no more than 14 years. According to LCEC, by June 2020, more than 1,000 projects were approved by the NEEREA financing mechanism with a total amount of more than 600 Million USD. Results show that around 76% of the projects were for solar photovoltaic while 42% of loans amount were for green buildings. These projects all together contribute to an annual saving of 73,253,210 USD.

1.3.4. Access to information communication technology (ICT)

Mobile technologies easily navigated through the Lebanese market since 1993. This was revealed by the rising number of mobile subscriptions over the past few years. Lebanon has been sanding as one of the fastest growing country in terms of ICT Development Index, ranking 64th out of 176 countries in 2017, and 6th out of 19 Arab countries[18].

The mobile market in Lebanon remains underdeveloped and not performing at full capacity. The poor conditions of the industry comprise the quality of network coverage, the quality of connection, the quality of data and Internet services, the customer service, and the speed of technical repairs (BLOMINVEST BANK, 2014).

Internet coverage is still not providing equal service to all areas; in fact, the good speed is concentrated in the capital and its close surroundings, and does not often reach the speeds adopted in global indices. According to Ogero, this is due to a delay in the completion of installation of fiber optics network. There is also the issue of conflict in duties between the Ministry of Telecommunications and Ogero, and the conflict over the competences and the legality of the Ministry of Telecommunications commissioning the installation of the network to private companies (Maharat Foundation, 2018).

Lebanon's mobile sector is one of the most expensive markets in the Arab World despite the downward trend in the price of mobile calls that started in 2012. Despite 2013's substantial drop in prices, the Lebanese mobile basket's value remained higher than the $33 Arab Med average price and the $23 average price in the OECD countries. (BLOMINVEST BANK, 2014). The mobile market in Lebanon is owned by the government but operates through two private mobile

[18] Retrieved from www.itu.int

operators, Touch and Alfa, that are controlled by the Lebanese Ministry of Telecommunications (MoT). One of the major obstacles to the sector's reaching its full potential relies in the government's policy of short-term license extensions. In fact, management contracts of operators Alfa and Touch are carried out on a three-month basis, a short-time frame that do not support long term investment strategies. This has affected the motivation to expansion, especially with the lack of adequate investment and the poor infrastructure that hinders the provision of advanced and innovative mobile services (ibid).

Law № 431 of 2002 regulating the telecommunication services sector on the Lebanese Territory stipulates the transfer of the telecommunications sector, or the transfer of its administration, in full or in part, to the private sector. It also stipulates the establishment of the Telecommunications Regulatory Authority (TRA) to supervise the operations of the sector and to regulate it, as well as the establishment of "Liban Telecom" as a third-party operator for a cellular network for 20 years and to manage the fixed- line network, exclusively, for five years. However, the Law remains unapplied and out of public discussions of the sector.

Overall, the different national plans and strategies in the ICT sector are marked by fragmentation and discontinuity. In fact, the work of successive ministries is always interrupted and restarted with every new minister. In the telecommunication sector, this has led to the absence of a consolidated strategy to manage the sector. On the other hand, the first Lebanon's e-Government strategy was published in 2002 and then updated in 2005. The second e-Government strategy was published in 2007; however, the implementation totally relied on outsourcing, which resulted in fragmented e-government projects operating independently, and not able to provide modern integrated digital services at a large scale (OMSAR, 2018). In 2018, a new Digital Transformation Strategy was published, aiming at guiding the digital transformation of public service in Lebanon into an inclusive digital society where all citizens, businesses, government departments and organizations can benefit from Internet era opportunities offered by digital technologies (ibid).

SUSTAINABLE AND INCLUSIVE URBAN

2.1. Inclusive Urban Economy

2.1.1. Promote productive employment for all including youth employment

Lebanon youth suffer from the limited opportunities in accessing employment, with the majority having to emigrate or to work in the informal sector. A 2012 World Bank report estimates that, in the consequent decade, there will be an average of 23,000 new job seekers annually while the average number of jobs created between 2004 and 2007 numbered just around 3,400 jobs per year. This creates a major challenge to the socio-economic stability of the country (World Bank Group, 2012). In 2019, the youth (15–24 years old) unemployment rate was 23.3 per cent – more

than double the general unemployment rate (11.4 per cent), and was even higher among university graduates (35.7 per cent) of the same age cohort (CAS, 2020).

Lebanese state authorities still play a central role in the economy. The public sector share of employment (ministries, public administration, and government-owned institutions) in Lebanon is 14 per cent; the private sector accounts for the remaining 86 per cent (ibid). The public sector employs 110 000 workers, of whom only 30 000 are formally recruited and benefit from social protection and health security schemes; the remaining 80 000 employees are recruited on a contractual or day-to-day basis (ETF, 2015). The public military and security services employ 86 000 people (ibid).

The self-employed make up as much as 36% of the labor force in Lebanon (ibid). The distribution of sectors in the self-employed category is broadly as follows: 4% in agriculture, 20% in industry and 76% in services (CAS, 2020). In general, employment is also mainly concentrated in the Beirut metropolitan area where nearly 42% of businesses are based, hence economically marginalizing periphery and rural regions.

At the national level, women unemployment is 14% while men unemployment is 10%. Significant differences in employment rates can be observed also at the geographic level; for instance, the highest unemployment rate was found in Minieh-Danniyeh (17.8 per cent) – located at the northern periphery- and the lowest was in Maten (7.1 per cent) – in the vicinity of the central areas.

In 2012, the minimum wage in the public and private sector was set by the government following consultation with employers and workers and was last raised to 675,000 Lebanese pounds, which was equivalent to 450$ (currently dropped in August 2021 to an equivalent of 34$ following the dire economic crisis).

Syrian and Palestinian refugees also suffer from unemployment and restrictions to jobs. Decree No. 1756 regulating the employment of foreign persons (1964) is the most relevant for Syrians, Palestinians, and migrant workers and provides the need for a work permit (ALEF et al., 2020). As for the migrant workers, their access to jobs is governed by the Kafala system that exposes the workers to different forms of abuse. Although the Ministry of Labor recently updated and promoted the unified contract that dates back to 2008 to counter the Kafala system and protect migrant domestic workers, Lebanon’s Shura Council abolished this step (Amnesty International, 2019; Human Rights Watch, 2020). In general, migrant workers are not covered by social insurance and health insurance schemes and therefore represent low-cost labor for employers and unfair competition for Lebanese workers (ETF, 2015).

The National Social Security Fund (NSSF) manages key elements of the social insurance system. It provides health insurance, an end-of-service indemnity and family allowances to formal workers in the private sector. Private sector workers not covered by the NSSF or the civil service (around 50% of the labor force, including informal wage earners and self-employed people) can, in principle, obtain health coverage from the Ministry of Public Health (World Bank Group, 2012).

Currently, as a result of the multifaceted and unprecedented crisis that includes an economic and financial collapse that Lebanon is facing, data shows that an estimated 350,000 people out of 1.15 million working in the private sector have lost their jobs. These numbers have continued to increase in 2021. This is exacerbated by depreciation in the value of the Lebanese Lira, as well as soaring inflation rates, estimated at 136.8 percent year-on-year in October of year 2020 (CAS, 2020). A survey by WFP found that 50 percent of Lebanese, 63 percent of Palestinians and 75 percent of Syrians were worried they would not have enough food to eat over the past month (Abed et al., 2020).

The National Employment Office NEO was initially mandated to design and implement a comprehensive national employment strategy for Lebanon. Despite this ambitious mandate, the NEO's role remains timid, partly as a result of its limited financial and institutional capacity. The NEO has a stagnant annual budget of LBP 2 billion (USD 1.3 million) and only three offices that are understaffed.

Overall, there are no real efforts from the relevant national authorities to address unemployment, and particularly the matching of education with market needs. In fact, the Lebanese labor market is facing increasing numbers of university degree holders who graduate each year in specializations that do not match the needs of the economic activities, in the total absence of efficient orientation. The Ministry of Education and Higher Education is entitled to set the education policy and govern public and private educational services. It is responsible for the licensing and accreditation of private vocational training providers. However, the ministry has limited authority over the private education sector.

2.1.2. Support the informal economy

The informal economy represents a large portion of economic activities in the country and many sectors—including construction, agriculture, tourism and industry—have strongly relied on informal arrangements to keep their workforce. The informal economy has recently reached an estimated 30% of the GDP, contributing to more than 50% of the workforce (Angel-Urdinola & Tanabe, 2012; Saliba et al., 2017). In 2004, 70% of employment for the 15–24 age group was in

the informal sector (Angel-Urdinola & Tanabe, 2012). In the post-War period, the size of the informal economy in Lebanon was estimated at 34.1% of the total GNP for the year 1999/2000, ranking 7th in Asia (Schneider, 2004). In the labour force, 66.9% of employees do not contribute to any social security system (World Bank Group, 2012).

The non-Lebanese constitute a significant part of the informal economy; the majority is engaged in low-skilled domestic work, construction, and agriculture. Refugees have also resorted to informal routes to make a living in the country; Palestinian refugees have resorted to informal, unregistered businesses in their so-called "no- zone" camps where the Lebanese authorities are not allowed to step in (Fathallah, 2020).

They establish small scale enterprises located mainly in and around camps, and they tend to be employed by small business enterprises. They are a labor pool of various skills, however with limited mobility in view of their limited financial resources (El Khalidi & Tabbara, 2008). Syrian refugees are also creating new businesses in various parts of Lebanon; the businesses are often small-scale ones, and usually depend on informal sources of income.

Public authorities address informal activities in various ways. A common scenario, especially in areas with informal settlements, is to ignore these activities as closing them will lead to severe tensions and resistance from local populations. However, in other cases, such activities are banned, especially regarding street vendors and under the pressure of tax-paying businesses. In other cases, local authorities could organize informal markets, setting regulations on the way the marketplace will be used and imposing minimal fees on sellers.

2.1.3. Support Small and Medium-sized Enterprises.

Banque Du Liban defines SMEs as enterprises with less than LBP 15 billion in annual turnover, while Kafalat defines SMEs as having less than 40 employees (UNDP, 2015). Namely, the proposed definition combines annual turnover and number of employees as follows: micro enterprise with less than LBP 500 million and less than 10 employees, small enterprise with less than LBP 5 billion and less than 50 employees, and medium enterprise with less than LBP 25 billion and less than 100 employees.

According to Lebanon SME Strategy "A Roadmap towards 2020" published in 2014 by the Ministry of Economy and Trade in Lebanon, SMEs in Lebanon constitute around 90% of total enterprises in the country. In the years 2016- 2018, 48% of SMEs that Kafalat has supported are located in the Beirut and Mount Lebanon regions. In the years 2017 and 2018, 33% of SMEs supported within LCRP programs were located in the Bekaa, 31% in Beirut and Mount Lebanon, 19% in the South, and 17% in the North (MoET, 2018b).

The Investment Development Authority of Lebanon (IDAL) has been providing incentives to encourage Lebanese entrepreneurs to invest in remote areas and generate employment. In addition, IDAL also occasionally subsidizes the participation of Lebanese firms from certain sectors in international trade fairs.

In 2010, the Lebanon Creative Cluster, funded by USAID, was created to focus on advancing creative industries in Lebanon; unfortunately, the initiative did not succeed. In 2011, the Beirut Creative Cluster (BCC), with the financial support of the European Union, was incepted to gather enterprises positioned on several different segments of ICT. The existence of previous experiences is a very positive sign for the progressive development of more projects to facilitate the emergence of cluster initiatives (UNIDO, 2015).

Social Enterprises are not defined or categorized yet as legal entities and do not enjoy a specific legislative framework in Lebanon. According to experts this is still "a grey area". There is no general consensus yet on the requirements to initiate this legal form. However, there is a consensus for the need to regulate and support such organizations (Beyond Group, 2012). Social entrepreneurship initiatives and activities exist within the following forms: Non-Governmental Organizations (NGOs), commercial business registered as S.A.L. or S.A.R.L. that re-invest partially or totally their profit in social impact activities, and non-registered initiatives, that are widely spread in rural areas and among youth, and that generate income with the purpose of making social impact (ibid).

There are many barriers that hinder the establishment of SMEs; the economic uncertainty and inadequate financing measures, combined with a lingering old economy delaying the transition to the knowledge economy are main factors. At the cultural level, owners/managers show limited readiness for institutionalization and often tend to keep their capital closed. At the capabilities level, there is a mismatch between demand and supply of capabilities and the real market needs, combined with a shortage of vocational programs and high emigration levels with poor talent retention ability.

In May 2020, the ILO surveyed 363 small- scale enterprises to capture the impact of the economic and COVID-19 crises affecting enterprises. It found that prior to the lockdown the situation for enterprises was already significantly challenged; only one-third of

the enterprises in the sample reported were profitable, 40% reported breaking even, while 26% were operating at a loss. Of those sampled, around half (51%) had stopped operations temporarily due to the COVID-19 pandemic and associated lockdown measures (ILO, 2020). SME's in Lebanon are facing a serious financial crisis especially after the Beirut Blast. The

various initiatives aiming at supporting the people impacted by the blast have little consideration and resources for SMEs.

Since 2005 onwards, the focus of support in Lebanon shifted to SMEs and more considerably to entrepreneurship, especially in the context of the global financial crisis and rising unemployment. This was combined with the advent of new players, namely from the private sector and NGOs. Initiatives and entities such as the Bader Program, Berytech, Arabnet, MIT Enterprise Forum, Endeavor, and Middle East Venture Partners were established and took an active role in funding, supporting and developing entrepreneurs (UNDP & MoET, 2020). The "Lebanon SME Strategy: A Roadmap to 2020" has been initiated by the Ministry of Economy and Trade to ensure the long-term planning and support for a key sector of the Lebanese economy (UNDP, 2015).

The Lebanese government has adopted an important initiative to provide assistance to SMEs. A key project at this level is KAFALAT, a public fund guarantor launched in 1999, that provides guarantees for SMEs' credits. As of June 2015, KAFALAT has already provided more than 1,146 billion Lebanese pounds (LBP) in guarantees for projects in agriculture (2,544 projects), industry (2,388), tourism (980), crafts industry (175), and high technology (1,121) (Kafalat S.A.L., 2015). In the last few years, commercial banks dominate the funding scene for mature SMEs with (costly) highly collateralized debt. At around 16% of the total loan portfolio, SME lending in Lebanon is among the highest in the MENA region, yet still half of the 30% target set by banks (UNDP, 2015). Recently, the economic crisis has resulted in ending all types of loans to SME.

As for the social enterprises, the available financial facilities seem significantly limited, as there is a lack of cooperation platforms between social entrepreneurs specifically in attracting funding and investments, and because business associations are still less interested in cooperating to support social enterprises (Beyond Group, 2012).

2.1.4. Promote and enabling, fair and responsible environment for business and innovation

While Lebanon ranks 115 out of the 185 economies covered by the World Bank 2013 Doing Business Project, relatively little progress has been made in recent years. According to ESCWA, the deterioration of Lebanon's ranking is not due to implementing any negative reform in Lebanon. It is mainly because other countries reformed their business regulations and were able to jump forward (ESCWA, 2013).

Government instability and corruption are the two most problematic factors for companies doing business in Lebanon, according to the World Economic Forum's Executive Opinion Survey 2017

(European Commission, 2019). Compared to regional peers, Lebanon's infrastructure lags in almost all dimensions. The quality of roads, ports and air transport is perceived as significantly worse. Electricity supply is unreliable and substantially worse than in regional peers, hampering the competitiveness of Lebanon's businesses and the ability to attract foreign direct investment. The already heavy burden on Lebanon's existing infrastructure was further exacerbated by the arrival of an estimated 1-1½ million Syrian refugees (ibid).

The present economic crisis has exacerbated existing issues and added difficulty to access bank accounts and credit in a context of falling exchange rate, contraction of consumption, and difficulty of import. Lebanon ranks 143 out of 190 countries in the Business and Global Competitiveness index in 2020. Nevertheless, according to IDAL, the ICT sector has been able to endure the crisis more efficiently than other sectors and has thus proven its resilience. A greater reliance on digital services emerged allowing many Lebanese ICT firms to thrive. Mature ICT SMEs and scale-ups in particular have been faring better than others, with some actually witnessing growing sales (IDAL, 2020).

Historically, the Lebanese State has had a predominantly laissez-faire approach in terms of economic policies. However, some initiatives in terms of draft laws, policies, and projects by Ministries and public agencies have been implemented, some with the support of international organizations and donors. In the past few years, the Bank of Lebanon has focused on boosting the energy sector, by providing 0% loans for the first five years to businesses in this sector. Recently, and as demand is growing for various products and services needed to fight COVID-19, IDAL has put in place a guide that details all the requirements needed to produce industrial goods in addition to the licenses needed to operate and export (ibid). The Lebanese Government took some measures to mitigate the impact of the pandemic through the implementation of rapid economic response measures ranging from tax deferrals to targeted awareness campaigns and also doubling the Internet speed (Although limited in time).

Moreover, The Investment Development Authority of Lebanon (IDAL) has launched a temporary platform- Lebanon Updates- providing investors, companies and the international community with information on public and private sector measures being adopted to face the current crisis.

At the local level, local authorities and humanitarian agencies have initiated local economic development initiatives, many of which succeed in engaging local economic networks, yet with limited impacts on business development and job creation.

2.2. Sustainable Urban Prosperity

2.2.1. Support the diversification of the urban economy and promote cultural and creative economy

According to UN-Habitat, the urban economy in Lebanon is dominated by the service sector where most of the country's working force is employed (41.6%), followed by trade (22.6%), industry (13.8%), and agriculture (7.2%). Beirut in particular, which comprises one third of the total population of Lebanon, contributes to roughly 75% of the GDP, according to the World Bank. At the geographic level and on the level of urban economy dynamics, sharp differences exist between urban areas. Beirut and its suburbs, as well as cores of large cities, have more dynamic urban economic activities than the remaining areas in the country.

Sociopolitical conditions are the main challenges affecting the urban economy in Lebanon. As such, the adherence to liberal economic principles, primarily individual entrepreneurship and the sanctity of private propriety, diminish support to planned economic development initiatives, leading to the concentration of activities that have a fast return-on-investment, and translating to the absence of a vision in the development of economic sectors. Emigration is also a key factor impacting the Lebanese economy in general, first through remittances providing funds for many economic investments, and second by the development of transnational economic networks with the potential of integration in the Lebanese economy, and creation of linkages between diaspora and local projects. However, this is also governed by social segmentation leading to fragmented and isolated initiatives.

The real estate and construction sector grew exponentially in the last decade and Lebanon witnessed record investments in its real estate sector and construction by nationals, individuals of the Lebanese diaspora, expatriates, and foreigners. Thus, though Lebanon witnessed significant growth in GDP in the last decade, such growth has been concentrated in particular sectors, mainly service and real-estate, with minimal contributions to the agricultural and industrial sectors. Real estate speculation and rent capture have shaped urban spaces with commercial strips, shops and large-scale centers increasingly developing along highways. These investments have allowed for economic growth, the creation of jobs and expansion in specific sectors.

However, this haphazard economic development had considerable repercussions on the socioeconomic milieu (Dewailly, 2016), primarily the agricultural and industrial sectors that were severely affected by these economic orientations. In fact, reconstruction was an opportunity to position Beirut regionally, thus contributing to boosting the economy at the city and national levels. Large-scale urban projects were perceived to attract international investors, providing the necessary infrastructure to foster economic growth and the creation of a global city. On

the other side, this has increased the already existing trend of rural exodus that resulted from agricultural decline and the emergence of new lifestyles that privileged urban contexts. However,

with the recent economic crisis that led to a concern regarding food security, many households are resorting to agriculture, even if at an individual scale. Nevertheless, some agricultural activities with possibility of export have flourished as well, given the profitability of earning foreign currency, in opposite to selling in local markets.

Rapid urbanization in Lebanon constitutes a major threat to agricultural lands. Mainly located in Akkar, the Bekaa, and the coastal plains, agricultural lands are subject to threats related to urban sprawl and densification. Coastal plains such as the Southern plain from Saida to Naqoura, the Akkar plain, and the valley of Abou Ali (Koura), are especially exposed to permanent pressures of urban sprawl. The majority of these lands are attractive for developers especially that they provide benefits if exploited through real estate development. The transformation of agricultural and grazing lands in the peripheries of urban areas, especially in Beirut, into real estate property caused the development of a profitable real estate market that speculated on the demographic growth of the city and its sprawl (Fawaz, 2013). On the other hand, coastal and peri-urban agricultural lands, being very close to dense urban areas and to a number of highways, are exposed to high levels of water, soil, and air pollution. These aspects have been exacerbated since the beginning of the Syrian crisis with the influx of refugees, since a number of informal tented settlements (ITS) occupy large areas at the peripheries and within agricultural lands, as is the case in Akkar and the Bekaa. These settlements have also encouraged some farmers to forgo cultivating their lands in return for higher profits resulting from yearly rents paid by refugees (Un- Habitat & UNHCR, 2014).

The NPMPLT has defined agricultural lands, emphasizing their wide national interest, and has recommended their protection; however, this has not been adequately addressed in implementation. As such, lands zoned as agricultural are not entirely protected, whereby building in these lands is permitted with a few restrictions imposed on issues relating to height and density.

Urban agriculture is mainly concentrated in coastal plains. New technologies such as vertical agriculture and hydroponics are implemented, albeit on a very small scale. Agro industries exist in Lebanon and are located in various parts of the country and projects are undertaken by the Ministry of Agriculture in order to support these industries; examples include projects that aims to support the beekeeping sector and others to encourage the rehabilitation and recovery of the dairy sector in the Bekaa Valley and the uplands of Hermel- Akkar. However, these projects remain insufficient in addressing such issues, and actions and strategies to support agroindustry are lacking. It is to be noted that the majority of these initiatives do not necessarily relate to urban and peri-urban areas, and are localized mainly in rural areas. (Ministry of Agriculture, 2020).

As for the cultural and creative industries, they have been in decline in the last decade with theaters, cinemas, museums and other cultural centers facing financial problems and closing. Nevertheless, a new generation of creative and artistic workspaces was also emerging, often in particular areas in Beirut. Cultural and Creative industries contribute almost 5% to the country's GDP and 4.5% to national employment, with average annual growth rate of over 8%. These numbers become even more significant when taking into account the general absence of public support and of a clear development strategy. In fact, the strength and dynamism of Cultural and Creative industries in Lebanon are rooted in multifaceted cultural influences, deep-rooted private initiative and the country's privileged geographical location (UNIDO, 2015). According to UNESCO, the 15-year civil war trembled profoundly the cultural sector of Lebanon, which led to many artists leaving the country, and a large number of cultural establishments closing their doors. This war also led to a loss of arts and cultural education. The return to peace gave way to a renaissance in many cultural and artistic fields, especially literature (notably poetry), music and film (UNESCO, 2020). Beirut, for instance, has been regaining and consolidating its role as a regional hub in design, advertising, architecture, fashion, gastronomy and publishing despite limited collaborative works and initiatives (UNIDO, 2015).

On the other hand, the Lebanese film industry and the field of digital arts have flourished in the past few years, as the Lebanese films progressively attracted international audiences.

This industry made promising by a new generation of filmmakers is contributing to shaping in its way the national culture and identity (UNESCO, 2020).

In 2020, many cultural components were hit following Beirut blast, as many of the city's art spaces, heritage sites, museums and galleries, are located in the neighborhoods of Mar Mikhael and Gemmayzeh and in the industrial area of Karantina close to the epicenter of the blast (ibid). The explosion had also severe impact on major museums, such as the National Museum of Beirut, the Sursock Museum and the Archaeological Museum of the American University of Beirut, as well as cultural spaces, galleries and religious sites. The Lebanese National Higher Conservatory of Music in Monot suffered also from important damage, as well as a large number of heritage private and public buildings.

On another hand, the NPMPLT recognizes the endogenous economic potential of the different regional and urban contexts, valorizing the assets and role of each category of areas, such as "urban", "rural", "agricultural" and "natural". It stresses that Lebanon's geographic location, resources, and territorial offerings provide favorable and varied assets for economic growth. To face international competition, the NPMPLT proposes various responses such as: 1) integrating the region's economy into the economy of Beirut, 2) increasing local productivity, and 3) identifying and developing niche products particular to villages or cities. However, according to

UN- Habitat, the Lebanese economy is still highly linked with the main four coastal cities of Tripoli, Beirut, Saida, and Tyre, which constitute 80% of the economy in Lebanon. Three of the key income sectors, (1) the service industry, (2) real estate and, (3) tourism, are concentrated in these urban areas and along the urban coastal belt.

2.2.2. Develop technical and entrepreneurial skills to thrive in a modern urban economy

In a recent Government report "Lebanon Economic Vision, aims for 2025", Knowledge Economy is listed among five sectors that present the highest economic potential for the country, with the aspiration "to become a knowledge-driven digital nation, at the forefront of innovation, acting as a talent hub for technology, outsourcing, creative industries and education." In fact, Lebanon aims to become a "knowledge-driven digital nation" as the GoL considers knowledge economy as one of the most important sectors impacting national economy[19]; special attention is given therefore to innovation in many industries sectors including creative industries and education[20] to ensure high growth and employment (Itani, 2019; MoET, 2018a; UNDP, 2017; The Lebanese Parliament, 2017). In 2018, the country ranked 61st out of 140 countries, by scoring 38.5 over 100 on innovation according to The World Economic Forum's Competitiveness Report (World Economic Forum, 2018; Atallah & Ezzeddine, 2019b).

In general, the GoL and the Lebanese economic sector suffer from low digitization; although few small technologies and digital industries continue to emerge, their access to global markets is limited and restricted. As for the educational sector, it is strongly digitalized; however, it suffers from a low potential of international attractivity (MoET, 2018a). Nevertheless, knowledge economy lacks creative human capital, funding, and regulatory schemes, which makes the governance and infrastructure of this sector underprivileged (MoET, 2018a; World Bank Group, 2003).

The development of research and training in universities and vocational schools on Knowledge Economy, as well as Sustainability-oriented knowledge and skills, play a big role in supporting this sector; in fact, the combination of the education system with the technology industry can lead to more prosperous and creative national human capital, and can generate added value by serving international markets, which requires laboratories and expertise sharing (Itani, 2019; Atallah & Ezzeddine, 2019b). In this context, the GoL aims to increase by 2030 the number of young people and adults who have the appropriate skills, including technical and vocational skills, to work and occupy decent jobs and engage in self-employment by updating and elaborating laws and regulations, and via workshops and national and international partnerships (The Lebanese Parliament, 2017).

[19] This declaration was stated in the GoL report "Lebanon Economic Vision, Aims for 2025".
[20] Many projects have been envisaged including the Beirut Park-Knowledge Center (Itani, 2019).

Partnerships also exist between local authorities and universities nowadays to implement studies or workshops and to develop the R&D sector; more often municipalities, such as Antelias and Jdeide, are funding a number of studies[21]. However, the rates of local R&D activity within the Lebanese industrial sector aren't significant, as very few companies invest in product development and innovative scientific research activities (Atallah & Ezzeddine, 2019b). Supporting R&D requires in fact the collaboration of many actors – such as the MoI and MoA, syndicates, universities, and research centers – and sectors (Atallah & Ezzeddine, 2019b; Itani, 2019) which is challenging. For instance, there is a gap in the cooperation between universities and the private sector (employers), as students are not sufficiently prepared to access job market, and sometimes, language and technology knowledge present important barriers preventing youth from getting involved in some industries (Save the Children, 2019; Itani, 2019).

However, to provide employment opportunities, and reinforce Lebanon's position as a technology hub in the MENA region, sectorial incubators and accelerators in the technical and creative sectors exist, and are highly emerging (Stel, 2013; Itani, 2019). For example, the Tripoli Special Economic Zone (TSEZ) is a promising platform to boost the economic development in North Lebanon area (Melki, 2017b). In 2013, Lebanon has noticed an "entrepreneurial boom" especially when the BDL launched Circular 331 which has enabled the financing of dozens of startups, incubators, and accelerators from the central bank[22] (Stel, 2013; Ben Hassen, 2018; Le Commerce du Levant, 2018).

Several supportive actors are also involved, either by giving entrepreneurs loans such as World Bank-Kafalat and USAID-IM Capital, or by offering intensive workshops in the case of Berytech, Injaz, and Dots. Also, numerous entrepreneurship programs have been settled up recently such as the UK Lebanon Tech Hub, AltCity Bootcamp, Speed@BDD, Smart ESA (Rouhana, 2015; Ben Hassen, 2018), and the youth leadership programme (YLP) implemented by the UNDP.

2.2.3. Strengthen urban-rural linkages to maximize productivity

According to the world Bank, the national GDP saw a contraction by % 20.3 following the 2020 economic crisis. There are no recent statistics that show the distribution of Lebanon's GDP shares among the regions. However, most of Lebanon's economic development takes place in Beirut, as it is the major contributor to the county's GDP, surpassing the South, North, and Bekaa regions (Dewailly, 2016). Following Beirut in contribution to the national GDP are the

[21] Interview with Béchir Odeimi- BTVL

[22] However, several critiques have been made five years later, stating that the circular didn't accomplish its promises (Le Commerce du Levant, 2018).

cazas of Mount Lebanon, Bekaa, and South Lebanon, whereas the caza of Akkar falls behind economically due to its dependance on agriculture sector (Khneyzer & Donsimoni, 2015).

Lebanon has a great potential for a wide range of rural-urban exchanges that boost many of the country's economic sectors (Dibeh et al, 2020). For one, eco-activities are present in many locations that offer an ideal cultural heritage and a rich environmental biodiversity (Samouri, 2018). Internal tourism is a sustainable sector in Lebanon that links the urban population with rural contexts. Over the last 20 years, ecotourism has grown to become a great potential for rural development and a main driver of national tourism; it is supported and funded by local authorities as well as international organizations. The Ministry of Environment had designated many assets for ecotourism in Lebanon, of which are three UNESCO Biosphere Reserves and 14 Nature Reserves that cover up to 2.2% of the Lebanese territory (Abou Arraje & Abdel Hady, 2019).

Another sector that links urban areas with the rural geography is the agro-industrial sector, where an articulation is achieved through wholesale markets which connect rural farmers across the country with urban supermarket chains, restaurants, and household consumptions (Mercy Corps, 2014; Chaaban, 2012). Today, some of Lebanon's important supply chains (with great economic output) are formed by the dairy sector and the olive oil sector (ACTED & Consultation and Research Institute, 2018; USAID, 2014).

There are national, regional, and local policies that strengthen urban/rural linkages. Unions of Municipalities (UoMs) in Baalbeck, Byblos, Batroun, and Tyre have developed (throughout the past decade) Local Strategic Plans that mobilize natural, social, and economic assets, in order to utilize their common resources in the process of bridging between their shared urban and rural contexts (UN-Habitat, 2016).

National institutions have been embracing rural activity with several programs. IDAL, one of these institutions, has provided financial incentives in the form of tax exemptions for international and local investors to support rural-based businesses and small producers (IDAL, 2020). KAFALAT has also provided loans under the Agriculture and Rural Development Program framework in the process of boosting agro- business and supply chains linking agricultural production with the Lebanese cities (Chlouk, 2016). The Ministry of Agriculture (MoA) had also launched many projects that promote the Olive Oil production industry in Lebanon; the MoA's Agricultural Strategy (2015-2019) opts to facilitate, market and ensure the wellbeing of the agricultural sector (Chaaban, 2012; Ministry of Agriculture, 2020). Nevertheless, public support to cooperatives is absent and needs further attention from the government (ACTED & Consultation and Research Institute, 2018).

Despite all governmental efforts in decentralizing urban development, regional and territorial planning remain imbalanced with Beirut benefiting from the biggest share of development, especially with the role of infrastructure such as the port, the airport, and the linking highways (Dewailly, 2016; UN-Habitat, 2018). The National Physical Master Plan for the Lebanese Territory (NPMPLT) remains the only national policy that highlighted the need to achieve equitable development across all the Lebanese regions. It identified key infrastructures, sectors, and services that form the stronghold of the different territories and localities.

3 - ENVIRONMENTALLY SUSTAINABLE AND RESILIENT URBAN DEVELOPMENT

3.1. Resilient, Mitigation, and Adaption of Cities and Human Settlements

3.1.1. Address urban sprawl and loss of biodiversity

The Greater Beirut Area (GBA)[23] hosts almost 23% of Lebanon's total population, the city area is densely populated (19,509 persons/ km2 in Beirut City compared to Lebanon's overall 600 inhabitants/km2) and features many socioeconomic disparities (UN-Habitat, 2020). Vulnerable groups in the GBA reside in refugee camps and concentrated neighborhoods which house Lebanese and non-Lebanese citizens.

Such urban aspect evades the government's control and continues to densify with no policies addressing it (UN-Habitat & UNICEF, 2020). In the past few years, the population has increased with the influx of 1.5 million Syrian refugees in Lebanon (GoL &UN 2019).

The major cities have witnessed accelerated expansions; Between 1963 and 2005, Beirut agglomeration's area has nearly multiplied by 2, Jounieh by 7, Nabatieh by 3.9, while Saida by 5.4 (Faour, 2015).

Urbanization in Lebanon has reached all types of topographies and geographies. Haphazard urban expansion over the steep mountains surrounding the GBA is leading to a loss of the mountains' ecosystem. Some towns in districts that lay on hills, such as Aley, Meten, and Baabda have expanded beyond their boundaries (UN- Habitat & UNICEF, 2020). On the other hand, urban densification and highways along the costal zones are affecting large agricultural areas with urban sprawl and pollution. The Syrian crisis has reflected in the proliferation of informal tented settlements over large agricultural areas and on the peripheries of cities in

[23] Although the GBA is not a recognized official perimeter, it is usually defined as the area going from Khaldeh in the south to Nahr El-Kaleb in the north (UN-Habitat, 2018).

Lebanon, with the most affected agricultural lands being in Bekaa and Akkar districts; these lands have also seen real-estate activity (UN-Habitat & UNHCR, 2014).

National regulations regarding urban sprawl have been regularly updated by administrative bodies throughout the past decades, but they have lacked efficiency and implementation procedures. In trying to limit urban sprawl, public actors on both local and central level- mainly concerned ministries, the Council for Development and Reconstruction (CDR), the Directorate General of Urbanism (DGU), the Higher Council for Urban Planning (HCUP), unions of municipalities, and municipalities- are constrained by a profit-driven political process favoring the real-estate sector. Some decrees have however directly contributed to urban expansion such as Decree 169/1989 also threatened the public maritime domain, as it authorized the occupation of the public domain located on the coastline in the so-called "zone 10" in Beirut to any owner of 20,000 m² (UN- Habitat, 2018).

At the local level, municipal council are supposed to ensure that regulations and plans represent the local inhabitants' interests, including the need to limit urban sprawl and maintain green spaces (Public Works Studio, 2017). In the past decade, and with the increase in the number of municipality unions, global donors have become interested in forming development plans and forging partnerships with local authorities in Lebanon. Despite many forms of coordination and partnerships with local and international partners, local authorities are still unable to play an efficient role in limiting sprawl and managing their territories land uses (UN habitat, 2018).

The fragmentation of urban planning decisions among public actors themselves has also constrained the capacity of municipal councils to develop and control the development process in their localities. Sadly, rather than confronting urban sprawl, municipalities are supporting it. Direct and indirect taxes are paid to the municipalities through fees over construction permits and rental values. Municipal councils are dependent on those taxes, which hinders planning processes that limit sprawl; on the contrary, urban sprawl is encouraged because it finances the local authorities' incomes (ibid). Nevertheless, political will has always stood in the way of intentions that confronted urban sprawl.

Unconscious urban sprawl is particularly threatening biodiversity. In 1996, the country was known to feature a remarkable biodiversity all over its small area[24]. Today, the nation's biodiversity suffers habitat loss due

[24] Lebanon covers 0.007% of the world's land surface area and hosts about 0.8% of the world's recorded and catalogued species (MoA, 1996). There were 9,116 known species in Lebanon, including both fauna (4,486 species) and flora (around 4,630 species) (MoE and UNEP, 2016).

to unorganized urban expansion, pollution, temperature rise, and unsustainable exploitation of natural resources. These phenomena have not only imposed great damages on local ecosystems and species, but have also indirectly added pressure on human health (MoE & UNEP, 2016).

Unorganized quarrying has also caused the loss of important habitats. Most of the quarries are located in forests and scrubland ecosystems, which are rich in faunal and floral diversity. Between 1996 and 2005, the number of quarries gradually increased from 711 to 1278, and the excavated areas doubled in size from 2,875 to 5,283 ha (AFDC et al., 2019). Quarries active between 1989 and 2005 destroyed 738 ha of grassland, 676 ha of arable land and 137 ha of forests. Recently, the number of quarries is equal to 1,800 sites while 710 sites have become abandoned (MoEW et.al.,2020).

The surviving types of vegetation from the ancient forests that spread all over Lebanon are numerous and they are the basic elements of the Mediterranean vegetation (Ceratonia, Quercus, Laurus, Arbutus, Pinus, and Pistacia) (MoE, 2009). Almost 23% of the Lebanese territory is covered with trees of different types; although they have been partially lost due to urban expansion (Sarkissian et al., 2018), their size has increased in the past ten years (FAO, 2020). This is due to individual, private, and public efforts for green regeneration in empty lands[25]. In the Anjar and Aammiq areas, there are few wetlands and swamps that have survived until today[26]; they form crucial habitats for migrating birds and other types of birds that are going extinct[27].

Forest fires are also on the rise in Lebanon due to climate change. In only one day in 2007, a fire had burnt an area three times of the reforested area from the year 1990. These fires have caused loss in natural habitats and affected the local communities (AFDC, 2007). In 2019, more than

[25] In 2010, forests cover about 137,000 ha (13% of the territory) and Other Wooded Land (OWL) covers 106,000 ha (about 10%) of the territory, yielding a total of about 23%. About 57% of the forest cover is broadleaved species (primarily oaks), with coniferous species (mainly pines) contributing about 31% (Khater & El-Hajj, 2012). in 2020, forests cover almost 143,000 ha of Lebanon (FAO, 2020). Annual deforestation is estimated at 0.4 percent while annual reforestation is estimated at 0.83 percent. Despite the reforestation of 583.5 ha by MOE during 2002-2004 and the reforestation of other areas by MOA and NGOs, the reforestation rate decreased between 2000 and 2005 to 0.76 percent per year (As per an interview with Dana & Assil on 31-05-2021).

[26] Dominant vegetation in wetlands includes Syrian ash (Fraxinus syriaca), Lebanese willow (Salix libani), southern reed (Typha australis), water iris (Iris pseudacorus) and many other bird species (Khater & El-Hajj, 2012; MoA, 1996).

[27] Lebanon is considered as a huge “bottle-neck” for migratory birds. Available knowledge stresses the importance of this country in the soaring bird’s migration systems. (MoE & UNDP, 2014). At least 399 species of birds have been recorded in Lebanon. These belong to 64 families and 19 orders. The presence of globally threatened bird species in Lebanon such as Dalmatian Pelican, Greater Spotted Eagle, White-tailed Eagle, Egyptian Vulture, Pallid Harrier, Imperial Eagle, and the Lesser Kestrel emphasizes on the importance of this country on an international scale (Ramadan-Jaradi, 2012; SPNL, 2004).

100 fires burned the Lebanese forests for a couple of days from the south to the north of Lebanon. According to the Directorate General of Civil Defence, these fires were the worst

in decades; hills in Mount Lebanon (east and south-east of Beirut) were among the areas heavily affected (Aljazeera, 2019). In the 13th of November 2021, the CNRS has mapped 48 fires, spread at the same time in the different Lebanese forest areas. Lebanon's urban areas have scarce if not any biodiversity. Most of the country's urbanity is high in pollution, affecting hence the terrestrial ecosystems. The sources of this pollution go back to the discharge of untreated industrial effluents, wastewater, dumps, healthcare wastes, and gas emissions (transport vehicles, incinerators, and industries) (Khoury et al., 2015). Although the Lebanese cities have some green spaces, these spaces are fragmented and often unplanned and unplanted.

Every year, the excess water from rainfall in urban areas warns of flood risk, especially in the low altitude areas of Beirut. This aspect is recurring often in neighborhoods with low permeability, absent public spaces, and inefficient drainage systems (Aljazeera, 2020). There is an increasing number of developments on coastal lands such as resorts, dumpsites, and illegal constructions; this is also blocking the natural discharge of rainwater into the sea. The over-pumping of water from illegal wells, groundwater pollution, and the disposal of wastes in natural aquifers are also threatening biodiversity in urban areas (Prinz, 2016; UNEP, 2012). Beirut's garbage crisis that occurred in 2015 had severely left its mark on the urban environment, it was confronted with the illegal burning of trash, polluting the air and intoxicating the soil (HRW, 2020). Moreover, lack of environmental awareness and the absence of a proper enforcement of the construction law continue to challenge Lebanon's ecosystem (Khoury et al., 2015).

In general, the Lebanese government has been sacrificing the policies relating to environmental sustainability and biodiversity conservation in favors of economic development, infrastructure procurement, and private businesses (Makhzoumi et al., 2012). But some effort has led to maintaining natural habitats and protecting endangered species by declaring fifteen natural reserves and creating management plans for six of them[28].

The NPMPLT acknowledges that some coastal regions have outstanding importance for biodiversity. In 1996, law 558/1996 was adopted, aimed at increasing forest protection. Law 92/2010 also bans any land uses inside burned forest areas to prevent future acts of arson. However, the code has been weakly applied, with forests left barely protected, thus paving the way for urban sprawl (UN-Habitat, 2018).

[28] Nature reserves occupy around 2.7% of the country's area. Some sites are recognized by international entities and conventions; i.e. World Heritage Sites by UNESCO, Ramsar sites under the Ramsar Convention, Important Bird Areas (IBAs) by Bird Life International, and Specially Protected Areas of Mediterranean Importance (SPAMI) under the SPA and Biodiversity Protocol (MoE & UNEP, 2016) (UN-Habitat, 2018).

On another note, Lebanon's National Biodiversity Strategy and Action Plan (NBSAP) 2016-2030 is an environmental plan that was placed in response to Lebanon's obligations towards the Convention on Biological Diversity (CBD). The NBSAP is aligned with the new CBD strategic goals and integrates the 2020 Aichi Biodiversity Targets while taking into consideration Lebanon's existing professional capacities and specific awareness levels (Khoury et al., 2016).

3.1.2. Climate change mitigation and adaptation actions

Lebanon's climate is typical of the Mediterranean region with four distinct seasons that encompass a rainy period usually lasting from November to March followed by a dry period during which very little precipitation occurs. Annual precipitation on the coastal plain ranges between 600 mm and 800 mm. Mount Lebanon may get precipitation up to 2000 mm annually but a typical range is from 1000 mm to 1400 mm. Rainfall in the central and northern Bekaa is approximately 200 mm to 600 mm annually, while in the southern portions of the plain is 600 mm to 1000mm (MoE, 2011; MoE et al., 2010). According to the PRECIS model, temperatures by 2040 will increase from around 1°C on the coast to 2°C in the mainland. Rainfall is also projected to decrease by 10-20% by 2040. This combination of significantly less wet and substantially warmer conditions will result in an extended hot and dry climate (MoE, 2011).

Lebanon's GHG emissions have increased by 33.7% since 1994; the total GHG emissions in 2012, amounted to 26.3 million tones CO2 eq., which represents 89% of emissions increase from 1994 and 39% of emissions increase from 2000, and averaging to 4.67% annual increase of greenhouse gases in Lebanon (MoE & UNDP, 2016).

The main contributor to greenhouse gas emissions is the energy production sector with 53% of GHG emissions, followed by the transport sector (23%), the waste sector (10.7%) and industrial processes (9.7%). CO2 removals from the land-use, land use change and forestry category amounted to-3,036 Gg CO2eq., bringing Lebanon's net emissions down to 23,188 Gg CO2eq. (ibid). Some electricity production units, especially that of Zouk, have been the subject of many controversies because of their impact on public health and contribution to the rise of chronic and lethal diseases in some areas. Emissions from industrial processes in Lebanon were estimated at 2,557 Gg CO2 in 2012, representing 9.7% of national emissions. Cement industries are the main contributors (over 99%) to GHG emissions from this sector (ibid).

At the local level, electricity generators are a major source of nuisance and pollution (IFI, 2017). As reported by the MoE (MoE et al., 2010), GHG emissions from informal generators exceed those from MoEW infrastructures.

If current trends in GHG emissions continue, anticipated changes in climate would likely impose economic costs on Lebanon both directly and indirectly. Direct costs would materialize as higher temperatures, changes in precipitation, and extreme weather events, such as storms, reduction of agricultural productivity and impact on human health. Indirect costs would materialize as the direct costs slowing the country's economic growth, reducing Lebanon's Gross Domestic Product (GDP) and lowering business activity (MoE et al., 2015).

Agriculture is one of the most vulnerable economic sectors to climate change as it is directly affected by changes in temperature and rainfall. Limited availability of water and land resources in Lebanon, together with increasing urbanization, puts additional challenges for its future development in the country. In general, the direct effects of climate on agriculture are mainly related to lower crop yields or failure owing to drought, frost, hail, severe storms, and floods, and other losses due to short-term extreme weather events (Farajalla et al., 2014).

The public institutions that are in charge of climate change observation and response are mainly:

- The Ministry of Environment whose mandate and organizational structure include the coordination of sustainable development issues. The Ministry of Environment is the National Focal Point to the UNFCCC, ratified by Lebanon by virtue of Law No. 359 dated 1/8/1994.
- The National Council for the Environment (NCE), established in 2012 by the Council of Ministers, through Decree (8157/2012). It constitutes of 14 members representing line ministries as well as non-public entities and including the Order of Physicians, Order of Engineers and Architects, Association of Banks, Association of Insurance Companies, NGOs, and the academic sector. The NCE is used as a platform through which environmental issues, including climate change, are coordinated at the national level.
- The Climate Change Coordination Unit (CCCU), whose role is coordinating and pooling all work of climate change related projects and activities in order to pull resources together and maximize the benefits of each of the projects implemented. It was established through the 'National Action Programme to Mainstream Climate Change into Lebanon's Development Agenda' project, funded by Lebanon's Recovery Fund. It is composed of officially appointed representatives from 40 different Governmental and non-governmental institutions and private and the academic sectors.

Lebanon prepared and submitted its Initial National Communication (INC) to the UNFCCC in 1999. The second one was prepared in 2011; a major improvement over the Initial National Communication to the UNFCC refers to the climate modeling effort, as for the first time a specifically developed regional model that targeted Lebanon was used (MoE, 2011). The third and latest national communication report was presented on November 2016 (MoE et al., 2016). It is the most recent update of the developments that have taken place in Lebanon on climate

change adaptation, mitigation and reporting levels. The report comprises an updated national greenhouse gas (GHG) inventory for the year 2005 and time-series covering the period from 1994 to 2012, an updated analysis of potential GHG mitigation measures, a vulnerability and adaptation analysis, in addition to policy recommendations[29].

Several ministerial initiatives were designed in the last decade to address climate change, namely:

- The Low Emission Capacity Building project that started in 2013 through MoE as part of the EU-UNDP Low Emission Capacity Building Programme. It is currently developing the required national capacities to improve Lebanon's GHG inventory infrastructure, develop Nationally Appropriate Mitigation Actions (NAMAs), and design a Measurement, Reporting and Verification system in order to achieve a low emission development.
- The Technology Needs Assessment project, funded by the Global Environment Facility, managed by United Nations Environment Programme RISOE Center (URC) and executed by the Ministry of Environment (MoE). It aims at assisting Lebanon in identifying and analyzing priority technology needs to mitigate GHG emissions and reduce the vulnerability of sectors and livelihoods to the adverse impacts of climate change and to form the basis for a portfolio of Environmentally Sound Technology projects and programmes (MoE & UNEP, 2012).
- The MISCA interface, a platform developed in 2018, with the support of the EU-ClimaSouth project in order to track emissions and mitigation progress. A pilot phase includes the energy sector inventory and mitigation since it is the most emitting sector in Lebanon. Through this platform, Lebanese institutions will be able to inform climate change and sustainable development decision-making and enhance the reporting to the UNFCCC.

In the agriculture sector, one of the most affected sectors by climate change, several projects aim at supporting rural agriculture, combatting desertification, and promoting new methods to address climate change. These projects are either funded by the Ministry of Agriculture (MoA) or by international donors and organizations.

In general, governmental sectorial policies as they stand today would not be sufficient or adequate to address climate change. Moreover, weak inter- ministerial coordination structures make it very difficult for the central Government to plan and manage these issues. Prerogatives are fragmented between Ministries, and plans tend to multiply. Furthermore, standards- if existing (such as in the case of air pollution)- are not enforced and regulations encouraging more

[29] https://climatechange.moe.gov.lb

sustainable and climate change-responsive attitudes at the social and economic levels are not yet implemented.

3.1.3. Develop systems to reduce the impact of natural and human-made disasters

Lebanon is subject to a wide range of natural hazards: earthquakes, tsunamis, and small-scale threats like floods, wild fires, landslides, and drought. These are exacerbated by different factors such as haphazard housing, uncontrolled urban expansion, lack of resources and regulation codes implementations, as well as periods of instability and armed conflicts[30]. Nevertheless, dense urban cores are more prone to certain types of risk such as flooding due to the excessive impermeability of soil.

Located on the Dead Sea fault, between the African and Arabian tectonic plates, Lebanon – particularly southern Lebanon – is at risk of earthquakes. Although there has not been a major event since 1759, when an earthquake killed approximately 40,000 people in Beirut and Damascus, earthquakes are expected every 250 to 300 years (Harajli et al., 2002). Moreover, northern Lebanon is vulnerable to flooding, particularly in urban areas of al-Fakeha and Ras Baalbek, which suffer from flash floods affecting mainly agricultural (UNDP, 2018).

Forest wildfires are common in the summer because of the hot, dry climate and strong winds (GFDRR, 2017). Over a 40-year period, forest fires have destroyed more than one quarter of Lebanon's forests (Ziadé et al., 2014). Some areas are also prone to landslides such of West Bekaa, a particularly hilly and mountainous area (UNDP et al., 2016). As for tsunamis risk, the coast of Lebanon, where the country's population is heavily concentrated, is at medium risk, meaning there is a more than 10% chance that a potentially damaging tsunami will occur in the next 50 years – a risk that is likely to increase due to rising sea levels (GFDRR, 2017).

In January 2018 a landslide caused by heavy rains partially blocked the Chekka– Batroun highway – the main road between Beirut and Tripoli – injuring three people (ibid). The winter episodes of extreme weather are particularly affecting the refugees' camps where more than 800 sites suffer each year from flooding. As it has experienced relatively few major natural hazard-related disasters in its recent history, Lebanon is considered to be facing low disaster risk relative to other countries in MENA (ODI et al., 2019).

The National Emergency Response Committee is a key authority in charge of disaster risk monitoring, planning and response. Established in 2010 by the Lebanese Government, it consists

[30] Mainly the oil spill from thermal power plants south of Beirut caused by Israeli bombing during the Israel–Lebanon war in 2006 (UNEP, 2007).

of 22 members representing the different Ministries. It is responsible for the development of: (1) a general framework for combating disasters, (2) a detailed contingency plan to respond to threats from various types of disaster and (3) an emergency management plan when a disaster occurs. Another Committee is the High Relief Committee that was formed in 1976. It is the main body responsible for DRM, and became responsible for both the prevention and response phases of disaster management as a result of a modification of its mandate. The Government also established an inter-Ministerial crisis cell, and facilitated service provision through public institutions. Some ministries have internal divisions tasked with disasters' management, such as the Division of Environmental Technology in the Ministry of Environment.

Other stakeholders include the Order of Engineers and Architects in Beirut that has formed an Architectural Committee at the level of the Higher Council of Urban Planning (HCUP) to assist the Council in setting the design and quality criteria of proposed planning and architectural projects. The ministry of agriculture, the CDR, the Lebanese Army, the Civil Defense, a number of universities, private and public laboratories and observatories (LARI, Ksara and others), and also Municipalities, Lebanese Red Cross, and the International Committee of the Red Cross, have also various roles contributing to disasters and risks management.

The National Master Plan for the Lebanese Territory (NPMPLT) provides recommendations for landslides, floods, desertification and earthquakes. On an individual project level, the earthquake hazard is being dealt with by following certain international codes. The tsunami hazards are not being considered for any of the major infrastructure projects along the Lebanese coast, all of which is prone to Tsunamis. As for the forest fire prediction, it is currently being carried out by different bodies, using different methodologies. The AFDC, an independent NGO, also produced fire risk maps, and LARI (Lebanese Agricultural Research Institute) also produces fire indices.

In the last few years, significant efforts were put in the strengthening of the country's abilities and resources in DRRM. According to ODI, 2019, Lebanon is regarded as one of the leading countries in the region in the design and enforcement of DRRM policies, plans and legislation, and has been vocal in its support for the Arab States regional DRRM mechanisms and the Sendai Framework. In fact, the existing DRRM plans and frameworks have been reviewed several times, and a number of units were formed. A DRRM Unit attached to the Prime Minister's Office and supported by UNDP was formed in 2009. The Unit aims to promote resilience by improving emergency preparedness, establishing protocols and structures that respond quickly to crises, and supporting early recovery processes' (ibid), and a national operations room for crisis management and the protocols outlined in the Lebanon Crisis Response Plan (GoL & UN, 2018) have been tested through high intensity simulations. The CNRS plays an important role, as it has completed mapping for floods, hazard, landslide and fire-prone areas at the national level.

According to the World Bank, DRRM national policies are not supported by adequate budgets, and local authorities, which play a critical role in DRRM, are often not aware of national policy changes and lack the know-how to contribute effectively to DRRM. In fact, national-level DRRM initiatives remain isolated due to the Lebanese government's centralized institutional system.

On another note, local observatories with various scales, scopes, and methodologies have been established in Lebanon in the last two decades. These observatories are important data gathering and treatment tools supporting local authorities, as for example, the Tripoli Environment and Development Observatory (TEDO). At the local level, several initiatives can be mentioned as well, such as the city of Byblos that organized a tsunami simulation with the UN Development Programme (UNDP) and the Lebanese army. The city of Saida has also developed an Urban Sustainable Development Strategy with the support of Medcities. In 2015, the city engaged in peer-to-peer DRRM knowledge-sharing with Dutch cities through an international exchange programme, which helped in the development of the Saida Resilience Action Plan, with technical support from UNDP (ODI et al., 2019).

In general, despite all efforts made in this sector, many gaps can still be found, as many of the efforts are still directed to response and not enough on prevention, mitigation and reduction. The lack of major disasters in the collective memory and the continuously pressing living conditions, make the investment in DRRM challenging.

3.2. Sustainable Management and Use of Natural Resources

3.2.1. Strengthen the sustainable management of natural resources in urban areas

Lebanon has a palette of natural characteristics, mainly in term of water resources and green cover. It was also considered as having more water resources per capita than its neighboring countries. This mainly results from its diverse topography and high rates of precipitation. These water resources are progressively challenged with the decreasing of precipitations and the aggravated water pollution. As a result of its green cover, Lebanon hosts a diverse set of natural and agricultural plant life, with the highest densities of floral diversity in the Mediterranean basin. Overall, there are 14 natural reserves, 28 protected forests and 17 natural sites[31].

In terms of national regulations for the protection of natural reserves, the Law No 130 of 2019 is the latest issued in this context. It establishes the following objectives (i) protection of the components, (ii) reconstruction of the natural biodiversity landscape; (iii) ecosystems preservation; (iv) protection of birds, as well as both sedentary and migratory species; (v) preservation of landscapes and distinctive natural features. Protected areas are divided into four

[31] According to National News Agency

main categories (1) nature reserve; (2) natural park; (3) natural landmark sites; and (4) Hima (sites including a natural ecosystem and may incorporate another sustainable modified part, i.e., through the sustainable use of natural resources). According to this law, a volunteer committee is established for each natural reserve, supervising the good management of the natural reserve and setting and implementing its annual financial budget. The law establishes also a financial mechanism to reserves, based on national budgets and donations.

Urban agriculture in Beirut struggles in a context of poorly regulated urban expansion. It has adapted to urban proximity by intensifying production, developing greenhouse production and diversifying cultivated species (Tohmé-Tawk, 2003).

It has also been able to benefit from indirect agricultural maintenance strategies for urban planning reasons, such as the preservation of buffer spaces between industrial and residential areas (Debs, 2004). However, agriculture has also been able to maintain itself for local geopolitical reasons specific to Lebanon, for example due to the relationship of land competition between religious denominations which seek to assert territorial control lost during the civil war (Verdeil, 2004). In this context, agricultural land with waqf status occupies a significant area and in particular on the properties of Christian religious institutions (Lteif & Soulard, 2019).

3.2.2. Promote resource conservation and waste reduction, reuse, and recycling

In 2005, the MOE prepared a draft law on Integrated SWM that was submitted to Council of Ministers (COM) in October 2005. The draft law was approved by the COM in January 2012 and sent to the parliament for ratification in March 2012 (UNEP, 2019). Lebanon's parliament passed the law on September 24, 2018. However, the law is still not enforced, due to many technical and political constraints, mainly lack of training, low level of fines, and political interferences. In 2015, the closure of one of the country's largest landfills in Naameh, and a sudden halt in waste collection, triggered protests and heated debates about restructuring the sector. Human Rights Watch found in a December 2017 report that burning waste at more than 150 open dumps was risking the health of nearby residents. The practice violates Lebanon's obligations under international law, including the government's duties to respect, protect, and fulfill the right to health[32].

On another note, in a country that is suffering from daily challenges related to food security, political turbulences, unemployment and financial challenges, conducting sensibilization on environmental issues such as waste reduction and recycling practices seems a challenge. In general, these practices are still very limited. Some local authorities have conducted awareness campaigns for citizens, mainly sorting-at-source and recycling, but most of them are uncapable

[32] www.hrw.org

to maintain the continuity of these efforts, and to institutionalize participative approaches for an inclusive SWM system. The challenges of engaging citizens is more challenging in large municipalities (DRI, 2019c).

Both governmental and local institutions have responsibilities in SWM, which leads to overlapping mandates. However, municipalities in Lebanon lack the human and financial capacities to manage this sector. Despite the existence of a range of fragmented technologies and practices – including different forms of sorting, recycling, landfilling, composting and, most recently, waste-to-energy (ibid) – municipalities are still in a learning process in terms of securing funds, providing infrastructure, partnering and involving citizens.

In parallel, there is an informal market of waste collection and recycling that is overlooked by the central and even local authorities. This sector is increasingly playing a role in the recycling process. It is estimated that this sector constitutes 10-15% of the solid waste management system. The informal channel, especially in the Beirut agglomeration area, is considerable as it is estimated to reach 500 tons per day, 80% of which is diverted into recycling (Azzi, 2017; IFI, 2017).

There is also a growing number of NGOs, and young ecofriendly organizations, that are specialized in solid waste recycling. Many of them recuperate recyclable sorted waste from households and businesses, treat them and sell them back as raw material to industries (Giannozzi, 2017; Salem, 2018).

Despite all limitations, some of the most promising initiatives are conducted by local authorities. In fact, since 2000, municipalities are contributing through smart initiatives to the solid waste sector reform. For example, in 2000, Zahle Municipality, with the support of international organizations, established a treatment plant to replace the existing open dumping site that serves as a recycling and composting facility as well as a sanitary landfill (Farah & Gemayel, 2016). Another case is the city of Saida, which hosts the first large-scale waste-to-energy site in Lebanon. This facility resulted in removing the hazardous “waste mountain” and servicing towns and villages in the area and its vicinity. Also, by partnering with local stakeholders, Bikfaya and Beit Mery municipalities managed to implement and operate recycling centers disposing of nearly all municipal solid waste (Farah & Verdeil, 2016). Although such examples demonstrate successful attempts of SWM by local authorities, sustainability remains a prevailing challenge, as financing is mainly attained from international donors.

3.2.3. Adopt a smart-city approach that leverages digitalization, clean energy, and technologies

Lebanon's Digital Transformation Strategy 2018 Vision states the following: "By 2022, we will transform Lebanon to one of the most advanced digital governments in the region". The government will be a platform to better serve citizen, businesses, and wider society and to enable people help each other (OMSAR, 2018).

In the education sector, the Lebanese national strategy 'Teaching and Learning in the Digital Age' states that Lebanon's National Educational Technology Strategic Plan focuses on the contribution of new technologies to improve teaching and learning and emphasizes the importance of social media. Online teaching methods were facing important obstacles related to structural, pedagogical and technical aspects. Many of these challenges were overcome with the COVID-19 related measures and lockdown, where all educational institutions in Lebanon shifted to online teaching. Similar to the technical recognition committees established at the MEHE for licensing new programs in the various disciplines, it is critical that a similar technical committee is established for licensing online programs, in close collaboration with the other technical committees at the Ministry (Addam El- Ghali & Ghosn, 2019).

In the governance sector, OMSAR has participated and launched various initiatives in support of e-government attainment. OMSAR's role is linked with a close partnership and working relationship with all the key ICT players in the public sector, private sector, and academia. Moreover, OMSAR has well-established core competencies in the fields of ICT designs and implementations, modern procurement procedures, and institutional and legal framework developments. It has also given technical inputs to current drafts of digital legislations as well as to cyber security management of web hosting provisions. Although these activities have continuously made significant improvements, lots of effort is still needed to meet the expected growing needs in this domain (OMSAR, 2018).

In the telecommunication sector, advanced and innovative new mobile services such as the 4G LTE services were launched in May 2013. As of December 2013, there were around 400 sites (200 sites in each company) located in Central Beirut. As of December 2013, the number of 4G subscribers reached 2,000 (BLOMINVEST BANK, 2014).

In general, the ICT sector in Lebanon has witnessed extensive government attention and reform over the last decade that has supported its growth over the last decade. In 2018, ICT contributed to around 2.1% of the nation's GDP, the equivalent of USD 1.1 billion, and expanded at an annual rate (CAGR) of 4.8% since 2004, from USD 565 million. The sector is estimated to employ around 11,000 people with a large majority of skilled professionals (IDAL, 2020).

‘Smart Cities’ have started to emerge lately; Beit Misk is the first smart city in Lebanon; it is a private community that includes digitizing the physical elements of the city, adding a layer of machine learning and artificial intelligence to provide data insights and predictive analytics to guarantee the quality of the air (Rogerson, 2017).

4 - BUILDING GOVERNANCE STRUCTURE

4.1. Decentralization to Enable Subnational and Local Governments Undertake their Assigned Responsibilities

The number of municipalities in Lebanon is high relative to its surface area and number of residents. In fact, there are 1108 municipalities, of which 70% are small in size. The majority of municipalities lack financial and administrative capacities for service provision. Many Municipalities have formed UoMs which have become important actors in the context of decentralization. As of today, there are around 60 UoMs, of which more than 30 were established in the last 10 years. Some Unions have further pooled their resources in order to fund or develop regional development projects.

Municipalities are responsible for the provision of public services including the construction and maintenance of roads and highways, the management of hospitals and schools, the collection and disposal of waste, local policing and maintenance of public safety, as well as authorizing and regulating zoning, housing, healthcare, commercial establishments and public amenities within their jurisdiction (DRI, 2019a; UNESCO et al., 2017).

After a long stagnation between 1966 and 1998, and following debates and mobilizations demanding the reinstatement of the municipal system, the government held the first post-war local elections in 1998. Municipal elections have reinvigorated Municipal life, engaged citizens at the local level and provided an impetus for decentralization in the country. However, the increasing number of municipalities has made them smaller and weaker and highly dependent on external funding.

Unions of Municipalities became increasingly active in the last twenty years. Their number has rapidly increased since 2000 – from 13 unions in 1998 to more than 60 in 2021, with now 75 percent of Lebanon’s municipalities grouped under the banner of unions. Many UoMs have been involved in developing their own strategic planning frameworks, building on their territorial offerings and moving toward local economic development. The majority of these projects and initiatives have been largely supported by international organizations, UN agencies, and the CDR.

Despite many active unions, many struggle to address planning needs in their territories. While a significant number of strategic plans were prepared in the last decade, almost two-thirds of the unions haven't developed any master plan or vision (UN-Habitat, 2016; Darwich, 2018; DRI & VNG, 2020). This is due to many reasons mainly the lack of resources and the lack of expertise, in the absence of any guidance from central authorities in the domain of planning.

Despite the challenges they face, local authorities are the main actor providing services at the local scale, especially with the inefficiency of central authorities at the local level; they are also seen by political parties and various donors as key actors of development, governance and service delivery.

The Ta'ef Agreement (1989), which forms the Constitution of the Lebanese Republic, includes a series of provisions responding to the need to restructure administrative divisions in Lebanon and enhance administrative decentralization. In practice according to the Ta'ef agreement, the Lebanese model combines aspects of deconcentration at the level of the eight Mohafazas (Governorates) and the 25 Cazas (administrative districts), with administrative decentralization at the Municipality level (UPLoAD, 2017).

The law of municipalities of 1977 that defines and organizes local authorities in Lebanon is the main legal document framing local authorities functioning in Lebanon. It has many weaknesses as it provides only vague conditions for the creation of new local authorities and gives wide control to the Ministry of Interior over approval of municipal budgets. According to this law, municipalities have a broad range of powers. However, with the exception of some larger municipalities, the services Lebanese municipalities provide are largely limited to marginal activities such as street cleaning, road 21 asphalting, street lighting, setting up road signs, rehabilitating and extending the sewage and water drainage systems, etc. (Harb & Atallah, 2015). At the Governmental level, the Directorate General of Local Administrations and Councils at the Ministry of Interior and Municipalities has the mandate to control and support Municipal actions. The Directorate has produced several guides and training programs, with a special focus on financial issues.

The municipalities' autonomy is challenged, and as a result their capacity to govern. Despite the broad prerogatives, the majority of municipalities are severely understaffed, and highly dependent on the Independent Municipal Fund. Over a third of municipalities do not even have a single full-time paid employee and more than two- thirds need to hire new employees but lack the financial means to do so (LCPS, 2015). The Independent Municipal Fund transfers resources from central to local governments and is the main source of revenue for several municipalities (36% on average, going up to 90% for smaller municipalities). While municipalities have the

right to collect taxes directly, the rate of collection varies greatly from one municipality to another. On average, it is quite low and estimated to be around 50% (Harb & Atallah, 2015).

On another note, the Minister of Interior and Municipalities as well as governors and district commissioners supervise the local authorities; they have broad powers that constrain municipal autonomy. They can approve and initiate fund transfers, approve projects over a certain value (from as low as LBP 10 million) and can delay any decision on the basis of security (Haase & Antoun, 2015). This central administrative oversight over municipalities, and the excessive control of the majority of administrative, financial and technical aspects, is considered as a major impediment to municipal authority over the local territory, and significantly challenges municipal relations to the central state.

The lack of total autonomy is also a challenge at the level of unions of municipalities, who also depends for their financials on the payments of the Independent Municipal Fund. In fact, according to the Municipal Act (1977), the union is a financially autonomous legal personality that manages its own finances and is free to act on its own budget. However, it is not administratively autonomous, since the union council is not directly elected by the people, but rather composed of representatives of member municipalities. Also, a municipal union is established – or dissolved – by virtue of a government decree that the Minister of the Interior and Municipalities advises, on his own initiative, or at the request of the member municipalities.

The 1977 Municipal Act does not specify the size of the unions (population, area, number of member municipalities) nor does it identify specific areas of action as it does with municipalities. Hence, there is a large variation in terms of unions' size, area, population, urban/ rural contexts, institutional capacity, etc. This variation impacts on the unions' resources and their capacity to provide services and is reflected in the wide differences in budgets (ranging from USD 0.3 million to USD 26 million), number of employees (ranging between 1 and 161), number of departments (ranging between 0 and 7) and number of specialized committees in the union's council (ranging between 2 and 19) (UPLoAD, 2017).

On the administrative aspect, most unions do not have the capacity to maintain a basic institutional capacity, and many do not have a formalized administrative structure. Unions also lack the core administrative units required by law; 22 percent of them do not have administrative and financial departments while 37 percent function without an engineering department (DRI & VNC, 2020).

Several bills are proposed in Parliament to amend the present municipal law or replace it by a new enlarged decentralization law. Concerned parliamentary commissions have been discussing

these bills for several years. These proposals, however, lacked a clear demarcation between the Central Government, its regional antennas, and the elected decentralized authorities. A proposed decentralization law was drafted in 2013, which proposes large reforms for defining and operating local authorities. The suggested reforms provide sustained financial mechanisms and more equitable representation in municipal councils by giving quotas for non-registered residents and women. There seems to be a direction towards the creation of new district-level elected councils that would have large prerogatives at district level. The 2013 proposed new decentralization law promotes the strengthening of Cazas and their decentralization to become key developmental actors. The law mandates Cazas to provide a wide range of services as well as provides them with the necessary fiscal resources. It also gives them new responsibilities including launching developmental projects in the sectors of infrastructure, transportation, environment, and tourism, among others. Such functions, previously the Government's responsibility, would be re-assigned to Cazas as said functions are considered to be compatible with geographic areas.

4.2. Linking Urban Policies to Finance Mechanisms and Budgets

Urban policies are not recognized as a separate category of policies in Lebanon. While there is no law that is specific to urban issues, many laws include legal texts that address them (Lamy, 2014). Texts specifying the production and management of urban spaces mainly include: real estate property code (1930), building code (2004), code on urban planning (1983), code on the environment (2002), decree on the protection of the coastline (1966), laws on the protection of natural sites (1939) and forests (1966), decree on the protection of historic monuments and antiquities (1933), decree on the location of certain industrial and commercial buildings (1932) and the ministerial decree on the NPMPLT (2009), according to UN-Habitat (2016).

Several stakeholders shape the existing planning framework in Lebanon. Within this context, the governance dynamic is complex; it includes central government agencies, ministries, local authorities and others (UN-Habitat, 2016). Urban policy fields are either addressed locally by local authorities in the frame of their urban and territorial development policies or by central institutions affected to spatial planning (DGU) or to coordination of large project programming and implementation on behalf of ministries (CDR).

In 2017, and with coordination with UN-Habitat, the minister of state in charge of planning has tried to push for the adoption of National Urban Policies frameworks. This attempt was brief in time and was dismissed in the subsequent government, but it was continued by UN- Habitat. Recognizing the importance of urban policies, UN-Habitat has been engaged in a process of assisting national governments and sectoral ministries and directorates in leading an evidence-based policymaking process through the NUP process. According to the UN-Habitat National Urban Policy (NUP) Guiding Framework (UN-Habitat, 2016), NUP is defined as "a coherent set of decisions derived through a deliberate government-led process of coordinating and rallying

various actors for a common vision and goal that will promote more transformative, productive, inclusive and resilient urban development for the long-term (UN-Habitat, 2014).

In 2018, the international community convened on 6 April 2018 for the 'Conférence économique pour le développement, par les réformes et avec les entreprises' (CEDRE). The Lebanese government presented the Capital Investment Plan (CIP) that provides details on 269 infrastructure projects, in all key sectors of the economy including electricity, water, and transportation, in order to ameliorate Lebanon's dilapidated public infrastructure. The aim of the conference was for the Lebanese government to seek funding from international donors, who eventually pledged more than $11.06 billion in soft loans to finance the CIP (Atallah et al., 2019). Following the recent economic and political crisis, no progress has been achieved yet in this regard.

4.3. Legal and Policy Frameworks to Enhance the Ability of Governments to Implement Urban Policies

The CDR was created in a context of a need to coordinate development and reconstruction efforts by the different ministries, mainly for large infrastructure and urban development projects. It was created by virtue of legislative decree No.5, dated Jan. 31, 1977, which describes it as "a public institution with financial and administrative autonomy and which is directly accountable to the Council of Ministers." The decree also stipulates the abolishment of the Ministry of Public Planning. According to the decree, the council has many important and diverse tasks, including 1) drafting reconstruction and development plans, 2) outlining budgets, 3) outlining a general guidance framework for civil regulation, 4) advising the Council of Ministers on economic and financial relations with states and bodies, 5) preparing and promulgate statistics related to all aspects of economic and social activity, and others. CDR has the right to sign deals for domestic and external loans, which can also be in the form of bonds. CDR has also the right to lend money to public institutions and municipalities.

The CDR has played a central role in post-war reconstruction projects; it has important human and financial resources. The CDR resources consist of funds allocated from the public budget, loan contracts, financial transfers, and treasury loans (Information International, 2017).

Specific laws were developed in the post-war period for large urban projects including those that were used for SOLIDERE for example. The reconstruction of Beirut's downtown, was undertaken starting 1994 by a private real estate company, Solidere, extending over an area of 191 hectares that mainly includes Beirut's historical core. Solidere was founded by the late Prime Minister Rafic Hariri and is widely considered as the emblem of his ten-year era in Lebanese post- war history (Ghandour & Fawaz, 2010).

In relation to legal and policy frameworks to enhance the ability of governments to implement urban policies, UN-HANITAT has developed in 2020-2021 guides for mainstreaming key sectors (housing and transport) in Lebanon's national urban policy, in addition to a report showing the inter-sectoral linkages between housing and transport, to emphasize the connectivity in public policymaking.

4.4. Strengthen the Capacity of Local and Subnational Governments to Implement Local and Metropolitan Multilevel Governance

Besides central authorities and municipalities, union of municipalities represent a central platform of cooperation between municipalities. The growing number of unions can be explained by the need and interest of neighbouring municipalities to work together, especially

on matters that present common geographic or technical aspects, such as solid waste management, environmental protection and water pollution, and education and health facilities. Political interference also exists in the process of creation of unions, as unions are often politically backed by local or regional politicians.

In fact, one aspects of this interference are the attempts of politicians or politically connected real estate lobbies that seek to influence the price of land, through introducing changes to spatial planning regulations in their favor. The possibility of reaching more funding resources is also a main driver for the creation of unions.

In fact, international organizations and UN agencies have been a main supporter to unions in their attempts to ensure development in their localities. While inter-municipal cooperation frameworks are limited and legal bases for metropolitan governance are absent, unions of municipalities ensured an internal cohesion and cooperation between the member municipalities. The solidarity and common commitment between their member municipalities seem to have a positive impact on governance, providing opportunities for partnerships and joint projects and plans. Even the sectarian diversity is considered as an asset and an opportunity rather than an impediment to local development (UNESCO et al., 2017; DRI, VNG, 2020). However,

these new frameworks provided by unions do not often contribute to ensuring additional competent human resources.

It is to be noted that unions of municipalities have the legal power to elaborate their own regional and development plans, however do not have a full autonomy of decision when it comes to binding and statutory master plans. Master plans are elaborated by experts and approved by the Ministry of Public Works and Transport's Directorate General for Urban Planning (DGUP)

before they are validated by the government through a decree. Moreover, the DGUP can develop a master plan independently from the concerned local authority for which it is addressed and which has only one month period to review before it becomes effective. This regulatory aspect seems to be disempowering, as the majority of unions and local authorities didn't

develop master plans. Other reason is the lack of internal expertise, and engineering and planning committees that are crucial to develop plans and studies, and also to issuing permits.

In fact, despite the relatively flexible framework that allows unions to have specialized units, committees, guards, firefighting and rescue units, the lack of financial resources prevent them from benefiting from these prerogatives.

In some cases, there were some attempts of several unions collaborating together in matters that present common interest in their territories. One example is the collaboration of unions in the two casas of Rachaya and West Bekaa in submitting a proposal to a EU call, addressing solid waste issues. Another case is the collaboration between the unions of Zgharta- Ehden, Koura, Al Fayhaa, and Donniyeh in creating an agency for urban and socio-economic development. This concerned mainly localities that are located geographically in the watershed of Qadisha-Abu Ali River.

4.5. Promote Participatory, Age- And Gender-Responsive Approaches to Urban Policy and Planning

In Lebanon, a relatively liberal-oriented country, urban development is mostly seen as an entrepreneurial economic activity on private land where public involvement is not legitimate or even relevant. Public participation in urban planning and development therefore remains marginal. Channels enabling citizens to take part in contributing to urban development processes are limited because the voting system leads to a disjointed situation between territories of voting and territories of residency, in planning and development processes, existing legislations do not recognize citizen participation.

However, despite the lack of recognition of participation as an intrinsic component of the urban planning and development processes, forms of participation can be seen especially at the local level: Municipalities have been involved in basic forms of participatory practices namely through leaflets, publications, websites, town hall meetings, provision of claim boxes, and periodic meetings- such meetings aim to advertise Municipal action and strengthen relations with the local population, with limited impact on decision-making and urban development.

One example of the use of the participatory approach in Lebanon in the past two decades was the 'Assistance to the Rehabilitation of the Lebanese Administration (ARAL)' Program, supervised by the Office of the Minister of State for Administrative Reform (OMSAR) and funded by the EU. The aim of the program was to promote new participatory practices of local governance and to facilitate consultation and dialogue between elected officials and partners in civil society in order to establish local development plans. For each of the regions concerned by the program, consultative platforms were put in place to select and prioritize projects for local development.

At the local level, and despite the fact that Municipal Act does not explicitly valorize the approach of participation, there has been a growing practice among mayors and union presidents using various mechanisms to ensure communication with the local population. This can take different forms such as workshops, meetings, surveys, volunteers committees, as well as online participation and social media-based communication.

Although there is no law that require participation of citizens decision-making processes, the Access to Information law of 2017 imposes on public bodies to share disclosable information and date produced or gathered by these bodies, on their websites and when requested by citizens. However, unions and municipalities' officials are skeptical about the publication of information, arguing that civil society or opposing parties could take advantage of this information and raise controversies building on it. Hence regular publication and information sharing is still rare, especially when it concerns financial documents; in fact, not all unions and municipalities easily share this type of information considered as 'very sensitive'. Despite these general tendencies among local authorities, several municipalities such as Zahle and Barbara, and unions such as Danniyeh and Jabal EL-Sheikh, publish their decisions regularly. In general, almost all local authorities have websites or Facebook pages as main communication means.

Already since 2000, the greater involvement of international organizations and donors in funding of large urban and infrastructure projects has pushed for more consultative processes in these projects. However, this is often done ad hoc without mandatory implications for the projects' processes. Hence, local authorities are still selective in the type of information they share, favoring those of self-promotion rather than sharing crucial information such as budgets and tenders for example. However, development projects, often the result of international cooperation agreements, do incorporate a participative approach in their methodology, a condition often set by donors. The most common form of participation is the involvement of established local actors (private sector, faith- based organizations, local notables, NGOs, etc.), which sometimes amount to partnerships and the pooling of resources for certain projects. In some cases, long-term coalitions have developed between these actors.

4.6. Promote Women's Full Participation in All Fields and All Levels of Decision-Making

Lebanon is signatory to the ILO's Conventions on Decent Work and the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW). A unified contract was introduced in March 2009 that defined responsibilities for both employers and workers, securing increased rights for the latter.

CEDAW Article 7 "States Parties shall take all appropriate measures to eliminate discrimination against women in the political and public life of the country and, in particular, shall ensure to women, on equal terms with men, the right: (a) To vote in all elections and public referenda and to be eligible for election to all publicly elected bodies; (b) To participate in the formulation of government policy and the implementation thereof and to hold public office and perform all public functions at all levels of government; (c) To participate in non-governmental organizations and associations concerned with the public and political life of the country."

In general, Lebanese women have been more involved in civil work than in politics, creating strong activism in lobbying for women's rights and fighting against gender discrimination. There is an active public sector/civil society in Lebanon that is making an impact with regards to women's issues[33].

For instance, a notable movement towards gender equality in the judiciary public sector led to the growth in the number of women studying law and becoming judges from 2.51 per cent of the judges in 1980 to 47.7 per cent in 2019 (ESCWA, 2019).

In 2013, after five years of lobbying, civil movements, supported by local NGOs, were able to achieve parliamentary approval over a draft law granting women protection against domestic and gender-based violence.

According to Oxfam, significant involvement of women in politics at the national level is still lacking; however, campaigns to involve more women at the municipal level and in political parties have been effective and require further support (Oxfam & AUB, 2016). In fact, many independent and politically affiliated women intend to participate in the 2022 elections; besides,

[33] ABAAD (Resource Centre for Gender Equality), The National Committee for the Follow up of Women's Issues (CFUWI), Collective for Research on Training and Development – Action (CRDTA), Economic and Social Commission for Western Asia (ESCWA), Al Jam3iyat Haqooq, KAFA (enough) Violence & Exploitation, Marsa, National Commission for Lebanese Women (NCLW), Red Cross, United Nations Population Fund (UNFPA), Women in Front (WIF) and the Young Women's Christian Association (YWCA) and Counseling Office for Women in Politics- COWP- is a Women in Front (WIF) project funded by the Embassy of the Netherlands in Lebanon.

those women are more likely to continue working on achieving their goals, especially after immensely learning from their first electoral experience in 2018 (WIF, 2018).

5 - PLANNING AND MANAGING

5.1. Integrated and Balanced Territorial Development Policies

The National Physical Master Plan for the Lebanese Territories (NPMPLT) is the main legal document that provides an overall understanding of the state of Lebanese territories and orientations for further land-use and infrastructural and territorial development at the scale of Lebanon. It was adopted as a decree in 2009. serve as a guideline for all stakeholders participating in the national and land use development, starting with public bodies, administrations and autonomous offices. The recommendations of this study for the urban planning sector, as decreed by the Council of Ministers, will be imposed, among others, on local urban planning master plans that will be elaborated or reviewed afterwards (CDR, 2005).

The NPMPLT defines different urban agglomerations, main and secondary cities as well as smaller towns and rural areas each with specific importance and possible role in the development of Lebanese territories. It promotes an integrated and balanced territorial development at the national level.

The NPMPLT promotes balanced development across different cities and regions, while ensuring complementarity in roles (CDR et al., 2004). This plan was a first in defining areas as “urban”, “rural”, “agricultural” and “natural”. More importantly, the plan defined a hierarchy of urban areas: (1) The Central Urban Area (CUA), including the Beirut agglomeration and other urban areas in Mount Lebanon connected to it; (2) The gate- cities of the CUA: Jbeil and Saida; (3) Tripoli as the large metropolis of the North; (4) The growth centers of Zahle and Nabatieh; and the patrimonial cities of Baalbek and Tyre. In addition to these agglomerations, the NPMPLT recognized the existence of smaller towns, many of which constitute administrative centers of qada’s (UN-Habitat, 2018).

The NPMPLT is supposed to be taken in consideration in planning and project development by all public institutions. It is conceived to serve as a comprehensive land- use plan for the entire Lebanese territory and serves as a reference for spatial development in

public agencies, regional, and local governments. However, it does not represent a strategic development plan; it only provides general guidelines and lacks implementation procedures at different levels, fostering the independent work of various planning actors (Harb & Atallah, 2015). In fact, according to a survey done in 2018, since the NPMPLT’s issuance, forty-two general and detailed master plans have been ratified and sixty-nine amended, yet only five of

them have mentioned the NPMPLT. The rest of the decrees have not even used the NPMPLT's vocabulary[34]. Moreover, the NPMPLT is binding on public institutions and namely by the DGU. In fact, DGU relies makes use of the NPMPLT when elaborating a master plan or a land use plan for a region without specific zoning regulation.

Since the years 2000, at the regional and local level, there has been a surge in strategic territorial and urban planning and development schemes. Strategic planning in Lebanon has been evolving over the past decade, with a significant number of internal displaced population settling in urban and rural regions, due to conflicts and wars in Lebanon. The Syrian crisis and its flow of refugees have accelerated this development. In 2019, these plans cover 41.6 % of the territory.

These plans are in several cases developed through international funding. They provide local authorities with roadmaps for their actions and allow several municipalities to work together towards a shared development goal. UN agencies (UN-Habitat, UNDP, UNHCR, etc), World Bank, the European Union (EU), Agence Française de Development (AFD), the Italian Cooperation, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), are among the main IOs that funded regional development projects. The support takes the form of loans, direct financial assistance or capacity building (MoE, 2011). However, many questions are raised as to the real implementation of these plans, especially in the context of crisis of the last years.

5.2. Integrate Housing into Urban Development Plans

Overall, housing provision is left to the real- estate market and the construction industry. Nevertheless, the issue of housing provision has a considerable weight on processes of masterplans and strategic plans' development at the local level[35].

In local negotiations around masterplans, and especially land use zoning perimeters and construction ratios, the issue of access to land for housing construction is usually the primary argument in favor of allowing urban sprawl. The real estate sector was a main contributor to the economy, especially during the post-war reconstruction. Mutual interests resulted in partnerships between public authorities, political actors, and real estate/private investors. With the lack of the enforcement of urban planning regulations, and within a system favoring the real estate market, concerned public authorities were flexible with real estate developers (Krijnen & De Beukelaer, 2015). Developers took advantage of high construction ratios, leading to arbitrary building developments. This has also contributed to urban sprawl.

[34] https://www.jadaliyya.com/Details/38067

[35] For more information, see Guide for Mainstreaming Housing in Lebanon's National Urban Policy (UN-Habitat Lebanon, 2021).

Moreover, many local authorities support real- estate developers of large housing projects and facilitate administrative procedures as these projects are seen as source of local jobs and revenues for municipalities, through construction permits fees and habitation taxes.

5.3. Inclusion of Culture as a Priority Component of Urban Planning

According to the World Bank, Lebanon prides itself on its rich history of landmark thousands of years old heritage sites and stunning landscapes, as well as a hospitable culture that welcomes people from around the world[36]. However, since 2013, and the growing crisis related to security concerns, regional tensions, the Syrian refugees influx, and recently the COVID-19 and the dire economic crisis, Lebanon is witnessing a significant drop in culture, heritage and arts- related revenues and generated jobs.

Since 2003, the World Bank in partnership with the Government of Lebanon, the Government of Italy and the Agence Française de Développement have been jointly supporting a large project

of rehabilitation focused on five historic cities: Baalbeck, Byblos, Saida, Tripoli and Tyre. This has generated opportunities to communities to develop local economy and to provide employment. The project has also provided substantive contribution to infrastructure and basic services. In this context, the urban cultural heritage was mobilized and preserved as a key driver for local economic development.

According to a study by AFD and the IFL, Culture- related activities and investments contribute to 5% of the national GDP[37], and has generated in 2014 100,000 jobs. However, this sector, and particularly the cultural industries is increasingly suffering, in the absence of any governmental support. In fact, in the last government, the ministry of culture was merged with the ministry of agriculture. The already limited resources were often channeled by the minister to the agriculture sector.

Since 2019, the arts and culture sector are suffering from the combined crisis at all levels. For many organizations the situation is not tenable anymore. Already the sector had a precarious financial sufficiency before the crisis, as many cultural organizations depend on donations and support from embassies, community donations and local banks. Recently may theatres and cultural spaces have dramatically reduced their structure or even permanently closed.

[36] https://www.worldbank.org/en/news/feature/2016/08/08/supporting-lebanons-cultural-heritage-as-a-driv- er-of-job-creation-and-local-economic-development

[37] https://www.lorientlejour.com/article/1219728/-la-culture-au-liban-cest-5-du-pib-soit-plus-dun-milliard-usd-de-chiffre-daffaires-.html

At the central level, law 35; 2008 that created the ministry of culture does not define any authority or unit in charge of cultural and creative industries. Moreover, this sector has never been a priority in the national strategies; the budget of the Ministry of Culture constitutes 0,24% of the national budget.

On the other hand, urban areas have often a rich built heritage, mainly at the level of old cores' fabrics. This heritage, relatively well preserved, is a major contributor to local economy development. However, the built heritage is in general threatened by modern construction and real-estate investment especially in Beirut. The Directorate General for Antiquities is the main actor responsible for the protection of archaeological sites and built heritage. However, it lacks professional and financial resources that hinder its mission.

The Beirut Central District renovation project by the private company Solidere, has raised controversies around the destruction of a number of heritage buildings as part of the operation.

The company was accused to destroy large archeological areas during the excavation work, and the removal of buildings and structures that date back to many centuries. On his side, Solidere has used the built heritage in its area as a slogan for the promotion of its project: 'An ancient city for the future'.

The protection of urban built heritage is an issue that raises discussions on the legal level resulting in draft propositions and counter-propositions. Urban legislation protecting built heritage in Lebanon goes back to 1933; despite providing a very restrictive definition of built heritage, the legislation has not had significant amendments to date. The legislation focuses on the physical structure of the buildings while neglecting heritage and urban fabric matters. In 2007, a draft law was prepared to increase the scope of protection of built heritage to include a larger variety of buildings and urban fabrics. The draft was reworked in 2008, 2010, and 2015 and has yet to be adopted.

The Beirut blast of August 4 has resulted in the destruction of large surrounding areas. Hundreds of buildings dating back to the 18th and 19th century were damaged. These old buildings were protected by the government through freezing the development, as a way to protect the heritage fabric from replacement by real- estate development. In fact in September 2020, the parliament has voted for a law to protect these areas, through according to the Ministry of Culture the prerogative of setting a plan to rebuild the damaged historical area, and to control all works permits. However, it is not clear in the law how it will be dealt with old buildings that are not classified on the national inventory as heritage buildings – knowing that many historical buildings are not listed on that list, and that many controversies have always been raised in this

sense- and that the majority of affected buildings in the blast surrounding are not listed. Another concern is the eventual administrative process that often takes time, as well as the prerogatives overlapping between the DGA, Beirut municipality, and the various committees. These delays are a major concern as many buildings are threatened by the risk of collapse.

5.4. Planned Urban Extensions and Infill, Urban Renewal and Regeneration of Urban Areas

In parallel to the haphazard urban sprawl, urban extensions are also in certain cases the result of large urban development projects by public or private actors. In this category, there are the large-scale public parceling projects planned or developed by municipalities and the DGU in many big cities in Lebanon. These projects allow the creation of new neighborhoods that attract mainly middle-class households. One of the most notable examples is the Tripoli land-pooling project, located at the city entrance. These projects might also touch on large agricultural lands that were not urbanized in the heart or direct vicinity of the city, like the Wastani area of Saida. They also might raise controversies as to the protection of urban agriculture and natural lands in the face of the need for housing and urban development.

Other forms of extension are large private development projects in the form of gated residential complexes. These complexes are developed in the periphery in the form of agglomeration of buildings, but in some cases, they reach the scale of neighborhoods and small towns. These could be produced by private developers targeting middle class and well-off households or by religious organizations aiming to provide affordable housing to their followers. Beit Misk is an example of a gated community at the scale of a small town, located at 15min of Antelias highway. It is promoted as being a city in the middle of greenery and at the same time close to the capital center. However, these developments are often far from being mixed-used development providing a variety of facilities and services as promoted, but rather residential complexes.

While there are no large urban regeneration projects for neighborhoods in Lebanon, gentrification in certain neighborhoods, especially in Beirut has been palpable. It is mainly driven by private market dynamics. However, as some researchers point, there is systemic support to real-estate development that facilitates and even encourages gentrification dynamics.

5.5. Improved Capacity for Urban Planning and Design, and Training for Urban Planners at All Levels of Government

National institutions responsible for urban planning have internal gaps in terms of organization and capacities. These include outdated tools and frameworks, a lack of sufficient human capacities and resources, a lack of systemized databases and the non-systematic coordination between different planning institutional actors. Moreover, public planning tools, which are

marked by modernist planning approaches, are defined by a code that has not evolved since the eighties.

The DGUP, main actor in urban planning, is affiliated to the Ministry of Public Works. It is responsible for developing and reviewing

master plans all over Lebanon; however, it has limited human resources and budgets. On the other hand, collaboration between DGUP and key planning actors exists, but it's only project-based. This also applies to the DGUP's relation to municipalities, which is often affected by political representation and technical/legal issues.

Other actors are involved in this context, the engineering departments and staff working on urban issues in municipalities and UoMs, however, while this unit is very important at the level of sustainability, 37 percent of local authorities still lack an engineering department (DRI, 2019a). In order to fill the gaps, some IOs and INGOs delivery engineering support to the municipalities when needed. For example, UN- Habitat offered in April 2020, four field teams – comprising engineers, architects and social development experts – to conduct a rapid need assessment to deal with Covid-19 (UN-Habitat, 2020b).

Also, in partnership with Lebanese Municipalities, UN-Habitat created Regional Technical Offices (RTO) in order to face the high increase of population after to the massive arrival of SDP, the aim is to strengthen the local authorities' capacity to cope with the increasing demands on services in Lebanon[38].

Another example of dealing with urban issues- especially in the management of the environmental problems while keeping a sustainable development- is the Tripoli Environmental & Development Observatory (TEDO), which is a tool helping the Urban Community of Al Fayhaa (UCF) and the municipalities[39].

Another factor that has an impact on urbanism in a more indirect way is the urban planners. In fact, few universities offer that formation in Lebanon, and happen to be all placed in Beirut (Lebanese university, Alba, and AUB). However, many urban planners are formed in foreign countries too. The formation takes usually two years, and the graduates can be either qualified as urban planners or urban designers, also, they can choose either to go with the professional branch

[38] https://globalcompactrefugees.org/article/establishing-regional-technical-offices-municipalities-across-lebanon
[39] https://globalcompactrefugees.org/article/establishing-regional-technical-offices-municipalities-across-lebanon

or do research. However, there is no data about the number of urbanists in Lebanon, since a lot of students studied abroad and there is no union for urban planner as there is for engineers.

5.6. Strengthening the Role of Small and Intermediate Cities and Towns

The growth of small and intermediate cities and towns has been the main driver of urbanization in Lebanon in the last decades. In fact, the urbanization was more driven by small and intermediate cities than large cities.

These cities and towns, with relatively more affordable real-estate and housing prices than large cities attract households as well as industrial and logistical activities. In fact, growth in secondary cities, such as Zahle, Jbeil and Minieh, is attracting industries and logistic activities given the availability of lands and the strategic location on main axes.

The NPMPLT gives importance to these cities and aims to give them particular roles in order for them not to become "cités-dortoirs". However, with the emerging crisis of the Syrian refugees, there is no recent national strategy to address these cities and the growing challenges they are facing.

On another note, the Lebanese state's policy of developing more public administrations and services outlets in all districts encourage the development of the cities and towns that form the district's centers. However, the main challenge these cities and towns face is their fast growth that might put heavy stress on their resources and capacity to deliver services.

5.7. Promote Sustainable Multimodal Public Transport Systems Including Non- Motorized Options

Car-driven transportation is considered the main driver of transportation policy in Lebanon in the last decades. This is accentuated by the fact that transportation projects are developed by separate authorities than those concerned with urban planning and urban development. Road transport in Lebanon consists of road-motorized vehicles only, since there is no appropriate infrastructure for no motorized vehicles in Lebanon (e.g. bicycle lanes, safe storage space, and convenient and affordable bike rentals) (MoE, & UNDP, 2016).

The majority of the road-motorized vehicles are personal-owned passenger cars. According to the 2012 vehicle fleet database there is a total of 1.58 million registered vehicles in Lebanon (MoIM, 2013). Lebanon has around 22,000 km of roads, 30 percent of which are classified and fall under the authority of the Ministry of Public Works and Transport (MoPWT) as

international, primary, secondary, and local roadways while the remaining 70 percent are non-classified roads governed by municipalities (MoE & LEDO, 2001); More than one third of the road network is in poor condition.

In the transport sector, the responsibilities are vague and fragmented. The various authorities do not have clear limits and missions, which leads to a low level of accountability. In particular there is no framework of cooperation between the transport authorities and the transport authorities. This keeps the transport design confined in the engineering domain, while disconnected from development and planning approaches. Nevertheless, at the local level, public transportation is increasingly being integrated in local and regional strategic plans. The transport sector is seen as key factor in facilitating development and promoting accessibility[40].

At the central level, the Ministry of Public Works and Transport (MoPWT) presented to the Council of Ministers in 2014 the master plan to revitalize the land public transport for passengers. It encloses a set of actions to be implemented on the short and medium terms, shifting the passenger transport demand to mass transit systems. The main actions that have a direct impact on reducing our emissions are: a-Implementation of phase 1 of the rail transportation plan, namely the lane connecting the port of Tripoli to the Syrian border, b-Revitalization and restructuring of the operation of public buses inside cities, c- Continuing the development project of traffic management in GBA, d- Improvement of the pedestrian infrastructure. e- Deployment of a Bus Rapid Transit (BRT) on Beirut north gate, commuting Beirut to Tabarja, and f- Restructuring the freight transport (MoE, & UNDP, 2016). In terms of air quality, air monitoring has vastly improved in Lebanon.

In parallel to the national, government-driven program for air quality monitoring, several universities and institutions have started to coordinate their air pollution related activities. The Ministry of Environment through a project managed by the United Nations Development Programme (UNDP), developed an Air Quality Monitoring Programme for the measurement of criteria air pollutants through a number of monitoring stations across the lebanese regions (ibid). In 2004, and within the EU funded Strengthening the Environmental Legislation Development and Application System in Lebanon (SELDAS) project, the MoE started the preparation of the Draft Law for the Protection of Air Quality, known as the Clean Air Act (CAA). The CAA was finalized in 2005 epitomizing a landmark effort to reduce emissions, improve air quality and associated betterment of human health. Comprising of 34 articles, the CAA sets the stage for MoE to collaborate with all stakeholders to protect air quality and human health in Lebanon.

[40] For more information, see Guide for Mainstreaming Transport and Mobility in Lebanon's National Urban Policy (UN-Habitat Lebanon, 2021).

There are only few cases of streets pedestrianization, despite the growing general awareness of the role of pedestrian spaces in boosting touristic and commercial dynamics. One example is the public space rehabilitation in parts of the core city centers in the context of CHUD project. Another example is the city of Jbeil where growing attention has been given to the pedestrian spaces in the historic core and its surroundings. In Saida, the heritage trail guides tourists through a scenic route, identifying attractions along the way such as museums, arts and craft centers, antique shops, and local activities that reflect the cultural history of the area (Al-hagla, 2010).

Recently, with the growing impact of the economic crisis, and the fuel shortage the presence of the two-wheel motorized transportation, especially in large urban areas, is becoming increasingly significant.

However, the negative side of this transport mode is the lack of control and the growing security issues related to its use. In fact, the city of Saida has banned motorcycle use since 1999, after a string of severe crimes – including the murder of two police officers – were carried out utilizing the vehicles.

The offenses culminated in a crisis point when attackers breached a courthouse and killed four judges. Electric motorbikes were exempt from the ban, given that their lower speeds would limit the user's ability to use them as getaway vehicles after committing a crime (The Daily Star, 2017).

6 - MEANS OF IMPLEMENTATION

6.1. Mobilization of Financial Resources

6.1.1. Develop financing frameworks for implementing the NUA at all levels of government

In Lebanon, there are no particular policies that are linked to the National Urban Agenda, and consequently there are no particular financing frameworks directly linked to implementing it.

6.1.2. Mobilize endogenous (internal) sources of finance and expand the revenue base of subnational and local governments

For their income, Municipalities rely on a number of fees and taxes recognized by the Law. Municipalities are funded by several sources of revenue, the most substantial ones being direct fees (43%) and the Independent Municipal Fund (IMF) (31%). Other sources include aid and loans, revenues from municipal properties, Grants, and Fees transferred from autonomous agencies and public institutions (DRI & LCPS, 2020).

As for UoMs, IMF transfers account for 70% of their revenue. Other sources of revenue are contributions from members of Municipalities, donations and additional percentages on Municipal taxes.

Income from these sources is in practice linked to two types of fees, mainly construction permits fees and habitation taxes. Nevertheless, there is big variations among different local authorities with larger urban ones capable of mobilizing more effectively other fees. Municipal financial statements and budgets show that around 85% of all direct Municipal receipts come from rental fees and construction permits, only two of the 36 types of taxes and fees.

Large differences can be seen between the financial situations of Municipalities and Unions in Lebanon based on size and/or locality. This is mainly true in the case of major cities, which usually have considerable revenue. Municipalities of suburban and peripheral localities near major cities also benefit from acceptable revenues, as they also face rapid urbanization and population growth. On the other hand, Municipalities of rural areas, especially those with decreased or decreasing populations, face considerable financial challenges hindering their capacity to plan. (CDR, 2016). In fact, municipalities in Lebanon suffer from low tax collection rates. Moreover, there exist many discrepancies between the municipalities; despite the fact that municipalities have a legal right to collect 36 different taxes and fees, in practice however, 85% of collected taxes come from just three sources: the rental value fee, the sewage fee, and the building permits fee.

There are many reasons that hinder the capacity of municipalities to efficiently collect fees. Some are related to municipalities' lack of human capacity, and the weakness of IT systems that would ensure a proper assessment of fees values. Another reason is the lack of payment mentality and the reluctant attitude of mayors in enforcing payment. The latters consider that people are in majority suffering from poor economic conditions, while the real reason could be sometime their fear from losing electoral votes.

In attempts to generate more funds, municipalities and UoMs are resorting to different strategies to develop their capacities to generate revenue. Typically, such strategies include temporary privatization of public domains, which support income generation and reduced maintenance costs. Another common practice is applying service charges. For example, in Zahle, neighboring Municipalities and industries pay a set charge for discharging their waste through the Solid Waste Treatment Plant of Zahle. Another option Municipalities and UoMs can utilize are territorial marketing strategies, which help Municipalities to promote their territorial offerings and attract investment (ibid).

As per the Municipal Act, municipalities have the legal right to establish joint projects with the private sector[41]. Several examples have proved successful contributing to local economic development and jobs generation.

Moreover, in order to attract investments in their territories, municipalities can use various incentive mechanisms. However, the majority of municipalities are unaware of many mechanisms that would help them generating additional income.

On another note, municipalities have no legal power to establish additional fees or re- define their tax base. This constitutes a serious impediment, especially with the changing economic situation.

6.1.3. Promote sound systems of financial transfers from national to subnational and local governments based on needs, priorities and functions

In Lebanon, there is no legal obligation for government for fund transfers from the national budget to local authorities' budgets. Despite the stress placed by the Municipal Law on strengthening Municipal capacities by providing Municipalities with the necessary financial resources to accomplish their duties Lebanese Law (Exceptionally Decree 9093 of 15/11/2002) does not guarantee or provide Municipalities with those financial resources. Moreover, laws do not guarantee the direct or indirect participation of Municipalities in the legislation of the distribution of competences, responsibilities, and resources between the central and local authorities, including issues pertaining to the Independent Municipal Fund (IMF) or the reinforcement of Municipal resources (CDR, 2016).

The Independent Municipal Fund is, as per the Municipalities Law, a mechanism for transfer of funds collected by national agencies on behalf of local authorities as per their share of various fees and taxes (e.g. mobile phone bills).

The distribution of the IMf on local authorities is based on an equation that takes in consideration the number of registered populations in a local authority as well as its income from local taxes in prior years. UoM get a 25% share of the IMF and an additional sum of the IMF is awarded to municipalities that present projects deemed interesting to finance by the MoI.

[41] The Municipal Union of Jezzine has invested in several eco-tourism projects in partnership with the private sector such as 'La maison de la foret'. The municipality of El Ghbayrie has also jointly implemented several investment projects with the private sector such as a sports stadium, a disaster management council, as well as social and health centers (LSCP, 2014)

There are controversies regarding the actual IMF mechanism due to the fact that registered populations often do not reflect actual population, which leads to an improper allocation of funds. In practice, The IMF is fraught with problems including unpredictability in transfers and improper distributional criteria, hindering service delivery and exacerbating inequality between regions (ibid). Another key problem is the lack of independence and transparency of the IMF as funds are managed between the MoIM and the MoF. Moreover, data on revenue sources of the IMF are not publicly available; municipalities are hence not aware of how their promised funds are calculated.

Nevertheless, many local authorities are very dependent on the IMF for their operations. The irregularity of transfers has been a major cause of concern for local authorities that are weakened in their capacity to plan and develop projects.

6.1.4. Mobilize and establish financial intermediaries (multilateral institutions, regional development, subnational and local development funds; pooled financing mechanisms etc.) for urban financing

For now, local taxes and fees and the IMF share are considered major sources of income for local authorities' budgets. In the last two decades, many local authorities however have been keen on mobilizing international development and humanitarian aid funds, especially as an important source of investment money in their projects.

Many Programs have been implemented in order to strengthen the developmental capacities of Municipalities and Unions. Municipalities in Lebanon have a long history of decentralized cooperation, which contributes to strengthening local authorities' competencies and capacities. International organizations also mostly target Municipalities and UoMs in Lebanon through capacity building. However, in many cases, the short-span of aid programs and their ad hoc nature and funding mechanisms prove to be a challenge for long-term sustainability of such programs.

International organizations also assist Municipalities and UoMs in their efforts to increase their revenues. This is through the upgrading of Municipal services on the technical and human resources levels in order to increase their capacities to collect fees and taxes and manage their financial assets. Other international programs assist Municipalities and UoMs in their territorial marketing strategies by providing expertise and visibility.

There is presently no public or public-private financial institution dedicated to providing loans to local authorities. Previously, under the Decree- Law 118 of 1977 (Municipal Law), municipalities had the right to borrow from banks. However, this was then amended by the Law

89/5 dated 5/1/1989, which prohibits municipalities from taking out loans. Furthermore, under this law the government is not allowed to act as a guarantor to the municipalities unless a special decree is passed for that purpose (LCPS, 2015).

6.2. Capacity Building

6.2.1. Expand opportunities for city-to- city cooperation and fostering exchanges of urban solutions and mutual learning

The growth in the number and fields of action of local authorities are leading to a diversity of experiences. Hence, there is a rising interest for looking into other local authorities' experiences and sharing them. Indeed, there is growing sense of cohesion and cooperation between member municipalities of a union, but also among municipalities of different unions. In some cases, unions are also participating in various events to share their experiences. This sharing of experiences might happen mainly through direct visits or in conferences and meetings, usually hosted by international organizations, working on specific urban or territorial development themes.

There is also a lot of international cooperation between local authorities in Lebanon and abroad. This cooperation might range from simple visits and protocol exchanges to twinning and decentralized cooperation. Through the latter, many local authorities in Lebanon have benefitted from the technical and financial support of local authorities all around the world.

6.2.2. Promote the capacity development as a multifaceted approach to formulate, implement, manage, monitor and evaluate urban development policies

The MoI's structure is constituted of around 15 directorate and bodies. One of them is the Directorate of local councils and administrations. The ministry is concerned with the affairs related to internal policy, and maintaning order and security. It supervises the affairs of governorates, districts, municipalities, municipal unions, the independent municipal fund, mukhtars, and all other elected or appointed local councils, villages, university places, parties and associations, and manages personal status, refugee affairs and defense affairs, civil society, traffic, and it does everything entrusted to it by laws and regulations[42].

In general, the MoIM provide guidance to municipalities in various domains, such as for example the case of support and orientation related to COVID 19. In the domain of planning and development, training to local authorities have increased with the presence of international organizations, and the development project they support. Capacity building for local authorities' staffs is in many cases an integral part of the development projects and plans. For example, in

[42] As per the MoIM website.

2009, training workshops were conducted involving the Municipalities of the CHUD project for the implementation of environmental management plans in their cities (Tyre, Tripoli, Baalbek, Byblos and Saida).

6.2.3. Support local government associations as promoters and providers of capacity development

In Lebanon, there is no national association of local authorities. However, there are local authorities that are members of international networks of local authorities. The case of "Cités et Gouvernement locaux unis" is one good example of these networks. There is also a number of interested local associations and experts in this field, such as the BTVL, in helping set such networks and develop exchanges between them to international networks and to training and capacity building providers.

6.3. Information, Technology and Innovation

6.3.1. Development of user-friendly, participatory data and digital platforms through e-governance and citizen-centric digital governance tools

In May 12, 1997, the Lebanese government manifested its full involvement and support of a strategic plan for administrative reform. The decision was to adopt information and communications technology to modernize the much-needed infrastructure after almost two decades of civil war (Hejase, Beyrouti & Mikdashi, 2001). For this task a professional team for administrative reform was formed and located under the Office of the Minister of State for Administrative Reform (OMSAR).

After more than 23 years, the country is still lagging in terms of e-governance. The effort put is variegated between different administrations and ministries with some moving towards more digital interaction with the public. Ministerial websites provide information about ministry's actions with some giving access to report and documents. However, even when websites are up to date and providing information, this information is not usually in formats that allow direct digital use.

In 2013, a new portal (www.dawlati.gov. lb) became available and introduced the e-government initiative. The goal of this portal was to increase efficiency of government by providing citizens with easy access to information and services, ensuring more transparency of government agencies. Furthermore, this portal decreased paperwork and visiting government offices back and forth to complete certain transactions (Kassem, 2019). Currently, it provided PDF forms that can be completed electronically and then printed, and e-services through both its website and mobile apps.

In April 2011, the Minister of Water and Energy, announced the launching of Water Evaluation and Planning (WEAP), an electronic system for the ministry that interrelate the ministry's information that was for years distributed on different automated systems of different platforms. Also, the Ministry of Finance announced on February 2011 the launching of its e-taxation service together with its new portal. The E-taxation service is now available for public use on the ministry's portal: www.finance.gov.lb (Choueiri et.al., 2013).

However, according to a survey, in Lebanon only 15% of citizens express some acceptance to use public e-services (Harfouche & Robbin, 2012).

OMSAR is officially the body in charge of the promotion of e-governance. At the governance level, OMSAR has given technical inputs to current drafts of digital legislations as well as to cyber security management of web hosting provisions. Although these activities have continuously made significant improvements, they did not meet the higher expectations of our wider society and, in particular, the digitally savvy new generation (OMSAR, 2018).

At the local level, increasingly, local authorities are mobilizing digital communication tools. Many have their official websites however most communication happens through social media pages like Facebook. In many cases this is voluntary effort. There are 237 out of 1109 municipalities who have web addresses across the various governorates. Mount Lebanon had the highest number of municipalities with web presence. North Lebanon ranks the 2nd largest position in number of municipalities, where it also ranked the 2nd largest position on web presence. South Lebanon had a greater number of municipalities that Beqaa and also a greater number of websites than Beqaa (Kassem, 2019).

Municipalities in Lebanon are slowly catching-up with e-government mainly due to the absence

of laws pertaining to e-signature and citizens' unwillingness to use the websites (ibid). However, the current Covid-19 pandemic is contributing

to more reliance on digital communication with citizens. In fact, relevant ministries are taking data-driven measures and coordinating their actions, namely through the Inter-Ministerial/

Municipal Platform for Analysis, Coordination and Tracking (IMPACT). As such, relevant authorities relied on this platform to set up the current and ongoing mobility permits procedure, in addition to the upcoming National Covid-19 Vaccination Plan, both based on a digitally-enhanced government approach (Siren Analytics, 2021). On January 28, the vaccination pre-registration form was launched by the National Covid-19 Vaccine Committee and the Ministry of Public Health on the IMPACT platform as well.

On another note, the Central Inspection has deployed an extensive damage assessment survey for public buildings in Beirut and its suburbs on IMPACT platform. According to Central Inspection, 'sectoral data, decisions, logistics, and human resources are all being mapped on IMPACT, providing our institution with an unprecedented access to information and initiating the transparency and accountability much needed today for oversight and strategic advice'. Central Inspection states also that IMPACT platform has already reached out to all 1,100 municipalities around the country, 7 ministries, as well as many public institutions, and continues to expand to more state and non-state actors, promoting interinstitutional collaboration, efficiency and responsibility (Council for Central Inspection, 2020).

6.3.2. Use of digital tools, including geospatial information systems to improve urban and territorial planning, land administration and access to urban services

The use of GIS dates back to many years in the Lebanese central administrations and ministries. The CDR and DGUP have started relying on GIS since many years ago. The Coordination and Programming Department of the DGUP, responsible for staff trainings, provides GIS program trainings (CDR, 2016).

The Remote Sensing Center is part of the National Council for Scientific Research. It has been carrying out a wide variety of research and applications in GPS. The center relies on a GIS application for the analysis of its data (OMSAR, 2003).

Established in 1995, the Remote Sensing Center results from the will to concentrate efforts and establish a leading agency on most recent insights in remote Sensing and GIS technology. Conceived as support for decision making, the RSC provides a platform among various ministries, in watershed management, Forestry, urban settlements, archaeology and the environment, integrated coastal zone management, public participation, natural hazards, and natural resources (water, soil, biodiversity), the Centre is securing highly needed upgraded information as well as cooperating with several development projects necessary for environmental monitoring and data acquisition in various sectors, and producing various thematic maps, training staff of various public agencies on requirements and applications of remote sensing and GIS[43].

At the level of local authorities, most engineering departments are digitalized. There is even a surge in interest in GIS with some engineering departments adopting it or even the creation of new GIS units. Of these local authorities, many came to acquire GIS in the context of

[43] As per the website of CNRS

international development projects. However, there is a large portion of those not updating their systems or using them in the most basic of their functions.

To build on the strengths of UoMs and municipalities and enhance their capacities, UN- Habitat established and funded Regional Technical Offices (RTOS) at the level of the Unions. Through these RTOs, UN-Habitat implemented its emergency response to address the July-2006

Israeli war on Lebanon, as well as the Syrian crisis, empowering UoMs to coordinate the response. The introduction of the GIS Mapping at the level of municipal unions through Regional Technical Offices (RTOs) proved to be vital to data collection and updated information (Boustani, 2014).

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%D8%A7%D9%84%D8%B3%D9%83%D9%86-%D9%81%D9%8A-%D8%B8%D9%84-%D8%A7%D9%84%D8

%A3%D8%B2%D9%85%D8%A7%D8%AA-%D8%A7%D9%84%D8%B1%D8%A7%D9%87%D9%86%D8%A9

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Annex: List of Interviewees

- Abbas Mteirek, Ministry of Foreign Affairs
- Abdel maoula El Chaar, Expert in Economy
- Alix Chaplain, Expert in Renuable Energy
- Amira Mrad, IDAL
- Andre Sleiman, DRI
- Anis Bou Diab, ECOSOC
- Antoinette Ghattas, Ministry of Water and Energy
- Bechir Odaimy, BTVL
- Carla Digrigorio, WFP
- Chiara Noone, ACTED
- Dana Chaaban & Assil Tlayjeh, Experts in Biodiversity
- Elie Choueiri, FAO
- Fadi Saliba, DGU
- Fayez Araje & Karim Eid Sabbagh, Experts in Urban Agriculture
- Gabriella Trovato, Expert in Green infrastructure and Agriculture in Urban Areas
- George El Jallad, Ministry of Foreign Affairs
- Ghassan Nehme, MERP
- Habib Debs, Expert in Transportation and Soft Mobility
- Hanadi Chmeit, Expert in private development projects
- Hanan Wehbe, Expert in SWM
- Hicham Achkar, Expert in Housing and Housing regulations
- Ismael Sheikh Hassan, Expert in Palestinian Refugees and Urban Agriculture
- Karima Bin Bih, World Bank Group
- Laury Hayatyan, Expert in Gas and Oil
- Layal Zaatari, Expert in Transportation and Mobility in Saida

- Marc Diab, UNHCR
- Maya Nehme, LRI
- Mireille Rahme, Ministry of Social Affairs
- Mohamad Fayazi & Olivier Thonet, UNICEF
- Mosbah Rajab, Expert in Strategic Planning
- Nancy Awad, CDR
- Patrick Assaad, Expert in private development projects
- Racha Serhal, Expert in GIS
- Rachel Dore Weeks, UN Women
- Raed Jouny, Expert in large urban and infrastructure projects
- Rami Samaan, Expert in Transportation and Mobility

- Rita Nasr, Expert in SWM
- Rony Lahoud, PCH
- Sara Sannouh, IRC
- Sonia Ilias, UNICEF
- Tarek al Khoury Abdel Ahad, UNEP
- Tarek Jaber, ILO
- Yasmin Makaron, APSAD
- Youssef Fawaz, Expert in Economy
- Ziad Abdalah, CAS