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Trade for Food Security and Nutrition Security in the Arab Region

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Abstract

The status of food security and nutrition in the Arab region is examined to highlight challenges and opportunities facing the region. These arise mainly due to the prevailing global and regional trade environment facing the Arab region since the advent of the Covid-19 pandemic and the aftermath of the war in Ukraine. The report assesses the supply and import-dependency levels for major food groups and the attempts to re-examine trade policies and governance to optimize their food security and nutrition. It assesses ways to strengthen trade while decreasing vulnerabilities including the required food system change to emphasis on greater collaboration and improving food safety standards. As such, it discusses the impact of population growth and its implication for food import dependency considering the recent food prices increase as well as the impact of resource scarcity and degradation, notably land and water resources. The critical analysis of the position of the Arab region in international food markets shows rising food requirements which are likely to compound its vulnerability to ensure its food security and nutrition notably in times national, regional and global disturbances, which are likely to increase with the advent of climate change and pandemic concerns. Results suggest that governments could pool strategic regional storage facilities to mitigate against supply shortages and price shocks to stabilize food availability. The region also needs to diversify sources of food imports that would be concomitant to increased production of local food products, which are more resistant to stresses. These would suppose a change in diets that could help alleviate the impact of environmental changes and resource depletion.

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Acronyms

ESCWA	Economic and Social Commission for West Asia of the United Nations
EU	European Union
CETA	EU-Canada Comprehensive Economic and Trade Agreement
FAO	Food and Agriculture Organisation of the United Nations
GAFTA	Greater Arab Free Trade Agreement
GCC	Gulf Cooperation Council
NFSA	National Food Safety Authority of the Arab Republic of Egypt
OECD	Organisation for Economic Cooperation and Development
PTA	Preferential Trade Agreement
SDGs	Sustainable Development Goals
USA/US	United States of America
WTO	World Trade Organisation

1. Introduction

Over the last two years, two events have led to severe disruptions in global food trade and subsequently renewed food security concerns in the Arab region. First, the COVID-19 pandemic has had a significant impact on the functioning of food systems including food production, distribution and access that led to fears of potentially widespread disruptions of the global food trading system, as it impacted the livelihoods of rural communities, urban poor and those in informal employment. Second, the war in Ukraine has led to a severe global shortage in grain and other food and agricultural commodities threatening grain imports and availability in most Arab countries as the region imports more than a third of its grain needs from Russia and the Ukraine (FAOSTAT, 2022) while about 50% of the grain exported by Ukraine is sent to the Middle East (Walsh, 2022). These kinds of disruptions might become frequent and be compounded in the future by climate change and other uncertainties that might affect food and nutrition security. The most vulnerable will be the Arab poor across the region in both urban and rural areas, who are currently numbering 101.4 million in the aftermath of the COVID-19 pandemic (ESCWA, 2020). According to the Food and Agriculture Organisation of the United Nations (FAO), around 32% of Arab citizens lack access to sufficient and nutritious food in 2021. Over the past two decades, the level of undernourished people increased by 91% to 69 million people (FAO, 2021). Especially poor and post-conflict countries have seen dramatic increases in food and nutrition insecurity since the beginning of the century. Food systems tend to suffer from poor strategic governance on the global level but also immense power disparities making change a highly difficult challenge presently and, in the future, and more so in the Arab region due to other peculiarities including conflicts and violence, climate impact, fragile and dwindling natural resources or susceptibility to macroeconomic shocks (FAO, 2021).

Due to a lack of water and arable land resources, the Arab region has become one of the most food import-dependent in the world (ESCWA, 2017). The relationship between food security and trade is evident in its support in achieving the Sustainable Development Goal of ending hunger and all forms of malnutrition by 2030. Agricultural trade contributes directly to food security as noted in the SDGs (targets 2.b and 2.c – see below) and once it is hampered or distorted, food security is menaced. Climatic shifts, population growth and dwindling natural resources continue to place pressure on local food systems thereby further increasing the strategic importance of global trade in agricultural produce and exacerbating trade imbalances and shortages of foreign currency reserves. The 2022 crisis in the Black Sea region once again highlighted that reliance on food trade presents several threats notably when it is disrupted. However, agricultural trade could contribute to economic growth when it is diversified, and when intraregional opportunities are utilised. These two aspects are important to consider since the Arab region is experiencing several conundrums: while it has a high cereal import dependency, several countries enjoy high levels of self-sufficiency in certain vegetable and fruit crops or have untapped agricultural and food production potential. At the same time, malnutrition (such as undernutrition, micronutrient deficiencies, obesity, and other dietary ailments) persists leading to high health costs across the Arab region.

Following the Covid-19 pandemic and subsequently the Black Sea crisis, the Arab region should explore several options on the global level, the regional level and on the national level.

- On the global level, the region could act as an important purchasing bloc allowing cheaper and more secured imports of strategic grains with a focus on a diversified trade portfolio.
- On the regional level, prioritizing trade of fruits and vegetables and other produces in which some countries might have or build a comparative and competitive advantage.

- On the national/local level, there are several opportunities that could be derived from changing patterns of consumption and dietary changes. These changes could have a positive impact on trade as policymakers ensure a strategic expansion of agricultural trade and food imports that focuses on the eradication of hunger, food insecurity and malnutrition.

Those countries most affected by food and nutrition insecurity in the Arab region stand to benefit from repurposing trade policies and governance for the optimised nutritional security of their populations.

This report will be divided in three sections that will examine the status of food security and nutrition, analyses global and regional trade environment and look into member states trade agreements as mentioned below:

First, it will provide an overview on the status quo of food security and nutrition since Covid-19 and the war in Ukraine illustrating recent data on population growth and future food requirements among ESCWA member states. In addition, changes in food prices to the 2015 baseline will be provided to highlight those countries particularly affected by rising food prices since the beginning of the pandemic. This will be juxtaposed with data on food balance sheets and cereal import dependency ratios to disclose the weaknesses and strengths of Arab countries in food production and food imports.

Second, the report will provide an analysis on the global and regional trade environment which is operated within the ESCWA member states. The WTO (where applicable since not all ESCWA member states are WTO members) will be presented, in text boxes, as well as regional Arab free trade agreements and bilateral trade agreements of specific member states such as Egypt.

Finally, those member states and their role in multilateral trade agreements such as access to the European Customs Union will be illustrated and new market trends such as trade with Sub-Sahara Africa will be highlighted. This final section will introduce a SWOT analysis for trade and nutrition in the Arab region including potential options for global, regional, and national/domestic trade. In the end, five recommendations will be presented to strengthen trade and decrease vulnerabilities in the Arab region including food system change, greater emergency collaboration and improving food safety standards for the benefit of consumers' health and trade.

2. Food and nutrition security: an overview

The Arab region is one of the most at-risk regions in the world in terms of food security. According to 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 an active and healthy life” (FAO, 2009). In the Arab region, population growth, land and water resources scarcity, economic inequality, unfavourable terms of trade, shifting geopolitical risks and sometimes poor food quality and safety act as key drivers of current and future food and nutrition insecurity. To ensure food security and meet the Sustainable Development Goal (SDG) 2 by 2030 and beyond, the Arab region will not only have to find ways to produce, access and utilize better food but also to ensure future trade strategies are in line with the demands of an increasing population. The importance of trade in achieving food security and nutrition is recognized through two targets of the SGD 2:

- **2.B** Correct and prevent trade restrictions and distortions in world agricultural markets, including through the parallel elimination of all forms of agricultural export subsidies and all

export measures with equivalent effect, in accordance with the mandate of the Doha Development Round.

- **2.C** Adopt measures to ensure the proper functioning of food commodity markets and their derivatives and facilitate timely access to market information, including on food reserves, to help limit extreme food price volatility.

These targets are of major importance to the Arab region due to their position as large-scale participants in global food trade. The next section will introduce the specific challenges Arab countries face to meet SDG 2.

A. The nutrition challenge in the Arab region

Few regions in the world are predicted to see similar total absolute population growth than the Arab region. Overall, the region's population will double from approximately 456 million in 2021 to 914 million by the end of the century. The population is expected to be above 533 million by 2030 at the end of the SDGs and more than 694 million by mid-century or about 76 million more people to feed by 2030 and close to 240 million more to feed by 2050. Omit for the Gulf Cooperation Council (GCC)¹ countries, all Arab sub-regional groupings, Middle Income Countries (MICs),² Countries in Conflict (CiCs)³ and Least Developed Countries (LDCs)⁴ will experience a relatively strong population growth. However, three countries will experience negative growth of population including Bahrain, Qatar and the United Arab Emirates as they are already well below a fertility rate of 2 children per women. A great number of countries will see moderate population growth including Kuwait, Lebanon, Libya, Morocco, Oman and Saudi Arabia and Tunisia (Figure 1). Fertility rates in those countries are currently just above 2 children per woman with an expected decrease to below 2 children per woman in the coming decades. On the other hand, Algeria, Djibouti, Egypt, Jordan and the Syrian Arab Republic have an average fertility rate between 2.5 and 3 children per woman, with fertility rates expected to fall below 2 children per woman over the coming two decades. Comoros, Iraq, the State of Palestine and Yemen have fertility rates above children by women though they are expected to fall below 2 children per women before the turn of the century. On the other hand, the remaining three countries, Mauritania, Somalia and Sudan, which currently have high fertility rates of above 3 children per woman are expected to remain at a fertility rate above 2 children per women at the end of the century (Figure 2). Although for all countries will experience declines, the impact on absolute population growth will remain high. As a result, the ten countries with high population growth over the next 2 decades will represent 78% of the entire Arab population

¹ GCC includes Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates.

² MICs include Algeria, Egypt, Jordan, Lebanon, Morocco and Tunisia.

³ CiCs include Iraq, Libya, Palestine, Syria and Yemen.

⁴ LDCs include Comoros, Djibouti, Mauritania, Somalia and Sudan.

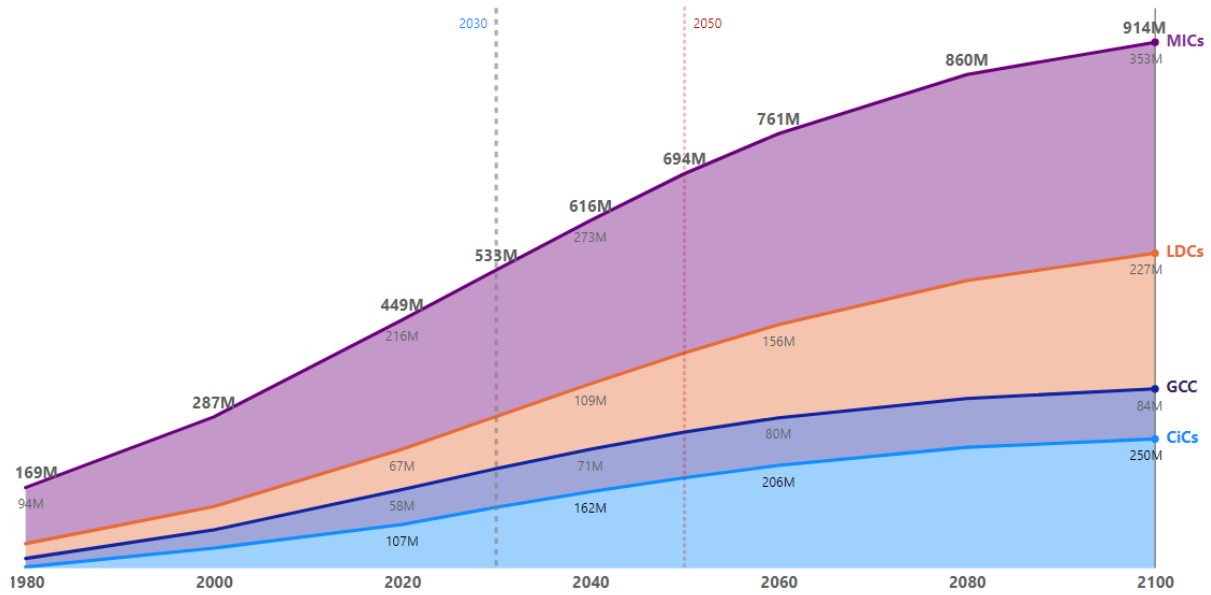


Figure 1: Total population growth in the Arab region from 1980-2100
Source: UNDESA (2022)

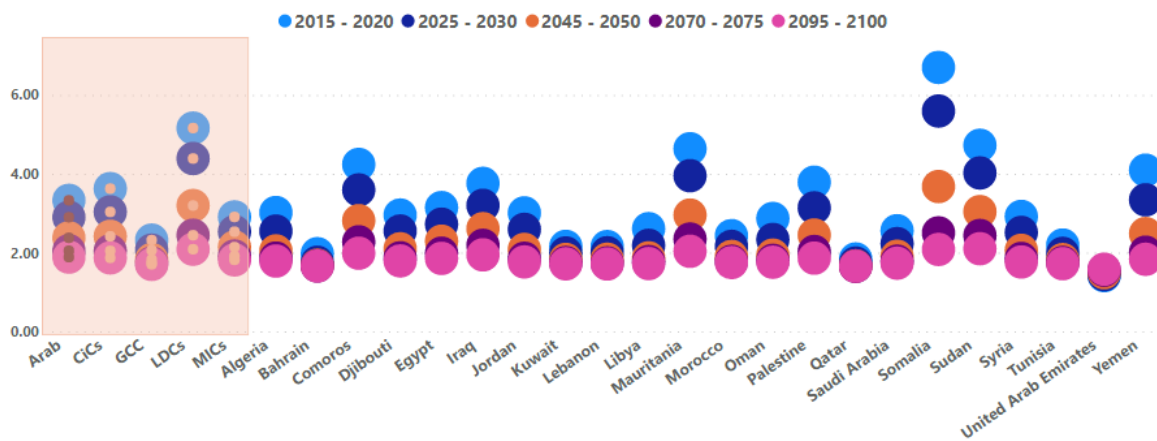


Figure 2: Average Annual Rate of Population Change 2022-2100
Source: UNDESA (2022)

The Arab region will need to double its food supply to match population growth over the course of this century and even more if account is taken of the anticipated rise as the region continues to develop. The countries with high population growth will need three to four times of the currently supplied food quantities to meet sufficient caloric intakes in the future. Already, caloric intakes are below the Eat-Lancet Commission suggested 2500 calories per day per person in most countries (Figure 3), which is slightly above the recommended 2300 calories per day per person for a healthy adult male to give countries a wiggle room in nutrition-related policies (Willet et al, 2019).

Especially some least developed and conflict affected Arab countries, e.g., Somalia, Yemen, Mauritania, Palestine, Sudan, or Iraq, are already struggling to reach the recommended 2300 calories per person for healthy adult male suggesting that not all of their population are able to meet their nutritional needs. A combination of factors including underdevelopment, lack of resources, disasters

and conflict are among the drivers of the inadequacy of food supply. In addition, growing populations do not only mean higher absolute demand for food. Apart from meeting caloric requirements of 2500 calories per day for each person, the region also needs to take stock of its nutritional requirements. For example, breastfeeding women need about 300-400 additional calories per day to meet the dietary requirements for both the mother and the child (CDC, 2022). Breastfeeding women should therefore have access to a diversified, nutritious maternal diet with a higher intake of iodine, choline, and vitamin B12 to provide their infants with sufficient nutrients to avoid stunting and wasting in children. Iodine, choline and vitamin B12 can be found in meat, fish and dairy products as well as legumes and beans (CDC, 2022).

Similarly, children under the age of 13 need access to a diversified, healthy diet with higher intakes of minerals, vitamins and fatty acids to avoid the triple burden of malnutrition such as underweight, hidden hunger – whereby children suffer from a lack of micronutrients – and obesity (UNICEF, 2020a). Key nutrients for children are vitamin A, iodine, iron, and folic acid found in fruits and vegetables, dairy products and meat (UNICEF, 2020b). Providing diversified diets is therefore not just optional but mandatory for the Arab region as it prepares for growing and healthy populations that are capable of meeting future challenges.

In terms of nutrition, the picture for the Arab region has an even more challenging outlook with about one quarter of the population suffering from malnutrition. While 53.7 million people in the region were considered as undernourished in 2016, 65.2 million people were classified as obese. While undernourishment is a major issue in the least developed Arab countries, obesity is a growing concern across the region with the highest levels in the GCC countries, Egypt, and the Maghreb states with common adverse effects on public health. Non-communicable diseases such as diabetes, cardiovascular diseases and cancer have been on the rise since the 1980s. A significant cause of higher levels of non-communicable diseases has been assigned to unhealthy diets that are low in fruits and vegetables and high in starchy and sugary foods (Rahim et al., 2014).

Moreover, protein supply is also important and necessary to all diets. Protein supply is generally adequate in the Arab region while most of the protein supply comes from wheat-based foods. Animal protein supply is still insufficient in most countries across the region with the notable exception of high-income countries in the GCC region (Figure 4). This influences the diets of young mothers, infants, and children, who all require higher intakes of micro-nutrients sourced from animal protein such as meat, dairy, and fish (e.g., Vitamin B12, Creatine, Carnosine, Vitamin D3, DHA, Heme iron, Taurine, etc.). A higher provision of animal proteins such as from fish farming or rangeland herding should therefore be a policy objective.

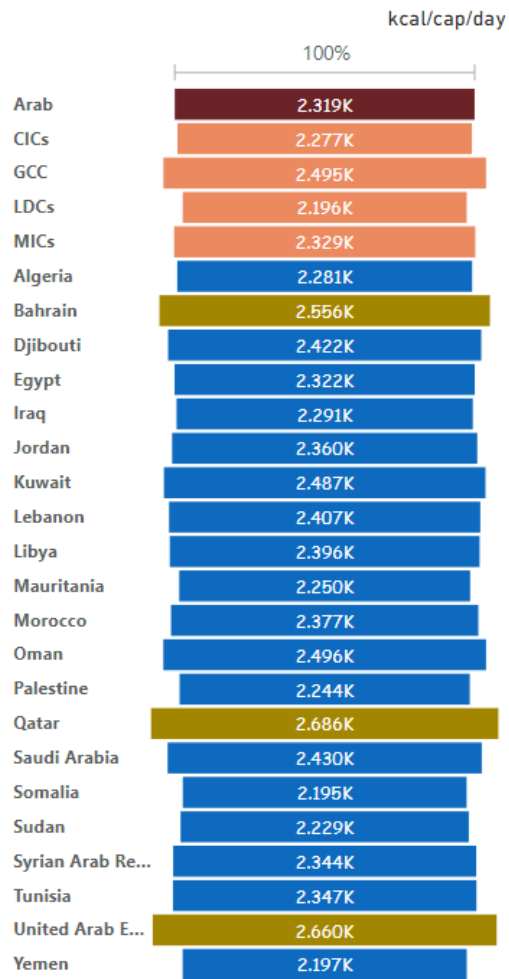


Figure 3: Daily caloric consumption in 2021
Source: FAO (2022).

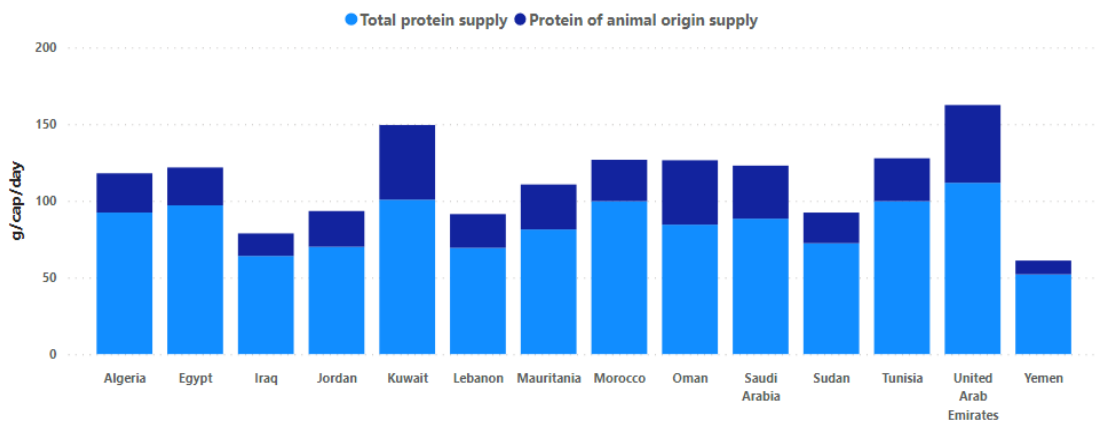


Figure 4: Average supply of protein, grams per capita per day, 2016-2018
Source: FAO (2022).

Cost and affordability of a healthy diet determine food security and nutrition outcomes as well. As healthy diet become expensive malnutrition tends to increase, both the prevalence of undernourishment and obesity, which is a contradiction in this region. For those with low income, nutritious food such as fruits and vegetables, meat, fish, or dairy tend to be less affordable and as such opt for lower-costs staple foods including cereals and starchy foods, which are energy-dense and thus less healthy. On the other hand, those with more means tend to choose foods and drinks with high levels of saturated fats and/or sugar as their diets are oriented towards more processed foods. Food price volatility might not end up affecting much the demand for calories but rather affect the price of specific food items, which would likely impact the demand of those food items. It should be noted that a healthy diet is a diet that provides adequate calories and nutrients through a diverse intake of foods from different food groups to meet all nutrient requirement intake to prevent malnutrition in all its forms (FAO et al, 2020). A healthy diet builds on global nutritional guidelines that are nationally adapted to meet the specific availability, requirement, and preferences of each country and would comprise fruits and vegetables, legumes (lentils, beans, etc.), whole grains, protein, dairy, healthy fats and limited amounts of carbohydrates (WHO, 2020).

B. Food availability patterns

As seen above, the Arab region does not only need to provide sufficient calories to its growing population. Calories could be provided in ample ways by increasing, for example, the supply of high carbohydrate-containing staple foods. The region will also need to provide sufficient micro-nutrients to meet the criteria of healthy diet and adequate food for all people for an active and healthy life . It is therefore important to examine the supply of key food items such as cereals, fruits and vegetables, meat and dairy and fish while also assessing future requirement.

Box 1: The world food price spikes of 2007/08 and 2010/11

In 2006, amid rising oil prices, the United States outlined a programme to gradually replace the oil imported by ethanol and other renewable energy sources (Bumiller and Nagourney, 2006). It provided the onset of increased subsidies for ethanol production that turned maize into biofuel. The European Union similarly increased its ethanol production by turning select food items into bioenergy. Later analysis provided evidence that the ethanol policies of the United States and the European Union contributed partly to the food price spikes of 2007/08 and 2010/11, which had profound impacts on the socio-political stability of many developing countries (Condon et al., 2013). When wildfires alongside poor harvests prompted Russia to impose an export ban on wheat during a widespread inflationary pressure due to a rapid growth of the world economy, and a depreciation of the US Dollar, the demand for grain led to a substantially decrease in global grain stocks. The combination of these multiple causes was the perfect storm that commodity market speculators used to further bet on higher food prices prompting rice prices to increase by 217%, wheat by 136%, maize by 125% and soybeans by 107% within a period of a few months (Wiggins et al., 2010). This resulted in the infamous food prices crisis, as prices spiked first in 2007/08 and later in 2010/11 (Piesse and Thirtle, 2009). In part, increasing prices led to greater civil unrest on Arab streets especially during the 2010/11 world food crisis contributing to the so-called “Arab Spring”. The 2007/08 and 2010/11 food price spikes highlighted the vulnerability of Arab countries to global food price fluctuations and how geopolitical events affect their countries’ food security and socio-political stability.

i. Cereal supply

There is a stark difference in production levels of different commodities across Arab countries. During the period from 2018-2020, cereal import-dependency for the entire Arab region was about 60% and was above 90% in all GCC countries as well as in Djibouti, Jordan, Libya, and Yemen (Figure 5)

meaning that these countries almost entirely relied on the international market for their cereal needs (also see text box 1). LDCs tend to be less reliant on cereals import (40%) omit for Djibouti (100%) as the country has minimal agricultural resources. GCC countries are the most reliant on global cereal markets at an average of 93% import dependency largely due to the limited productive resources. Most Middle-Income countries Algeria, Egypt, Morocco and Tunisia on the other hand produced between 30-50% of their cereal requirements domestically. Egypt is among the largest cereals importers in the world notably as related to wheat though it also produced about half of its cereals need domestically. In terms of cereal supply, the Arab region as whole supplies about 305 kg/cap/year with most Maghreb countries omit for Morocco supplying above 400 kg/cap/year though the highest is Djibouti at 477 kg/cap/year. Most Arab countries have a cereal supply below the world average with five countries supplying less than 150 kg/cap/year. These countries omit Bahrain are LDCs or CiCs.

While most Arab countries are utilising global comparative and competitive advantages by importing cereals from world regions with adequate land and water availability, the region’s import-dependency is subject to increase because of population growth and increasing affluence. With higher import-dependency levels comes the challenge of not only providing sufficient carbohydrates to their populations but also significant other nutrients present in wheat such as protein, dietary fibre, manganese, phosphorus, and niacin as well as several B vitamins. Cereals are also increasingly becoming important as a source of animal feed for meat, dairy and egg production. Thus, cereal import-dependency has several spill-over effects on nutrition security in the region and will continue to be a crucial commodity. By mid-century, the region will need to import 55% more cereals than currently being imported, which will more than double the current import bill, estimated at an average for 2018-2020 of about US\$ 22.5 billion (FAOSTAT, 2022).

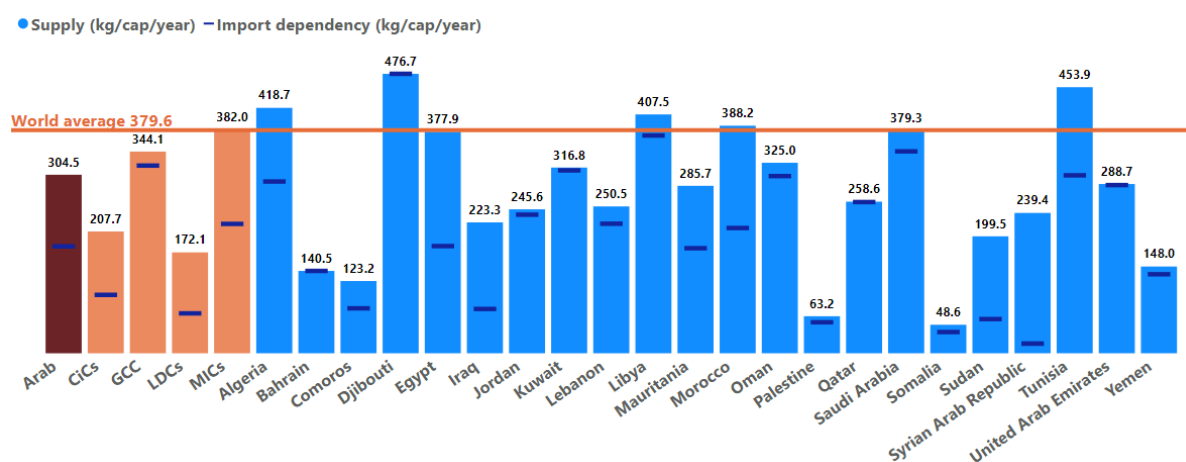


Figure 5: Cereal-supply and import dependency 2018-2020
Source: FAOSTAT (2022).

ii. Milk and eggs supply

Milk supply per capita per year is generally below the world supply average of 113/kg/cap/year omit for three countries Oman, Somalia and Tunisia while seven countries are self-sufficient in milk supply with a 0% import dependency rate (Figure 6). LDCs end to be more self-sufficient though milk supply in Comoros and Djibouti in addition to Iraq and Yemen, countries in conflict, are a cause of concern as supply hovers at around 20kg/cap/year with Yemen supplying only 13kg/cap/year. The largest milk producers are Algeria, Morocco, Egypt, Saudi Arabia, Sudan, Syria and Tunisia as they possess

meaningful production capacities to meet most of their requirements for milk supplies. For most other GCC countries, milk import dependency is above 60% as they lack the resources for a productive local capacity. According to the US Dairy Export Council, the dairy sector in the Arab region is expected to grow significantly due to population growth, health and wellbeing considerations, economic growth, and restaurant and grocery sector growth (Rogers, 2021).

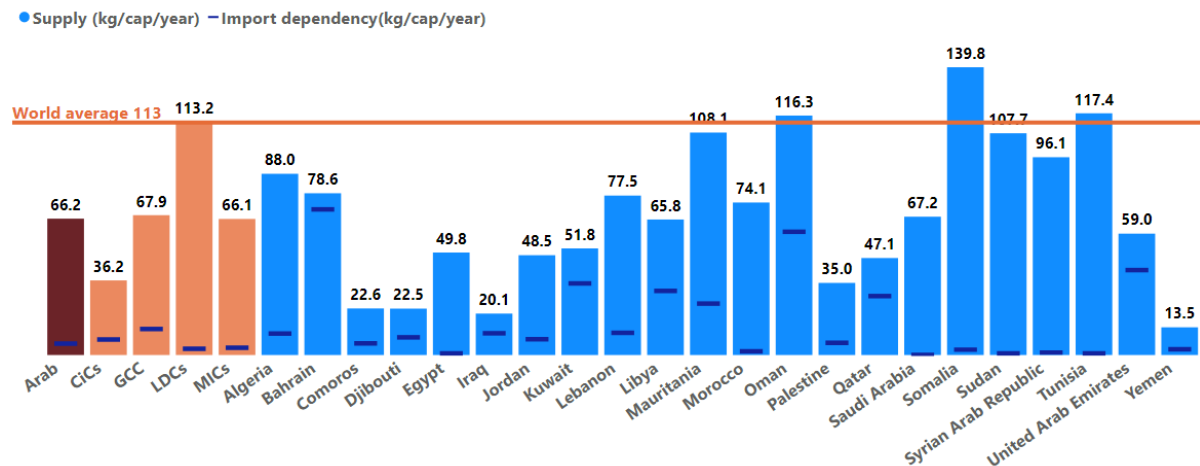


Figure 6: Milk supply levels and import dependency in 2018-2020
Source: FAOSTAT (2022).

For eggs production, a great number of countries in the region are self-sufficient though a majority of countries are well below the average world supply level of 12 kg/cap/year. Eggs supply do not pose significant challenges to the region (Daghir et al., 2021). In addition, there is a potential to further expand eggs production across the region due to the lower inputs needed and less natural resources requirement for producing eggs.

iii. Meat supply

The average meat supply in the Arab region is about 30 kg/cap/year will below the world average supply of 43 kg/cap/year. All GCC countries supply more than 50 kg/cap/year to their populations while the lowest supplies are in the CiCs and LDCs with respective averages of 18 and 21 kg/cap/year (Figure 7). In many Arab countries, sheep meat is the traditional choice of red meat by consumers especially in Maghreb countries, Yemen, Egypt, and Oman. However, richer GCC countries have expanded their beef and dairy farm production capacities over the past decades (OECD and Food and Agriculture Organization of the United Nations, 2021). Most of the imported beef is from either Latin America or Oceania, where production capacities are high. At the same time, the Arab region is seeing a gradual shift away from red meat to poultry, which has been a recent introduction to Arab diets. While traditionally, chicken were reared in backyards, a highly efficient poultry industry has been on the rise since the 1960s. Current production cannot however meet demand, hence about 40% of poultry meat is imported (Daghir et al., 2021). However, recent joint ventures such as between Brazil and Saudi Arabia to establish new poultry plants in Saudi Arabia worth \$350 million suggest this gap could be decreased in the future as Saudi Arabia aims to increase its domestic chicken production (Araujo and Mano, 2022).

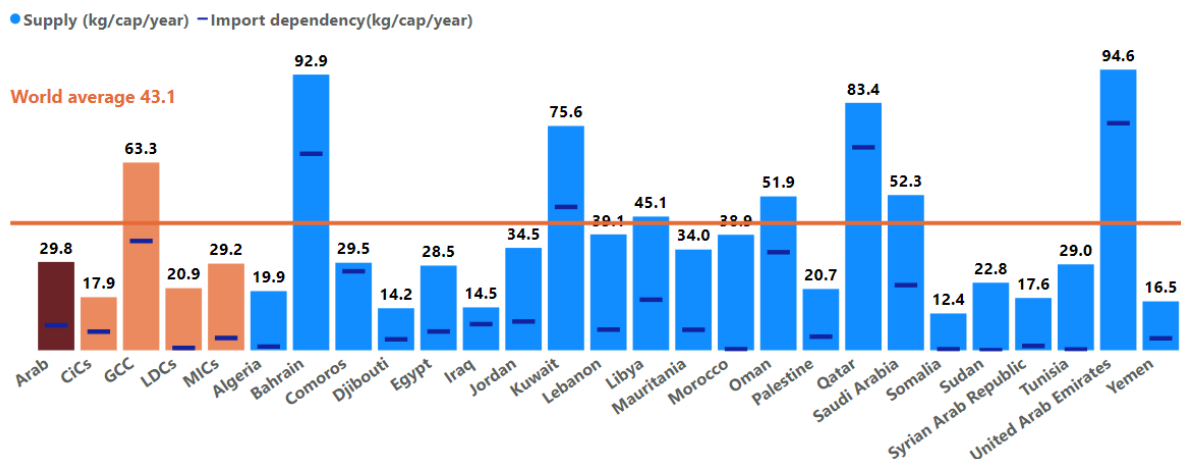


Figure 7: Meat supply and import dependency, 2018-2020
Source: FAOSTAT (2022).

iv. Fruit and vegetable supply

Regarding fruits and vegetables, the picture looks different. Data for fruits and vegetables illustrates the high level of self-sufficiency for many Arab countries for which data is available. Only Bahrain, Mauritania, Qatar and the United Arab Emirates import considerable amounts of fruits and vegetables (above 70%) from regional and international markets. Egypt, Morocco and to a lesser extent Saudi Arabia even have considerable export quantities of fruits and vegetables (Figures 8 and 9). This comes without much surprise as the region is endowed with a favourable climate to produce a variety of fruits and vegetables around the year. Moreover, developments in the agricultural sector such as more efficient production technologies including hydroponics may present opportunities where climate change negatively affects production.

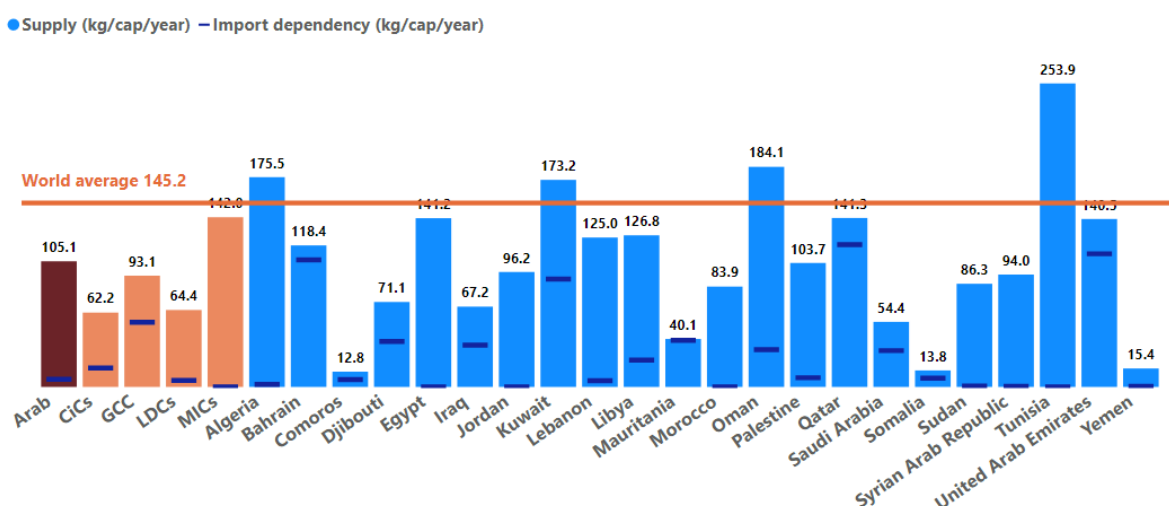


Figure 8: Vegetable supply and import dependency, 2018-2020
Source: FAOSTAT (2022).

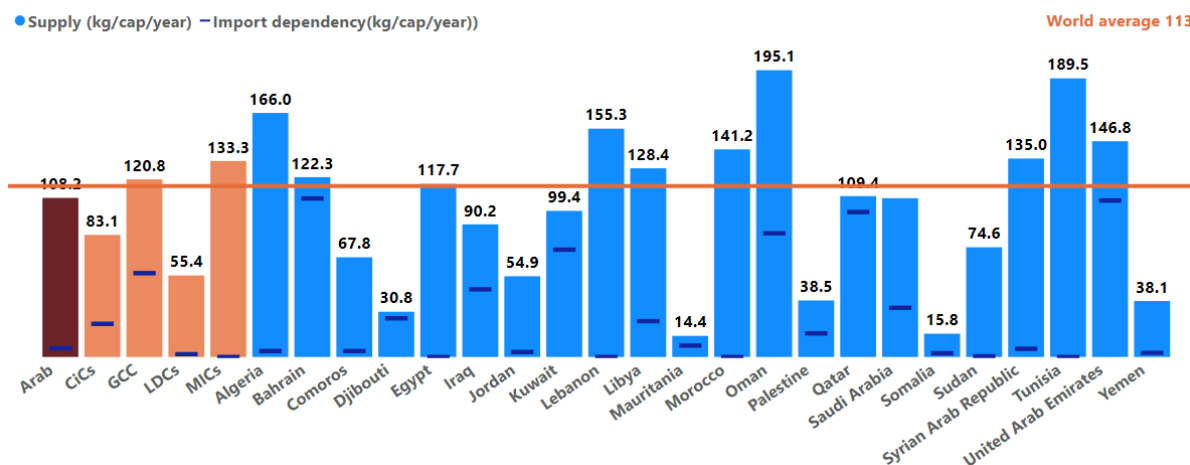


Figure 9: Fruits supply and import dependency, 2018-2020

Source: FAOSTAT (2022).

v. Pulses and Roots & Tubers supply

Pulses or legumes, which include such produce as beans, peas, soybeans, chickpeas, lentils, peanuts, and so on, are increasingly considered as a superfood around the world. In the Arab region, legumes are a traditional staple that provide significant amounts of carbohydrates and proteins to consumers (UNICEF, 2020c). Although demand is continuously increasing, production levels have declined in recent years due to a lack of government support for legume production (Frija et al., 2016). As a result, 15 countries have import dependency ratios in excess of 60% with a majority well above 90%. The largest producers are Sudan is by far the largest producer followed by Morocco, Egypt, and Syria and to a lesser extent Algeria, Tunisia and Yemen (Figure 10). The United Arab Emirates remains one of the largest importers and re-exporters of pulses due to its favourable port infrastructure.

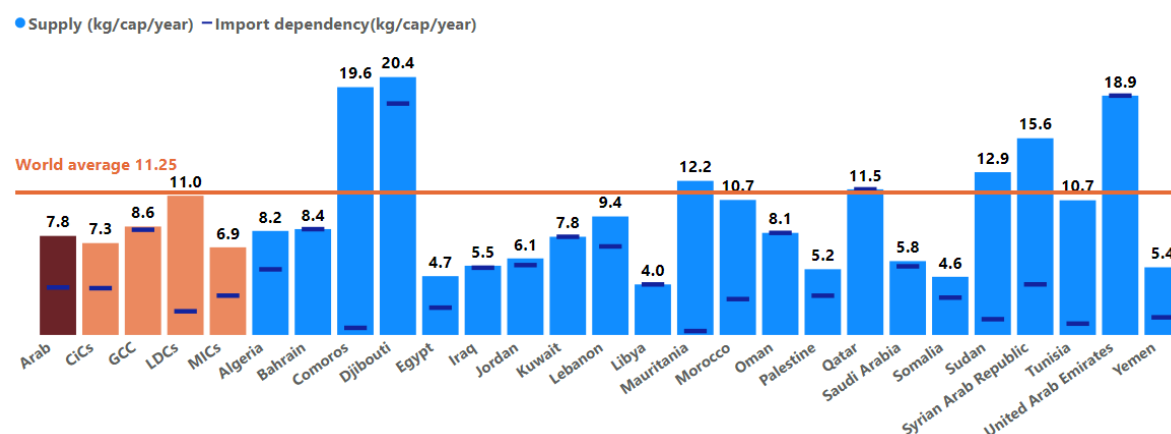


Figure 10: Pulses supply levels in 2018-2020

Source: FAOSTAT (2022).

Roots and Tubers (R&T) tend to receive less focus than cereals or livestock. They include potatoes, sweet potatoes, cassava and yams among others, and are mostly cultivated, harvest and eaten in developing countries notably Africa, South & South-East Asia and Latin America while in developed countries focus is on potatoes mostly (Scott et al, 2000). In developing countries most of the poor

household depend on R&T as a source of food and nutrition as R&T produce large quantities of dietary energy while also providing stable yields under conditions less suitable for other crops. In the Arab region, the three largest producers are Egypt, Algeria and Morocco followed by Sudan Lebanon, Syria, Saudi Arabia and Tunisia (Figure 11). Potatoes are the most produced and exported inter-regionally. Eleven Arab countries are closely self-sufficient while most GCC countries omit for Saudi Arabia as well as Djibouti are highly import dependent. Only Algeria, Comoros and Lebanon have a domestic supply comparable to the world average of 109 kg/cap/year. With growing affluence and urbanization, consumers are switching to R&T, mostly potatoes, to diversify away from cereal-based diets while their use as raw material for processed food products could offer opportunities for growth especially in Sudan, which is still producing well below a million tonnes while for example Egypt produces well above 5.5 million tonnes.

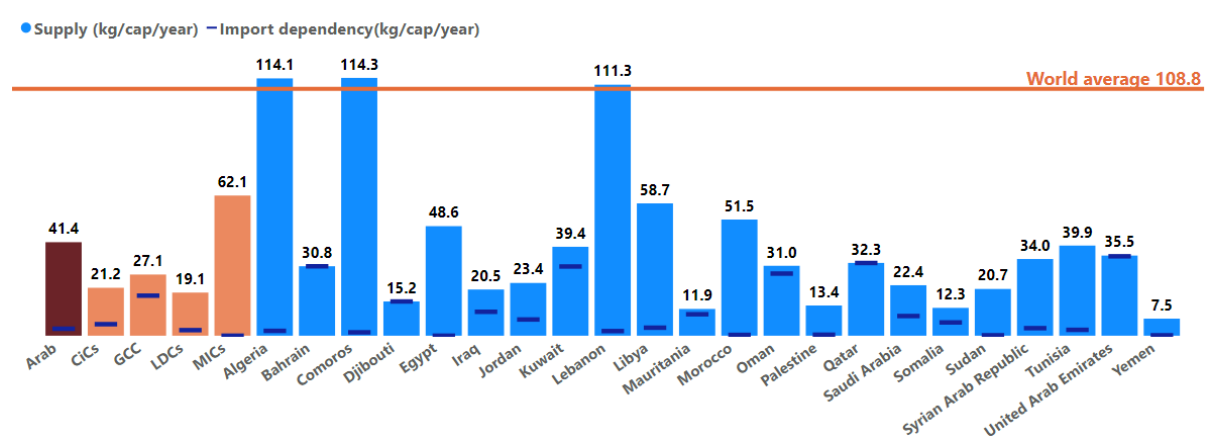


Figure 11: Roots and tubers, 2018-2020
Source: FAOSTAT (2022).

vi. Fish supply

Fish is another traditional source of lean and healthy protein in Arab countries. Egypt is the biggest producer in both capture fisheries and aquaculture, supplying 40% of the total production in the Arab world. Egypt is also the largest producer of freshwater fish followed by Iraq and Sudan due to the access to the rivers Nile and Euphrates and Tigris. However, the biggest fish catches are found in offshore fishing (pelagic fish production) while demersal (shallow water) fish levels are increasingly depleted. Morocco is the largest producer in offshore fish production followed by Mauritania, Oman, Yemen, Algeria and Egypt (Figure 12). Kuwait, Qatar, Syria, Lebanon, and Jordan on the other hand are the lowest producers. Aquaculture presents major opportunities to increase fish production. However, it is still largely underdeveloped in most countries except for the GCC countries and Morocco.

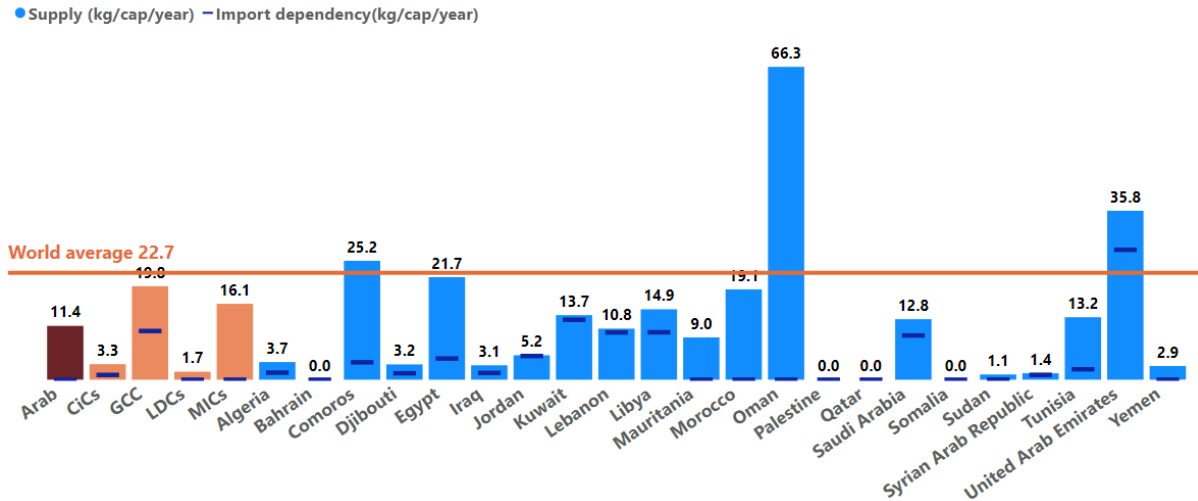


Figure 12: Fish supply and import dependency in 2019
Source: FAOSTAT (2022).

vii. Food import value

The analysis above shows that a majority of Arab countries supply less food per capita per year than the world average omits for fruits where above half the countries supply as much or more than the world averages. This is a testament of the continued food deficit plaguing the region, which is among the largest in the world. There are many factors that could explain this discrepancy both on the demand- and supply-sides. The main ones include a high population, which is increasingly more affluent, a low productive capacity, which is increasingly affected by dwindling resources and climatic shocks, and inadequate financial resources to import the excess food needed particularly in times of high global food markets volatility. As a result, the food import bill has continued to grow and more dramatically since the food price crisis of 2007-2008 and 2011 (Figure 13). In 2020, the food import bill reached a value of about US\$ 104 billion, and it could be expected to go further higher following the recent crises including the COVID-19 pandemic and the Ukraine war, which have dramatically affected global supplies of food and other commodities. Cereals are the single largest items, which is a major a major staple in many countries.

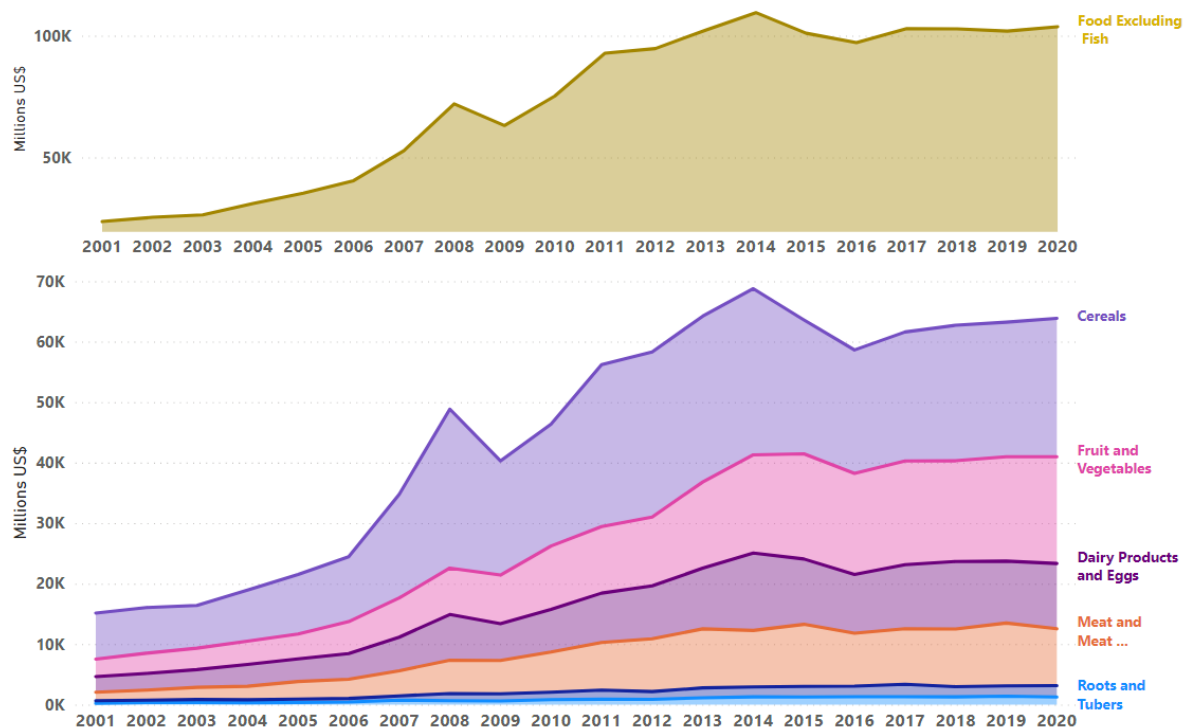


Figure 13: Food import value
Source: FAOSTAT (2022).

The Arab region is reliant on global food markets to achieve its food security and nutrition, which is a concern for most countries including the wealthier ones. Those worries are further exacerbated by the growing unreliability of global food markets and trading systems with many countries looking more and more into ways to boost national production of key commodities. The recent disturbances in global food market have the potential to renew interest in investing in regional food production through land acquisition in countries with sufficient resources such as Sudan or Morocco to ensure regional food market stability.

C. Sources of bottlenecks in the Arab region

The availability of natural resources for current and future food production has been and remains Amongst the direst challenges for Arab states. Due to high land degradation and water stress, food production faces significant productivity limitations. This applies to the key food bowls of the region such as in Egypt, Iraq, and the Maghreb countries (**Error! Reference source not found.**Figure 13), where meaningful production levels exist as shown above. Salinity of soils has increased to levels of up to 75% in agricultural areas as a direct result of overuse of fertilisers and pesticides (Arab Spatial, 2017) while water unavailability has been a constant concern for governments and farmers since the 1970s (Allan, 2003). Water stress and water variability are amongst the highest in the world (**Error! Reference source not found.**). In addition to local water stress and variability, water inflows from transboundary watersheds bring further challenges. The Nile and Euphrates and Tigris riparian states in the region depend on water inflows from outside the region such as Sub-Saharan Africa or Turkey. Transboundary water relations have soured over the past ten years as a result of new dam constructions such as the Grand Ethiopian Renaissance Dam in Ethiopia or the Ilisu Dam in Türkiye (Cascão, 2008;

Nasrawi, 2018; Oxford Analytica, 2021; Tawfik, 2015). Uncertainty over future Nile and Euphrates and Tigris water inflows adds to the likely inability to produce more food for growing populations.

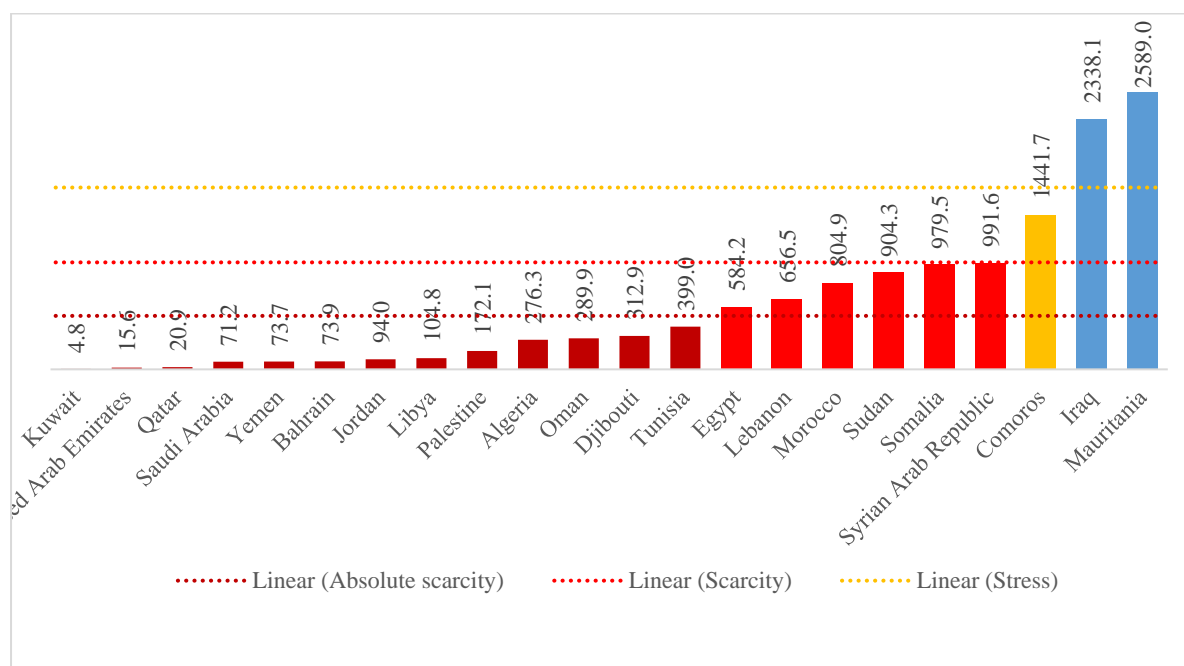


Figure 14: Water stress levels in the Arab region
Source: AQUASTAT (2022).

Political unrest and conflict and the Covid-19 pandemic further exacerbated the precarious food and nutrition security trajectory. Most notably the wars and conflicts in Iraq, Syria, Yemen, Libya, and Somalia have added severe pressures on availability of food and access to food. This has not only affected local food markets in those countries but the wider region due to a decrease in traded food across Arab borders as well as a distortion of food trade routes due to road impasses resulting from conflict (Carnegie Endowment, 2015).

D. Summary of the situation analysis

Food and nutrition security in the Arab region face severe challenges on multiple levels starting with the insufficient provision of calories in half of the ESCWA member states. In addition, approximately one quarter of the population is experiencing the triple burden of malnutrition, which compounds undernourishment (too few calories), obesity (too many calories) and hidden hunger (a deficiency of micronutrients). Due to moderate or high population growth in half of the Arab countries, future requirements entail more nutritious food to populations in the region. However, due to land and water shortages, expanding production levels will be a challenge as agricultural expansion will continue to bump on its natural ceilings. Intensification of existing production and the adoption of new technologies may be a more suitable option. Yet, this will not suffice to produce sufficient food in the Arab region. Trade will continue to remain an essential element to meet food and nutrition security in the future. However, trade itself must be rethought and adapted to arising challenges facing the region and the world. In theory, sufficient calories could be provided by just importing more carbohydrates in the form of cereals. Yet, given the qualitative food and nutrition security challenges such as the growing triple burden of malnutrition and adapted diets to different social groups in societies, this would not suffice.

The next section will therefore shed light on current trade patterns and how current (partly inadequate) food security is handled by Arab countries.

3. Food trade in the Arab region

Arab countries are highly dependent on trade to meet their food needs and thereby ensure their food security and nutrition. This trend will only intensify in the future as the population continues to grow and becomes more affluent while local production remains limited. A great deal of the cereals and red meat consumed are sourced from outside the region while there is still a adequate production capacity and further potential for other commodities such as fruits and vegetables, beans, peas and legumes, dairy, and fish to be produced within the region in selected countries. Thus, food trade opportunities are located both within the region and globally and ensuring smooth trade to achieve food and nutrition security will continue to be a crucial policy objective for Arab governments. This section will first analyse how Arab countries have fared in terms of food prices in the past three years followed by an analysis on global food trade and how Arab countries have interacted with global food markets. Second, intra-regional trade agreements will be explored. Third, the relationship between food trade, healthy food systems and food safety will be explored to analyse opportunities and potential threats.

A. Food prices developments in the Arab region

i. Food price developments prior to the war in Ukraine

The COVID-19 pandemic has led to rising food prices around the world. Lockdowns in many countries led to food supply chain disruptions as well as limited trade restrictions in selected agricultural export countries. In addition, rising inflation levels and labour shortages in the United States, Asia and Europe meant that food prices increased to levels higher than during the food price spikes of 2007/08 and 2010/11 (see box 1 on page 7 above) (FAO, 2022) (Figure 15). In the Arab region, the four most affected countries of the COVID-19 food price rally were countries already faced by internal economic and/or socio-political crises such as Lebanon, Sudan, Syria, Yemen, and Libya (Figure 16). Sudan and Lebanon were particularly affected due to hyperinflation resulting from internal economic and political problems. However, stable countries such as Egypt, Saudi Arabia or Tunisia experienced also higher food prices, which were a direct result of their high import dependency in relation to cereals. In 2021, maize and wheat prices were 44.1 and 31.3 percent higher on average than in 2020 thanks to strong demand and less supplies, especially among major wheat exporters. Rice was the sole major cereal to register a decline in prices in 2021, with quotations falling on average 4.0 percent below 2020 levels. In September 2022, wheat prices were 10.6 percent higher than their values a year prior (FAO, 2022). Though food prices might be falling governments from the Arab region need to remain careful as any fluctuation in global grain markets will lead to significant impacts. Countries where wheat flour and bread are subsidised to keep consumer prices for key staples at an affordable level will face higher public spending costs as prices fluctuate.

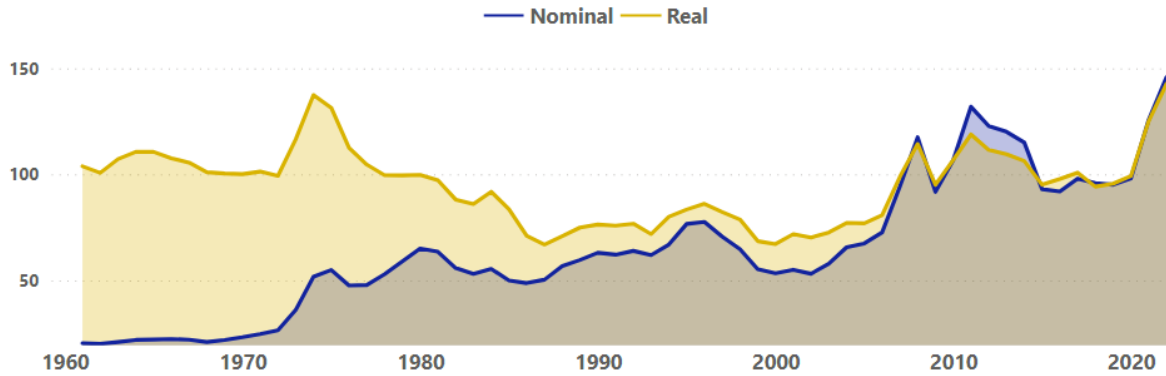


Figure 15: FAO Food Price Index in nominal and real terms (2014-2016=100)
Source: FAO (2022)

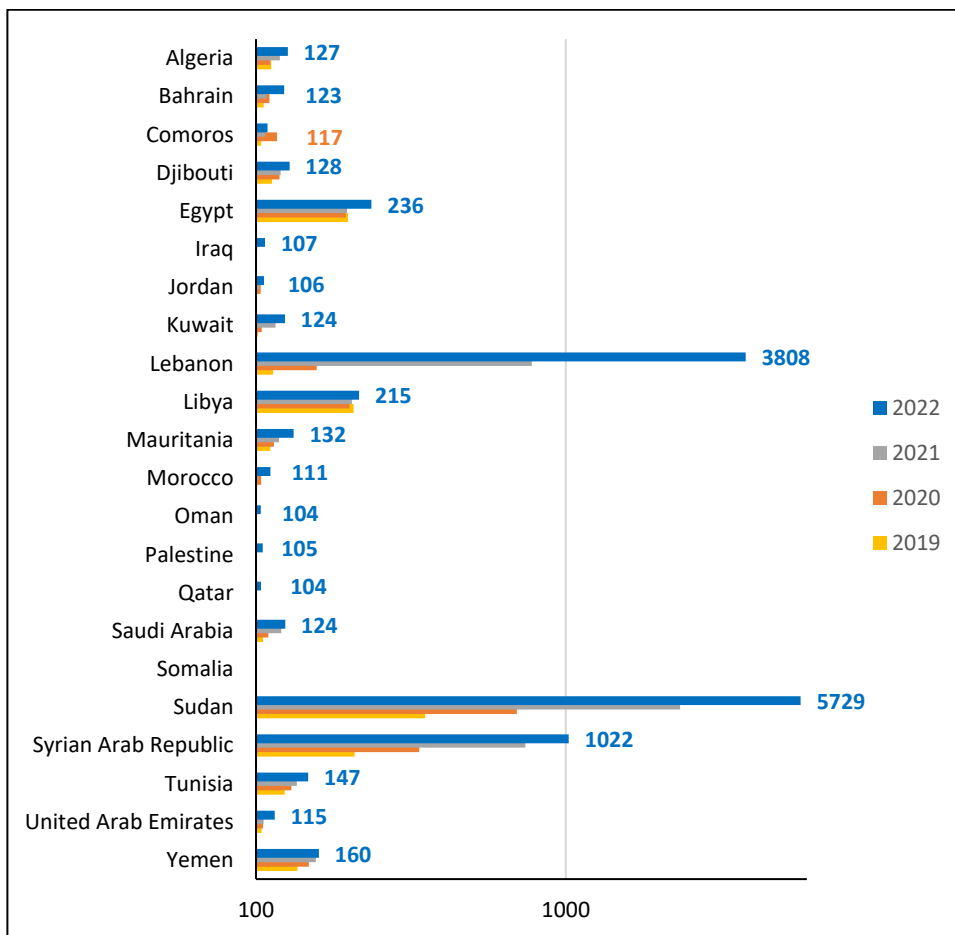


Figure 16: Food price developments in 2019, 2020, 2021 and 2022
Baseline=2015 and Logarithmic scale and highest value shown
Source: FAOSTAT (2022)

ii. Food price developments after the war in Ukraine

The war between Russia and Ukraine has led to another, potentially even more threatening food price increase in global markets. Within days after the invasion, it became evident how dependent the Arab region is on especially wheat and barley imports from the two Black Sea countries (Figures 17 and 18). Approximately half of the wheat imports to the Arab region originate from Ukraine and Russia. An

important reason for Arab countries to procure wheat and barley from Russia and the Ukraine are lower costs for the wheat itself and lower transportation costs (Walsh, 2022). However, not all countries are similarly exposed to Ukraine and Russia in terms of wheat and barley. While Egypt imported 86 percent of its wheat imports from Russia and the Ukraine in 2020, Lebanon was able to meet even 96 percent of its wheat import requirements from the two countries at the Black Sea.

The crisis in the Black Sea region will likely lead to long term cereal-import challenges for the Arab region. Initially, social safety nets may provide price hike alleviation. However, the crisis in the Black Sea will force the Arab region to rethink its agricultural trade import strategies as well as wider food systems shifts which will be discussed in the next section. .

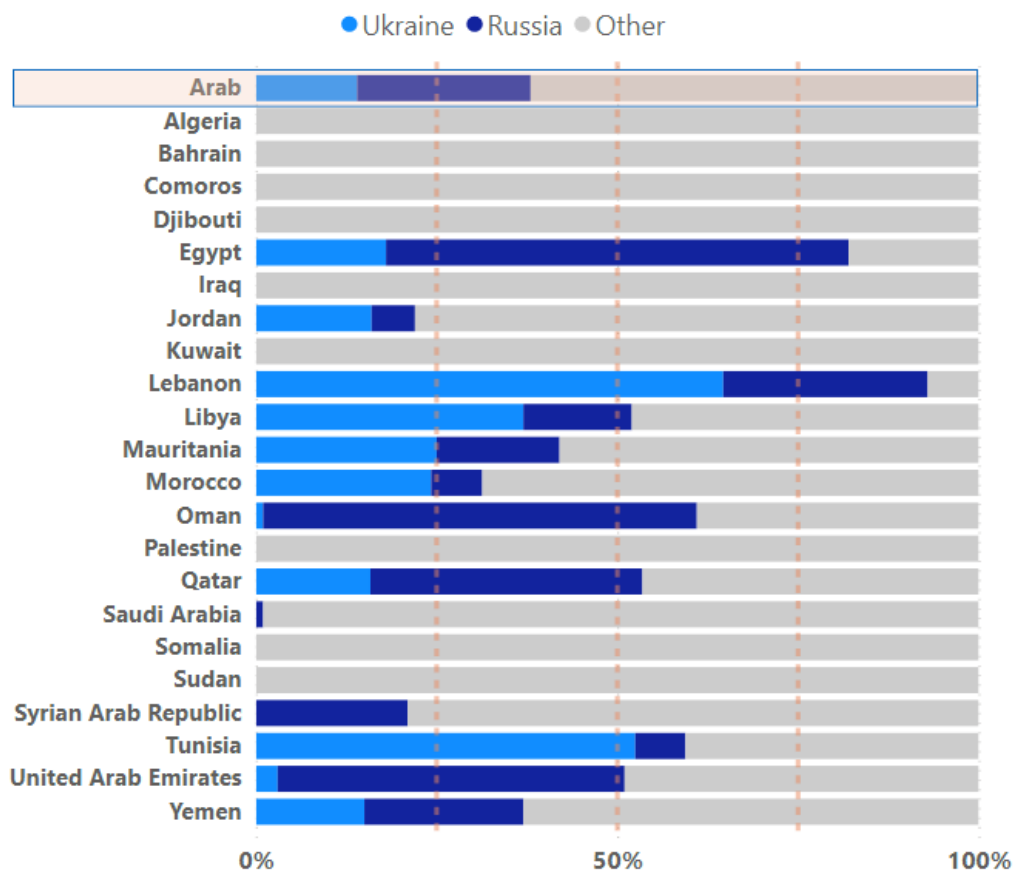


Figure 17: Wheat imports from Russia and the Ukraine (2018-2020)

Source: FAOSTAT (2022).

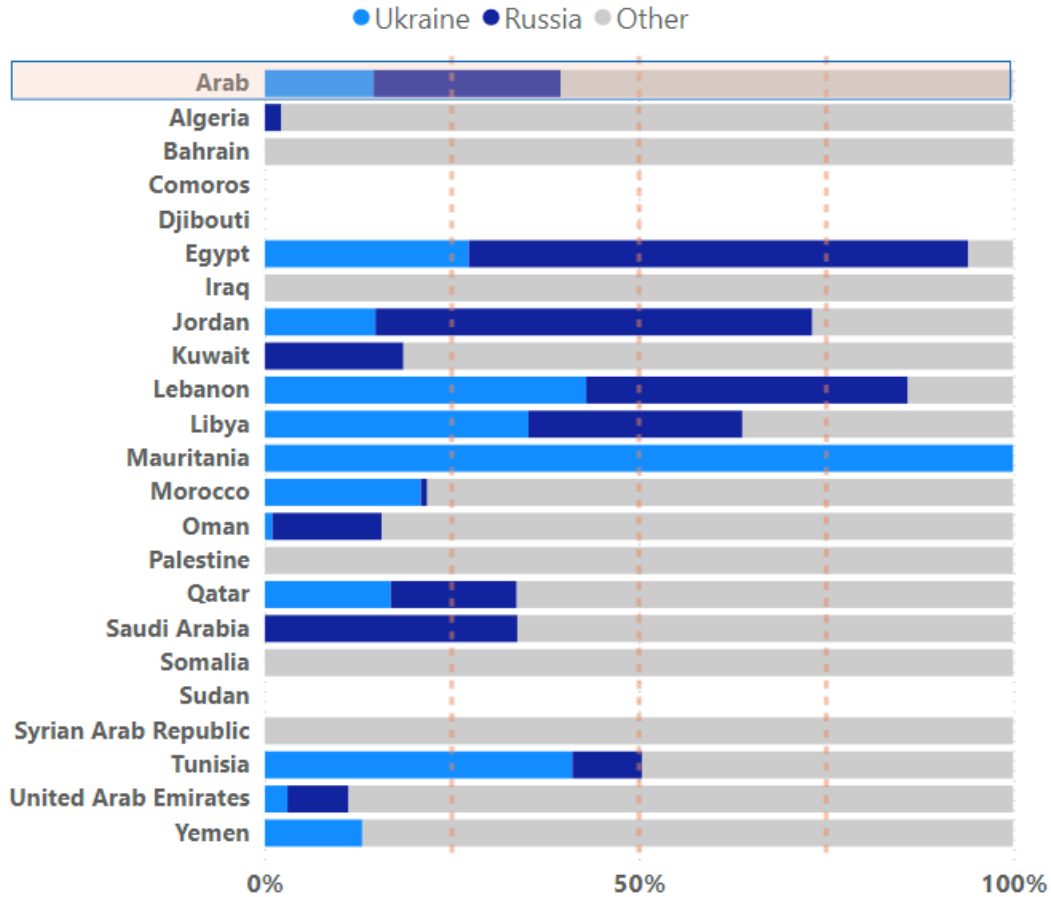


Figure 18: Barley imports from Russia and the Ukraine (2018-2020)
Source: FAOSTAT (2022).

B. The Arab region and its position in international food markets

As already discussed, the Arab region is highly dependent on international grain and red meat markets. These supply chains are global in nature. As a result, the average Arab consumer will likely consume bread produced with grains from outside the region at breakfast, lunch, or dinner each day of the year since wheat-based products are a staple in Arab diets. The Maghreb countries are the leading wheat-based product consumers in the world with 160kg per person/yr. While in the Mashreq countries, wheat consumption is still high with about 120-150kg per person/yr. The GCC countries consume about 90kg per person/yr. In the least developed Arab countries such as Somalia and Sudan, wheat consumption is similar to other developing countries due to supply shortages (UNESCWA, 2015).

The wheat consumed in the Arab region has its origins around the world. However, as mentioned above, the most important sourcing area is the Black Sea region with about 50% of wheat being supplied by riparian Black Sea countries due to the strong wheat export potential of Russia, the Ukraine and to a lesser extent Romania and Bulgaria (Ahmed, n.d.; World Bank and FAO, 2012). Russia in particular has used wheat as part of its diplomacy with Arab countries to extend its global reach and generate income (Astrasheuskaya, 2021). However, while Russia is the largest wheat exporter to Egypt, Lebanon, and Libya, it is still behind the European Union and Australia in the GCC and the Maghreb countries. Ahmed and Hamrick (2014) have therefore divided Arab countries' "stickiness" to other world regions in terms of their wheat sourcing. While the Maghreb countries enjoy strong wheat trading

relations with the EU and notably France, the Mashreq countries Egypt, Lebanon, Jordan, and Yemen are prime customers of Russian wheat. Iraq on the other hand procures most of its wheat from the United States. The GCC countries have a more diversified wheat import portfolio procuring most of their wheat from Australia, the US, and the EU. Yet, Russia’s wheat exports are also on the rise in GCC countries. Often, import choices correspond with wider geostrategic choices of countries such as the level of political cooperation with either the United States, Europe or on the other hand Russia.

i. Agreements governing trade in the Arab region

The Arab region has been dubbed as “the last frontier” in globalized trade (Al Khouri, 2012). About 30% of the World Trade Organisation’s (WTO) applicant countries are from the Arab region. Libya, Algeria, Lebanon, Syria, Sudan, and Somalia only have observer status (Table 1). Palestine is neither a member nor observer of the WTO. This makes the Arab region as the least integrated world region into the world trading system. Despite ongoing negotiations of observer countries, talks have stalled especially since the Arab Spring due to in part to the ongoing socio-political crises affecting countries such as Syria, Libya, Iraq, Sudan or Somalia. Accession talks of successful applicants also tended to be considerably longer than those of other countries from other world regions (Al Khouri, 2012). Though agricultural trade negotiations are still on-going, and trade of agricultural products is affected by non-trade measures. WTO membership can bring several benefits, for instance, eliminating or significantly reducing tariffs and binding countries not to favour other countries under the “Most Favoured Nation” principle, which states that all trading partners must be treated equally. Local and foreign produce must also be treated equally under WTO rules.

Country	WTO Membership Position
Algeria	
Bahrain	1 January 1995
Comoros	
Djibouti	31 May 1995
Egypt	30 June 1995
Iraq	
Jordan	11 April 2000
Kuwait	1 January 1995
Lebanon	
Libya	
Mauritania	31 May 1995
Morocco	1 January 1995
Oman	9 November 2000
Palestine	
Qatar	13 January 1996
Saudi Arabia	11 December 2005
Somalia	
Sudan	
Syrian Arab Republic	
Tunisia	29 March 1995
United Arab Emirates	10 April 1996
Yemen	16 June 2014

Table 1: Membership status of Arab countries

(In blue are members; in orange are observers)

Source: WTO (2022).

WTO membership also involves commitment to domestic policy reforms towards more transparency and good governance. However, those countries that successfully acceded the WTO during the 1990s and 2000s had to make painful policy adjustments such as realigning their economies to international productivity standards, often via the route of privatisation leading to cutbacks in public sector employment, which was for long the main absorber of graduate jobseekers (UNDP, 2016). Such policy shifts were often introduced without much needed social buffers for young people making integration efforts by Arab governments even more difficult.

However, WTO membership also brings about positive impacts. Because decisions at the WTO are made by consensus of all countries, smaller countries have more bargaining power if they seek to cooperate. The multilateral trading regime is supposed to restrict the power of large trading countries. Smaller countries can form trading alliances and pool resources (WTO, 1999). However, the WTO has also been described as not very inclusive to the needs of developing economies. In particular, agricultural trade was for a long time hampered due to agricultural subsidies in developed economies making it nearly impossible for developing countries to compete (Grant and Boys, 2012; Häberli, 2015). Although immense progress has been made on a reduction of tariffs and subsidies since the late 1990s, agricultural trade is still negatively affected by indirect barriers to trade such as non-tariff measures (NTMs). NTMs have been a major barrier to trade through the use of sanitary and phytosanitary measures imposed by developed countries (Gourdon et al., 2020).

Moreover, the WTO has lost significant power in recent years due to the advent of bilateral trading agreements signed by the United States and the European Union with other world regions such as the North American Trade Agreement (NAFTA) or the EU-Canada Comprehensive Economic and Trade Agreement (CETA). There are further US or EU bilateral trade agreements in place with Arab countries, which will be explored below.

ii. Preferential Trade Agreements (PTAs)

Many Arab countries have opted for bilateral PTAs with larger economic powers such as the US or the EU in recent years. For example, Jordan and Oman signed a bilateral PTA with the United States as early as 2001. The EU has signed several bilateral trading agreements that slashed tariffs with Arab countries such as Algeria, Lebanon, Egypt, Jordan, Morocco, Palestine, and Tunisia since the 1990s under the framework of the Euro-Mediterranean Association Agreements (European Commission, 2021a). However, agreements with the EU did not prioritise agricultural trade liberalisation and the EU has made trade with Arab countries increasingly difficult due to NTMs using high sanitary and phytosanitary standards.

On a much more informal basis, the EU and the GCC have signed an EU-GCC Cooperation Agreement in 1988, which involves economic and political cooperation based on two annual meetings with the two blocs. A more structured informal dialogue was launched in 2017 (European Commission, 2021b) yet with no outcomes until this date. PTAs also involve a few follies by design. An Arab country may have once been considered a preferential partner, yet with no further guarantees as the preferential trading partner may sign further bilateral agreements with other countries from other world regions, who are promised the same preferential treatment leading to less trade than anticipated (Al Khouri, 2012). Moreover, trade agreements with other partnering regions such as the EU have often not been as promising in practice as hoped. For example, EU parliamentarians have questioned access of Moroccan import quotas to the EU, which has led to smaller trade quota for e.g. the Moroccan fisheries sector (European Parliament, 2021). In addition, there have been longstanding fears that Moroccan small

farmers would not benefit from EU-Moroccan agricultural trade due to a comparative advantage of EU farmers acquired through EU subsidies.

Box 2: Egypt's trade agreements

Egypt is one of the largest wheat importers in the world. Most of the wheat imports come from Russia and the Ukraine followed by the European Union and the United States. The European Union is Egypt's top trading partner if exports and imports are considered. Egypt is party to both multilateral and bilateral trade agreements. Egypt is part of numerous multilateral and bilateral agreements including with several Arab countries.

An agreement with the European Union provided for immediate duty-free access for Egyptian products into EU markets, while duty free access for EU products was phased in over a twelve-year period. In 2010, the agreement was expanded to include agriculture, thereby liberalizing trade for over 90 percent of agricultural goods (European Commission, 2022). Egypt has also signed trade agreements with the United States since the 1980s though the Trade and Investment Framework Agreement (TIFA) in 1999 has yet to be signed (ITA, 2021).

Egypt is also pursuing trade opportunities with Arab countries (Great Arab Free Trade Area), GCC countries and an Africa-wide free trade agreement (The African Continental Free Trade Area or AfCFTA). These agreement provide Egypt with opportunities to add scale to its exports by connecting to traditional partners in Europe and the Middle East as well as to Africa and the overall global market (Figure 21) (OECD and UNCTAD, 2021). As a result, it has created a National Food Safety Agency (NFSA) in 2017, which is viewed as a crucial step towards more exports as it reshaped food standards compliance rules for the Egyptian agro-food sector with an eye on increasing its competitiveness (OECD and UNCTAD, 2021)

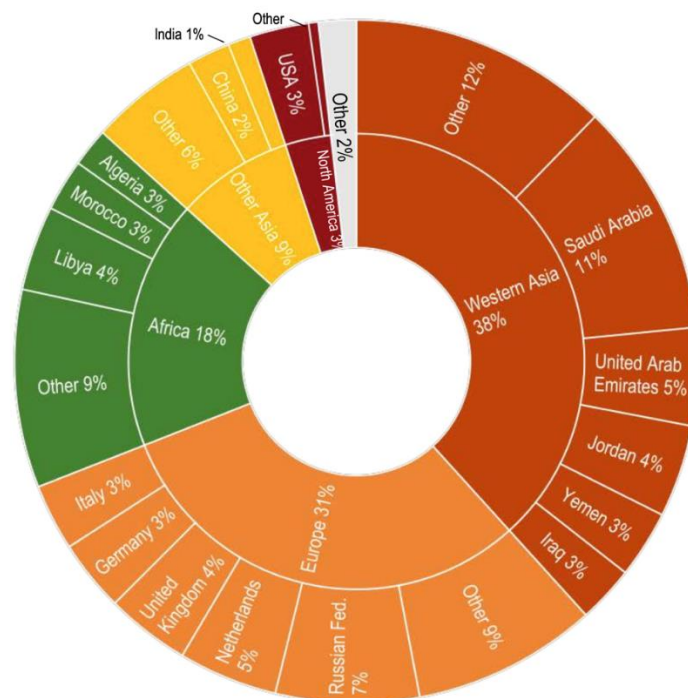


Figure 19: Egypt's Agro-Food Exports by Country and Region
Source: OECD and UNCTAD (2021)

iii. The Greater Arab Free Trade Area (GAFTA)

At the regional level, liberalizing intraregional trade has been on the agenda since the 1960s. In 1981, an agreement between Arab countries to facilitate and promote intra-Arab trade came into force but had little effect. In 2002, Arab governments decided to create another free trade under the hospices of the League of Arab States also known as the Greater Arab Free Trade Area (GAFTA) with the aim of eliminating barriers to trade by 2008. The 17 countries that signed up to GAFTA are: Algeria, Bahrain, Egypt, Iraq, Kuwait, Lebanon, Libya, Morocco, Oman, Palestine, Qatar, Saudi Arabia, Sudan, Syria, Tunisia, United Arab Emirates and Yemen. Initially, GAFTA was a striking success by Arab governments with intraregional trade rates outpacing global trade between the period of 1997-2005 (Abedini and Péridy, 2008). However, the political developments since the Arab Spring have hindered further liberalised trade and associated success stories. Especially agricultural trade is lagging. This has to do with political disagreements at large. Often, however, insufficient food quality and standards are used as political scapegoats for not trading.

Box 3: Case-study: the Lebanese potato disputes

Lebanon provides a case study on how trade is distorted whilst also harming trading relations with other countries and increasing farmer debt. Over the past decades, Lebanon has witnessed several farmer-led protests over imported potatoes from Egypt. Lebanese traders tend to buy Egyptian potatoes when their market price is low in early spring to put them into storage shortly before potatoes from Lebanon come to the market. However, when demand is high in export markets, the same potatoes are marketed as Lebanese potatoes and sold to export markets such as the GCC and Syria, where they are perceived as lower quality potatoes compared to Lebanese counterparts (Zurayk, 2007).

Large agricultural traders in Lebanon are behind these practices. They control large parts of the agricultural value chain such as land ownership, agricultural inputs and infrastructure needed by farmers to grow a profitable crop. However, due to the purchase of Egyptian potatoes at a lower cost, Lebanese farmers are forced to sell their potato crop for lower margins forcing them into debt, which amounts to several times the yearly income of the farmers (Wood et al., 2020). In addition, high debt and low returns have left farmers unable to maintain high farming practices such as in relation to pesticide management. These practices have led to mistrust amongst buyers from the Gulf or Syria, who believe they buy Lebanese potatoes but get sold Egyptian potato crops. Lebanon has also not been able until 2013 to use its quota to sell 50.000 tonnes to the European market due to high pesticide residues found in Lebanese potatoes partly of unknown origin (Leeters, 2018).

C. The relationship between agricultural trade and nutrition

As Section 1 has shown, on one hand, Arab countries heavily rely on international markets for cereal trade both for human consumption and livestock production for meat and dairy. On the other hand, Arab countries produce significant amounts of fresh products such as vegetables and fruits, especially in key production countries such as Egypt, Morocco, Algeria, and Tunisia. In addition, Egypt, Morocco, and Sudan have significant legume production capacities. Finally, the Arab region is largely self-sufficient in egg production, and it has a strong fish production potential. This means, the Arab region must consider two key supply chains for trade: First, the cereal supply chain including the cereals needed to produce meat and dairy for example, and second, the vegetable and fruit supply chain. While the former is highly dependent on international markets, the latter could be subject to domestic provision and intraregional trade. Here, the agricultural power houses such as Egypt, Morocco as well as Algeria, Tunisia and even Sudan could provide remedy to other countries by exporting key fruits and vegetables. However, this must go hand in hand with a reassessment of food systems in the region. Among others, the Aid for Trade Initiative for the Arab States (AfTIAS), an initiative from the WTO and the Islamic Development Bank (IsDB) aims to address this situation by ensuring that trade does not only contribute

to commodity availability but rather to ensure a more comprehensive development through adequate resource mobilization of resources to foster competitiveness, investments, employment, and wealth (Box 3). In the aftermath of the Ukraine war and its impact on food security, AfTIAS is particularly aiming to address food insecurity through trade building on various initiatives including the establishment of a dedicated fund, allocating better investments, increasing agricultural production, enhancing rural infrastructure and improving food and agricultural market information.

Box 4: The Aid for Trade Initiative for Arab States

The Aid for Trade initiative was launched in December 2005 by WTO (WTO, 2005) to encourage countries to recognize the role that trade can play in development by, among others, mobilizing resources to address trade-related constraints identified by developing and least-developed countries. It coordinates with entities part of the Official Development Assistance (ODA) to lessen supply constraints facing developing countries, which could impact positively food security. (Boonekamp & Perez-Estevé, 2012)

The Aid for Trade initiative for the Arab States (AfTIAS) was initiated in collaboration with the Islamic Development Bank and launched in 2013 (IsDB, 2013). The International Islamic Trade Finance Corporation (IIFC) manages AfTIAS as a multi-donor, multi-country and multi-agency initiative aiming at enhancing trade and economic cooperation amongst Arab States by fostering competitiveness, facilitating trade, fostering investments and generating employment and wealth. In its 1st phase from 2014-18 it initiated 28 projects and 19 Arab countries (IIFC, 2018).

In July 2022, against the backdrop of overlapping crises, IIFC initiated a 2nd phase of AfTIAS 2.0 aimed at addressing food security challenges in the Arab Region. Its scope included as well responding to covid-19 and the war in Ukraine on food security with an added focus on women to support their participation in value chains and international trade. (WTO, 2021)

The Arab region is very vulnerable to disruptions in global food markets as a majority of Arab Countries rely on Russia and Ukraine for their food and fertilizer imports meaning that advocating for responsible trade is a solution to addressing food insecurity in the Arab region. To achieve this goal, it aims to:

- Increase financial investments directed to the agricultural sector in the Arab world.
- Establish a fund in partnership with the public and private sectors to finance agricultural projects.
- Mobilize financial resources to fund small farmers to increase agricultural production.
- Provide incentives for the private sector to invest in the agricultural sector.
- Enhance cooperation between countries in the agricultural fields through experience sharing.
- Invest in basic infrastructure projects needed in rural areas.
- Establish an electronic platform to provide agricultural data to enhance inter-Arab trade.
- Establish a free trade zone for agricultural products among Arab countries

i. Aligning trade to healthy food systems in the Arab region

The faults of the current food system have been highlighted by an increasing number of studies in recent years (Capone et al., 2014; Rahim et al., 2014; Schmidt-Traub et al., 2019; Willett et al., 2019). Food systems no longer meet the needs of people and the environment due to high levels of waste, malnutrition, and poverty including among the actors within the food system. If business as usual continues, food systems will prove to become unable to meet and maintain food availability, accessibility, utilization and stability thereby leaving millions of people hungry and in precarious livelihood conditions. Existing discrepancies within the current food system contribute to its lack of effectiveness and is highlighted by the gradual nutrition shift away from traditional healthy diets rich in plant-based products to Western-style diets high in sugars, animal proteins and starchy products (Box 4). The Arab region has undergone a significant nutrition transition in the past forty years with dire outcomes on people's health and regional food systems.

A well-functioning food system should:

- Be profitable throughout (economic sustainability);
- Provide broad-based benefits for society (social sustainability); and
- Have a positive or neutral impact on the natural environment (environmental sustainability).

A sustainable food system lies at the heart of the United Nations' Sustainable Development Goals (SDGs). Adopted in 2015, the SDGs call for major transformations in agriculture and food systems in order to end hunger, achieve food security and improve nutrition by 2030. In order to reach the SDGs, food systems need to be restructured:

- a) To become more inclusive of poor and marginalized populations
- b) To become environmentally sustainable and resilient,
- c) To deliver healthy and nutritious diets to all people (FAO, 2018a).

Trade is a key pillar for any strategies to achieve the three desired outcomes as no country can produce all the food it needs let alone those of the Arab region, which lack adequate natural resources. The trade environment must be designed accordingly to address the needs of the most vulnerable, maximize benefits and protect ecosystems. Section 3 will further provide recommendations on how to make trade fit for the future.

Box 5: The Nutrition Transition vs. Healthy Diets

The nutrition transition is characterized by changing diets that concur with economic, demographic, and epidemiological changes. The term has gained traction in nutrition science for the transition of dietary patterns in developing countries from traditional diets to more Western style diets high in sugars, fat, and animal-sourced food. Arab countries have undergone significant nutrition transitions with detrimental health effects (Table 1). As a result, nutritionists across the Arab region have called for revisiting Arab diets to increase the consumption of healthy foods such as vegetables, fruits and whole grains at the expense of sugar (Afshin et al., 2015; Rahim et al., 2014). These diets are guided by a return to plant-based diets akin to Arab traditional diets with an additional intake of proteins such as milk, dairy, and non-red meat. This is in line with medical advice especially for people with diabetes or pre-diabetes to lower carbohydrate content in diets to avoid insulin resistance, which prevents the body from burning fat (Petersen and Shulman, 2018). Given that diabetes levels in the Arab region are amongst highest in the world with about every fourth citizen suffering from type-2 diabetes, dietary changes are inevitable (Meo et al., 2017). An important reason for the sweeping type-2 diabetes levels is due the rapid nutrition transition, which Arab countries have undergone in the past 40 years. Therefore, a more diversified diet containing less carbohydrates could lead to important health outcomes for the wider population in the Arab region.

Category	Characteristics	Countries
Countries in advanced nutrition transition	<ul style="list-style-type: none"> • High levels of overweight and obesity • Moderate levels of undernutrition and micronutrient deficiencies in some population subgroups 	GCC countries Tunisia
Countries in early nutrition transition	<ul style="list-style-type: none"> • Moderate levels of overweight and obesity • Moderate levels of undernutrition in specific population and age groups • Widespread micronutrient deficiencies 	Egypt Jordan Lebanon Libya Morocco Palestine
Countries with significant undernutrition	<ul style="list-style-type: none"> • Particularly high levels of acute and chronic child malnutrition • Widespread micronutrient deficiencies • Emerging overweight, obesity, and malnutrition of affluence in certain socioeconomic subgroups 	Iraq Syria Yemen Population subgroups in GCC countries, Palestine (Gaza) and Tunisia
Countries in complex emergencies	<ul style="list-style-type: none"> • Severe child and maternal undernutrition • Widespread micronutrient deficiencies 	Somalia Sudan

Table 2: Nutrition Transition classification in Arab countries

Source: adapted from `Abd al-Jalil et al. (2015).

ii. Food safety as a pillar for nutrition and trade

Food safety is an equally important and urgent issue for improved trade and nutrition in the region especially given that fruits, vegetables and legumes can be produced and traded within the region to improve food and nutrition security prospects for the wider region. Non-compliance with global agricultural standards has negatively impacted exports of Arab countries to the United States and Europe but also to the GCC countries due to food safety concerns. Although Egypt, Jordan, Morocco, and Syria have reviewed their food safety regulations and standards often with the help of the World Health Organisation (WHO) in recent years, there are still major challenges ahead to increase food safety standards. Institutional challenges, corruption, low enforcement rates by government and a lack of training of especially small farmers prevail notably in poorer countries of the Arab region (Faour-Klingbeil and Todd, 2018). Different standards such as the Codex Alimentarius or the Good Agricultural Practice standards (which governs food safety of fruits and vegetables in trade) are often unknown to small farmers (Box 5). In addition, pest management knowledge capacity must be dramatically increased, and the use of pesticides limited to as little as possible to ensure good quality of food. Finally, existing water and cooling infrastructure must be enhanced to clear produced crops pollutants and to ensure important protein sources such as fish not to be spoiled by inadequate handling.

Box 6: Adopting Good Agricultural Practices in the Arab region

Standards on the production of fruits and vegetables are becoming increasingly important within national food markets and in intra-Arab regional trade. These standards are required to promote food safety and produce quality while ensuring environmental sustainability. To this end, ESCWA has put forward guidelines aiming at promoting socially acceptable practices for food consumption while improving public health at the local and regional levels. The guidelines provide a follow-up methodology and practical implementation steps to producers to enhance the safety of their agricultural produces. They target fruits and vegetables to reduce the risks of physical, chemical and biological pollution. The guidelines advocate sound and practical actions to support health and safety conditions during cultivation, harvest, transportation, storage, and distribution.

Source: ESCWA (2021)

D. Summary of the trade environment of the Arab region

The Arab region is on the one hand highly dependent to global markets and its associated risks such as food price spikes and on the other hand possess a non-negligible production capacity notably for perishables commodities such as fruits and vegetables but also legumes, eggs, poultry, and fish. However, this production capacity is unequally distributed among countries of the region with those with sufficient natural resources potential lacking adequate financial means to fully exploit that potential and vice versa. If a holistic food system perspective was to be adopted at the regional level, nutritional challenges could be addressed through increased intra-regional trade. Demand for starchy foods would then be decreased lessening the requirements for cereal imports. This could also address the rising health challenges facing the region such as type-2 diabetes and other non-communicable diseases for which poor dietary patterns have a high responsibility. Embracing existing trade agreements and institutions such as the WTO and GAFTA could lead to positive outcomes for the region because high population growth means that demand for traded produce will continue to increase across the region.

4. Enhancing trade for food security and nutrition

This final section will provide a SWOT analysis on where the region stands and what the region should focus on to realise opportunities from trade. The section will end with a set of policy recommendations to reap the benefits of trade for the entirety of the Arab region.

A. SWOT analysis on food trade and nutrition in the Arab region

What are the strengths, weaknesses, opportunities, and threats in the Arab region to increase trade-based food and nutrition security? Despite a currently challenging outlook for Arab countries on food and nutrition security, the region is not without strengths. As shown in Section 1, there are considerable fruit and vegetable production capacities in key agricultural producer countries such as Egypt, Morocco, Syria, Lebanon, Algeria, or Tunisia. These countries can produce more nutritious crops for both domestic and regional markets allowing Arab consumers healthier food choices for better nutrition outcomes. The high-income countries in the GCC as well as Iraq and Sudan also have further options to expand their production capacities in horticultural products, especially through an adoption of new higher-efficiency methods such as green houses and hydroponics. Growing populations also mean there will be a higher availability of labour that could see job opportunities all along agricultural value chains from production to processing, to retail and catering while also providing a source of growth for product demand offering the possibility to recoup investments. This is a crucial competitive advantage compared to ageing societies, especially in Europe. The region also possesses readily available trade governance instruments through various bilateral trade agreements and GAFTA. Enhancing these governance instruments may provide significant benefits in the future for Arab economies.

However, the region also is exposed to significant weaknesses. Since most of the cereals are imported from international markets such as Europe, Asia, North and South America, and Australia, the region's food and nutrition security will depend on good trade relations with global food bowls to provide sufficient carbohydrates and proteins to the populations in the Arab region. On the export side, Arab

countries have weak food safety rules. Food-borne diseases are still common across the region due to inadequate handling of fresh food. If the region wants to increase its trade opportunities, it needs to commit to a strategy as Egypt did. In 2017, it launched a programme through the National Food Safety Agency to increase competitiveness and food quality standards that complies with global markets. Small farmers are a further key issue to address. Although small farmers could act as a key strength in the region, they are poorly integrated into food and nutrition security and trade, which instead turns them into a liability due to rural poverty and poor agricultural and management practices (Bush, 2016).

Crucial opportunities for the Arab region at large exist in domestic protein supply expansion. Except for the West Bank, no other Arab country is landlocked. On the contrary, while almost all Arab countries possess a promising fisheries potential for aquaculture, certain countries such as Egypt, Mauritania, Morocco, Yemen, and Somalia also possess opportunities for pelagic and even demersal fish production. However, such opportunities must be strictly governed through fishing quotas to avoid an over-exploitation of fish resources. In addition, aquaculture and deep-sea fishing require an upscaling of existing technologies such as more modern fleets and aquaculture plants. Technology also presents major opportunities for upscaling fruit and vegetable production, especially in higher income countries such as the GCC. New greenhouse technologies and hydroponics can provide the region with increased outputs of healthy crops traditionally used in Arab diets, which used to be amongst the healthiest around the world. Finally, there are immense opportunities in trade by integrating regional markets as well as those on the African continent. The Arab region has the fastest growing regions at its doorstep, which could provide future economic opportunities for the agricultural sector.

Population growth also serves as a threat to the future of the region. High population growth in the Arab region and Sub-Sahara Africa requires drastic food supply increases. This will have to be carefully planned to avoid further pressures on already highly limited natural resources availability. However, steering the agricultural sector away from field crops to high-efficiency horticultural crops could free water and land resources currently used for field crop production such as wheat or other cereals for which imports can be considered as the safer and more cost-efficient option. Yet, climate change adds to future uncertainty regarding natural resources, hence there are a number of 'black swans' in relation to food and trade. At the same time, climate change requires even more coordinated shifts to ensure future food production even under harsher conditions. Finally, the Arab region must take steps to resolve political conflicts to keep trade routes open. Simultaneously, Arab governments must ensure fiscal stability to avoid all-out inflation as seen in Lebanon and Sudan in the recent past.

<p>Strengths</p> <p>Fruit and vegetable production capacities in key producer countries such as Egypt, Morocco, Syria, Lebanon, Algeria, and Tunisia; a growing population means increasing agricultural labour availability and potential new consumers; existing institutions such as GAFTA on the regional level to govern trade</p>	<p>Weaknesses</p> <p>High import-dependency of strategic cereals such as wheat and animal feed; low domestic protein production due to high import-dependencies on animal feed products; food safety is insufficiently regulated across the region impairing export opportunities for key producers; low integration of small farmers in export supply chains</p>
<p>Opportunities</p> <p>Increased protein supply through more production of low resource-intensive meats such as chicken and fish production to address micronutrient deficiencies; high income countries could produce more fruits and vegetables through technological innovations such as hydroponics; a changing trade landscape with more demand coming from within the region as well as Africa; a focus on traditional low-resources diets could improve food availability and nutrition outcomes for health.</p>	<p>Threats</p> <p>Increasing demand through population growth in key producer countries such as Egypt, Sudan, Iraq, Yemen, Somalia, and Mauritania may absorb more food within domestic markets; climate change will further add to uncertainty in key producer countries due to increasing natural resources scarcity such as water and fertile land; conflict and economic decline/currency devaluation may further impair the ability of countries trade food.</p>

Table 3: A SWOT Analysis on Trade for Nutrition in the Arab region

Source: author's own illustration.

B. Policy adjustments for optimised trade for food and nutrition security

i. Pooling resources

Since all Arab countries except for Sudan are highly cereal import-dependent, the Arab region should consider the suggestions of the 2018 “State of Agricultural Commodity Markets” report by the Food and Agriculture Organisation of the United Nations (FAO, 2018b). Governments should pool emergency humanitarian food reserves through strategic regional storage facilities to mitigate potential availability and price shocks due to climate change, pandemics such as COVID-19 or conflicts in key production centres such as the Black Sea region. This could help lessen worries of Arab countries with regards to trade dependency in times of crises. Such storage must be governed by a supranational level organisation such as the League of Arab States to ensure fair and equitable distribution of emergency stocks in times of crises. At the same time, pooling resources would also mean greater collaboration of Arab governments to achieve food and nutrition security. Since the Arab region will be home to about 10% of the global population, it also has considerable market leverage if it acts in a more coordinated manner on global markets.

ii. Diversify import sources whilst increasing production of grains traditional to the region

The war in Ukraine poses unprecedented challenges to the Arab region. Cereal imports from the Black Sea may take years to fully resume. Arab governments must act quickly in such a new market environment. The focus on imports from one region such as the Black Sea region has shown to be of high risk. Instead, the Arab region must import from a variety of countries around the world including India, Argentina, Brazil, Europe, Kazakhstan, Pakistan, Australia, USA and Canada (Abay et al., 2022; Times of India, 2022). At the same time, Arab countries should resort to local wheat varieties such as durum wheat, which have commonly been used in the Mashreq and Maghreb countries. Durum wheat has traditionally been either steamed or smoked to produce bulghur or freekeh (Toufeili et al., 1997).

Although traditional grains can be grown under rainfed and marginal conditions, supplementary irrigation methods with strict water accounting rules to avoid over-abstraction of groundwater wells could boost production (Grafton et al., 2018). It must be noted that resorting to traditional grains will not lead to food self-sufficiency but it can act as an important mitigation effort to provide cereal security.

iii. Market traditional diets to leverage food system change

Food system change will be without alternative across the world. This also applies to the Arab region, where the nutrition transition has led to rising levels of non-communicable diseases. At the same time, Arab traditional diets especially in the Levant are considered amongst the healthiest in the world. Levantine food has become a trend food in many parts of the world due to its rich use of healthy ingredients such as vegetables, legumes, dairy, and smaller portions of wheat-based carbohydrates. Diets have often changed in the history of humanity. For example, the widely consumed potato was only available after European colonisers discovered America and consequently grown in Europe, too. Diets must once again change to address environmental change and resources depletion. An important part of food system change is focusing more on local produce. Resorting to traditional grains such as durum wheat would be an important step towards food system change in the Arab region.

iv. Invest in food safety institutions

Food safety is a topic of increasing concern not only in the Arab region since the origins of the Covid-19 pandemic are attributed to wet markets due to inadequate handling of food. The Arab region has poorly developed food safety regulations that are not fit for the future. Following Egypt's example in establishing a national food safety authority should be adopted by more Arab countries. Apart from a mere institution, food safety authorities must be given the financial and authoritative means to enforce food safety standards. Such standards must involve clear regulations of pesticide and herbicide use by farmers, new investments in supply chain infrastructure such as cooling and processing of agro-industrial foods and improved provisions of vital inputs such as clean water and seeds to allow farmers to improve the quality of the fresh food produced on their lands. The recently proposed Good Agricultural Practices, which have already been adopted and adapted by Jordan and Lebanon could provide a good starting to promote food safety and product quality. After all, the Arab region possesses a comparative and competitive advantage to produce fruits and vegetables during most of the calendar year.

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