

AMERICAN UNIVERSITY OF BEIRUT

CAN A TERRITORIAL BASED APPROACH IMPROVE
FOOD AVAILABILITY AND FOOD ACCESS IN LEBANON
TODAY?

by
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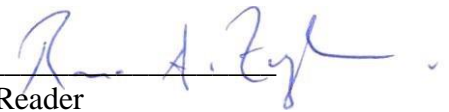
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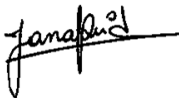
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ABSTRACT OF THE PROJECT OF

Jana Imad Beydoun

for

Master of Science

Major: Food Security

Title: Can a Territorial Based Approach Improve Food Availability and Food access in Lebanon Today?

The level at which Food Security should be governed has been largely debated in the literature: some argue that food security should involve the government only while others see that every actor from farm to fork should be involved in the decision-making process, and every person should have his or her voice heard. Often, food subsidies policies as well as agricultural policies encouraging more food production drive the food system yet do not respond to local needs. In addition to this, most of the available policies do not tackle food security using a territorial based approach. Because every country has different local challenges, and every geographic area within a country needs a more focused approach to food security, I aim to explore how a territorial based approach to food security might increase food availability and food access in Lebanon. I aim to explore what hinders municipalities from delivering services and see other context where local governments have been proven effective in achieving a better food security. The project has three goals: 1) Identify key challenges in achieving food security in Lebanon; 2) Explore if food security is better governed by local governments globally; 3) Explore how municipalities can implement tailored territorial based, multisectoral, bottom-up interventions to improve food security.

This study will be based on an extensive focused literature review combining information from the following sources: peer reviewed articles, international organizations reports and publications from reliable journals as well as food security briefs and projects submitted on the AUB food security portal, highlighting the current food security status worldwide. This project also aims to explore strategies adopted by different countries concerning food security as well as publications from countries where local governments have been shown to improve food security by adopting territorial based approaches to finally be able to make recommendations for Lebanon. The project's findings suggest that adopting a Territorial-based approach and Decentralization has been effective in enhancing Food Security in Malawi, Philippines, Brazil, and in Latin America and draws on these findings to propose a model to be adopted by Lebanese Municipalities, while keeping in mind the political limitations.

Key words: Municipalities; Lebanon; Decentralization; Local Governments; Territorial based approach; Food security governance level; Food Security programmes; Food policies; Food Availability; Food Access.

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ABBREVIATIONS

FAO: United Nations Food and Agriculture Organization
WHO: World Health Organization
IFRPI: International Food Research Policy Institute
OECD: The Organization for Economic Co-operation and Development
SDG(s): Sustainable Development Goal(s)
MoA: Ministry of Agriculture
UN: United Nations
UNICEF: United Nations International Children's Emergency Fund
USAID: United States Agency for International Development
MENA: Middle East and North Africa

CHAPTER I

INTRODUCTION

A. State of food security globally in the covid-19 pandemic and in the Arab world

Food insecurity is an issue that is affecting many countries worldwide. It is deeply rooted in history and accompanies population growth according to Malthus because as populations grow, more food is needed to feed people (Schmitt-Sands, 2017).

According to the Food and Agriculture Organization (FAO), food security “exists when all people, at all times, have physical, social, and economic access to sufficient, safe, and nutritious food to meet their dietary needs and food preferences for a healthy and active life” (FAO, 1996). Food security is complex and multidimensional. It is built on four pillars: availability, access, utilization, and stability. Availability refers to the physical presence of food, which is determined by food production, available food stocks as well as food trade. Access to food comprises both the ability of people to procure food at the physical and the economic levels. Utilization is more related to how our bodies can make use of the nutrients available in the food we eat. Utilization is often hindered by lack of hygiene and diseases. Good feeding practices and knowledge in food and food preparation also fall under the utilization pillar. The last pillar is stability.

Food security is a fundamental need to all human life and despite the progress that has been made to halt hunger, today, we are globally witnessing a rise in food

security issues. This is due to the long demographic and economic growth which have challenged the world's limits of "economic, social, and ecological sustainability". The current numbers of food insecure and hungry people around the globe coupled with the unsustainability of the current agricultural and food consumption patterns at the global and local levels show how food security is an essential concern (Mougeot et al., 1999).

Although progress has been made to reduce hunger and achieve food security, millions are still threatened by hunger and still face malnutrition. The pandemic coupled with the Russian-Ukrainian war heightened the challenge to end hunger and achieve food security. Even though access to food is a basic human right, it is still a privilege for many around the world. As a matter of fact, in 2020, more than 811 million individuals were still hungry.

Estimates show that more than 840 million people will be undernourished by 2030, not considering the effect of covid19 and the war in Ukraine (Gustafson, 2021). Though this number has seen a sharp decline for almost a decade, we have witnessed an unchanged prevalence of undernutrition from 2014 till 2019, yet an increase in the number of people going hungry between 2019 and 2020. Prior to the pandemic, around "690 million people, or 8.9 percent of the global population", were undernourished (SOFI, 2020). And as many as two billion people "experienced hunger or did not have regular access to nutritious and sufficient food". 9.3 percent of the global population went hungry in 2020, and that is around 118 million more people compared to 2019 (Action Against Hunger, 2021; SOFI, 2022).

In 2021, 46 million more people were affected by hunger and that constitutes 9.8 percent of the global population (SOFI, 2022).

746 million people were severely food insecure in 2019 according to the FAOSTAT database compared to 928 million people in 2020 representing almost 12 percent of the global population (SOFI, 2021). That is to say that approximately 148 million more people were severely food insecure in 2020 than in 2019. In 2021, approximately 2.3 billion people in the world were moderately or severely food insecure, and severe food security prevalence comprised 11.7 percent of the global population. The gender gap in food insecurity increased from 3 to 4 percentage points in 2021: women are more affected by moderate and severe food insecurity (SOFI, 2022).

Access to adequate food was not possible for approximately one in every three people in the world representing “an increase of 320 million people in just one year, from 2.05 to 2.37 billion” between 2019 and 2020, of which approximately 40 percent (representing 11.9 percent of the global population), or almost 928 million were facing food insecurity at severe levels (SOFI, 2022).

The pandemic in 2020 widened inequalities in access to food globally and coupled with “desert locust outbreaks in Eastern Africa”, it added to the economic burden and have made the food and nutrition security situation worldwide worse. We witnessed disruptions in food supply because of imposed lockdowns. Trade policies have also been modified resulting in loss of livelihoods of many farmers and loss of income to many people and households who have seen their financial ability to access nutritious and healthy food drop (Aday & Aday, 2020; SOFI, 2021).

More than half of the undernourished people in the world in 2020 (418 million) lived in Asia. Though in 2021, prevalence of moderate or severe food insecurity did not increase in Asia, severe food insecurity rose. Also, “more than one-third (282 million)” of undernourished people reside in Africa, with the highest numbers in eastern Africa. And

with the current Russian Ukrainian war, knowing that east Africa relies on Russia and Ukraine and imports 90% of their wheat from these countries, these imports will be disrupted heightening the challenge of ending hunger and achieving food security in the upcoming 8 years (NRC, 2022).

It is also important to mention that Latin America and the Caribbean represented 8 percent (60 million) of the total number of undernourished people in 2020.

In 2021, in Africa, an additional 15 million in 2021 went hungry, compared to 4 million more people in Latin America and the Caribbean and 26 million more people in Asia (SOFI, 2022).

Also globally, fuel prices have risen increasing transportation costs and so the cost of foods reaching countries, making healthy diets unaffordable for all (NRC, 2022).

Many factors as well as the pandemic have caused food price surges and global markets' disruptions: according to a report published by FAO and IFPRI, the way we eat which has raised global food demand, "poor harvests in South America", as well as supply chain disruptions aggravated by the pandemic, caused a reduction in the oilseed and grain stocks and a surge in the prices of these commodities since 2011. We are witnessing a sharp increase in vegetable oil prices, because of poor harvests in Malaysia and because palm and soybean oil are being used for the generation of biodiesel. Additionally, the war in Ukraine has caused global shortage of sunflower oil. The prices of fuel, fertilizers and pesticides have also recorded remarkably high levels recently mainly caused by the fact that Russia and Ukraine are the key wheat exporters and Russia is one of the largest fertilizer exporters (FAO, IFPRI, 2022).

The below graphs adapted from FAO by ARABNEWS website show that Russia ranks first among top 10 wheat exporters globally (figure 1), that Ukraine is the

top exporter of sunflower seed oil (Figure 2), and that Russia is a key exporter of K-fertilizers (Figure 3).

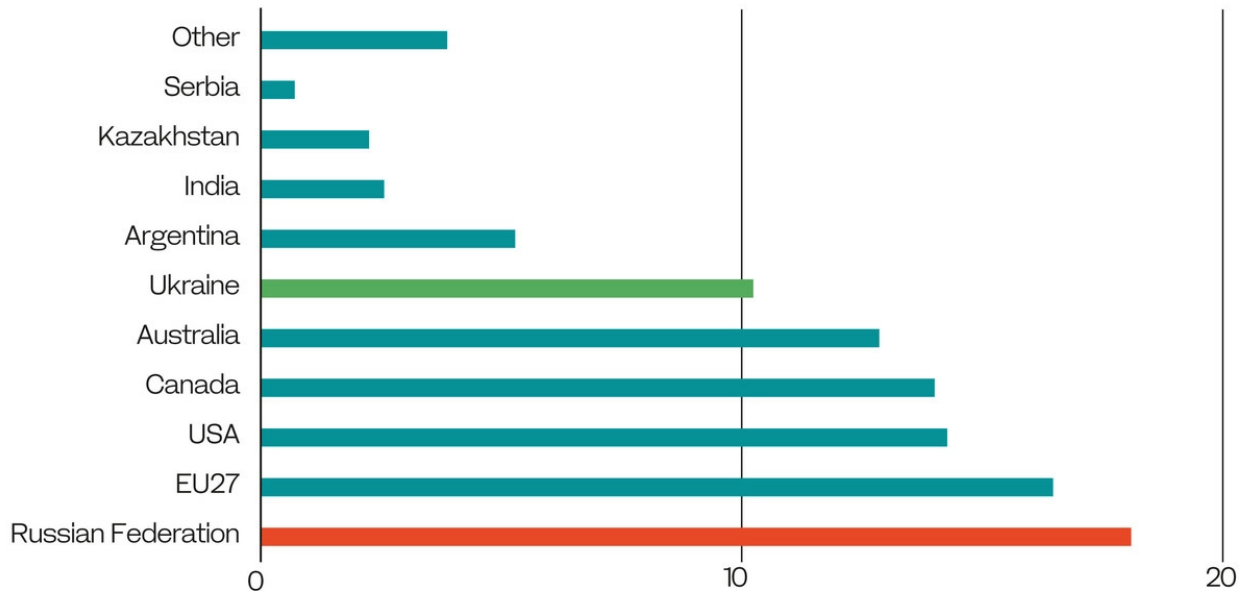


Figure 1: Top 10 Exporters of Wheat (% share in global exports in 2021)

Source: Arab news website, adapted from Food and Agricultural Organization (FAO)

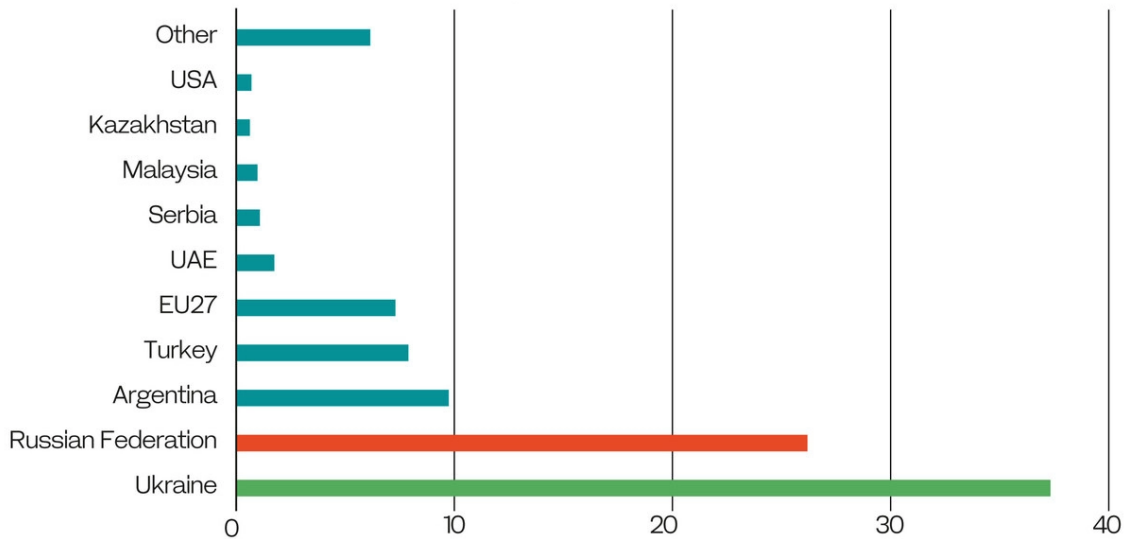


Figure 2: Top 10 Exporter of Sunflower Seed Oil (% share in global exports in 2021)

Source: Arab news website, adapted from Food and Agricultural Organization (FAO)

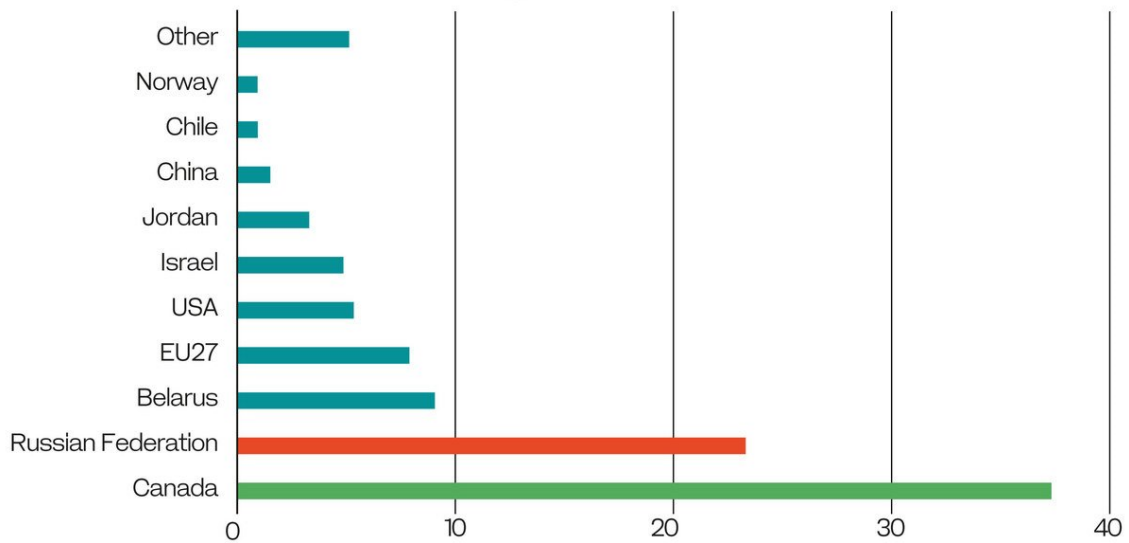


Figure 3: Top 10 Exporters of K-Fertilizer (% share in global exports in 2021)

Source: Arab news website, adapted from Food and Agricultural Organization (FAO)

As a result of the disruption of fertilizer and natural gas markets, producers and farmers will be negatively affected with the upcoming planting season. The most affected are low income as well as net importing countries who have already high rates of malnutrition aggravated by the pandemic (IFPRI, 2022).

In a nutshell, global food security is compromised by this conflict, and the livelihoods of many farmers as well as the lives of people are directly affected. We conclude that global food security and nutrition are directly affected by conflicts, climate change, and the COVID 19 pandemic, factors heightening the challenge of achieving the Zero Hunger and food security target by 2030. Protracted conflicts (Syria, Somalia, Yemen, Afghanistan, and Ukraine) have been estimated to majorly contribute to food insecurity and hunger.

Let us take a closer look at the Middle East and North Africa (MENA) region.

Food security in the MENA region

If we take a closer look at the MENA region, a plethora of factors contribute to the region's physical, economic, and social landscape.

Food insecurity is still a key challenge in the MENA. Even before the outbreak of covid19, more than “55 million individuals out of a total population of 456.7 million” was undernourished. In 2020, 20% of acutely food insecure people resided in the MENA. This percentage is considered a huge share because the MENA constitutes 6% of the global population (Belhaj & Soliman, 2021).

In addition to this, Most of the MENA countries are affected by climate variations and extremes, lack arable land and are water scarce. These two factors pressure the economies of the Arab countries and make them largely dependent on food imports. The situation is aggravated by ongoing conflicts and an environment of political instability (Omidvar et al., 2019).

In the protracted crises settings food security status deteriorates and affects both refugees feeling wars and their host communities.

The critical areas of concern when it comes to unstable economies and political situation are Syria, Yemen, Somalia, and South Sudan.

Iraq has also been affected by conflicts and global oil prices' fluctuations causing an increase in food insecurity (Belhaj & Soliman, 2021).

Also, the rate at which the population is growing (2% per annum), further pressures the resources and infrastructure of many middle eastern countries, and this might pose a severe challenge not only with the influx of refugees from countries of protracted crisis but also because of the pandemic.

In addition to this, we observe disparities in developmental levels between the Gulf countries which are considered high-income countries and the other less developed conflict countries such as Yemen (UNESCWA, 2019).

This figure adapted from Arab spatial website shows that in 2015 most countries in conflict, i.e., Syria and Yemen, have the highest prevalence of food insecurity (Arabspatial, 2015).

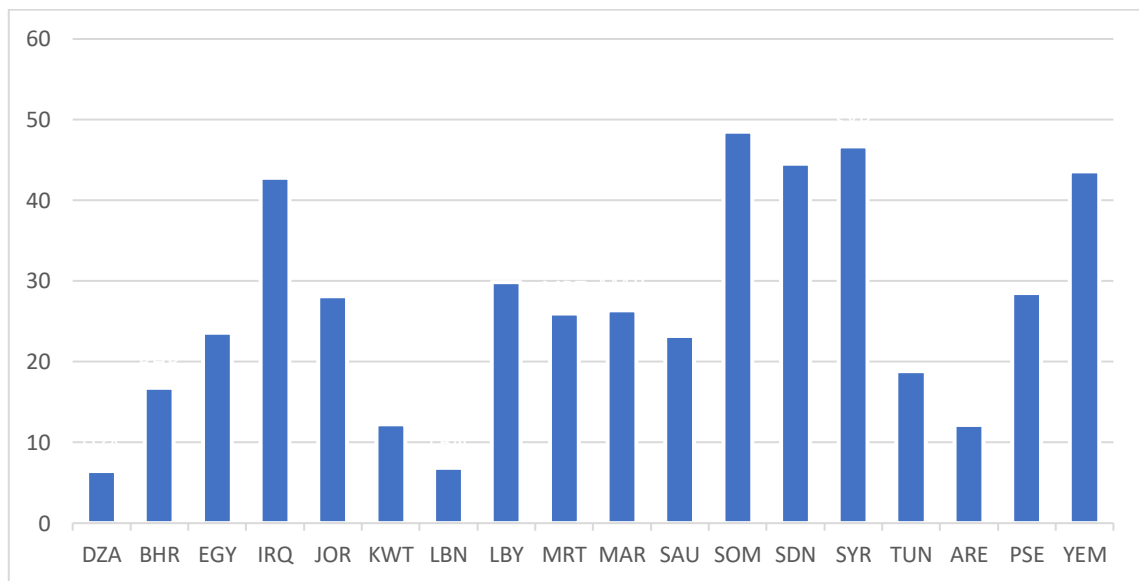


Figure 4: Prevalence of Food Insecurity in the MENA region in 2015(in%)

Source: Arab Spatial website

Most Arab countries are in a conflict situation, let alone the fact that the influx of Syrian refugees to neighboring countries such as Lebanon and Jordan have also pressured the economy and food security situation of these host countries.

Also, according to the latest numbers published in 2021 by UNICEF, 11 out of the 17 most water-stressed countries in the world are Middle East and North African (MENA) countries: 9 out of 10 children reside in areas “of high or extremely high-water stress”, negatively impacting their overall nutrition and health status as well as their cognitive development and so their “future livelihoods.” protracted conflicts in Syria, Yemen and Sudan, and the ”migration of people from rural to urban areas, population growth, poor

water management, deteriorating water infrastructure, and issues with governance” and the lack of self-sufficiency, add additional stress on water resources. Water stress is the result but also the cause of conflicts in the region (UNICEF, 2021).

Lebanon’s food security status worsened with the observed hyperinflation (Belhaj & Soliman, 2021).

Gulf countries suffer from another burden which is obesity and overweight prevalence. Even with the current war in Ukraine, these countries will most probably not be affected because the price of wheat and oil is not an issue to them, and procurement can happen from other countries.

So globally, there should be policy solutions and actions must be taken throughout the food supply chain to ensure not only availability but also access to food that has been jeopardized by the pandemic and the Russian-Ukrainian war.

However, there is no one-size-fits-all solution for all countries, and each territory within a country needs specific strategies and interventions. That’s why adopting a territorial based approach coupled with a food security governance at the local level could help us tailor context specific interventions and policies.

B. Economic collapse and its impact on Food security in Lebanon

The Lebanese food security situation prior to the pandemic was already precarious since Lebanon imports most of its food (65-80%) (Bahn & Yehya, 2020).

In addition to this, stress on its resources has been observed because of the Syrian refugees’ influx since 2011. Prior to October 2019, the Lebanese lira was stable, and the banking sector was somehow still thriving.

However, since late 2019, Lebanon has been in a dire economic situation, which manifested itself by a financial crisis which “has driven nearly half of the population of six million into poverty, wiped out jobs and savings” (Al Jazeera, 2021). The national currency has witnessed a deep devaluation. And despite interventions from Banque du Liban to “bolster informal exchange rates”, Consumers have seen their purchasing power decrease while prices of goods continue to increase. As a result, coping strategies highlighting serious food insecurity were observed (Bahn et al., 2022). Covid-19 government-imposed lockdowns and the latest fuel shortages and fuel price surges have caused major disruptions to residents’ daily life and the economy as well as financial and physical food access for some. In addition to this, the constant devaluation of the local currency, and price volatility have negatively affected food availability since food imports have been reduced.

This in turn has negatively contributed to the already precarious food security status in the country. To top it all off, the huge explosion of the Beirut port which “destroyed Lebanon’s main grain silos”, then the collapse of the silos, the ongoing strikes in banks and informal exchange rates exacerbated the political crises which was already unwarranted with the absence of government (Bahn et al., 2022). Also, the war in Ukraine affected the availability pillar since Lebanon’s major wheat supplier is Ukraine.

According to WFP, 45% of Lebanese households are Food Insecure, and approximately 3.4 million people are in need of humanitarian assistance (2022).

This health and economic downturn make us wonder at what level food security should be governed.

According to Alkadi, “The United Nations organizations, the civil society and non-governmental organizations, multi-lateral development banks, national governments, philanthropic organizations, private industry, and public-private partnerships” are responsible of the food security governance globally (Alkadi, 2021).

In Lebanon also, food security governance is not devolved to a single authority. It is rather divided between the following two major levels:

- The governmental level
- The humanitarian level

At the governmental level, food security has been given little attention through the ministry of agriculture who sees food production as the miracle that will curb food insecurity. People are being fed by the agricultural sector that is responding to food insecurity by increasing food production, neglecting the fact that if food is being produced, it doesn't necessarily mean that everyone has access to it and, it does not necessarily mean that people are eating. In other words, food availability does not ensure food access. In its 2020-2025 strategy, the Ministry of Agriculture included for the first-time food security in one of the five pillars suggested (FAO, 2021). This was the “only evident legislation” which entitles the Lebanese government to perform as “an agricultural security governor” but not “as a food security governor” (Al kadi, 2021). The lack of cooperation between the Ministry of Agriculture and the Ministry of Economics and Trade coupled with the different policies designed and implemented by different actors represent the main cause of hunger. However, these strategies often governed by vested interests are “geared towards donors” (Hamade, 2021).

At the humanitarian level, food aid is being provided by civil society groups and NGO, groups that are acting because we are in a crisis setting. These groups are often present on the ground for socio-political assistance yet there is hidden reasons behind their presence in some countries, particularly in Lebanon.

At both levels, solutions are temporary. And that is why we should think of local governments as better entities to govern food security.

C. Adopting decentralization as a tool to promote food security

1. The global context

Let us first understand Decentralization. According to Babu, Decentralization is “the extent to which the functions of power are distributed away from the national government to different levels of government”. If in a country, all power is held at the subnational levels, the country is said to be decentralized. It is a policy choice allowing policies to be specifically tailored to “both local problems, and to local policy preferences”(1999).

Because policy formulation tends to be nationally focused and ignores the needs of the ruled ones as well as the needs of “different agro-ecological regions in a country”, decentralization remains an essential tool in the design of food security policies (Babu, 1999). Decentralization empowers local governments through the transfer of power and resources. In that way, local governments employees who are technically more aware about the residents and activities related to food Availability and food Access in a certain territory, can better plan and implement Food Security Programmes in a way to intervene and control the following activities: land management, agricultural practices and local markets’ regulation (IFAD, 2022). Based

on this, we see that food policies should be tailored to every geographic region within a country, with different needs and that is why the governance of food security should be territorial based. And policies should not be designed and implemented in a one size fits all way.

Particularly, “Political and administrative decentralization” are expected to improve food security through better problem definition, and “improved targeting of policies” (Schmitt-Sands, 2017). Hence, adopting decentralization can effectively address problems in different parts of a given country and will “theoretically improve governance”. In that way, people feel more heard and could participate in the decision-making process as well as pressure the rulers. This is important because as discussed above, policies should be tailored to the needs of every person in every geographic area. When people are empowered to make their voices heard, they may pressure rulers to address their needs rather than implementing Food Security programmes that correspond with some political agendas. Locally, specific information about food insecurity and nutrition status of residents in local communities can be easily gathered by, for example, municipalities and local officials residing in a specific locality because theoretically they should be more aware about the residents of their localities, and local level knowledge is key to achieve better outcomes.

Yet, this process is often hindered by financial incapacity of localities, or the lack of power given to them.

If political and administrative decentralization are applied, policy implementation happens locally. Hence food security policies target directly specific challenges faced by food insecure individuals. Why? Because in each locality or state the causes of food

insecurity are different than in another one. Different ways of targeting different causes are possible under decentralization.

In Malawi for example, since the late 90s, decentralization of the food and nutrition policymaking has allowed more appropriate food and nutrition policy interventions at the local level. Designing appropriate food and nutrition policies taking into consideration the resource availability of individuals especially farmers, is “one of the attempts to incorporate the household food security and nutritional considerations in decentralized agriculture research and development projects” (Babu, 1999).

According to Koc et al, “Cities and metropolitan regions” should develop food security plans to enhance food availability and access, and this is feasible through food policy councils that advise and empower local governments adopting also a territorial based approach to nutrition and food security (Mougeot, 1999). This was demonstrated through the FAO intervention programmes in Latin America by the creation of “functional food circuits” that enhanced availability and access to healthy food in small and intermediate towns(FAO, 2017).

2. Potential role of municipalities in Lebanon

In Lebanon, the concept of municipalities has been in place since the ottomans ruled and then the French. These two authorities had municipalities, to monitor what is happening on the Lebanese territory, and to remain in power. The number of municipalities in Lebanon kept increasing even after the independence and during the civil war. The responsibilities of these local governments were extended but since the 1998 elections, the state has not reformed its laws in a way to encourage administrative decentralization. 350 new municipalities were created since 1998 and according to the

latest statistics, Lebanon has 1117 municipalities, a huge number compared to it being a small country. Being that numerous, municipalities become weak and, unable to fulfill their duties unless they rely on fundings by donors and the central government (DRI, 2019; Beydoun & Mourad, 2020; CAS, 2013).

In addition to this, the elections of municipal councils are massively politicized making municipalities very reliant on political parties and prone to their interference. Having said this, one may think that municipal service delivery is enhanced because of political empowerment and the abundance of municipalities on the Lebanese territory, but the only result is failure in service delivery or minimal service delivery. And even though the law of municipalities gives a lot of responsibilities to local governments, we haven't witnessed any tangible interventions concerning food security. But since political decentralization helps empowering local officials, municipalities for instance can become a "target for mobilization and political pressure among local groups" (Mourad & Beydoun, 2020). Because people often feel unheard by national governments, decentralization empowers them to "lobby local officials" to make their voices heard. However, this remains an assumption because a lot of work must be done to detach municipalities from their politicized reality and because municipalities in Lebanon do not necessarily have the means to address the needs of their communities, especially financially.

That's why the next section in this paper further explores what are the major factors hindering municipal service delivery in Lebanon, to be able to draw conclusions for food security improvement.

CHAPTER II

METHODOLOGY

The scope of my project includes the answer to the following research questions through an extensive literature review

- RQ1: What is the state of food security globally and in the Middle East and how is it affecting Lebanon and what are the major factors hampering the achievement of food security in Lebanon?
- RQ2: What is the current state of play of municipalities in Lebanon and what are the major factors hindering effective municipal governance in Lebanon?
- RQ3: What are contexts where lower governmental levels have intervened successfully to improve food availability and food access by adopting a territorial based approach? (How decentralization improves food security)
- RQ4: How can the municipal law be modified and updated to better serve communities when considering food security?

Methods to answer RQ1:

This question will be answered by first referring to The State of Food Security and Nutrition (SoFI) 2020, 2021 and 2022 reports and the numbers extracted from these reports will be backed with further evidence from the FAOSTAT database, FAO reports as well as reports published by IFPRI, NRC and figures adapted from Arab spatial website and FAO. Further evidence is going to be extracted from UN reports, WORLDBANK, NRC and action against hunger websites. Second, the paper looks at more focused evidence from Lebanon by reading news articles on al Jazeera and Al-Akhbar English websites as well as through food security briefs published on the food security portal by the FAFS at AUB.

Methods to answer RQ2:

This question will be answered by looking at what has been published by thinktanks like lcps and also by looking at the municipal law.

Further evidence is going to be extracted from published articles and from reports by Democracy Reporting International (DRI). Other pertinent information concerning municipalities will be extracted from Central administration of Statistics website (CAS) in Lebanon, logorep and localiban. A report from beyond group on *municipal community engagement efforts in Lebanon* will also be cited as well as reports from OECD.

Methods to answer RQ3:

This question will be answered by first citing benefits of decentralization in food security by being based on peer reviewed articles and by looking at contexts where decentralization and territorial based approached to food security have been effective: in Malawi, in Brazil, in India, in Latin America, and in Cambodia.

Methods to answer RQ4:

This question will be answered by looking at FAO work in Latin America and recommendations for Lebanon will be generated by adapting a model published by joint efforts between USAID and Beyond group.

CHAPTER III

CURRENT CONDITION OF MUNICIPALITIES IN LEBANON

A. Factors hindering effective municipal governance in Lebanon

Municipalities in Lebanon have a long history. The first municipalities were established in 1864 in Deir el Qamar under the Ottoman rule and then other municipalities in other areas like Beirut, Tripoli and Saida were created (Localiban, 2020). Under the Ottoman and French mandates, the responsibilities of the municipalities were cleaning, policing, and guarding as well as lighting the areas they oversaw. Also, municipalities were in charge of giving information to ottoman rulers about locals and what is happening in their area as well as helping in conflicts (DRI, 2019). After the independence in 1943, the Lebanese government kept the municipalities and assigned more responsibilities to them. Municipalities number increased although municipal elections were delayed until 1998 due to the civil war, and during the civil war many municipalities fell under the control of war militias or qaym maqams, which made them weaker.

Today, municipalities are not delivering any service to improve the food security status of its residents. Moreover, Lebanese residents perceive municipalities as entities whose duties are to clean the city, do maintenance work for the streets and the lights, collect taxes and dispose garbage. Even though the law of municipalities gives more responsibilities to municipalities and their councils, municipal service delivery is still minimal. Also, we must cite that the Ministry of Interior and Municipalities (MoIM) is responsible for territorial planning (at regional, municipal, and rural level), the management of communal lands, the supervision of non-governmental associations

including farmers' associations (but not cooperatives, that are under the MoA) and last, overseeing the wholesale markets and slaughterhouses.

So let us discuss what is preventing effective municipal service delivery.

1. Lack of proper budgeting/ lack of financial oversight

The Decree-Law no.118 of 1977 assigns a plethora of tasks to municipalities and provides them with financial and administrative autonomy to best serve local interest (Localiban, 2008).

To be able to do projects and plan forward, municipalities need a budget. The budget allocated to Lebanese municipalities is called the Independent Municipal Fund (IMF): it constitutes 70% of the municipal revenue and comprises the taxes collected by central governments as well as electricity, water, and telecommunication bills. And generally, urbanized municipalities who have a greater number of registered voters have a bigger share from the IMF than other municipalities and can employ more civil servants. However, the IMF is not collected and distributed following a fixed schedule, delaying municipal service delivery (LoGoRep, 2017; DRI, 2019; Harb & Atallah, 2015). The national government supplements the IMF by other taxes collected on a yearly basis for cleaning and maintenance services.

Also, since the country is hugely divided into political parties and everything must be linked to politics in order to move forward, municipal political affiliation and adherence to political parties and loyalty to certain political leaders remains key to benefit individually from further financial assistance and grants (Beydoun & Mourad, 2020). Disparities in budgeting are further observed because municipalities of 4000 people or

less are provided with more money to deliver services and do projects. Yet when taking into account the number of people who live within a certain municipality, we forget that this criterion will do better to the wealthy municipalities than the relatively poor ones with a higher number of residents.

Furthermore, around 2/3 of the total number of municipalities in Lebanon have grouped into what we call municipal unions forming 51 unions. By grouping, they are able to act on larger scales and increase their capacities. Also, we observe enhanced spatial representation, and opportunities for smaller municipalities to be supported by larger ones. Union of Municipalities is also more efficient when it comes to delivering services, and in developmental projects since it comprises a better human and financial capital (Boustani, 2014). Still, they face many challenges especially fiscal challenges because they are given little autonomy and cannot collect taxes or create new ones.

A lot of municipalities also fail to pay their fees of adherence to municipal unions hence municipalities remain dependent only on the IMF and grants by donors. We also observe a lack of autonomy given to municipal unions when it comes to tax collection or creation of new taxes. This lack of autonomy is further observed when municipalities are given large budgets. The “Muhafiz” and the “Qaym-maqam” must approve these grants (Harb & Atallah, 2015).

And with the foreign grants, municipalities try to hire consultants to help them enhance their project planning and their service delivery abilities. However, they end up obsessed with communicating about the consultant’s presence and the projects that they “will” do. The result is often failure of projects. Speculations are that the money dedicated for these projects ends up vanishing, maybe stolen, just like public assets have been stolen during crises (Abou Zaki et al., 2022).

Having said this, the total municipal budget coming from tax collection and other maintenance fees is 6% compared other countries like France where its share is 24%, and to 56% in Finland. This tiny amount is not only caused by the lack of fiscal autonomy given to municipalities, but also by the fact that many people abstain from paying taxes because they do not trust whether the money is going for investments, or it will be stolen. Other people do not pay taxes because of favoritism. Add to this the inefficient and outdated tax collection systems and lack of transparency and clear plans as to how the collected money is going to be used for the community (Beyond group, 2019).

So, we can see that local governments are not autonomous when it comes to the procurement of money for projects and are faced with many obstacles with regards to how politicized the country is.

2. Location and population density of municipalities

To date, Lebanon counts more than a thousand municipalities that differ in terms of their location, resources, residents, and services' delivery. As discussed above, municipalities that are more urbanized and more populated have more funds and according to Atallah, these municipalities can promote better tourism and provide health and education services to its residents (2015). On the contrary, smaller municipalities focus on other services such as cleaning, sewage problems, road lighting and water availability. Best outcome is observed in urban medium sized localities, but most Lebanese municipalities are small (LCPS, 2013).

That is to say that the effectiveness of work and service delivery within a municipality is related to its location and population density.

3. Lack of skills and specialized teams

Most Lebanese municipalities' staff lacks the required expertise and funds to plan and deliver services that best serve the locals. Also, staff is not encouraged to develop their technical skills. Hence, they are stuck in a loop of basic administrative tasks that they repeat on a daily basis. In addition to this, most administrations' work in Lebanon is not digitized. Also, inside municipal councils, no proper capacity building is provided to elected members hence they are misinformed about their duties and responsibilities. This in turn negatively impacts communities because they are also not informed about their roles and to what extent they should be involved. This enhances the already present corruption and discourages citizens to innovate and participate in municipal work.

Therefore, the lack of skills and means of municipal staff and elected members will affect the project planning and service implementation processes within municipalities (LoGoRep, 2017).

4. Media Coverage

Municipalities and their staff are very concerned about communicating to the public about their efforts even when minimal acts of public service are performed. Also, when donors are providing capacity building activities and even when routine administrative tasks are performed, media coverage and project reports publication are very necessary to municipalities.

We are not denying the fact that media coverage is essential: if one municipality delivers more services and plans better in terms of food security, media coverage is essential to show the model to other municipalities.

B. Treating food security by decentralization: local governments as defense lines

1. Contexts where decentralization has been proven effective in achieving food security (challenges and opportunities)

According to Babu, adopting decentralization in the food and nutrition policymaking in Malawi, resulted in more context specific policy design and implementation at the local level. This was possible because policies have taken into account the “resource availability of individuals especially farmers”, which has also helped in incorporating decentralized agriculture in developmental projects (1999). In India, adopting decentralization in food security systems has helped in reducing hunger and malnutrition because local participation contributed to more transparency in the food security system in a way to include local preferred foods i.e., replacing rice by millets which will directly contribute to “nutrition, diversity and taste” (Bharat, 2021). In the Philippines, food security policies were designed and implemented at the national level however, local government units are important actors when it comes to planning and implementing food security programs. Local governments have a direct link with the producers and consumers and so they are the key providers of useful data when formulating the national Food Security Plan. They also are the key actors and implementers of the national food security plan (Cabanilla, 2002).

In Brazil, Maluf’s key findings were that decentralized food systems help establish a connection at the local or territorial level and that helps in diving into the cultural links of food production and consumption. These interactions between “systems with different amplitudes, economic dynamics, social actors, and politics involved in the availability of and access to food and eating” contributed to better decision-making processes when it comes to food security (Maluf, 2021).

In Latin America, food producers and consumers are disconnected, there is scarce information on market supply, surpluses as well as consumption preferences. In addition to this, access to healthy food is limited at the local level. That is why FAO is providing capacity building activities and technical leadership programmes in cooperation with the public and the private sectors to promote partnerships and collaboration between “state, business and academia” at the municipal level. Hence a territorial instrument called “functional food circuits” is created to help specific geographical areas particularly small and intermediate towns and cities in Latin America access healthy food.

Participating municipalities benefit from this programme since they will manage their territorial food system with a focus on employment and enhancing the overall nutrition status of locals (FAO, 2017).

CHAPTER IV

ADOPTING A TERRITORIAL BASED APPROACH

A. Contexts where this approach has been proven effective in enhancing food security

Today, most food security policies are centrally led and are designed and implemented at the national level, ignoring geographical disparities within a country. And though most countries make progress at the national level in achieving food security, they ignore that most food insecure people reside in a specific area within the country. That is why it is very important to rather adopt a territorial based approach tailored to the needs of these specific groups within a specific locality or territory while addressing all the pillars: food availability, access, utilization, and stability.

We must remember that food is a cultural issue, it is a community issue and most importantly a personal issue. That is why policies cannot be designed and implemented in a one size fits all way.

To do so, information at local levels should be gathered and analyzed to identify the main factors obstructing the work towards the achievement of food security. Hence municipalities can be helpful here for better outcomes (OECD/FAO/UNCDF, 2016). However, we must remember that even if decentralization and adopting a territorial based approach help tailor more specific policies, a huge number of local authorities especially municipalities in Lebanon, remain financially incapable and lack the technical capacities.

The case of Cambodia:

Due to Cambodia's heterogeneous sub-national territories nature, the adoption of a territorial approach to food security integrating local stakeholders in the

development of national and sub-national plans to enhance food security, resulted in tailored initiatives to “local needs, priorities and specificities”. This approach helps in diversifying rural economies by exploiting other opportunities in tourism, renewable energy, and other sectors rather than relying on a single sector. In that way income generating opportunities are created in different areas not just agriculture, improving resilience to “macroeconomic and natural shocks”. In that way sectoral policies would be replaced by territorial approaches.

Territorial approaches in Cambodia helped in creating more comprehensive and sustained food security programmes replacing “sectoral, project-based interventions” (OECD/FAO/UNCDF, 2016).

Another case study would be Brazil and Latin America, cited above.

The case of Brazil:

In Brazil, adopting a territorial lens helped in better understanding of cultural links to food production and consumption whereas in Latin America “functional food circuits” were created to help specific geographical areas particularly small and intermediate towns and cities in Latin America access healthy food (Maluf, 2021; FAO, 2017).

B. Merging the territorial based approach in the law of municipalities in Lebanon

In Lebanon, the food security status keeps deteriorating with the current currency devaluation. That is why municipalities would be great actors.

If we were to merge the territorial based approach in the municipal law, there are a series of duties and responsibilities that should be added.

Inspired by the above examples, municipalities would:

- Have more responsibilities and give more attention to the economic and nutrition status of local residents not the people who come to vote in their town, to be able to generate more tailored interventions
- Ask for greater financial autonomy when it comes to collection of taxes and creation of new ones since every municipality is different than the other one and one municipality might need a great budget for greater assistance; yet greater governmental oversight for budget spending should be present
- Increase capacity development activities and digitize the work process in municipalities
- Act to generate accurate data about food purchasing, consumption, and overall access to food by individuals in certain municipalities
- Increase the participation of locals, local stakeholders and elected members in the development and implementation of plans to enhance food security
- Be in touch with other municipalities to create periodic capacity building activities and technical leadership programmes.

CHAPTER V

SOLUTIONS

A. What can be done to improve the current state of play of territorial food security in Lebanon based on global experience

Inspired by the FAO intervention in municipalities in Latin America, below is a list of recommendations to improve the current state of play of territorial food security in Lebanon

- Creation of municipal food security councils
 - These councils would specifically be concerned about gathering and studying data about the food security status of residents in each municipality (not only voters)
- Development of a territorial information system that includes data on:
 - Food basket prices
 - Food supply routes and production
 - Statistics on residents and their food security status
 - Food supply and demand balance
 - Budget and allocation of budget
 - The creation of independent intervention units would help in keeping the budget process more transparent
- Implement training and outreach programmes for municipal officials, civil society, and other actors in the food system
 - Build municipal capacity to implement e-commerce programmes when possible
- Creation and collection of the municipal food security fund

- This fund could be revenue based: the more an individual earns, the bigger the share he allocated to help in enhancing food security
- Less authority and power to qaym maqam over budgets and hence decision making
- Understand that local governments must focus on the demand side because national government mainly focuses on the supply side
- Creation of territorial market platforms with local identity
- Implementation of local food purchase and consumption policies to prevent food hoarding

B. Possible updates to the law of municipalities

The law of municipalities should be updated in a way to include a section involving the steps for better local governance of food security.

The below table is a model from beyond group. The model was adapted in some sections to better serve the context.

	Citizens and civil society	Municipal council
Prerequisites	Establishment of mutual trust	Territorial based strategies
	Proper communication	Resources
	Less power to NGO	Right people in place
	Electoral law not based on ancestral voting	Competent mayor and council members
Design	Partnerships in food policy designs between all stakeholders	More power to design better fit food policies
	Good communication with people	
Implementation	Exposure to initiatives and policies	Technical support for smooth policy implementation
	Communication of initiatives to others	
Sustainability	Local resources engaged	Institutional culture
	Transfer of capacity	Low dependence on central government
		More dependency on individuals' needs
Impact	Ownership, inclusion, success of programs	
	Social stability, better programs, local development	
	Influence on national level	

Table 1: Possible framework to add to the law of municipalities to enhance food security in Lebanon

Source: Adapted from Beyond group

The table above proposes the following model:

The new section in the municipal law should include the steps that both municipalities and municipal councils should take as well as what is required from citizens and civil society. First, there are prerequisites from both groups; citizens and civil society should trust municipalities' elected officials and members and give less authority to NGO.

They should accept that the electoral law shall be updated in a way that only residents of a certain municipality can vote there and benefit from food assistance programmes.

On the other hand, municipalities and municipal councils shall think while adopting a territorial based approach, make sure that the mayor and elected members are competent and employ the right people in the right place to efficiently use the resources available to ensure food availability and food access.

Second, while designing food policies, all stakeholders should be involved especially the mayor who should be the best informed about the needs of the citizens.

Third, to best implement the food and nutrition programmes, civil society should communicate all aspects of these programmes with all citizens and municipalities should seek support from elected member not the central government.

Last, to be able to sustain this model, local resources should be engaged in a way to enhance all citizens residing in a certain territory food security status and in a way to transfer capacities. Municipalities and municipal councils should be less dependent on central government when it comes to responding to local needs. The addition of this section to the law of municipalities with all the functions that it gives to municipal councils and the civil society would help in local development which in turn

will influence the national level: when availability of food and access to food is enhanced in each locality, the whole country's food security status would then be enhanced.

CHAPTER VI

CONCLUSION AND POLICY RECOMMENDATIONS

The world is not on track for ending hunger and achieving food security. Conflicts and climate change are driving more people into poverty and hunger each year. It is evident that if we do not change the way we produce and consume food on a global level, climate change will further impact people's livelihoods and hinder the progress toward achieving food security. In addition to this, conflicts will further disrupt food exports and food procurement from and by many countries i.e., the impact of the Ukrainian war.

Governance is a key issue when it comes to food security.

While most of the literature devolves the governance of food security to governments, this paper suggested another model for achieving food security.

Adopting decentralization coupled with a territorial based approach is suggested. While this strategy is successful in other countries cited above in the paper like Malawi, India, Brazil, and the Philippines, it is still not applied in Lebanon. It was evident from the literature that Lebanon does not even devolve the governance of food security to a single sector, rather gives the responsibility to the ministry of Agriculture who ensures availability of food through agriculture but does not really monitor food access by all Lebanese citizens.

Today, Lebanon counts more than a thousand municipalities which makes the adoption of a territorial based approach very convenient: each municipality can tailor the food security policies and interventions to the needs of its residents. According to the model proposed in table 1 and the solutions inspired by FAO, municipalities remain

the best governors of Food security in Lebanon because when financially empowered and when given technical guidance, municipalities are best informed about resources in each locality and can directly intervene to ensure food availability to all residents and access to food according to the proposed solutions.

However, since in Lebanon the political situation and context is not ideal to implement decentralization, municipalities will surely remain incapacitated and will face structural barriers. Political figures will further complicate the reforms in municipalities when putting the right people in the right place. It is indeed, a very long process but reforms take time and become effective after a while.

It is important to keep in mind that the barriers to decentralized food security in Lebanon are not the same in other countries and that is why this model might work better in other contexts where lower governmental levels are not politicized in terms of implementing certain agendas.

Finally, the electoral system in Lebanon must be reformed in a way to remove ancestral voting to best serve the needs of local residents.

The key question remains whether we can really detach Lebanese municipalities and other administrative entities in Lebanon from their politicized reality to be able to move forward.

REFERENCES

- Abou Zaki, S., Dagher, L., & Salam, A. (2022, July). *July 2022 number 69 LCPS policy brief*. Retrieved September 13, 2022, from <https://api.lcps-lebanon.org/content/uploads/files/Policy-Brief-69-eng.pdf>
- AlKadi, R. (2021). FOOD AND NUTRITION SECURITY GOVERNANCE: GAPS, OPPORTUNITIES, AND POLICY RECOMMENDATIONS: THE CASE OF LEBANON.
- Aday, S., & Aday, M. S. (2020). Impact of covid-19 on the Food Supply Chain. *Food Quality and Safety*, 4(4), 167–180. <https://doi.org/10.1093/fqsafe/fyaa024>
- Al Jazeera. (2021, March 29). Lebanon Could Sink Like the Titanic, Warns Parliament Speaker. Al Jazeera. Retrieved from: <https://www.aljazeera.com/news/2021/3/29/lebanon-could-sink-like-titanic-says-parliament-speaker>.
- Alami, M. (2022, April 3). *GCC not at risk of food insecurity but inflation as Ukraine crisis disrupts supply*. Arab News. Retrieved June 10, 2022, from <https://www.arabnews.com/node/2055761/business-economy>
- Babu, Suresh Chandra. 1999. Designing decentralized food security and nutrition policies: a knowledge based system approach in Malawi. *Quarterly Journal of International Agriculture* 38(1): 78-95
- Bahn, R., & Yehya, A. (2020). *Impacts of Crisis on Food Security in Lebanon: Presentation to the Food Security and Agriculture Sector Regional Working Group for Beirut-Mount Lebanon and South*. Presentation.

- Bahn, R., Yehya, A. A. K., & Zurayk, R. (2021, March 19). *American University of Beirut*. Food Security Program. Retrieved June 16, 2021, from <https://www.aub.edu.lb/fafs/foodsecurity/Pages/default.aspx>
- Bahn, R., Yehya, A. A. K., & Zurayk, R. (2022, August 8). *American University of Beirut*. Food Security Program. Retrieved August 24, 2022, from <https://www.aub.edu.lb/fafs/foodsecurity/Pages/default.aspx>
- Belhaj, F., & Soliman, A. (2021, September 29). Mena has a food security problem, but there are ways to address it. World Bank. Retrieved February 11, 2022, from <https://www.worldbank.org/en/news/opinion/2021/09/24/mena-has-a-food-security-problem-but-there-are-ways-to-address-it>
- Beydoun, J., & Mourad, K. (2020). Municipalities in Lebanon [Unpublished paper]. Department of Political sciences, American University of Beirut.
- Boustani, M. (2014). Enhancing municipal capacities: From emergency response to planning. Beirut: Civil Society Knowledge Centre.
- Cabanilla, L. S. (2002). Achieving food security: The role of and constraints faced by LGUs. *and APEC*, 73.FAO, IFAD, UNICEF, WFP and WHO. 2022. The State of Food Security and Nutrition in the World 2022. Repurposing food and agricultural policies to make healthy diets more affordable. Rome, FAO. <https://doi.org/10.4060/cc0639en>
- Democracy Reporting International (2019). Are municipalities in Lebanon delivering? Democracy Reporting International. Available at: <https://democracy->

reporting.org/dri_publications/are-municipalities-in-lebanon-delivering/
[Accessed March 26, 2020].

Democracy Reporting International (2017). Public Service Provision in Municipal Unions in Lebanon Solid Waste Management, Municipal Police and Public Safety, Accountability and Participation Available at: https://democracy-reporting.org/wp-content/uploads/2018/07/DRI_upload-municipal_26072018_english.pdf [Accessed January 26, 2022].

Democracy Reporting International (2017). Reforming decentralization in Lebanon. Democracy Reporting International. Available at: https://democracy-reporting.org/dri_publications/bp-80-reforming-decentralisation-in-lebanon-the-state-of-play/ [Accessed February 4, 2022].

FAO. (2021). Lebanon National Agriculture Strategy 2020-2025 addressing the priorities of the agrifood sector in Lebanon | FAO in Lebanon | Food and Agriculture Organization of the United Nations. Fao.org. Retrieved 26 April 2021, from <http://www.fao.org/lebanon/news/detailevents/en/c/1308437/#:~:text=News,Lebanon%20National%20Agriculture%20Strategy%202020%2D2025%20addressing%20the%20priorities,the%20agrifood%20sector%20in%20Lebanon&text=The%20NAS%20long%2Dterm%20Vision,economy%20into%20a%20productive%20economy.>

FAO. (n.d.). *Suite of Food Security Indicators*. Faostat. Retrieved August 5, 2022, from <https://www.fao.org/faostat/en/#data/FS>

Food Insecurity by Country in 2015. Arab spatial. (2016). Retrieved January 25, 2022, from https://arabspatial.org/map_viewer/?lang=en&indicators=type_vector.id_76.level_country.year_2015

Gustafson, S. (2021, March 29). *Ending hunger by 2030: Policies and costs*. Food Security Portal. Retrieved September 13, 2022, from <https://www.foodsecurityportal.org/node/1693>

Hamadé, K. (2021). Lebanon's Food Insecurity and the Path Toward Agricultural Reform. Carnegie Middle East Center. Retrieved 26 April 2021, from <https://carnegie-mec.org/2020/11/13/lebanon-s-food-insecurity-and-path-toward-agricultural-reform-pub-83224>.

Harb, M., & Atallah, S. (2015). Local Governments and Public Goods: Assessing Decentralization in the Arab World. In The Lebanese Center for Policy Studies. <https://doi.org/10.1017/CBO9781107415324.004>

IFAD. (2022, April 25). *Working in the context of government decentralization policies*. www.ifad.org. Retrieved September 13, 2022, from <https://www.ifad.org/documents/38714182/45491269/ESR+Government+performance+-+Learning+note+on+decentralization/fba4139e-48f0-e2d5-d2b2-b4eba5bfeb9f>

IFPRI. (2022, February 24). How will Russia's invasion of Ukraine affect global food security? ifpri.org. Retrieved 2022, from <https://www.ifpri.org/blog/how-will-russias-invasion-ukraine-affect-global-food-security>

Local government resilience programs for the middle east and north Africa (LOGOReP 2017). Lebanon Federation Capacity Mapping Study. Available at: <https://www.logorep.nl/wp-content/uploads/2018/06/Lebanon-Federation-of-Municipalities-Capacity-Mapping-Study.pdf> [Accessed April 16 2022].

Localiban, Status of the municipalities in Lebanon. Localiban. Available at: <http://www.localiban.org/status-of-the-municipalities-in-lebanon> [Accessed May 7, 2022].

Mougeot, L.J., Koc, M., MacRae, R., & Welsh, J. (1999). Introduction : food security is a global concern.

NRC. (2020, October 6). Global Livelihoods and Food Security Strategy 2020-2025. Retrieved March 11, 2022, from <https://www.nrc.no/resources/policy-doc/nrc-global-livelihoods-and-food-security-strategy-2020-2025/>

Omidvar, N., Ahmadi, D., Sinclair, K., & Melgar-Quiñonez, H. (2019). Food security in selected Middle East and North Africa (MENA) countries: an inter-country comparison. *Food Security*, 11(3), 531-540.

Schmitt-Sands, C. E. (2017). *The Political Determinants Of Food Security: Democracy, Decentralization, And Federalism*. Wayne State University.

UNESCWA. (2019, January). Tracking food security in the Arab Region. ESCWA. Retrieved March 5, 2022, from <https://www.unescwa.org/publications/tracking-food-security-arab-region>

UNICEF. (2021, August 22). "Running dry": Unprecedented scale and impact of water scarcity in the Middle East and North Africa. UNICEF. Retrieved February 8, 2022, from <https://www.unicef.org/press-releases/running-dry-unprecedented-scale-and-impact-water-scarcity-middle-east-and-north>