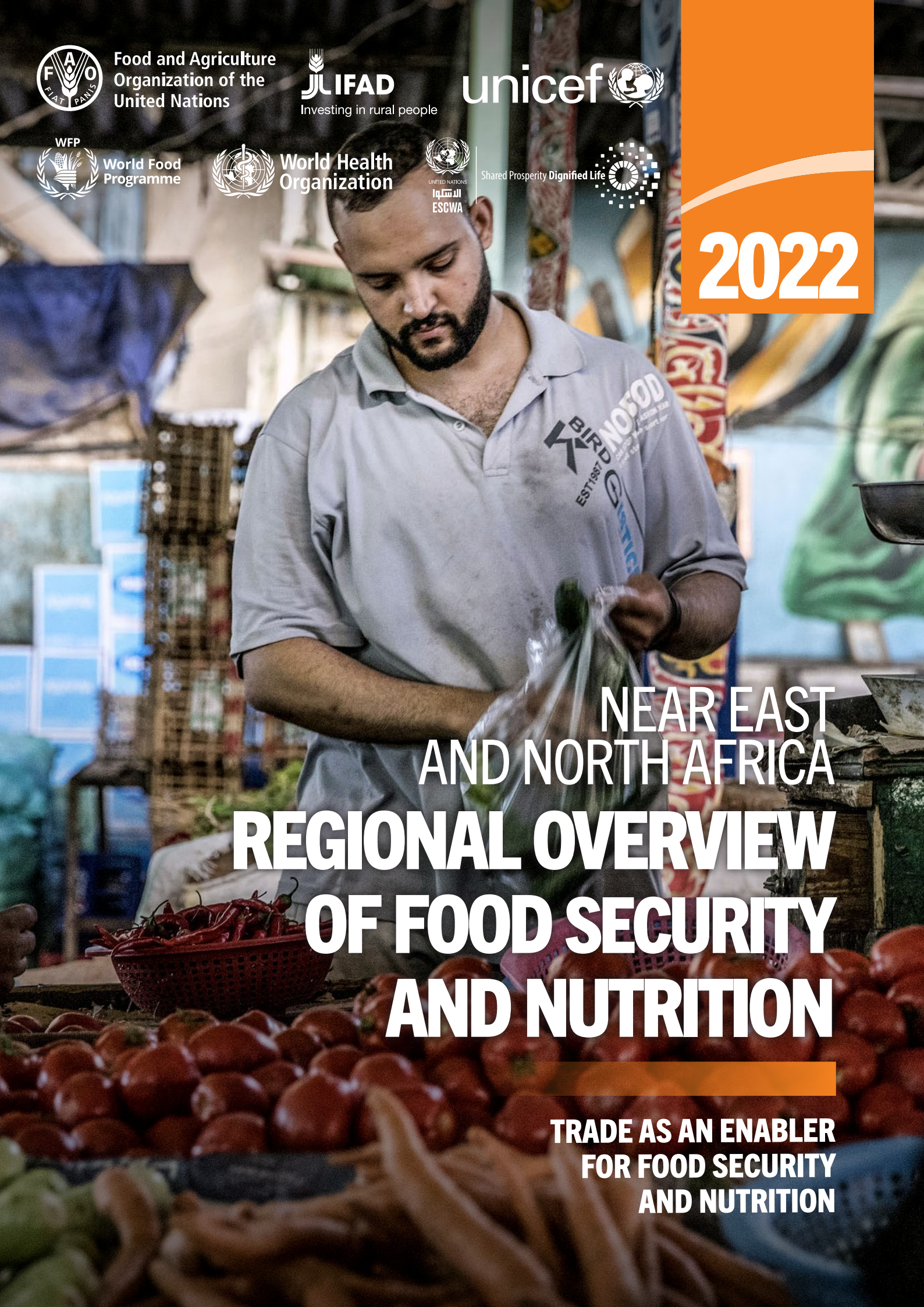

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2022

NEAR EAST AND NORTH AFRICA

REGIONAL OVERVIEW OF FOOD SECURITY AND NUTRITION

TRADE AS AN ENABLER FOR FOOD SECURITY AND NUTRITION

Required citation:
FAO, IFAD, UNICEF, WFP, WHO & UNESCWA. 2023. *Near East and North Africa – Regional Overview of Food Security and Nutrition: Trade as an Enabler for Food Security and Nutrition.* Cairo. https://doi.org/10.4060/cc4773en

ISBN 978-92-5-137711-6 [FAO]

COVER PHOTOGRAPH © FAO/PEDRO COSTA GOMES
EGYPT. A street seller sells cucumber in Cairo, Egypt.

2022
NEAR EAST AND NORTH AFRICA
REGIONAL OVERVIEW OF FOOD SECURITY AND NUTRITION

TRADE AS AN ENABLER FOR FOOD SECURITY AND NUTRITION

Food and Agriculture Organization of the United Nations
Cairo, 2023

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FOREWORD

The 2022 Near East and North Africa Regional Overview of Food Security and Nutrition provides an update on the progress made in the Arab States towards Sustainable Development Goal (SDG) 2 targets related to hunger, food security and nutrition, as well as the progress made towards the 2025 global nutrition targets set by the World Health Assembly (WHA). It also discusses the important role of trade as an enabler for food security and nutrition in the region.

The first part of the report focuses on trends and statistics, while the second part examines how trade increases food security.

The data presented in this report show that the Arab States continue to face significant challenges in achieving both SDG target 2.1 – ensuring regular access to sufficient, safe and affordable healthy food for all people – and SDG target 2.2 – ending all forms of malnutrition.

Estimates from 2021 show that 54.3 million people in the region, or 12.2 percent of the population, are undernourished. This is a 55 percent increase over 2010, before the region experienced the major shocks of popular uprisings and conflicts. The COVID-19 pandemic, which hit the region in 2020 caused hunger to surge across the region, affecting countries of all income levels regardless of whether or not there was conflict.

Moderate or severe food insecurity has also continued its upward trend, affecting an estimated 154.3 million people in 2021, an increase of 11.6 million people over the previous year. The number of food insecure people has been rising steadily since 2014, and in 2021, an estimated 34.7 percent of the region's population was moderately or severely food insecure and deprived of regular access to sufficient food and nutrition. The number of people exposed to severe food insecurity in 2021 is estimated at 53.9 million, an increase of 5 million from the previous year.

Trade plays an important role in food security in the region. However, most of the countries have not mainstreamed trade into food security policies; thus, relevant policies must be redesigned accordingly. The potential for enhancing intra-regional trade is also an area that needs attention, especially considering the recent shocks in food supply chains.

The region relies heavily on imports to meet food security requirements, and almost all the countries are categorized as net food importers, but some countries export a sizeable quantity of food. This means that international trade plays a vital role in food security in the region. Since the region relies on global markets to import food, it is more exposed to external shocks. The war in Ukraine and consequent decrease in exports of food and fertilizers from the Black Sea region has increased the vulnerability of food supply chains in the Near East and North Africa region. To reduce the exposure to such external shocks, international trade must be carefully managed, sources of imports should be diversified and international trade relations must be expanded to include new partners and markets.

Given this current state of affairs, the region is unlikely to achieve zero hunger (SDG 2) by 2030. Challenges such as climate change, conflict, the COVID-19 pandemic and the war in Ukraine, along with structural issues such as poverty and inequality, add to the burden. Recent food supply chain problems alongside increasing food prices could worsen the food security situation.

If the region is to mitigate these challenges and to get back on track to meet food and nutrition targets, agrifood systems in the area must be transformed to make them more efficient, inclusive, resilient and sustainable. Trade must be better integrated into food security policies in the region. FAO and other development partners are supporting member states in this endeavour.

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ACKNOWLEDGEMENTS

This report was prepared by Ahmad Mukhtar, of the Food and Agriculture Organization of the United Nations (FAO) Regional Office for Near East and North Africa (FAORNE), with the support of Tamás Vattai, under the overall leadership of Abdul Hakim Elwaer. Jean-Marc Faurès provided a range of inputs essential to the report, while further inputs were provided by Beenish Amjad, Mariam Hoda, Fatma Brahim, Baha'a Armouti and Mounir el Bouamri. Mariam Hassanien coordinated the publishing process. Angham Abdelmageed provided the layout design.

Máximo Torero Cullen, Marco Sánchez Cantillo and José Rosero Moncayo from FAO headquarters provided guidance in terms of structure and content of the report, Olivier Lavagne d'Ortigue provided support for overall data presentation, while Hernán Muñoz, Firas Yassin, Olivier Lavagne d'Ortigue (FAO Statistics Division), Cindy Holleman, Valentina Conti, Valentina Pernechele, Giovanni Carrasco Azzini (FAO Agrifood Economics Division), Ekaterina Krivonos, Jakob Rauschendorfer (FAO Trade and Markets Division), Ahmed Raza (FAO Food and Nutrition Division), José Valls Bedeau (FAO Food Systems and Food Safety Division) and May Hani (FAO Inclusive Rural Transformation and Gender Equality Division) provided valuable comments and inputs.

Support from partner agencies was provided by Alessandra Garbero, Amine Zarroug, Grayson Sakos (International Fund for Agricultural Development [IFAD]), Reem Nejdawi, Fidele Byiringiro, Estelle AlJammal (United Nations Economic and Social Commission for Western Asia [UNESCWA]), Aashima Garg, Wigdan Madani, Leonardo Menchini, Vrinda Mehra, Yoshito Kawakatsu (United Nations Children's Fund [UNICEF]), Siemon Hollema, Sabah Barigou, Kate Newton, Eric Scanlon (World Food Programme [WFP]), Ayoub Al-Jawaldeh, Nashwa Mansour and Asmus Hammerich (World Health Organization [WHO]), and Denise Penello Rial, United Nations Conference on Trade and Development (UNCTAD).

ACRONYMS AND ABBREVIATIONS

ADESA	average dietary energy supply adequacy
AfCFTA	African Continental Free Trade Area
AFTA	Agadir Free Trade Area
AMU	Arab Maghreb Union
BMI	body mass index
COVID-19	novel coronavirus disease
CPI	consumer price index
DSFI	dietary sourcing flexibility index
FAO	Food and Agriculture Organization of the United Nations
FAOSTAT	Food and Agriculture Organization Corporate Statistical Database
FBS	food balance sheets
FIES	Food Insecurity Experience Scale
GCC	Gulf Cooperation Council
GDP	gross domestic product
GG-NAP	Green Growth National Action Plan
GVC	global value chains
HHI	Herfindahl-Hirschman Index
ICP	International Comparison Programme
IFAD	International Fund for Agricultural Development
LDC	least developed country
NAS	National Agriculture Strategy (Lebanon)
NCD	non-communicable disease
NENA	Near East and North Africa
NTM	non-tariff measures

OECD	Organisation for Economic Co-operation and Development
PIP	Poverty and Inequality Platform
PoU	Prevalence of undernourishment
PPPD	per person per day
SD	standard deviation
SDG	Sustainable Development Goal
SPS	sanitary and phytosanitary
TBT	technical barriers to trade
UNCTAD	United Nations Conference on Trade and Development
UNESCWA	United Nations Economic and Social Commission for Western Asia
UNICEF	United Nations Children's Fund
UNIDO	United Nations Industrial Development Organization
WFP	World Food Programme
WHA	World Health Assembly
WHO	World Health Organization
WTO	World Trade Organization

EXECUTIVE SUMMARY

This report examines the food security and nutrition situation in the Arab/Near East and North Africa (NENA)[1] region. It discusses how international trade can enhance food security and nutrition in a region that is experiencing an array of external shocks. The COVID-19 pandemic has revealed fragilities in agrifood systems, exacerbated inequalities, and increased global hunger and malnutrition. The region was already off track to achieving hunger and nutrition-related Sustainable Development Goal (SDG) targets before the pandemic occurred. The ongoing war in Ukraine is also further disrupting supply chains and inflating grain, fertilizer and energy prices. Since the region depends heavily on imported food to meet its food security requirements, these crises have affected Arab countries disproportionately.

The pandemic and the war in Ukraine have made apparent many vulnerabilities in global food supply chains. Although trade can play an important role in fostering healthy diets, which translates to positive nutritional outcomes, hunger and malnutrition have reached critical levels as accessibility to basic foods has been hindered by these two crises. In the NENA region, the cost of cross-border trade transactions, increased delays from supply and demand uncertainties, and rising commodity prices triggered by supply chain disruptions have contributed to trade instability and, by extension, to food insecurity. Achieving SDG 2, and the relevant Food and Agriculture Organization of the United Nations (FAO) Regional Priority 2 (providing "food security and healthy diets for all"), will require accelerated action toward improving the facilitation of trade in agricultural products among Member Nations. These objectives can be achieved by: (i) securing food imports from diversified sources; (ii) enhancing food safety and quality; (iii) reducing food losses across the value chain; (iv) enabling the region's growing population to meet its food and nutrition requirements; and (v) making trade work for nutrition.

This report comes at a crucial juncture as the triple burden of undernutrition, micronutrient deficiencies and overweight/obesity is accelerating in the Arab region. The number of undernourished people reached 54.3 million in 2021, corresponding to 12.2 percent of the population. Moderate or severe food insecurity has also continued its rising trend, affecting an estimated 154.3 million people in 2021. Moreover, the prevalence of obesity has been increasing steadily in the region since 2000, while more than half the Arab region's population cannot afford a healthy diet.

Given the scarcity of natural resources, especially land and water, climate change and the increased frequency of extreme weather, the region is unable to a large extent to feed a growing population with local foods and must import agricultural products. More than 50 percent of the food consumed in the Arab region is imported, making it one of the

1 This report is intended to capture the countries of the Arab/Near East and North Africa (NENA) region: Algeria, Bahrain, the Comoros, Djibouti, Egypt, Iraq, Jordan, Kuwait, Lebanon, Libya, Mauritania, Morocco, Oman, Palestine, Qatar, Saudi Arabia, Somalia, the Sudan, the Syrian Arab Republicn Arab Republic, Tunisia, the United Arab Emirates and Yemen. NENA and the Arab region are used interchangeably.

most significant global net food importing regions. As a result, the area is increasingly vulnerable to shocks in international commodity markets. It faces considerable uncertainty on both the supply and demand side, aggravating the challenges related to food insecurity and malnutrition.

Studies also indicate that agricultural productivity in the region, while low relative to other countries, is not at pace with the growing population. Over the last decade, the average annual population growth rate in the Arab region was almost double that of the world average. Coupled with scarce water and land resources and the low domestic production of agricultural products, high demand has resulted in a high import dependency ratio. As the population is projected to increase, the region will continue to depend on trade and global markets, which is a serious concern for policymakers.

A significant income distribution disparity is also affecting the population's overall ability to afford nutritious food. Also, given the region's commodity import dependency, many countries are vulnerable to supply shocks and swings in the prices on international markets. As a result, the availability and price of food products are often unstable, which negatively affects food security and nutrition.

This report assesses the import dependency and identifies vulnerabilities in the Arab/NENA countries for four product groups (cereals, fruit and vegetables, meat, and pulses) and the total aggregate of food groups with the help of the following metrics: import dependency ratio and exporter concentration. A high import dependency combined with a reliance on very few suppliers can render a country vulnerable to shocks such as fluctuations in the origin country of production or interrupted transport routes. The results also suggest that those NENA countries with a higher dependency on imported foods also show a more diversified range of global suppliers. This is especially true for Jordan, Kuwait and the United Arab Emirates. However, this is not the case for the region overall, as most countries are highly dependent on imported food from fewer countries of origin. The wealthier nations of the region, Kuwait, Saudi Arabia and the United Arab Emirates, have a highly diversified food supply in terms of sourcing channels and food commodities; but this is not the case for other countries, especially Algeria, Iraq and Libya.

From a nutrition perspective, one essential conclusion of the report is that imports make a huge contribution to the diversity of available food items in the NENA region. In the case of fruit and vegetables, which are not produced in sufficient quantities in the region but are essential to a healthy and nutritious diet, imports contribute substantially to the variety available for domestic consumption, especially in Kuwait, Oman, Saudi Arabia and the United Arab Emirates. For meats and pulses, NENA countries show high degrees of global supplier concentration and a considerable variety of import dependencies. Overall, net imports per capita for these two groups are relatively small. From a food security point of view, risks of high import dependency and vulnerability to external shocks can be reduced by diversifying the import sources across countries and regions with different socio-economic and climate profiles as well as building food stocks.

While the linkages between trade and food security and nutrition are well-understood, it has become increasingly more important to improve policy coherence because in most developing countries, agriculture and trade-related objectives are developed through separate negotiation and coordination processes. Therefore, interventions that aim to transform agrifood systems and improve the nutrition and health status of the region's population must be appraised holistically, considering potential trade-offs and synergies in the economic, social and environmental impacts. This report identifies the significant economic, social and environmental trade-offs of specific policy interventions that aim to transform agrifood systems. One area where trade-offs must be carefully considered is repurposing domestic agricultural subsidies to pursue better nutrition, health and environmental outcomes.

This report concludes with some recommendations. In countries where domestic production is low yet the diversity of imports is high, trade instability and challenges with food security and malnutrition are less likely. Thus, policymakers are encouraged to (i) reduce trade barriers, facilitate trade including through digital technologies, harmonize non-tariff barriers, improve transparency, strengthen governance and coordinate trade policies; (ii) develop new free trade areas and/or expand the commodity and product coverage of existing ones; and (iii) promote collaboration and coherence among countries and the global community.

Moreover, trade and the strategic diversification of the import basket can go a long way towards achieving the four dimensions of food security and propelling progress toward the 2030 goal of eradicating hunger, food insecurity and malnutrition. In this United Nations Decade of Action on Nutrition 2016–2025, completing the ambitious development agenda requires accelerated action to end hunger and eliminate malnutrition in all its forms by ensuring that sufficient quantities of safe, nutritious and affordable foods are available to all. Therefore, the NENA region must improve agrifood systems to deliver food security and better nutrition for all, to be economically sustainable, to be inclusive, and to have a positive impact on climate and the environment.

TUNISIA
Mohamed Ali Ghaidi at work with his flock.
©FAO/Anis Mili

PART 1
STATISTICS AND TRENDS

Food insecurity and malnutrition are growing challenges in the Arab/NENA region, which is not on track to meet Sustainable Development Goal (SDG) 2, Zero Hunger. The triple burden of undernutrition, micronutrient deficiencies, and overweight and obesity is accelerating. Part 1 of this report will present the latest detailed statistics on the region's food security and nutrition situation. Chapter 1 presents statistics related to SDG 2.1 on undernourishment and moderate and severe food insecurity, while Chapter 2 highlights concerns related to SDG 2.2 with figures and trends in four global nutrition indicators: stunting, wasting, overweight in children under 5 years of age, and anaemia in women aged 15 to 49. Chapter 3 evaluates progress toward three additional global nutrition targets that the World Health Assembly (WHA) endorsed, such as exclusive breastfeeding, low birthweight and adult obesity. Finally, Chapter 4 provides a first assessment of the cost and affordability of a healthy diet in the region since the outbreak of the COVID-19 pandemic.

CHAPTER 1

SUSTAINABLE DEVELOPMENT GOAL 2.1: FOOD SECURITY

Key messages

- Hunger in the Arab region has continued to increase since 2014. The number of undernourished people reached 54.3 million in 2021, or 12.2 percent of the population. This represents a 55 percent increase since 2010, before the region suffered from the major shocks of popular uprisings and conflicts. The COVID-19 pandemic, which hit the region in 2020 led to a surge in hunger across the region, affecting regional subgroups of all income levels, and conflict-affected as well as non-conflict-affected countries. Yemen, a conflict-affected, low-income country, had the highest prevalence of undernourishment (PoU) in the region in 2021.
- Moderate or severe food insecurity has also been rising since 2014, affecting an estimated 154.3 million people in 2021, up from 142.7 million in 2020 – an increase of 11.6 million. Hence in 2021, an estimated 34.7 percent of the region's population was moderately or severely food insecure and deprived of regular access to sufficient and nutritious food. In 2021, an estimated 53.9 million people suffered from severe food insecurity, which is another measure that approximates hunger. This is an increase of 5 million people from the previous year.
- Recent trends in hunger and food insecurity suggest that the region is not on track to achieve Zero Hunger (SDG 2) by 2030. This can largely be attributed to the recent COVID-19 pandemic and various other factors such as poverty, inequality, conflict and climate change. Moreover, the recent food supply chain challenges coupled with increasing food prices may cause the situation to deteriorate further.

1.1 PREVALENCE OF UNDERNOURISHMENT

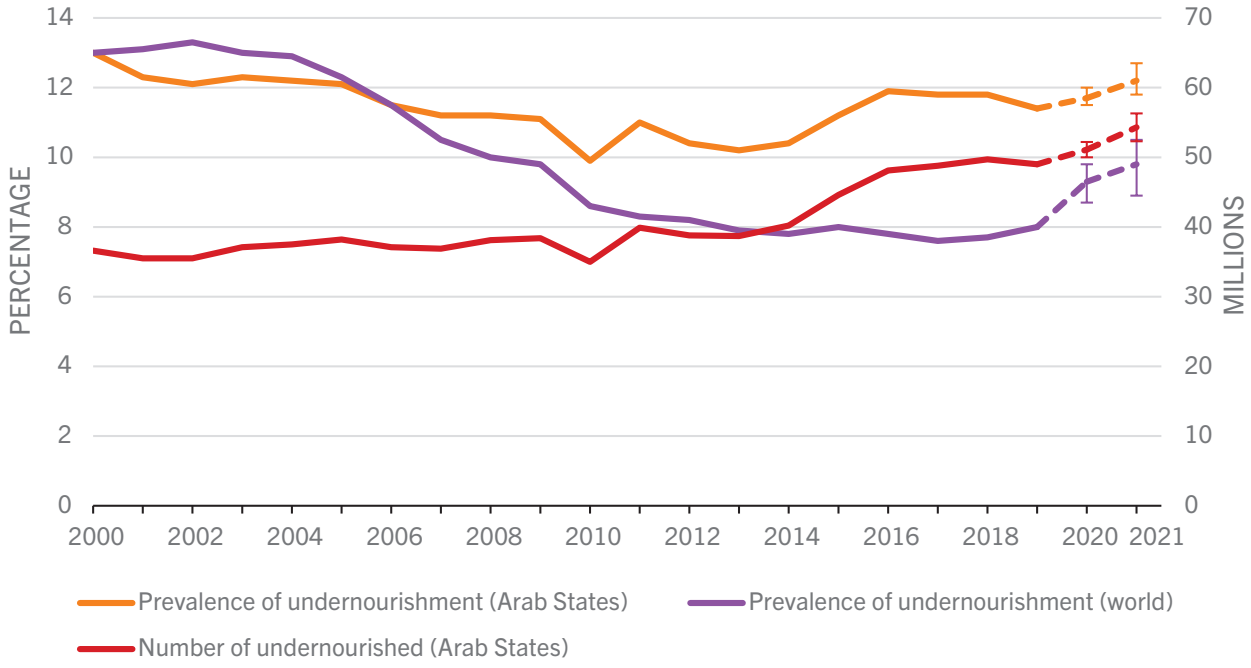
The Food and Agriculture Organization of the United Nation's (FAO) prevalence of undernourishment indicator is derived from official country data on food supply, food consumption and energy needs, while taking into consideration demographic characteristics such as age, sex and levels of physical activity. Designed to capture a state of energy deprivation lasting over a year, it does not reflect the short-lived effects of temporary crises or a temporarily inadequate intake of essential nutrients.

FAO always strives to improve the accuracy of PoU estimates by taking into account new information; the entire historical series is updated for each report. For this reason, only the current series of estimates should be used, including for values in past years.

Hunger has been on the rise in the Arab States since 2014, wiping out progress made since 2000. The PoU was 12.2 percent in 2021, close to its 2001 level, and higher than the global average of 9.8 percent. The region is facing multifaceted challenges such as the impact of climate change, prolonged conflicts and natural disasters, all of which are contributing to the prevalence of undernutrition. The number of undernourished people increased by 55 percent between 2010 and 2021, reaching 54.3 million.

This is also 3.2 million people more than in 2020, which is a result of the prolonged impact of the COVID-19 pandemic on the region's economy and people's livelihoods.

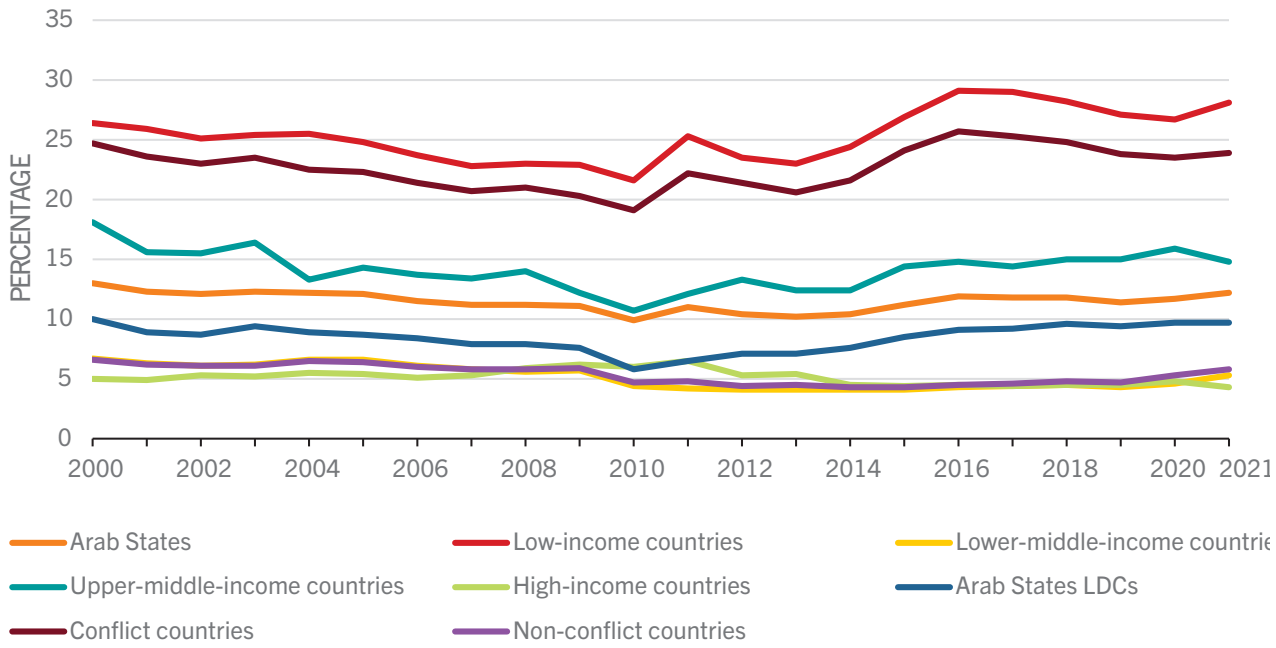
FIGURE 1
PREVALENCE OF UNDERNOURISHMENT IN THE WORLD AND THE ARAB STATES, AND THE NUMBER OF UNDERNOURISHED IN THE ARAB STATES



Source: FAO. 2022. *FAOSTAT*: Suite of Food Security Indicators. In: *FAO*. Rome. Cited November 2022. https://www.fao.org/faostat/en/#data/FS
Note: Values for 2020 and 2021 are projections. The bars indicate the lower and upper bounds of the estimated range.

PoU increases are observed in low- and middle-income country groups and in conflict-affected countries since 2010, as well as in non-conflict-affected countries since 2015 (see country groupings in Annex 4). The PoU trend has been, on average, steadily on the rise in the region since 2014. However, it is still slightly lower than in 2000 (13 percent). By subgroup, the PoU is highest in low-income countries, coming up to 28.9 percent, and lowest in high-income countries, accounting for 4.3 percent. The PoU in upper middle-income countries is higher than in lower-income ones due to the effects of prolonged conflicts in many countries within the group. Hunger in conflict-affected countries has always been much higher than in non-conflict-affected countries. In 2021, the PoU in conflict-affected countries was 23.9 percent compared to 5.8 percent in non-conflict-affected countries.

FIGURE 2
PREVALENCE OF UNDERNOURISHMENT IN THE ARAB STATES BY SUBREGION



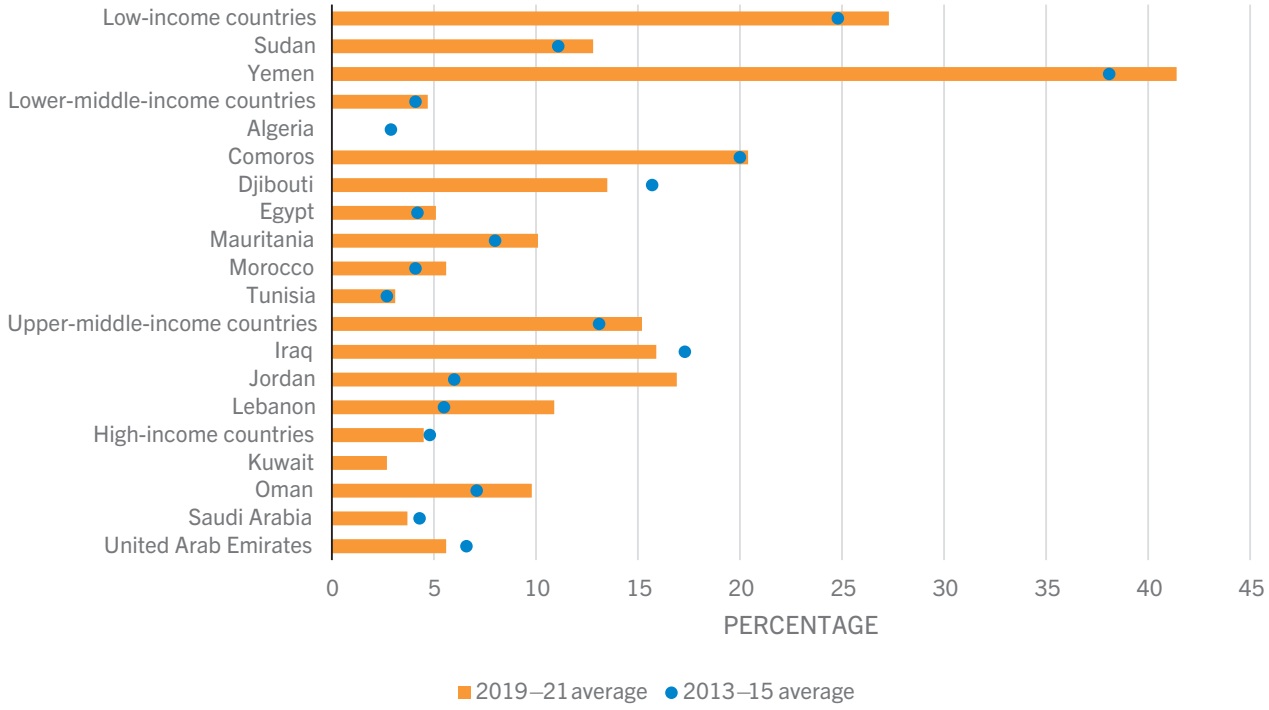
Source: FAO. 2022. *FAOSTAT: Suite of Food Security Indicators. In: FAO.* Rome. Cited November 2022. https://www.fao.org/faostat/en/#data/FS
Note: Projected values based on the middle of the projected range for 2020 and 2021.

TABLE 1
PREVALENCE OF UNDERNOURISHMENT (PERCENT)

	2000	2010	2015	2019	2020	2021
World	**13.0**	**8.6**	**8.0**	**8.0**	**9.3**	**9.8**
Arab States	13.0	9.9	11.2	11.4	11.7	12.2
Low-income countries	26.4	21.6	26.9	27.1	26.7	28.1
Lower-middle-income countries	6.7	4.4	4.1	4.3	4.6	5.3
Upper-middle-income countries	18.1	10.7	14.4	15.0	15.9	14.8
High-income countries	5.0	6.0	4.4	4.5	4.8	4.3
Arab States LDCs	10.0	5.8	8.5	9.4	9.7	9.7
Conflict countries	24.7	19.1	24.1	23.8	23.5	23.9
Non-conflict countries	6.6	4.7	4.3	4.7	5.3	5.8

Source: FAO. 2022. *FAOSTAT: Suite of Food Security Indicators. In: FAO.* Rome. Cited November 2022. https://www.fao.org/faostat/en/#data/FS
Note: Projected values based on the middle of the projected range for 2020 and 2021.

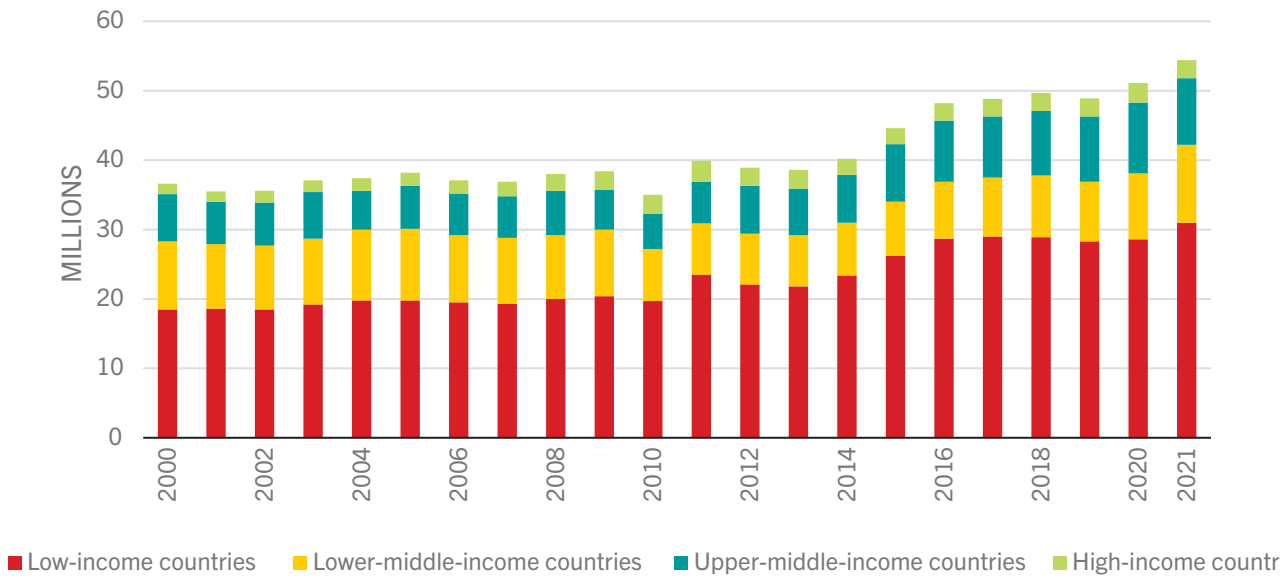
FIGURE 3
PREVALENCE OF UNDERNOURISHMENT IN THE ARAB STATES BY COUNTRY



Source: FAO. 2022. *FAOSTAT: Suite of Food Security Indicators. In: FAO.* Rome. Cited November 2022. https://www.fao.org/faostat/en/#data/FS
Note: The estimates referring to the middle of the projected ranges for the years 2020 and 2021 were used to calculate the three-year averages. The PoU is less than 2.5 percent for Algeria in 2019–2021 and for Kuwait in 2013–2015.

Individual country estimates are available for 16 of the 22 Arab countries. Most countries (10 out of the 16 listed) for which data are available show an increase in the PoU between 2013–2015 and 2019–2021. Undernourishment trended upwards in low- and middle-income countries (except Algeria, Djibouti and Iraq), but reduced slightly (0.3 percentage point) in the high-income country group. Yemen, a conflict-affected, low-income country, displayed the highest levels of undernourishment in the region in both periods, with the PoU reaching 41.4 percent in 2019–2021. The latest estimates show the lowest levels of PoU, below 4 percent in Kuwait, Saudi Arabia and Tunisia. Jordan has a high PoU due to the refugee influx, while Lebanon has faced serious economic challenges in recent years.

FIGURE 4
NUMBER OF PEOPLE UNDERNOURISHED IN THE ARAB STATES BY SUBREGION



Source: FAO. 2022. FAOSTAT: Suite of Food Security Indicators. In: *FAO*. Rome. Cited November 2022. https://www.fao.org/faostat/en/#data/FS
Note: Projected values based on the middle of the projected range for 2020 and 2021.

The number of undernourished people in the Arab region reached 54.3 million in 2021, up by 48.3 percent from 36.6 million in 2000 (Table 2). The number of undernourished people has risen by 3.2 million from 2020. The yearly increases occurred in low- and lower-middle-income country groups, Arab States least developed countries (LDCs), conflict-affected and non-conflict-affected countries of the region. The numbers have shown moderate year-on-year declines in 2021 in the upper-middle- and high-income country groups.

Low-income economies had 31 million undernourished people, upper-middle-income economies 11.2 million, lower-middle-income economies 9.6 million and high-income economies 2.6 million. The number of undernourished people in conflict-affected

countries was 37.8 million, which is more than double that of non-conflict-affected countries (16.5 million people).

The region accounted for 7 percent of the global total of 767.9 million in 2021.

TABLE 2
NUMBER OF UNDERNOURISHED PEOPLE (MILLIONS)

	2000	2010	2015	2019	2020	2021
World	**796.2**	**601.3**	**588.6**	**618.4**	**721.7**	**767.9**
Arab States	36.6	35.0	44.6	49.0	51.1	54.3
Low-income countries	18.5	19.7	26.2	28.3	28.6	31.0
Lower-middle-income countries	9.8	7.5	7.8	8.6	9.5	11.2
Upper-middle-income countries	6.8	5.1	8.3	9.4	10.2	9.6
High-income countries	1.5	2.7	2.3	2.6	2.8	2.6
Arab States LDCs	12.1	8.7	14.1	16.7	17.6	18.0
Conflict-affected countries	24.4	24.2	33.5	35.8	36.2	37.8
Non-conflict countries	12.2	10.8	11.1	13.2	15.0	16.5

Source: FAO. 2022. FAOSTAT: Suite of Food Security Indicators. In: *FAO*. Rome. Cited November 2022. https://www.fao.org/faostat/en/#data/FS
Note: Projected values based on the middle of the projected range for 2020 and 2021.

1.2 PREVALENCE OF FOOD INSECURITY BASED ON THE FOOD INSECURITY EXPERIENCE SCALE

The Food Insecurity Experience Scale- (FIES) based prevalence of moderate or severe food insecurity is an estimate of the proportion of the population facing moderate or severe constraints on their ability to obtain sufficient food over the course of a year. People face moderate food insecurity when they are uncertain of their ability to obtain food and have been forced to reduce, at times over the year, the quality and/or quantity of food they consume due to lack of money or other resources. Severe food insecurity means that individuals have likely run out of food, experienced hunger and, in the most extreme cases, have gone for days without eating, putting their health and well-being at serious risk.

The prevalence of moderate or severe food insecurity in the Arab region was 34.7 percent in 2021, showing an upward trend for the third year in a row, and higher than the global average of 29.3 percent. In 2021, Arab States LDCs displayed the highest prevalence of food insecurity, at 51.2 percent. By country income groups,[2] the highest prevalence of severe or moderate food insecurity, 48.2 percent, was recorded in low-income countries,

2 FAO uses the World Bank income groups, available at https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups.
High-income economies: Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, the United Arab Emirates; Lower-middle-income economies: Algeria, the Comoros, Djibouti, Egypt, Mauritania, Morocco, Palestine, Tunisia; Low-income economies: Somalia, the Sudan, the Syrian Arab Republicn Arab Republic, Yemen; and Upper-middle-income economies: Iraq, Jordan, Lebanon, Libya. Arab States LDCs: the Comoros, Djibouti, Mauritania, Somalia, the Sudan, Yemen; Conflict-affected countries: Iraq, Libya, Somalia, the Sudan, the Syrian Arab Republicn Arab Republic, Yemen; and Non-conflict countries: Algeria, Bahrain, the Comoros, Djibouti, Egypt, Jordan, Kuwait, Lebanon, Mauritania, Morocco, Oman, Palestine, Qatar, Saudi Arabia, Tunisia, the United Arab Emirates.

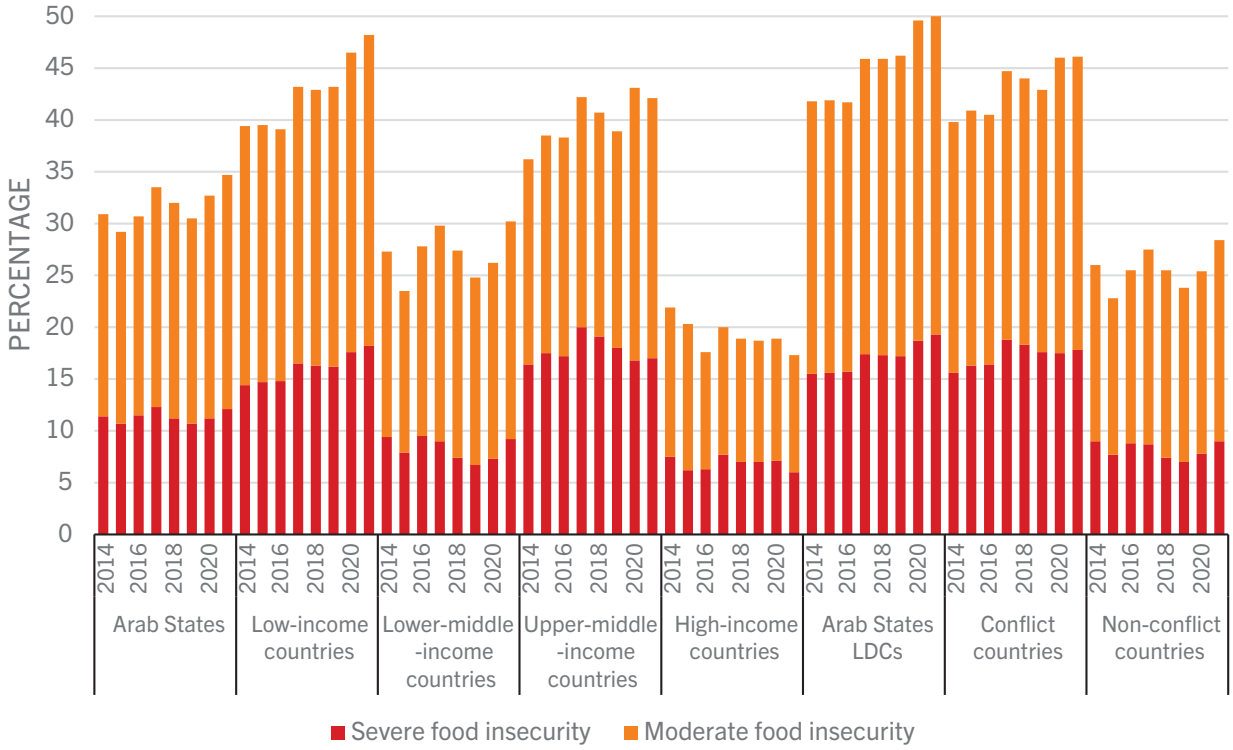
while high-income countries had the lowest prevalence at 17.3 percent. The prevalence of food insecurity has been trending upwards in conflict-affected countries since 2014, and in non-conflict-affected countries since 2019. In 2021, the indicator reached the level of 46.1 percent in conflict-affected countries and 28.4 percent in non-conflict-affected countries.

The number of moderately or severely food insecure people was equivalent to 154.3 million, of which 53.9 million were severely food insecure. This number has been rising since 2014.

Severe food insecurity affected 12.1 percent of the people in the Arab region in 2021, up from 11.4 percent in 2014. The highest levels of 18.2 percent were observed in low-income countries and the lowest in high-income countries, at 6 percent. Overall, the prevalence of severe food insecurity in the region has been increasing steadily since 2019.

The recent estimates (2019–2021) of the prevalence of moderate or severe food insecurity are available for 18 of the 22 Arab countries. These showed the highest prevalence of moderate or severe food insecurity in the Comoros, at 79.7 percent, and Somalia, at 77.4 percent. In contrast, the lowest prevalence of moderate or severe food insecurity, 7.5 percent, was recorded in the United Arab Emirates, a high-income country.

FIGURE 5
PREVALENCE OF FOOD INSECURITY IN THE ARAB STATES BY SUBREGION



Source: FAO. 2022. FAOSTAT: Suite of Food Security Indicators. In: *FAO*. Rome. Cited November 2022. https://www.fao.org/faostat/en/#data/FS

In 2021, 48.2 percent of people in low-income countries faced severe or moderate food insecurity, compared to 42.1 percent in upper-middle-income countries, 30.2 percent in lower-middle-income countries and 17.3 percent in high-income countries. In contrast, severe food insecurity affected 12.1 percent of the people in the Arab region in 2021, up from 11.4 percent in 2014: 18.2 percent in low-income countries, 17 percent in upper-middle-income countries, 9.2 percent in lower-middle-income countries and 6 percent in high-income countries.

Prevalence of moderate or severe food insecurity in the region has been rising since 2019. However, the trends differed by country income groups. Only the high-income country group displayed a reduction in the prevalence of moderate or severe food insecurity from 2014 levels, in contrast with other income category groups. The prevalence has increased progressively in conflict-affected countries since 2014. In 2021, 46.1 percent of people were moderately or severely food insecure versus 28.4 percent in the non-conflict country group.

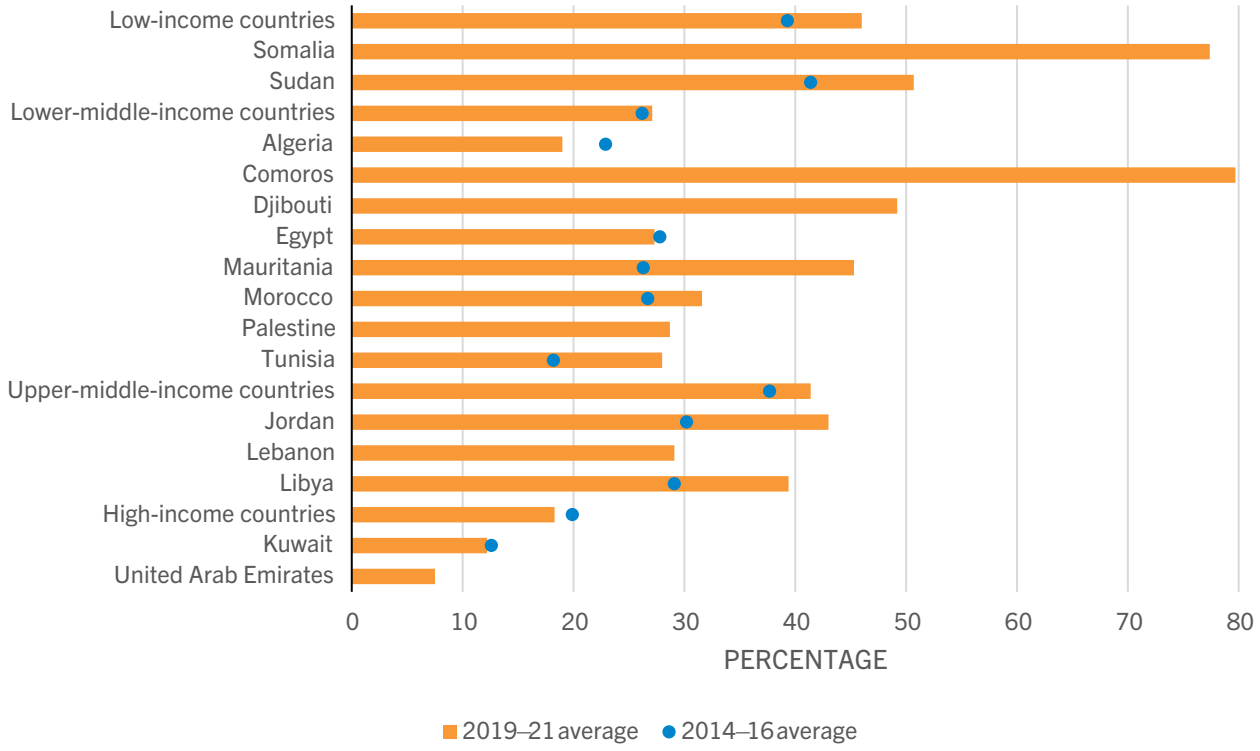
TABLE 3

PREVALENCE OF MODERATE OR SEVERE FOOD INSECURITY (PERCENT)

	Moderate food insecurity				Severe food insecurity				Moderate or severe food insecurity			
	2014	2019	2020	2021	2014	2019	2020	2021	2014	2019	2020	2021
World	13.5	16.1	18.6	17.6	7.7	9.3	10.9	11.7	21.2	25.4	29.5	29.3
Arab States	19.5	19.8	21.5	22.6	11.4	10.7	11.2	12.1	30.9	30.5	32.7	34.7
Low-income countries	25.0	27.0	28.9	30.0	14.4	16.2	17.6	18.2	39.4	43.2	46.5	48.2
Lower-middle-income countries	17.9	18.1	18.9	21.0	9.4	6.7	7.3	9.2	27.3	24.8	26.2	30.2
Upper-middle-income countries	19.8	20.9	26.3	25.1	16.4	18.0	16.8	17.0	36.2	38.9	43.1	42.1
High-income countries	14.4	11.7	11.8	11.3	7.5	7.0	7.1	6.0	21.9	18.7	18.9	17.3
Arab States LDCs	26.3	29.0	30.9	31.9	15.5	17.2	18.7	19.3	41.8	46.2	49.6	51.2
Conflict countries	24.2	25.3	28.5	28.3	15.6	17.6	17.5	17.8	39.8	42.9	46.0	46.1
Non-conflict countries	17.0	16.8	17.6	19.4	9.0	7.0	7.8	9.0	26.0	23.8	25.4	28.4

Source: FAO. 2022. FAOSTAT: Suite of Food Security Indicators. In: *FAO*. Rome. Cited November 2022. https://www.fao.org/faostat/en/#data/FS

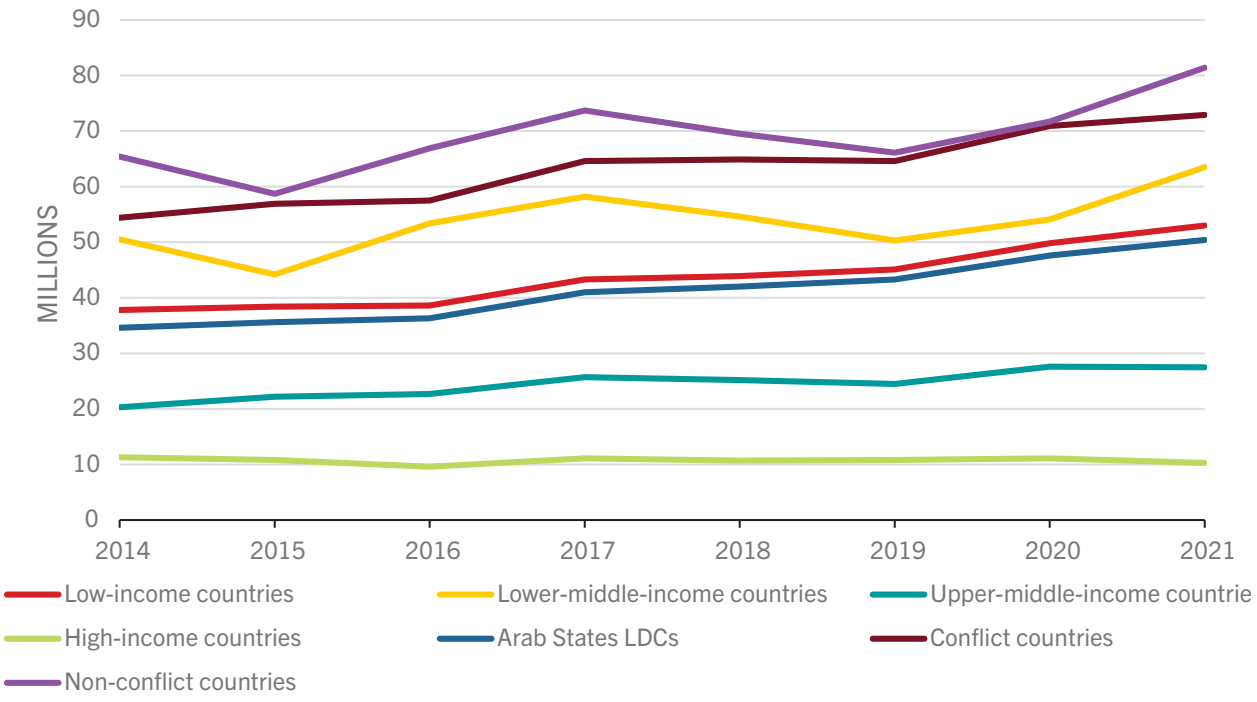
FIGURE 6
PREVALENCE OF MODERATE OR SEVERE FOOD INSECURITY IN THE ARAB STATES BY COUNTRY



Source: FAO. 2022. FAOSTAT: Suite of Food Security Indicators. In: *FAO*. Rome. Cited November 2022. https://www.fao.org/faostat/en/#data/FS

Comparing the estimates between two periods such as 2014–2016 and 2019–2021, eleven countries showed an increase in prevalence levels, six countries displayed declines, while levels have been sustained in two countries (the Comoros and Djibouti). In 2019–2021, the highest prevalence of moderate or severe food insecurity was recorded in LDCs such as the Comoros (79.7 percent), Somalia (77.4 percent) and the Sudan (50.7 percent), whereas the prevalence was lowest in the United Arab Emirates (7.5 percent), a high-income country.

FIGURE 7
NUMBER OF MODERATELY OR SEVERELY FOOD INSECURE PEOPLE IN THE ARAB STATES BY SUBREGION



Source: FAO. 2022. FAOSTAT: Suite of Food Security Indicators. In: *FAO*. Rome. Cited November 2022. https://www.fao.org/faostat/en/#data/FS

An estimated 154.3 million people in the Arab region experienced moderate or severe food insecurity in 2021, up by 34.5 million or 29 percent from 2014. Lower-middle-income countries had 63.5 million moderately or severely food insecure people, compared to 53 million in low-income countries, 27.5 million in upper-middle-income countries and 10.3 million in high-income countries. Between 2014 and 2021, numbers have increased across all country income groups, with the exception of the high-income country group, which saw a decline of 1 million. The numbers have declined compared to 2020 in high-income countries, with a slight increase seen in the upper-middle-income country group and increases seen in low- and lower-middle-income economies. The number of moderately or severely food insecure people has increased since 2014 both in conflict-affected and non-conflict-affected Arab States, mainly due to expanding populations coupled with limited agricultural production and food access. In the region as a whole, the number of moderately or severely food insecure people represents 6.7 percent of the global estimates.

TABLE 4

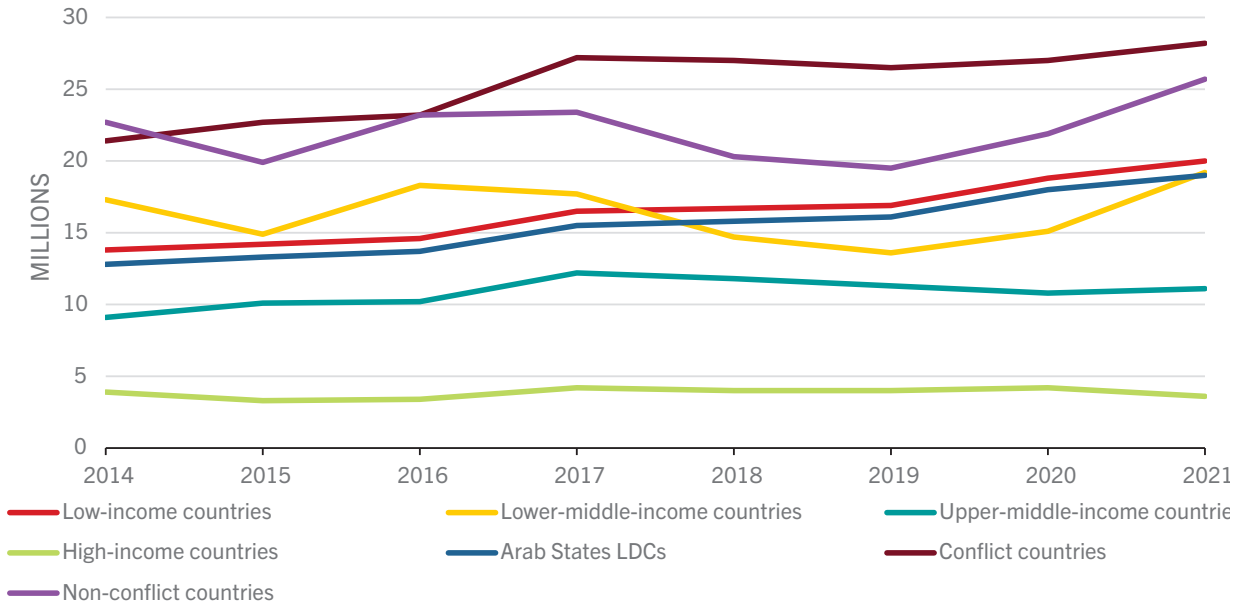
NUMBER OF MODERATELY OR SEVERELY FOOD INSECURE PEOPLE (MILLIONS)

	2014	2016	2019	2020	2021
World	1 543.9	1 693.4	1 955.9	2 297.8	2 308.5
Arab States	119.8	124.3	130.8	142.7	154.3
Low-income countries	37.8	38.6	45.1	49.8	53
Lower-middle-income countries	50.5	53.4	50.3	54.1	63.5
Upper-middle-income countries	20.3	22.7	24.5	27.6	27.5
High-income countries	11.3	9.6	10.8	11.1	10.3
Arab States LDCs	34.6	36.3	43.3	47.6	50.4
Conflict countries	54.4	57.5	64.6	70.9	72.9
Non-conflict countries	65.4	66.9	66.1	71.7	81.4

Source: FAO. 2022. FAOSTAT: Suite of Food Security Indicators. In: **FAO**. Rome. Cited November 2022. https://www.fao.org/faostat/en/#data/FS

FIGURE 8

NUMBER OF SEVERELY FOOD INSECURE PEOPLE IN THE ARAB STATES BY SUBREGION



Source: FAO. 2022. FAOSTAT: Suite of Food Security Indicators. In: *FAO*. Rome. Cited November 2022. https://www.fao.org/faostat/en/#data/FS

An estimated 53.9 million people in the Arab region experienced severe food insecurity in 2021, an increase of 9.8 million, or 22.2 percent from 2014. Low-income countries had 20 million severely food insecure people, compared with 19.2 million in lower-middle-income countries, 11.1 million in upper-middle-income countries and 3.6 million in high-income countries. Regional estimates showed an increase of 5 million people since 2020. Increases were recorded at all country income levels, except in the high-income country group where estimates showed declines of 0.3 million. Both conflict-affected as well as non-conflict-affected Arab countries have seen increases in the number of severely food insecure people. In 2021, 28.2 million people were food insecure in conflict-affected countries, compared to 25.7 million in non-conflict-affected countries.

TABLE 5

NUMBER OF SEVERELY FOOD INSECURE PEOPLE (MILLIONS)

	2014	2016	2019	2020	2021
World	564.9	588.5	716.9	850.1	923.7
Arab States	44.1	46.5	45.9	48.9	53.9
Low-income countries	13.8	14.6	16.9	18.8	20.0
Lower-middle-income countries	17.3	18.3	13.6	15.1	19.2
Upper-middle-income countries	9.1	10.2	11.3	10.8	11.1
High-income countries	3.9	3.4	4.0	4.2	3.6
Arab States LDCs	12.8	13.7	16.1	18.0	19.0
Conflict countries	21.4	23.2	26.5	27.0	28.2
Non-conflict countries	22.7	23.2	19.5	21.9	25.7

Source: FAO. 2022. FAOSTAT: Suite of Food Security Indicators. In: **FAO**. Rome. Cited November 2022. https://www.fao.org/faostat/en/#data/FS

CHAPTER 2

SUSTAINABLE DEVELOPMENT GOAL 2.2: NUTRITION

This section reports on four global nutrition indicators: stunting, wasting, overweight in children under 5 years of age, and anaemia in women aged 15 to 49.

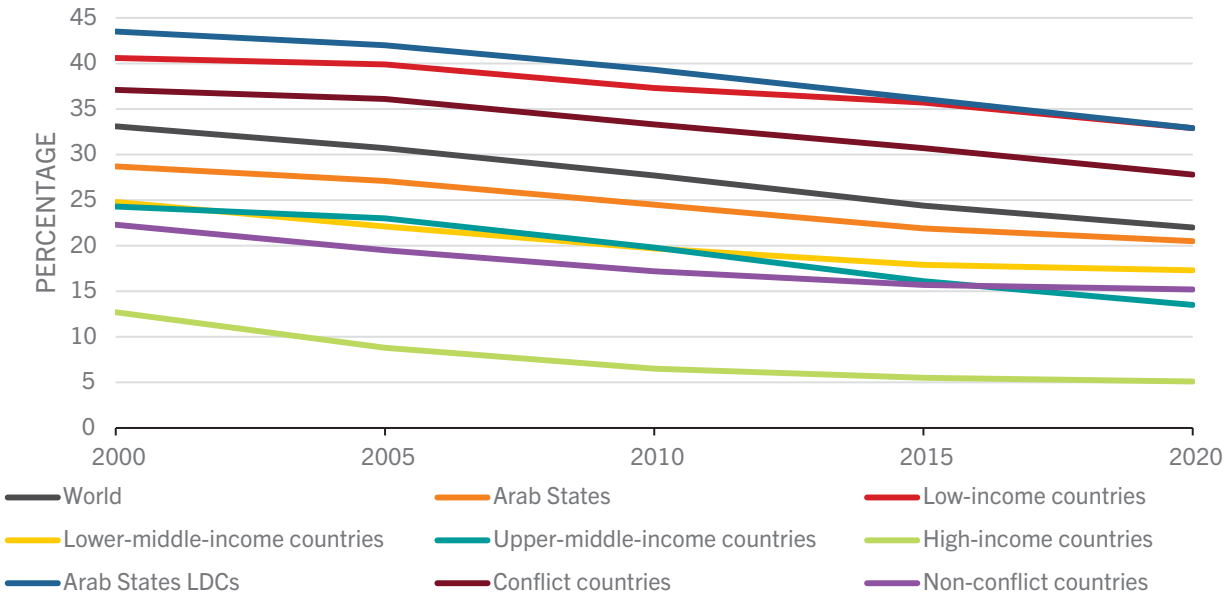
Key messages

- The Arab region continued to suffer from multiple forms of malnutrition. The prevalence of stunting (20.5 percent) and overweight (10.7 percent) among children under 5 years of age was high in 2020. Compared to global averages, the prevalence of stunting was lower in the region, whereas the prevalence of overweight was significantly higher. The prevalence of wasting (7.8 percent) in the region was also higher than the global average (6.7 percent). The Arab LDCs had the highest prevalence of both stunting and wasting in the region, whereas they displayed the lowest prevalence of childhood overweight.
- The prevalence of anaemia in women aged 15 to 49 was estimated at 33.2 percent in 2019 (latest estimate available), indicating overall a moderate public health issue in the region. However, anaemia remains a severe public health problem in the low-income countries as well as LDCs of the region. The highest prevalence of anaemia in women aged 15 to 49 years (61.5 percent) was recorded in Yemen, a low-income country.
- Conflict-affected countries in the region are worse-off compared to non-conflict-affected countries in such indicators as child undernutrition (wasting and stunting) as well as anaemia in women aged 15 to 49. In contrast, they fare better when it comes to childhood overweight, with a significantly lower prevalence (6.4 percent) compared to non-conflict-affected countries (13.8 percent).

2.1 STUNTING AMONG CHILDREN UNDER 5

The prevalence of stunting among children under 5 years in the Arab region was 20.5 percent in 2020, down from 28.7 percent in 2000. By level of income, low-income countries are the most affected, with a prevalence of 32.9 percent, followed by lower-middle-income countries (17.3 percent), upper-middle-income countries (13.5 percent) and high-income countries (5.1 percent). Conflict-affected countries had a high prevalence of stunting among children under 5 years (27.8 percent) compared to non-conflict-affected countries (15.2 percent).

FIGURE 9
PREVALENCE OF STUNTING AMONG CHILDREN UNDER 5 IN THE ARAB STATES BY SUBREGION



Source: UNICEF, WHO and World Bank. 2021. *Levels and Trends in Child Malnutrition. UNICEF/WHO/World Bank Group Joint Child Malnutrition Estimates. Key findings of the 2021 edition.* https://data.unicef.org/resources/jme-report-2021

Stunting has declined steadily since 2000 across all country income groups, conflict-affected and non-conflict countries in the region. Despite the improvement in the past two decades, the current prevalence of stunting in the region is still considered high based on the World Health Organization (WHO) classification of malnutrition severity as a public health problem. The current estimate for the Arab region is lower than the global average of 22 percent.

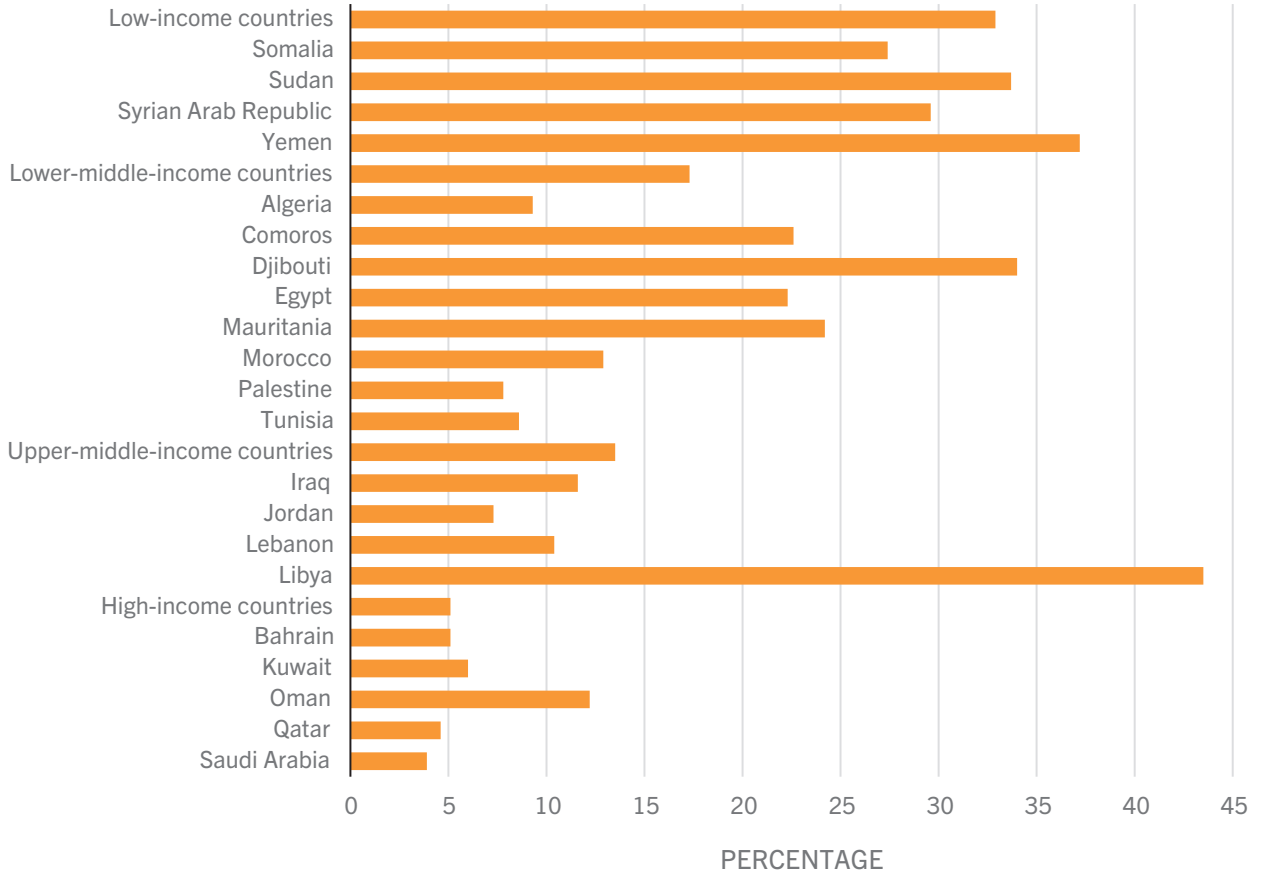
TABLE 6
PREVALENCE OF STUNTING AMONG CHILDREN UNDER 5 (PERCENT)

	2000	2005	2010	2015	2020
World	33.1	30.7	27.7	24.4	22.0
Arab States	28.7	27.1	24.5	21.9	20.5
Low-income countries	40.6	39.9	37.3	35.7	32.9
Lower-middle-income countries	24.8	22.1	19.7	17.9	17.3
Upper-middle-income countries	24.3	23.0	19.8	16.1	13.5
High-income countries	12.7	8.8	6.5	5.5	5.1
Arab States LDCs	43.5	42.0	39.3	36.1	32.9
Conflict countries	37.1	36.1	33.3	30.7	27.8
Non-conflict countries	22.3	19.5	17.2	15.7	15.2

Source: UNICEF, WHO and World Bank. 2021. *Levels and Trends in Child Malnutrition. UNICEF/WHO/World Bank Group Joint Child Malnutrition Estimates. Key findings of the 2021 edition.* https://data.unicef.org/resources/jme-report-2021

Estimates of the prevalence of stunting among children under 5 years of age in 2020 is available for 21 Arab States. In 2020, stunting was a very serious public health issue[3] (>30 percent) in four Arab countries, including Djibouti, Libya, the Sudan and Yemen. Five other countries such as the Comoros, Egypt, Mauritania, Somalia andthe Syrian Arab Republic had high levels of stunting, while in the remaining Arab countries, prevalence of stunting was a low or medium public health issue. Libya exhibited the highest rate of stunting in the region, equivalent to 43.5 percent.

FIGURE 10
PREVALENCE OF STUNTING AMONG CHILDREN UNDER 5 IN THE ARAB STATES BY COUNTRY (2020)



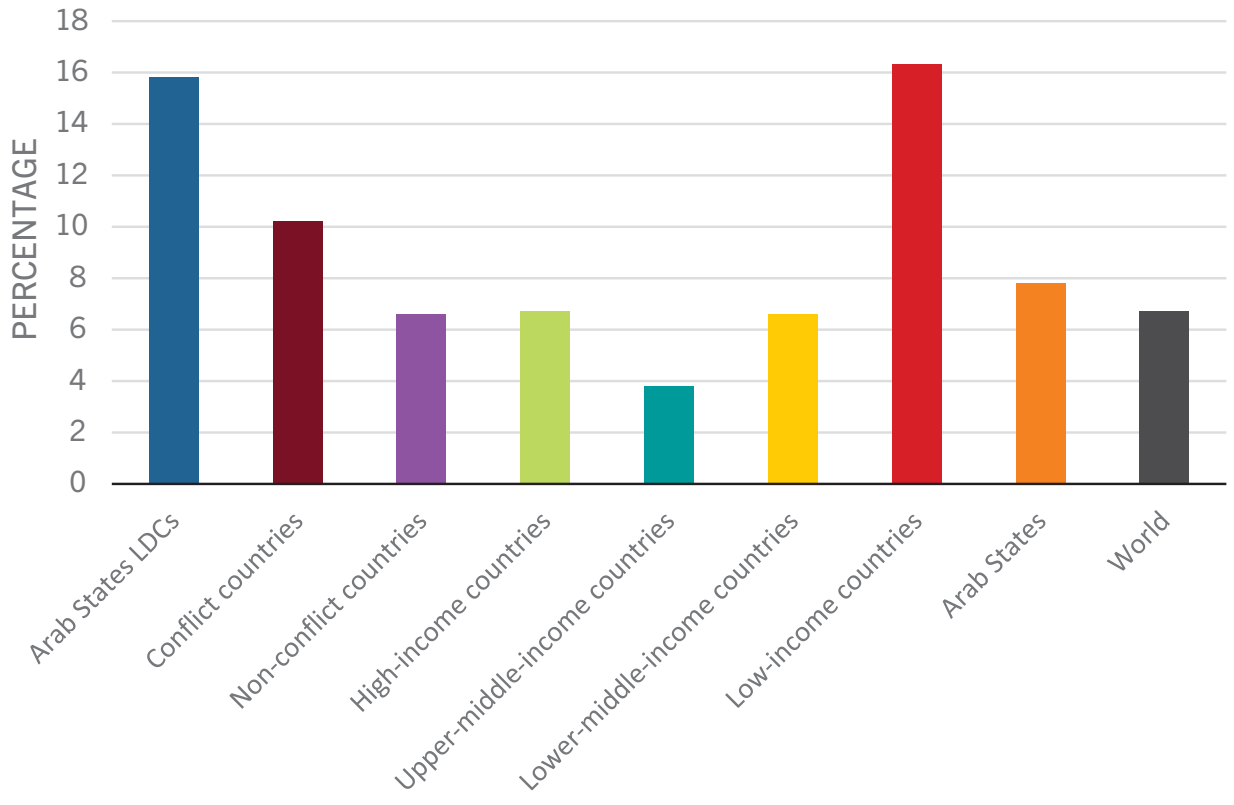
Source: UNICEF, WHO and World Bank. 2021. *Levels and Trends in Child Malnutrition. UNICEF/WHO/World Bank Group Joint Child Malnutrition Estimates. Key findings of the 2021 edition.* https://data.unicef.org/resources/jme-report-2021

3 As per the thresholds defined by the WHO (see Annex 2).

2.2 WASTING AMONG CHILDREN UNDER 5

The share of children under 5 years affected by wasting in the Arab region was 7.8 percent in 2020, which is higher than the global average of 6.7 percent. While the wasting average for the region falls under the medium category, as per WHO classification, the prevalence is very high (16.3 percent) in low-income countries and high in conflict-affected countries (10.2 percent). Across the varying levels of income, wasting affects 16.3 percent of children in low-income countries, indicating a very high prevalence. This is, surprisingly, followed by high-income countries with 6.7 percent. The lower-middle-income countries (6.6 percent) and upper-middle-income countries (3.8 percent) follow this trend. In conflict-affected Arab countries, wasting was a high public health problem with a prevalence of 10.2 percent. In non-conflict countries 6.6 percent of children under 5 years were wasted, which is a medium public health issue.

FIGURE 11
PREVALENCE OF WASTING AMONG CHILDREN UNDER 5 IN THE ARAB STATES BY SUBREGION (2020)



Source: UNICEF, WHO and World Bank. 2021. *Levels and Trends in Child Malnutrition. UNICEF/WHO/World Bank Group Joint Child Malnutrition Estimates. Key findings of the 2021 edition*. https://data.unicef.org/resources/jme-report-2021

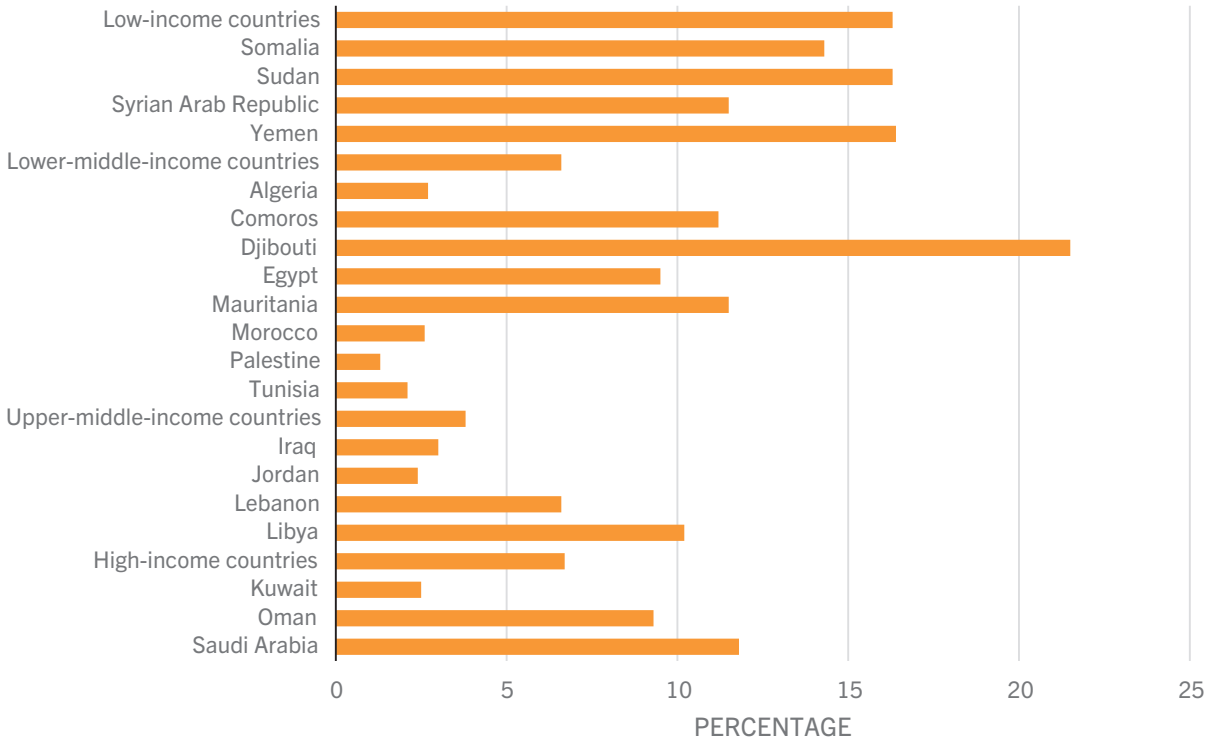
TABLE 7
PREVALENCE OF WASTING AMONG CHILDREN UNDER 5 (PERCENT)

	2020
World	6.7
Arab States	7.8
Low-income countries	16.3
Lower-middle-income countries	6.6
Upper-middle-income countries	3.8
High-income countries	6.7
Arab States LDCs	15.8
Conflict countries	10.2
Non-conflict countries	6.6

Source: UNICEF, WHO and World Bank. 2021. *Levels and Trends in Child Malnutrition. UNICEF/WHO/World Bank Group Joint Child Malnutrition Estimates. Key findings of the 2021 edition.* https://data.unicef.org/resources/jme-report-2021

The most recent country-level data show a very high prevalence of wasting in Djibouti (21.5 percent), the Sudan (16.3 percent) and Yemen (16.4 percent), all three being LDCs. The other three LDCs, the Comoros, Mauritania and Somalia, had high levels of wasting. A very low prevalence (less than 2.5 percent) of wasting was found in Jordan, Palestine and Tunisia.

FIGURE 12
PREVALENCE OF WASTING AMONG CHILDREN UNDER 5 IN THE ARAB STATES BY COUNTRY (LATEST YEAR AVAILABLE)

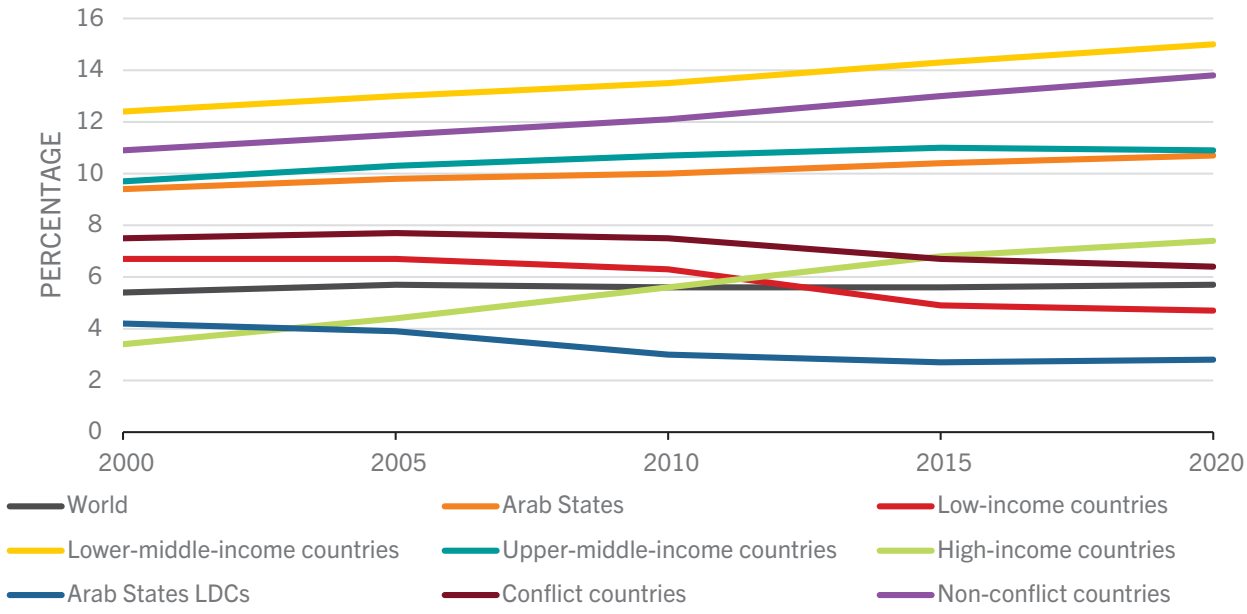


Source: UNICEF, WHO and World Bank. 2021. *Levels and Trends in Child Malnutrition. UNICEF/WHO/World Bank Group Joint Child Malnutrition Estimates. Key findings of the 2021 edition.* https://data.unicef.org/resources/jme-report-2021

2.3 OVERWEIGHT AMONG CHILDREN UNDER 5

In the Arab region, 10.7 percent of children under 5 years were overweight in 2020, up from 9.4 percent in 2000. This is higher than the global average of 5.7 percent. By level of income, lower-middle-income countries have very high levels of childhood overweight, at 15 percent. This is followed by 10.9 percent in upper-middle-income countries, 7.4 percent in high-income countries and 4.7 percent in low-income countries. The prevalence of overweight is high among children under 5 in non-conflict-affected countries (13.8 percent) compared to conflict-affected countries (6.4 percent). Data show a steady increase in childhood overweight in the region since 2000.

FIGURE 13
PREVALENCE OF OVERWEIGHT AMONG CHILDREN UNDER 5 IN THE ARAB STATES BY SUBREGION



Source: UNICEF, WHO and World Bank. 2021. *Levels and Trends in Child Malnutrition. UNICEF/WHO/World Bank Group Joint Child Malnutrition Estimates. Key findings of the 2021 edition.* https://data.unicef.org/resources/jme-report-2021

TABLE 8

PREVALENCE OF OVERWEIGHT AMONG CHILDREN UNDER 5 (PERCENT)

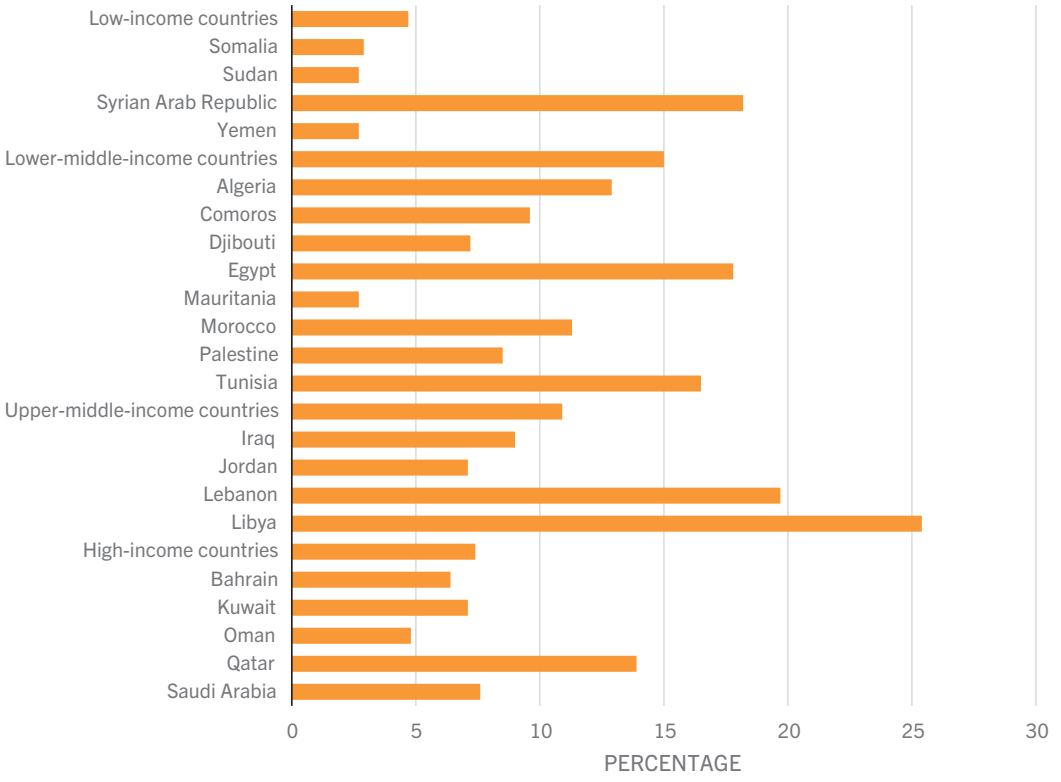
	2000	2005	2010	2015	2020
World	5.4	5.7	5.6	5.6	5.7
Arab States	9.4	9.8	10.0	10.4	10.7
Low-income countries	6.7	6.7	6.3	4.9	4.7
Lower-middle-income countries	12.4	13.0	13.5	14.3	15.0
Upper-middle-income countries	9.7	10.3	10.7	11.0	10.9
High-income countries	3.4	4.4	5.6	6.8	7.4
Arab States LDCs	4.2	3.9	3.0	2.7	2.8
Conflict countries	7.5	7.7	7.5	6.7	6.4
Non-conflict countries	10.9	11.5	12.1	13.0	13.8

Source: UNICEF, WHO and World Bank. 2021. *Levels and Trends in Child Malnutrition. UNICEF/WHO/World Bank Group Joint Child Malnutrition Estimates. Key findings of the 2021 edition.* https://data.unicef.org/resources/jme-report-2021

The prevalence of overweight is a public health problem of great concern in five countries of the region: Egypt (17.8 percent), Lebanon (19.7 percent), Libya (25.4 percent), the Syrian Arab Republic (18.2 percent) and Tunisia (16.5 percent). In contrast, only five countries in the region displayed a low prevalence of childhood overweight (less than 5 percent), including Oman, a high-income country, and four LDCs: Mauritania, Somalia, the Sudan and Yemen.

FIGURE 14

PREVALENCE OF OVERWEIGHT AMONG CHILDREN UNDER 5 IN THE ARAB STATES BY COUNTRY

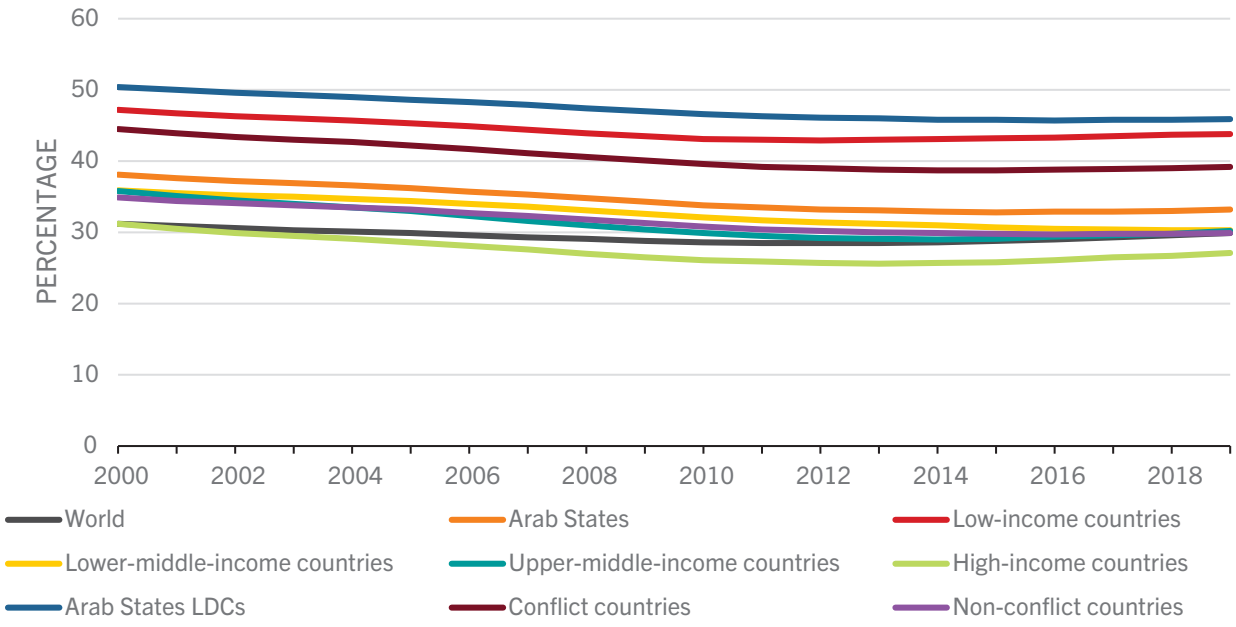


Source: UNICEF, WHO and World Bank. 2021. *Levels and Trends in Child Malnutrition. UNICEF/WHO/World Bank Group Joint Child Malnutrition Estimates. Key findings of the 2021 edition.* https://data.unicef.org/resources/jme-report-2021

2.4 ANAEMIA AMONG WOMEN 15 TO 49 YEARS

The prevalence of anaemia among women aged 15 to 49 years in the Arab region was estimated at 33.2 percent in 2019, 4.9 percentage points lower than in 2000. This is higher than the global average of 29.9 percent. The prevalence of anaemia is highest in low-income countries, with 43.8 percent, followed by 30.3 percent in lower-middle-income countries, 30.2 percent in upper-middle-income countries and 27.1 percent in high-income countries. Overall, anaemia among women aged 15 to 49 years is a moderate public health problem based on the WHO classification (see Annex 2). The prevalence of anaemia was 39.2 percent in conflict-affected countries versus 29.9 percent in non-conflict-affected countries.

FIGURE 15
PREVALENCE OF ANAEMIA AMONG WOMEN 15 TO 49 YEARS IN THE ARAB STATES BY SUBREGION



Source: WHO. 2021. Global Health Observatory: Global anaemia estimates, Edition 2021. In: *WHO*. Geneva. Cited 25 May 2021. www.who.int/data/gho/data/indicators/indicator-details/GHO/prevalence-of-anaemia-in-women-of-reproductive-age-(-)

TABLE 9

PREVALENCE OF ANAEMIA AMONG WOMEN AGED 15 TO 49 YEARS (PERCENT)

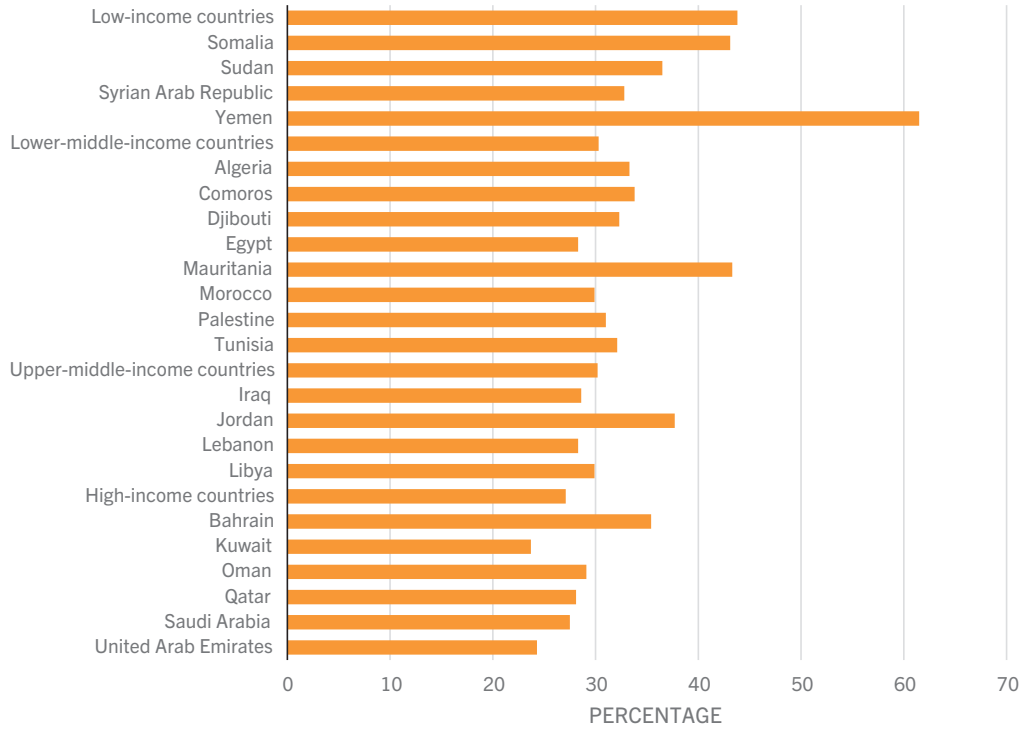
	2000	2005	2010	2015	2019
World	31.2	29.9	28.6	28.8	29.9
Arab States	38.1	36.2	33.8	32.8	33.2
Low-income countries	47.2	45.3	43.1	43.2	43.8
Lower-middle-income countries	35.9	34.4	32.1	30.7	30.3
Upper-middle-income countries	35.8	33.0	29.9	29.1	30.2
High-income countries	31.2	28.6	26.1	25.8	27.1
Arab States LDCs	50.4	48.6	46.6	45.8	45.9
Conflict countries	44.5	42.2	39.6	38.7	39.2
Non-conflict countries	34.9	33.2	30.8	29.8	29.9

Source: WHO. 2021. Global Health Observatory: Global anaemia estimates, Edition 2021. In: *WHO*. Geneva. Cited 25 May 2021. www.who.int/data/gho/data/indicators/indicator-details/GHO/prevalence-of-anaemia-in-women-of-reproductive-age-(-)

In 2019, anaemia in women aged 15 to 49 years was a severe public health problem in low–income countries such as Mauritania, Somalia and Yemen as the prevalence was higher than 40 percent. Yemen displayed the highest prevalence of anaemia in the region with 61.5 percent. In most Arab States, the public health significance of anaemia in women aged 15 to 49 years was categorized as moderate.

FIGURE 16

PREVALENCE OF ANAEMIA AMONG WOMEN 15 TO 49 YEARS IN THE ARAB STATES BY COUNTRY



Source: WHO. 2021. Global Health Observatory: Global anaemia estimates, Edition 2021. In: *WHO*. Geneva. Cited 25 May 2021. www.who.int/data/gho/data/indicators/indicator-details/GHO/prevalence-of-anaemia-in-women-of-reproductive-age-(-)

WEST BANK AND GAZA STRIP
Members of the local Women's Cooperative winnowing rice.
© FAO/Marco Longari

CHAPTER 3

ADDITIONAL WORLD HEALTH ASSEMBLY NUTRITION INDICATORS

This section assesses progress towards three additional global nutrition targets endorsed by the WHO such as exclusive breastfeeding, low birthweight and adult obesity.

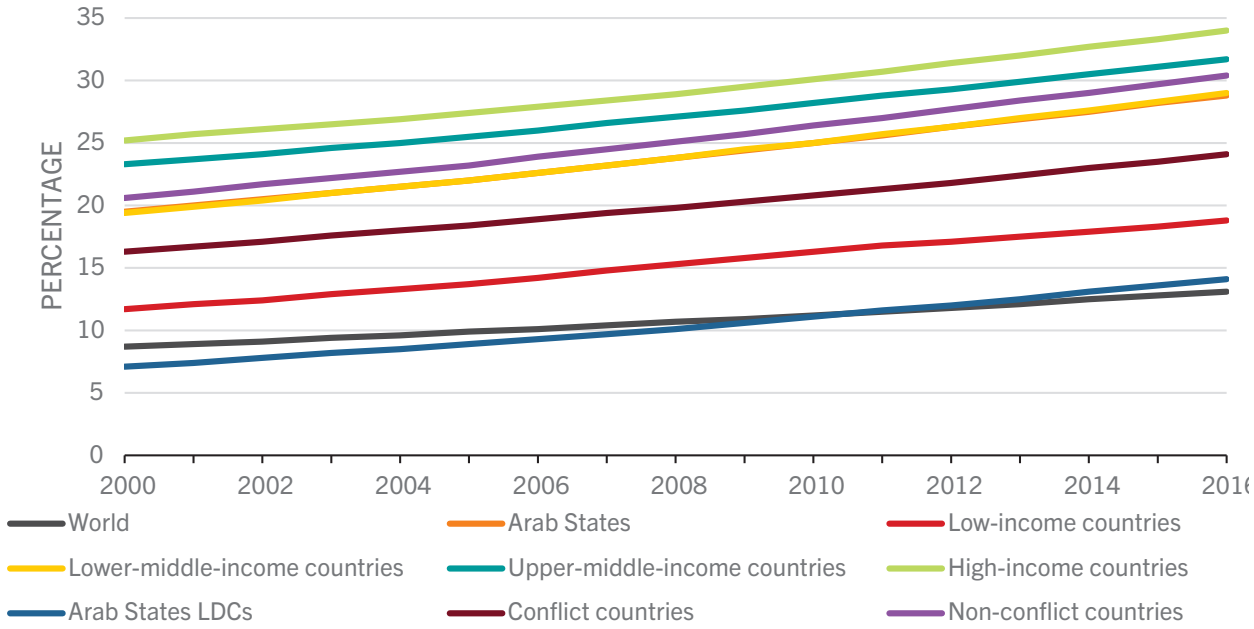
Key messages

- The latest available estimates (2016) show that 28.8 percent of the adult population (18 years and above) of the Arab region was obese, which is more than double the global average of 13.1 percent. Since 2000, the trend in the adult obesity prevalence showed an increase in the region as well as in subregions. High-income countries exhibited the highest prevalence of adult obesity and low-income countries had the lowest. Conflict-affected countries displayed a lower prevalence compared to non-conflict-affected countries of the region.
- The prevalence of exclusive breastfeeding among infants (0–5 months) in the Arab region has risen since 2012, reaching 40 percent in 2020. However, this is still lower than the global average of 43.8 percent. Upper-middle-income countries of the region had the lowest prevalence with slightly over one-quarter of infants being exclusively breastfed.
- The Arab region and its subregions have shown some progress in reducing the prevalence of low birthweight since 2012. Based on the most recently available data (2015), the prevalence of low birthweight in the region (11.6 percent) was lower than the global average (14.6 percent). The highest prevalence was in the Arab LDCs (14.4 percent), while high-income countries (9.1 percent) of the region had the lowest levels.

3.1 ADULT OBESITY

Obesity among adults of 18 years and above increased in the Arab region, from 19.5 percent in 2000 to 28.8 percent in 2016. The latest estimate is more than double the global average of 13.1 percent. All groups, by income or conflict categories, experienced increasing trends in adult obesity during this period. High-income countries had the highest prevalence of adult obesity, with 34 percent, followed by upper-middle-income countries (31.7 percent), lower-middle-income countries (29 percent) and low-income countries (18.8 percent). The prevalence of adult obesity is higher in non-conflict-affected countries (30.4 percent) compared to conflict-affected countries (24.1 percent).

FIGURE 17
PREVALENCE OF OBESITY AMONG ADULTS
IN THE ARAB STATES BY SUBREGION



Source: WHO. 2020. Global Health Observatory: Prevalence of obesity among adults, BMI ≥ 30, age-standardized estimates by country. In: *WHO*. Geneva. Cited 28 April 2020. https://apps.who.int/gho/data/node.main.A900A?lang=en

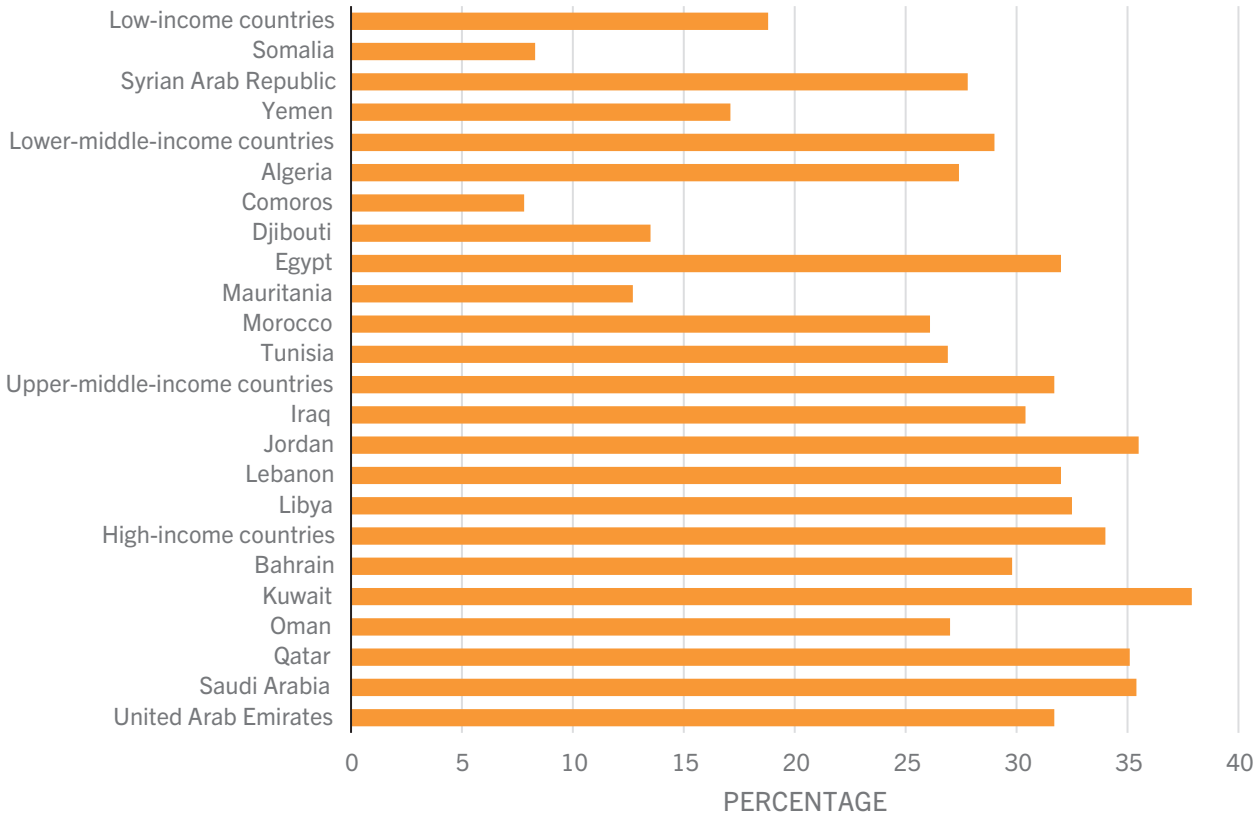
TABLE 10
PREVALENCE OF OBESITY AMONG ADULTS (PERCENT)

	2000	2005	2010	2014	2015	2016
World	8.7	9.9	11.2	12.5	12.8	13.1
Arab States	19.5	22.0	25.0	27.5	28.2	28.8
Low-income countries	11.7	13.7	16.3	17.9	18.3	18.8
Lower-middle-income countries	19.4	22.0	25.0	27.6	28.3	29.0
Upper-middle-income countries	23.3	25.5	28.2	30.5	31.1	31.7
High-income countries	25.2	27.4	30.1	32.7	33.3	34.0
Arab States LDCs	7.1	8.9	11.1	13.1	13.6	14.1
Conflict countries	16.3	18.4	20.8	23.0	23.5	24.1
Non-conflict countries	20.6	23.2	26.4	29.0	29.7	30.4

Source: WHO. 2020. Global Health Observatory: Prevalence of obesity among adults, BMI ≥ 30, age-standardized estimates by country. In: *WHO*. Geneva. Cited 28 April 2020. https://apps.who.int/gho/data/node.main.A900A?lang=en

The prevalence of obesity has increased in all countries of the region since 2000. Based on the latest estimates, adult obesity rates were over 30 percent in nine Arab States (Egypt, Iraq, Jordan, Kuwait, Lebanon, Libya, Qatar, Saudi Arabia and the United Arab Emirates). Kuwait exhibited the highest prevalence of 37.4 percent whereas the Comoros and Somalia had the lowest (7.8 and 8.3 percent respectively).

FIGURE 18
PREVALENCE OF OBESITY AMONG ADULTS
IN THE ARAB STATES BY COUNTRY (2016)



Source: WHO. 2020. Global Health Observatory: Prevalence of obesity among adults, BMI ≥ 30, age-standardized estimates by country. In: *WHO*. Geneva. Cited 28 April 2020. https://apps.who.int/gho/data/node.main.A900A?lang=en

3.2 PREVALENCE OF EXCLUSIVE BREASTFEEDING DURING THE FIRST SIX MONTHS OF LIFE

The prevalence of exclusive breastfeeding among infants (0–5 months) has increased in the Arab region from 34.8 percent in 2012 to 36.9 percent in 2020. Globally, steady progress has been made on exclusive breastfeeding, with 43.8 percent of infants under six months exclusively breastfed worldwide in 2020, up from 37.1 percent in 2012. However, for most of the region, rates were still lower than the global average. The prevalence has declined in lower-middle-income and non-conflict-affected countries. In contrast, it has increased in the other regional sub-groups: low-income countries, upper-middle-income countries, LDCs and conflict-affected countries. Recent estimates show that the highest exclusive breastfeeding rates are found in LDCs (49.4 percent).

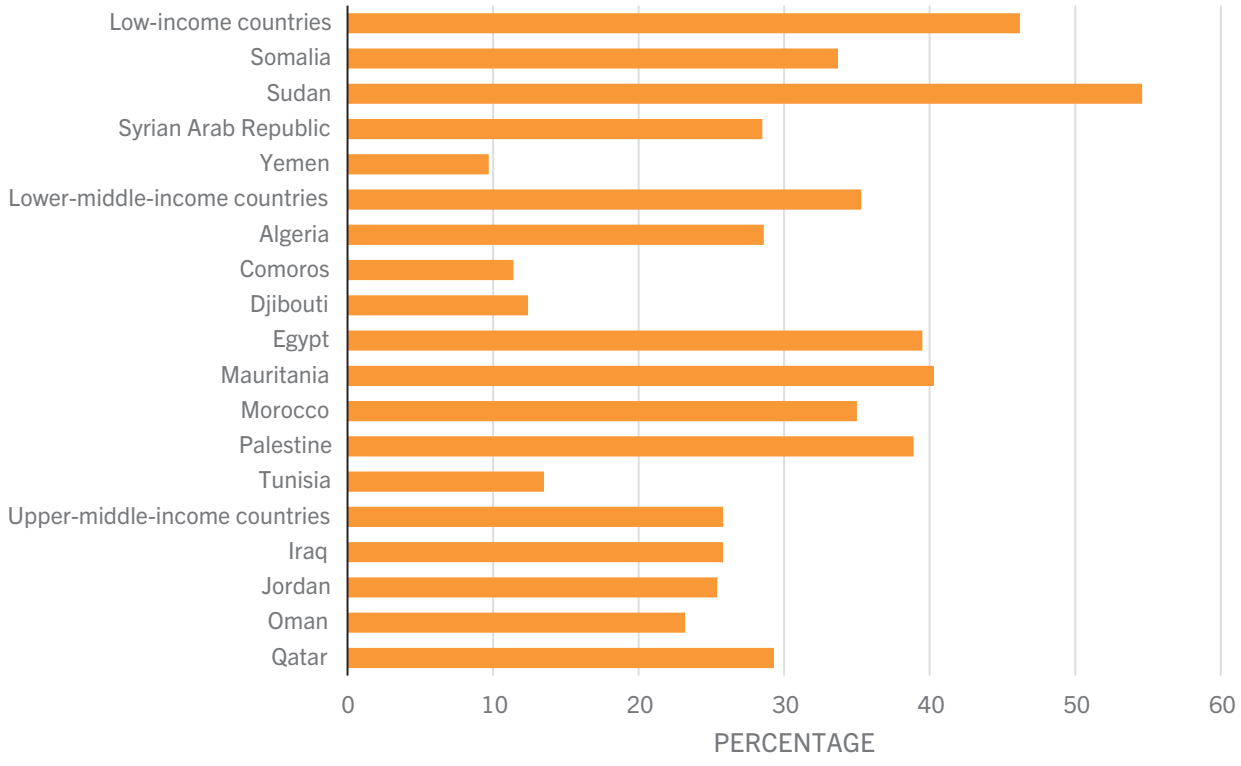
TABLE 11
PREVALENCE OF EXCLUSIVE BREASTFEEDING AMONG INFANTS 0–5 MONTHS (PERCENT)

	2012	2020
World	37.1	43.8
Arab States	34.8	36.9
Low-income countries	33.1	46.2
Lower-middle-income countries	39.7	35.3
Upper-middle-income countries	20.0	25.8
High-income countries	n.a.	n.a.
Arab States LDCs	29.6	49.4
Conflict countries	29.0	40.0
Non-conflict countries	38.8	34.7

Source: UNICEF. 2021. Infant and young child feeding. In: *UNICEF*. New York. Cited 6 April 2022. https://data.unicef.org/topic/nutrition/infant-and-young-child-feeding

At the country level, the Sudan had the highest prevalence of exclusive breastfeeding (54.6 percent), whereas Yemen had the lowest (9.7 percent).

FIGURE 19
PREVALENCE OF EXCLUSIVE BREASTFEEDING AMONG INFANTS 0–5 MONTHS IN THE ARAB STATES BY COUNTRY (LATEST YEAR AVAILABLE



Source: UNICEF. 2021. Infant and young child feeding. In: *UNICEF*. New York. Cited 6 April 2022. https://data.unicef.org/topic/nutrition/infant-and-young-child-feeding

3.3 PREVALENCE OF LOW BIRTHWEIGHT

The prevalence of low birthweight in the Arab region was 11.6 percent in 2015. This is lower than the global average of 14.6 percent. The prevalence of low birthweight is the highest in low-income countries, with 13.5 percent, followed by 11.4 percent in lower-middle-income countries, 9.9 percent in upper-middle-income countries and 9.1 percent in high-income countries. The prevalence of low birthweight was higher in conflict-affected countries, 12.3 percent, compared with non-conflict-affected countries, 11.2 percent.

TABLE 12

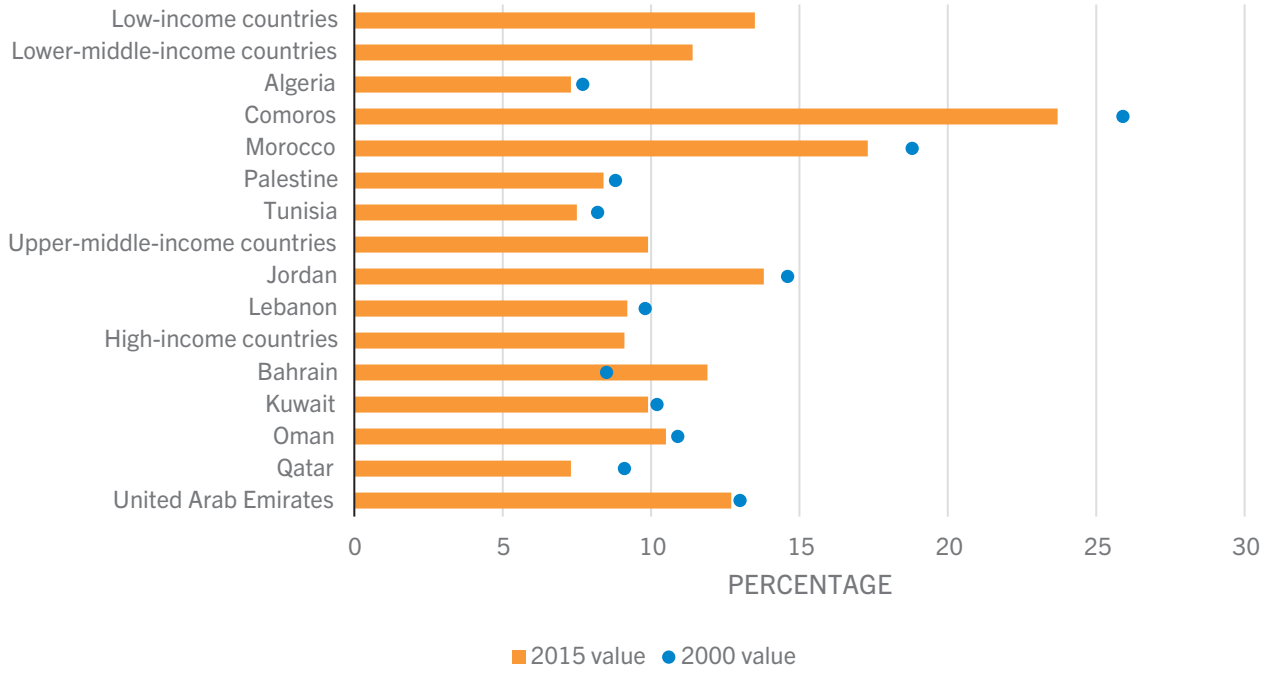
PREVALENCE OF LOW BIRTHWEIGHT (PERCENT)

	2000	2005	2010	2012	2014	2015
World	17.5	16.4	15.3	15.0	14.7	14.6
Arab States				11.8		11.6
Low-income economies				13.6		13.5
Lower-middle-income economies				11.6		11.4
Upper-middle-income economies				10.1		9.9
High-income economies				9.1		9.1
Arab States LDCs				14.7		14.4
Conflict countries				12.4		12.3
Non-conflict countries				11.3		11.2

Source: UNICEF and WHO. 2019. UNICEF-WHO joint low birthweight estimates. In: *UNICEF*. New York and Geneva. Cited 28 April 2020. www.unicef.org/reports/UNICEF-WHO-low-birthweight-estimates-2019

Data on the prevalence of low birthweight are available for 12 Arab States only. A comparison of 2000 with 2015 shows declines in all Arab countries with data available, except in Bahrain where the prevalence has increased by 3.4 percentage points. The latest estimates show the highest prevalence of low birthweight in the Comoros (23.7 percent) and the lowest in Qatar (7.3 percent).

FIGURE 20
PREVALENCE OF LOW BIRTHWEIGHT IN THE ARAB STATES BY COUNTRY



Source: UNICEF and WHO. 2019. UNICEF-WHO joint low birthweight estimates. In: *UNICEF*. New York and Geneva. Cited 28 April 2020. www.unicef.org/reports/UNICEF-WHO-low-birthweight-estimates-2019

CHAPTER 4

COST AND AFFORDABILITY OF A HEALTHY DIET

Key messages

- Healthy diets are key for human wellbeing and health; living an active and healthy life and guarding against all forms of malnutrition are essential to ensuring optimal growth and development.
- This is a first assessment of the cost and affordability of a healthy diet since the outbreak of the COVID-19 pandemic, which has led to inflation in food prices and affected the incomes of many. This increase in food prices inevitably affects the cost of a healthy diet.
- The cost of a healthy diet in the Arab region has been increasing each year since 2017. In 2020, the cost reached USD 3.47 per person per day (pppd), although it is still slightly lower than the world estimate (USD 3.54 pppd). The cost has been increasing since 2019 in most regional sub-groups and countries with the exception of three Arab States (Algeria, Egypt and Palestine) where it declined slightly in 2020.
- In contrast to the trend in the growing cost of a healthy diet, the data show yearly declines in the number and percentage of people who were unable to afford a healthy diet since 2018, which is driven by Algeria, Egypt, Iraq and Palestine.
- More than half the population in the Arab States, or 162.7 million people, could not afford a healthy diet in 2020. The vast majority of the Arab LDC population (88.3 percent) were unable to afford a healthy diet in 2020, in contrast to 42.6 percent in the upper-middle-income countries of the region. The Sudan had the highest percentage, 91.8 percent, of people unable to afford a healthy diet in 2020, whereas Jordan had the lowest estimate,14.9 percent.

The affordability of a healthy diet has become a challenge due to recent shocks related to the COVID-19 pandemic. Although affordability has improved slightly in the region between 2019 and 2020, the estimated percentage captures only the food price effects during the year but does not yet account for the income shocks related to the pandemic, due to the unavailability of 2020 income distribution data. It implies that affordability estimates accounting for the combined effect of price and income changes could be less optimistic in the region. Furthermore, it is estimated that the recent increase in food prices and the effects of supply disruptions due to the war in Ukraine could exacerbate the situation and lead to more of the population being unable to afford a healthy diet. This is particularly concerning in the Arab region, which depends heavily on cereals imports from the Black Sea region.

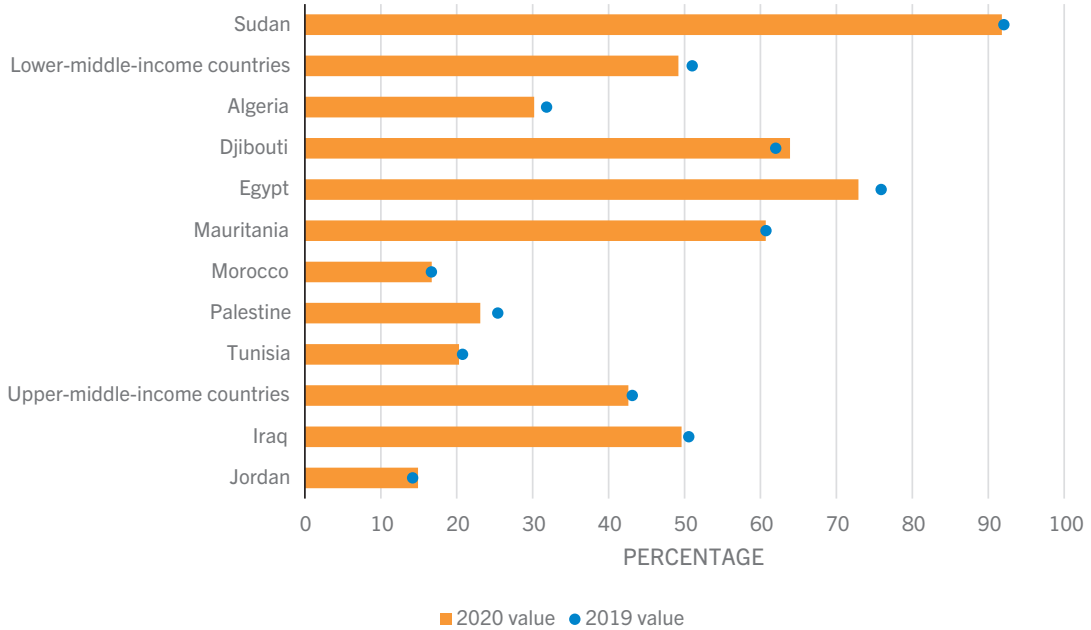
The cost of a healthy diet in the region has increased yearly from 2017, reaching USD 3.47 pppd in 2020 (see Table 31). This is lower than the world estimate (USD 3.54 pppd). Similarly, the cost has increased in all regional subgroups apart from lower-middle-income countries where it declined slightly (0.4 percent) in 2020 from the previous year. By countries, the cost of a healthy diet fell slightly in 2020 from the previous year in three Arab States (Algeria, Egypt and Palestine).

Over half the region's population (52.6 percent), equivalent to 162.7 million people, could not afford a healthy diet in 2020 (see Table 30). This is higher than the global average of 42 percent. Most people in the Arab LDCs (88.3 percent) were unable to afford a healthy diet, a proportion more than twice as high as in upper middle-income countries (42.6 percent). The percentage of people unable to afford a healthy diet is significantly higher in conflict-affected countries, 71.6 percent, compared to non-conflict-affected countries, 45.5 percent.

A trend analysis shows that the percentage as well as the number of people who cannot afford a healthy diet has declined in the Arab States between 2018 and 2020 (see Table 30). However, improvements in affordability are driven by Algeria, Egypt, Iraq and Palestine, where the cost of a healthy diet remained essentially unchanged or declined.[4] By omitting these four countries from the Arab States group, the share of people unable to afford a healthy diet increased between 2018 and 2019 (from 44.5 to 45.3 percent) and remained mostly unchanged between 2019 and 2020 (45.3 to 45.5 percent). The percentage of people who cannot afford a healthy diet has fallen since 2017 for upper-middle-income countries, and since 2018 for lower-middle-income and non-conflict countries.

Data on the percentage of people unable to afford a healthy diet are available for ten Arab States and they show an increase between 2019 and 2020 in Djibouti and Jordan only, while the percentage has fallen or remained unchanged in all other countries. The Sudan has the highest percentage of people unable to afford a healthy diet in the region (91.8 percent), followed by Egypt (72.9 percent). Jordan displayed the lowest estimate in the region, 14.9 percent in 2020.

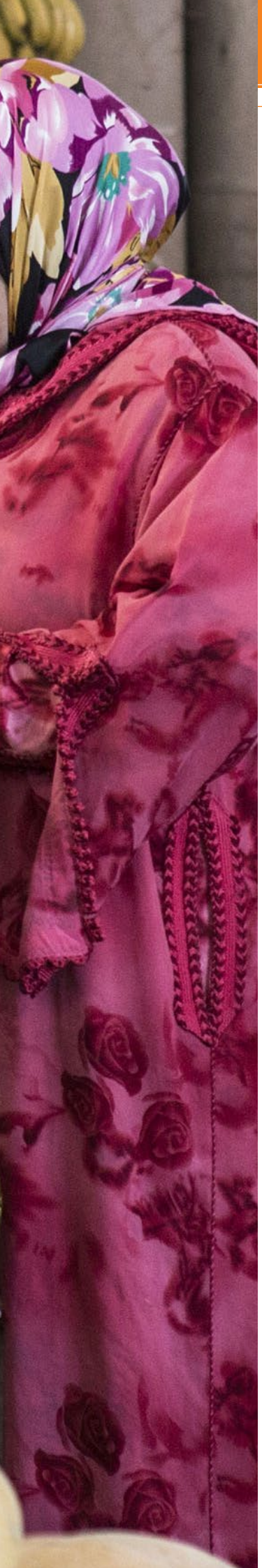
FIGURE 21
PERCENTAGE OF PEOPLE UNABLE TO AFFORD A HEALTHY DIET IN THE ARAB STATES BY COUNTRY



Source: 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

4 In line with The State of Food Security and Nutrition in the World 2022 report, Northern Africa and Western Asia (to which these four countries belong) are the only regions in the world where the number of people who cannot afford a healthy diet has decreased.

MOROCCO
Woman buying Oranges at Agadir's Suk Market.
©FAO/Alessandra Benedetti



PART 2
TRADE AS AN ENABLER FOR FOOD SECURITY

The world, and particularly the Arab/NENA region, is going through a challenging time because of the many drivers slowing progress towards ending hunger and malnutrition in all its forms. These drivers, which are increasing in frequency and intensity, include conflict, climate variability and extremes, and economic slowdowns and downturns (FAO *et al.,* 2022). The underlying structural drivers of inequality and poverty, compounded by the effects of the COVID-19 pandemic and the war in Ukraine, have worsened global vulnerabilities and socioeconomic inequalities as prices for basic foods have soared and the food purchasing power of households has decreased. Vulnerable populations are left exposed to food insecurity. The high cost of healthy diets and persistently high levels of poverty and income inequality continue to keep healthy diets out of reach for around 3.1 billion people in every region of the world (FAO *et al.,* 2022). It will take urgent and comprehensive interventions to mitigate these risks and to meet the SDGs by 2030.

Under SDG 2, Zero Hunger, Member Nations have committed to "end hunger, achieve food security and improved nutrition and promote sustainable agriculture." Five specific targets cover: (2.1) ending hunger; (2.2) ending all forms of malnutrition; (2.3) doubling the agricultural productivity and incomes of small-scale food producers; (2.4) ensuring sustainable food production systems; and (2.5) maintaining genetic diversity. Each target under SDG 2 aims to address different global challenges related to agriculture and food security, and nutrition. Trade can help to alleviate hunger and malnutrition as well improve the efficiency and sustainability of agricultural production systems. In the area of food security, nutrition, and sustainable agriculture, SDG target 2.b sets out trade as a means of implementation, alongside increased investment (SDG target 2.a) and properly functioning commodity markets (SDG target 2.c). Unfortunately, the Arab/NENA region is not on track to meet the SDG 2 targets (see Part 1 of this report).

Part 2 of this report provides a clear explanation for how trade can help to achieve SDG 2, i.e., how trade can enhance food security and nutrition in the region. The primary focus is on international trade in this report; however, the word "trade" is used for both domestic and international trade. As Chapter 5 presents, the region faces multiple food security and nutrition-related challenges. It has limited land and water endowments and a rapidly growing population, making the region highly dependent on trade and international commodity markets. Chapter 5 also elaborates on how the COVID-19 pandemic and the war in Ukraine, with their associated economic and trade repercussions, have affected food insecurity, malnutrition and the cost of healthy diets revealing the region's many vulnerabilities to global supply and price shocks. Making healthy diets more available and affordable in the Arab region will require significant transformations in agrifood systems, trade-offs and synergies for countries with no one-size-fits-all solution. The last part of the Chapter 5 (section 5.6.) will elaborate more on the role and some examples of trade-offs in the Arab region's agrifood systems transformation.

Chapter 6 provides an in-depth analysis of the region's food production, dietary energy supply and trade patterns. It presents statistical evidence for the essential role of trade in food security and nutrition in the NENA region, given that it is a net food importing region. Due to limited land and water resources, Arab countries rely to a greater extent on imports for the essential food items and products necessary for diverse and healthy diets (e.g. fruit and vegetables) that they cannot locally produce in sufficient quantities. However, countries that trade more may become more exposed to outside shocks, such as supply-side shocks or trade restrictions. The last part of Chapter 6 (section 6.4.) assesses the vulnerabilities of NENA countries, such as their dependency on imports and lack of supplier diversification, for four product groups (cereals, fruit and vegetables, meat, and pulses) and the total aggregate of food groups. High import dependency combined with a reliance on very few suppliers can render a country vulnerable to such shocks as fluctuations in the origin country of production or interrupted transport routes.

Chapter 7 will discuss the role of trade as an essential enabler in all four dimensions of food security and nutrition (availability, access, utilization and stability). Open global food and agricultural markets can help alleviate pressure on natural resources and meet the food requirements of countries with low water and land resources in terms of quantity, quality and diversity. Chapter 7, however, provides a more nuanced approach, as the positive effects of trade on food security and nutrition are not always straightforward and depend on several factors. Chapter 7 argues that facilitating trade is integral to increasing agrifood trade, food security and nutrition in the Arab region through reduced shipping losses and increased speed of delivery to markets. Economic access to food is highly dependent on the cost of the products, which are significantly determined by tariffs and the non-tariff measures a country applies. The second part of the Chapter 7 (section 7.2) presents the policy and regulatory framework in NENA with more detail on the level of applied import tariffs in the region, the importance of non-tariff measures in international trade, and it identifies a wide range of non-tariff measures applicable in Arab countries.

IRAQ
A family works to harvest onions.
© FAO/Cengiz Yar

CHAPTER 5

FOOD SECURITY AND NUTRITION CHALLENGES IN THE ARAB REGION

Key messages

- The NENA region faces multiple food security and nutrition-related structural challenges. It has limited land and water endowments and a rapidly growing population, making the region highly dependent on trade and international commodity markets. The area has the lowest per capita freshwater resource availability in the world. Average arable land as a percentage of the total land area is 7.23 percent, below the world average of 10.65 percent. Over the last decade, the average annual population growth rate in the Arab region was 2.29 percent, almost double that of the world average.
- High import dependency has made the region vulnerable to supply shocks and price inflation in international commodity markets. The COVID-19 pandemic and the war in Ukraine are examples of how a sudden disruption of supply chains affects the supply and prices of grain, fertilizer and energy and how this can aggravate food insecurity and malnutrition in the region.
- NENA countries responded to challenges posed by the COVID-19 pandemic by introducing economic stimulus packages targeting consumers and producers, introducing temporary export bans, and lowering or waiving food import tariffs.
- The war in Ukraine poses another severe challenge to the region, which depends heavily on imported foodstuff and fertilizers from the Russian Federation and Ukraine, including wheat as a staple food. Due to the crisis, food, energy and fertilizer prices reached record heights increasing import bills and putting further pressure on the international reserves of most food-importing Arab countries and, consequently, on their exchange rates.
- To tackle food security challenges and increase resilience to global shocks, countries in the region have implemented a range of measures, such as supporting domestic agriculture, boosting food stocks and increasing subsidies to vulnerable people, since the start of the war in Ukraine. Most trade-related measures adopted in the region were export bans, and some measures restricted export licensing requirements. In some instances, import tariffs were liberalized, or the import ban lifted to enhance food supply in the domestic market. In other cases, import tariffs were raised, or an import ban was introduced to promote domestic production. In addition, several countries in the region aim to increase the diversification of imports.
- Addressing the complex food security, nutrition and health challenges of the Arab region necessitates an agrifood-systems approach that considers the broader impacts of sectoral policies on several sustainability outcomes to avoid policy incoherence. The sustainability of agrifood systems must be appraised holistically considering the potential trade-offs and synergies in the economic, social and environmental impacts.

As shown in Part 1, food insecurity and malnutrition in all forms is a growing challenge in the Arab/NENA region. The region is not on track to meeting SDG 2. The triple burden of undernutrition, micronutrient deficiencies, and overweight and obesity is accelerating at an unprecedented rate as more than half the Arab region's population (162.7 million people or 52.6 percent) could not afford a healthy diet in 2020. This may be attributed to the region's heterogeneity as countries range from the high-income, oil-exporting countries in the Gulf Cooperation Council to middle-income, lower-middle-income and low-income countries, including Mauritania, the Sudan and Yemen. These strong contrasts translate to diversities in capacities, resources and needs, necessitating coordinated action to address the significant factors driving food insecurity and nutrition deficiencies and the region's overreliance on imports. This chapter discusses the food security and nutrition-related structural challenges of the NENA region, its limited land and water endowments and the related food import dependency and growing population. It also highlights trends in the region shaping nutrition-related outcomes and certain trade and market interventions that affect the availability and affordability of healthy diets.

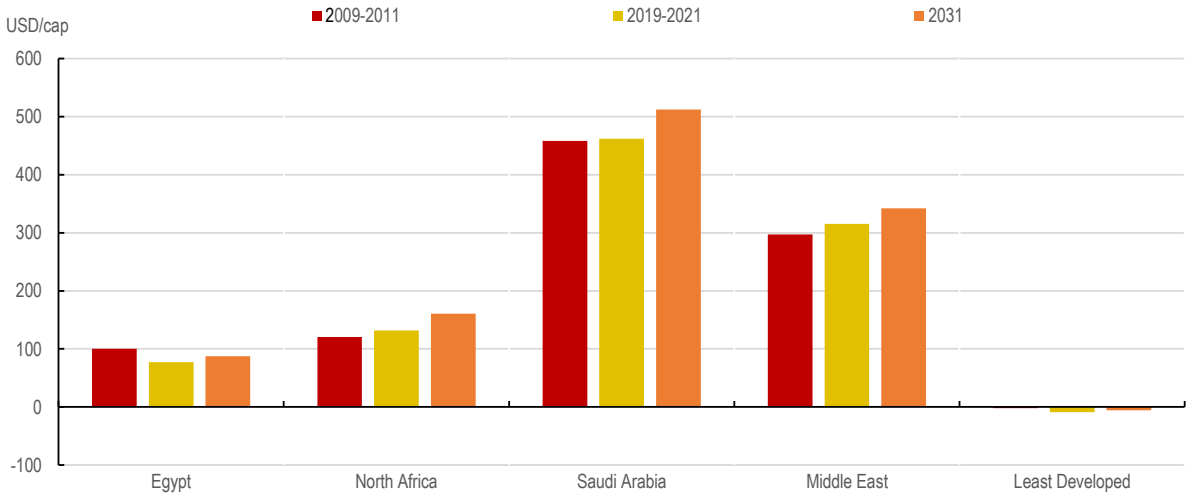
5.1. FOOD SECURITY CHALLENGES IN THE ARAB REGION

According to the FAO definition, "food security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food which meets their dietary needs and food preferences for an active and healthy life" (FAO, 2001). This concept also includes enhancing food affordability and ensuring a population's access to food markets. The sufficient consumption of nutritious foods that constitute a healthy diet is critical for food security and nutrition (see Chapter 4).

Hunger in the Arab region has continued to rise since 2014. As highlighted in Chapter 1 of this report, the number of undernourished people reached 54.3 million in 2021, or 12.2 percent of the population. This is a consistent increase in the past two decades and is close to the peak of 2011 when the region suffered from the major shock of popular uprisings. In addition, the COVID-19 pandemic, which hit the region in 2020, caused hunger to surge across the region, affecting all regional subgroups categorized by income levels, conflict-affected as well as non-conflict countries. Yemen, a conflict-affected, low-income country, had the highest prevalence of undernourishment in the region in 2021.

Chapter 1 also emphasized that moderate or severe food insecurity has continued to rise, affecting an estimated 154.3 million people in 2021. This is 11.6 million people more than in the previous year. The number of food-insecure people has been rising steadily since 2014. Thus, in 2021 an estimated 34.7 percent of the region's population was moderately or severely food insecure and were deprived of regular access to sufficient and nutritious food. The number of people exposed to severe food insecurity is another measure that approximates hunger and has also grown in tandem with the undernourishment trend. In 2021, an estimated 53.9 million people experienced severe food insecurity, an increase of 5 million people from the previous year.

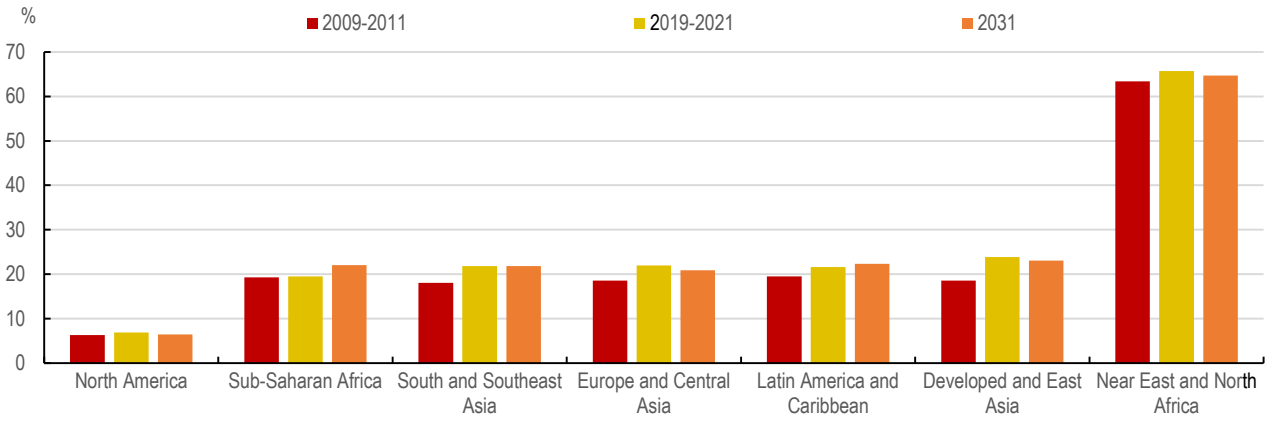
FIGURE 22
VALUE OF NET FOOD IMPORTS PER CAPITA IN THE NENA REGION (INCLUDING PROCESSED PRODUCTS)



Source: OECD and FAO. 2022. https://www.oecd-ilibrary.org/agriculture-and-food/oecd-fao-agricultural-outlook-2022-2031_f1b0b29c-en;jsessionid=AkWng_LdNb87Dh6VWFTQewAJBsIe3gcL61fu8AAA.ip-10-240-5-71

Given the scarcity of required natural resources for food production, the region depends heavily on importing agricultural products. Climate change and the increased frequency of extreme weather have also affected domestic agriculture, limiting the region's ability to feed a growing population with local products. The share of imports in consumption (65.7 percent in 2019–2021) in the NENA region is the highest in the world (OECD and FAO, 2022), making it one of the most significant global net food importing regions (Figure 23). Thus, self-sufficiency rates for most commodities are low, and net food imports per capita are high (Figure 22), particularly for cereals, vegetable oils and sugar. According to the Organisation for Economic Co-operation and Development (OECD) and FAO estimates, the area will continue to depend on trade and international markets due to resource constraints. As Figure 23 shows, the share of imports in consumption is projected to be 64.7 percent in 2031. On the one hand, trade enables the region to ensure the availability of food that can contribute to healthy diets. On the other, high import dependency has made the region quite vulnerable to international commodity markets both to supply shocks and price inflation. The war in Ukraine is an example of how the sudden disruption of supply chains affect the supply and prices of grain, fertilizer and energy and can worsen food insecurity and malnutrition.

FIGURE 23
SHARE OF IMPORTS IN CONSUMPTION
(PERCENT)



Source: OECD and FAO. 2022. https://www.oecd-ilibrary.org/agriculture-and-food/oecd-fao-agricultural-outlook-2022-2031_f1b0b29c-en;jsessionid=AkWng_LdNb87Dh6VWFTQewAJBsIe3gcL61fu8AAA.ip-10-240-5-71
Note that imports include feed and availability includes processing of commodities which may be re-exported.

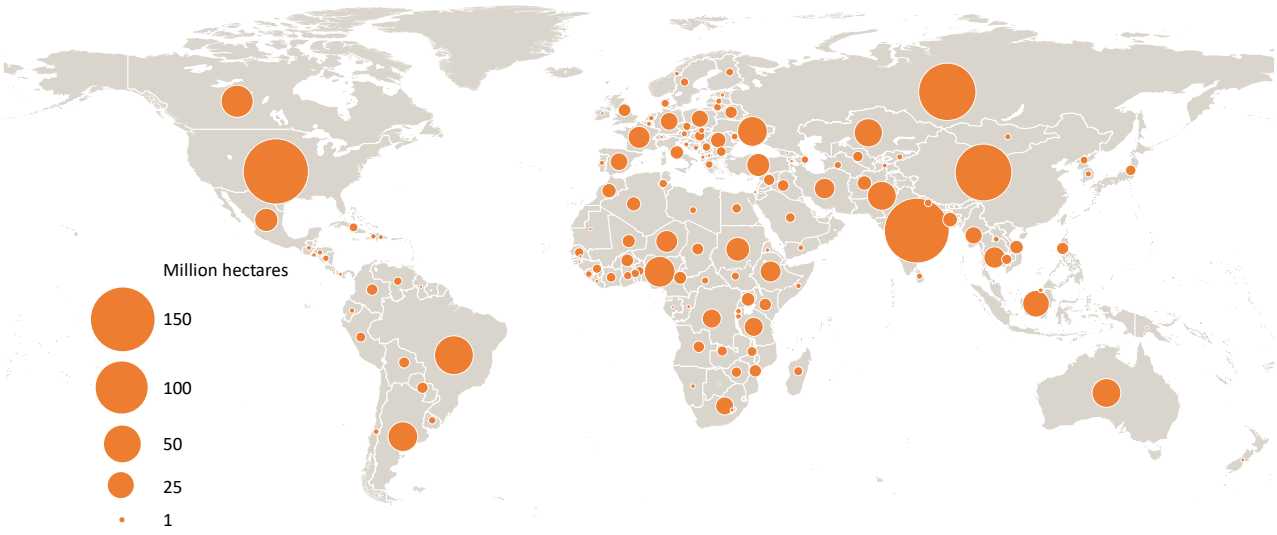
Many structural challenges contribute to the region's dependency on food imports; the first is water scarcity. Water scarcity is a hindrance to agricultural production in the NENA region and the driver of the region's dependency on food imports. Supply-side analysis of food production indicates that nearly all the countries in the region have water stress levels[5] close to or above 100 percent, with the highest values in Kuwait, Saudi Arabia and the United Arab Emirates. The area has the lowest per capita freshwater resource availability among all regions of the world, and severe problems with unsustainable water use. This has been exacerbated by limited rainfall and scarce arable land. Three countries have meagre freshwater resources: Bahrain, Egypt and the United Arab Emirates, with freshwater per capita measured at 2.68 percent, 10.37 percent and 15.81 percent of optimum levels, respectively. Apart from disparities in the groundwater levels across the region, there are also differences in irrigation methods, causing varied and unpredictable levels of agricultural output at the domestic level. Further, despite representing one of the most land- and water-constrained regions in the world, water tariffs remain relatively low. In contrast, subsidies on water consumption are high, at about 2 percent of gross domestic product (GDP). As a result, the productivity of water use is only half the world average.

Another challenge is the limited availability of arable land compared to other regions in the world (Figure 24). According to estimates from 2020, average arable land as a percentage of the total land area was 7.23 percent, below the world average of 10.65 percent (see Table 13). The data observes a downward trend as the availability of arable land decreased from 7.42 percent in 1990 to 7.23 percent in 2020, suggesting that significant changes to agricultural practices are needed. Several countries in the

5 The level of water stress is defined as freshwater withdrawal as a proportion of available freshwater resources. According to SDG indicator 6.4.2 it is the ratio between total freshwater withdrawn by major economic sectors and total renewable freshwater resources, after taking into account environmental water requirements.

region, Djibouti, Kuwait, Libya, Mauritania, Oman and United Arab Emirates, have arable land of less than 1 percent of the total land area. In contrast, other countries have high levels of arable land, specifically the Comoros and the Syrian Arab Republic, with 35.46 percent and 25.39 percent, respectively. This has posed a unique challenge for the region facing twin natural deficits in water and arable land.

FIGURE 24
ARABLE LAND (2020)



Source: FAO. 2022. FAOSTAT: Land Use. In: *FAO*. Rome. Cited November 2022. http://www.fao.org/faostat/en/#data/RL based on UN Geospatial. 2020. Map geodata [shapefiles]. New York, UN.
Note: Final boundary between the Sudan and South Sudan has not yet been determined. Final status of the Abyei area is not yet determined. The final status of Jammu and Kashmir has not yet been agreed upon by India and Pakistan.

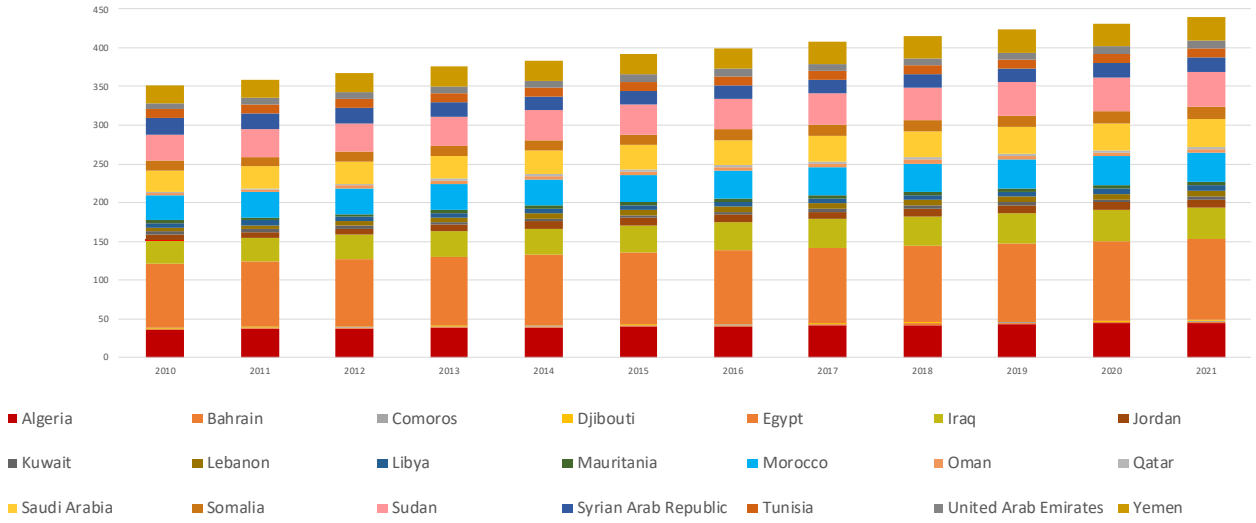
TABLE 13
ARABLE LAND (PERCENT OF LAND AREA)

	1990	2020
Algeria	2.97	3.15
Bahrain	2.90	2.04
Comoros	34.93	35.46
Djibouti	0.04	0.09
Egypt	2.29	3.38
Iraq	11.43	11.52
Jordan	2.03	2.32
Kuwait	0.22	0.45
Lebanon	17.89	13.23
Libya	1.03	0.98
Mauritania	0.39	0.39
Morocco	19.51	17.14
Oman	0.11	0.24
Qatar	0.86	1.83
Saudi Arabia	1.58	1.60
Somalia	1.63	1.75
Sudan	-	11.24
Syrian Arab Republic	26.58	25,39
Tunisia	18.72	16.70
United Arab Emirates	0.49	0.69
Yemen	2.88	2.19
Average NENA	**7.42**	**7.23**
Average World	**10.51**	**10.65**

Source: FAO. 2022. FAOSTAT: Land Use. In: *FAO*. Rome. Cited November 2022. https://www.fao.org/faostat/en/#data/RL

Agricultural productivity rates are not at pace with the rising population in Arab countries. Over the last decade (2010–21), the average annual population growth rate in the Arab region was measured at 2.29 percent, almost double that of the world average, which stood at 1.20 percent (World Bank, 2022a). The NENA region's total population was 351 million in 2010, and it has grown by 25.2 percent to 440 million in 2021 (Figure 25). Regionally, Oman had the highest annual population growth rate of 6.52 percent between 2010 and 2021, ahead of Qatar at 5.26 percent. In contrast, the population declined in the conflict-affected Syrian Arab Republic by 1.3 percent annually between 2010 and 2021. Resource constraints, low domestic production of agricultural products and high demand have resulted in a high import dependency ratio. The region will continue to depend on trade and on global markets for essential staple and nutritious food products, which is a serious concern for policymakers.

FIGURE 25
POPULATION IN THE NENA REGION, 2010–2021 (MILLION PEOPLE)



Source: World Bank. 2022. World Development Indicators. Series Population, total. In: *World Bank*. Washington, D.C. Cited November 2022. https://databank.worldbank.org/source/world-development-indicators

5.2. EFFECT OF COVID-19 ON FOOD SECURITY AND NUTRITION, AND POLICY RESPONSES

The COVID-19 pandemic affected the global trading system, adversely impacting the supply and demand of agricultural and food products. In 2020, the measures implemented to contain COVID-19 pandemic sent the world and NENA countries (except for Egypt)[6] into an economic downturn, with per capita incomes contracting. In addition, disparities in the impact of the pandemic and the recovery, along with the limited coverage and duration of social protection measures, led to widening inequalities and worsened food security. Food prices also increased significantly until May 2022 due to bottlenecks in logistics and supply chains, soaring transport costs and other disruptions caused by the pandemic (FAO *et al.*, 2022). Chapter 4 of this report provides an assessment of the effect of the pandemic on the cost and affordability of a healthy diet accounting for the consumer food price inflation effect stemming from the economic impacts of the pandemic and the measures to contain it.

At the height of the pandemic, trade diversity—products and trading partners—trade values, and the quantities of trade flows decreased steeply (FAO 2021b). The initial COVID-19 wave had an evident yet short-lived influence on agriculture and food trade, which proved to be resilient to the pandemic-induced shock, according to aggregate patterns at the global and regional levels. However, that shock, though brief, was severe enough to raise concerns over food security and nutrition and food safety worldwide. This led many countries to react promptly and apply policy measures to limit potentially adverse impacts on domestic markets: trade restrictions, efforts to lower import barriers and domestic measures (Table 14).

6 Egypt was an exception, based on International Monetary Fund, World Economic Outlook Database (accessed in October 2022)

TABLE 14

MAIN POLICY RESPONSES TO COVID-19 PANDEMIC, IMPACTS ON MARKETS AND TRADE

TRADE RESTRICTIONS	MEASURES TO LOWER IMPORT BARRIERS	DOMESTIC MEASURES
A limited number of countries imposed trade related restrictions (very few import restrictions). Many of the export bans were transformed into export quotas, and most of them were soon repealed. Import restrictions mainly addressed trade of live animals, fish, and some horticultural products.	Several countries lowered import barriers, mainly in the form of suspending import tariffs and, in limited cases, raising tariff rate quotas (TRQs). Selected countries also lowered technical barriers to trade (TBT) measures to facilitate imports of critical food items. Most measures were temporary, put in place in March/ April and aiming to last until the end of the year.	Producer support measures were provided to ensure production. Some countries provided logistics and marketing support. Several countries increased domestic food procurement targets, and/or increased imports to build national reserves, ensure availability. Some countries implemented ceiling prices, while others expanded food distribution programmes to ensure economic access.

Source: FAO. 2021b. *Agricultural Trade and Policy Responses During the First Wave of the COVID-19 Pandemic in 2020*. P. 17. Rome, FAO. https://www.fao.org/3/cb4553en/cb4553en.pdf

NENA countries responded to the challenges of the pandemic by introducing economic stimulus packages intending to inject liquidity through fiscal and monetary policies to ensure access to basic needs and services and to support the economy. The most common measures directed toward consumers and producers were: social protection measures, in particular, cash transfers, in-kind food distribution, unemployment compensation schemes, deferral of income tax payments, postponement of loan payments, provision of subsidized interest rate loans, creation of investment funds and state guarantees for new credits, exemptions on utility payments, social security contribution waivers, and price control and price monitoring to avoid price gouging. In addition, distribution of production inputs and subsidies were being used in some cases, notably to support smallholder producers (FAO, 2020b).

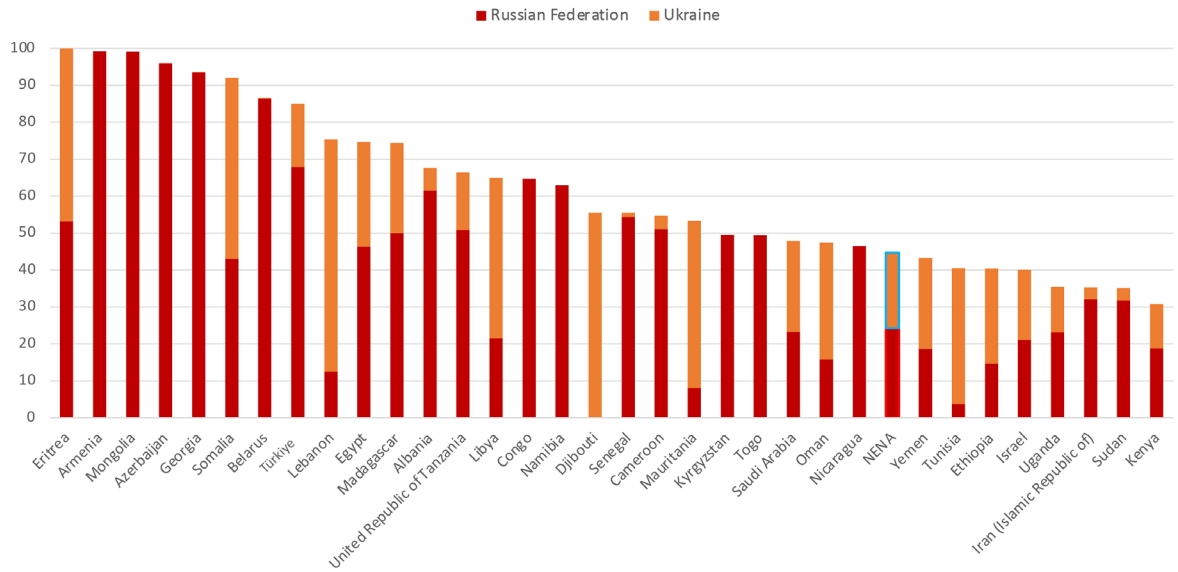
Some countries in the Arab region—an area characterized by high food import dependency ratios—responded by introducing temporary export bans (FAO, 2021c). These bans ranged from certain products in the case of the Syrian Arab Republic and the Sudan to specific product categories, as in Algeria, to an outright ban on all food exports, as in Kuwait and Jordan. To preserve strategic reserves, Egypt suspended the export of all types of legumes. The Syrian Arab Republic adopted export restrictions on eggs, milk, cheese and legumes for one month. Oman placed temporary restrictions on exports of certain agricultural products, such as onions, garlic, flour and wheat. And while the impact on global supply and price of the restrictions of these relatively small net-importing countries might be limited, it was felt in the regional markets. It also signaled a lack of trust in global food markets as a source of food supply, adding to overall market instability.

Importing countries in the region suspended or cut tariffs and other charges as a response to market uncertainties. Qatar waived the country's 5 percent customs levy on all food products. Wheat, wheat flour, lentils, chickpeas, string beans and broad beans were recognized as essential items and their tariffs were waived by Morocco, Qatar and Saudi Arabia (FAO, 2021c). Mauritania lowered the import tariff for edible oils. Some countries, such as Egypt, decided to boost food reserves, which increased their cereal purchasing operations including through imports.

5.3. IMPLICATIONS OF THE WAR IN UKRAINE ON FOOD SECURITY AND NUTRITION IN THE NEAR EAST AND NORTH AFRICA

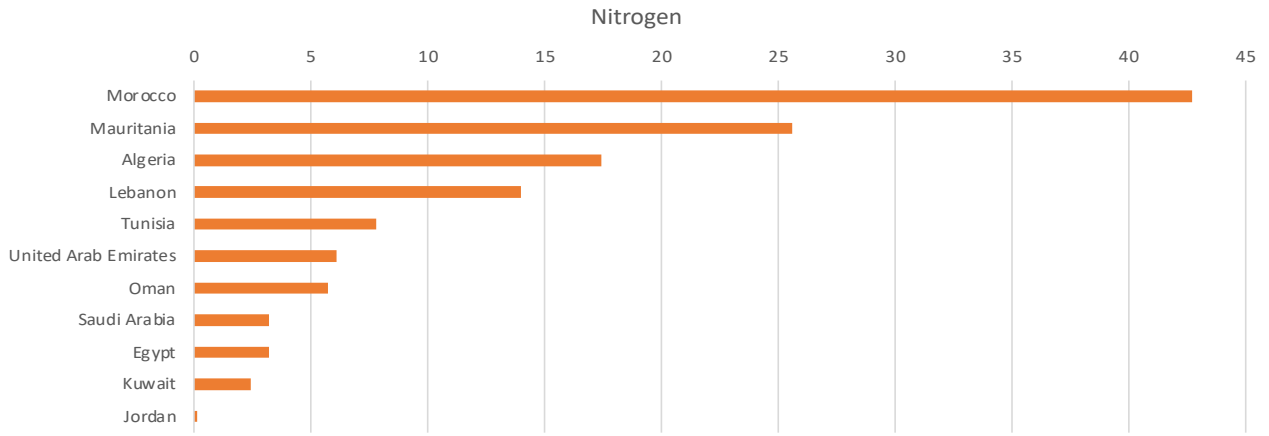
The trajectory of food security globally is likely to be affected by the war in Ukraine, which involves two of the biggest producers in agriculture and staple cereals globally. The crisis is disrupting supply chains and further affecting global grain, fertilizer and energy prices, leading to shortages and higher food prices. The Russian Federation and Ukraine are among the world's most important producers of agricultural commodities. Before the crisis, the two countries supplied 30 percent and 20 percent of global wheat and maize exports, respectively. They also accounted for close to 80 percent of global exports of sunflower seed products. Furthermore, the Russian Federation is a world-leading exporter of nitrogen, potassium and phosphorous fertilizers (FAO *et al.*, 2022). Many countries in the NENA region heavily depend on imported foodstuff and fertilizers from the Russian Federation and Ukraine, including wheat as a staple food (Figure 26). More than 70 percent of the wheat supply in Lebanon and Egypt comes from Ukraine and the Russian Federation. Libya imports more than 60 percent, in Djibouti and Mauritania it is more than 50 percent, in Saudi Arabia and Oman it is close to 50 percent, and in Tunisia and Yemen it is more than 40 percent. The NENA region's average wheat import dependency on the two conflict-affected states is around 45 percent (FAO, 2022b).

FIGURE 26
WHEAT IMPORT DEPENDENCY, NET IMPORTERS, 2021 (%) (PERCENT)



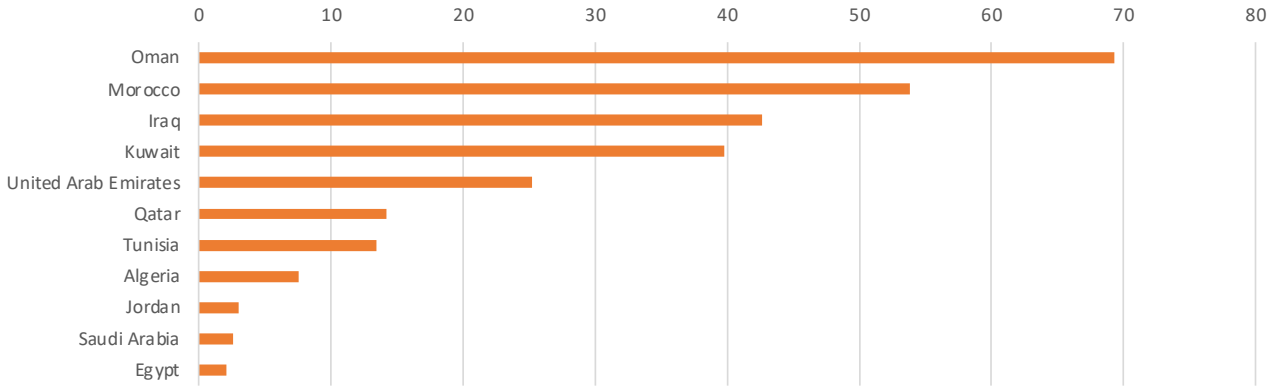
Source: FAO. 2022b. *Addressing Food Security Challenges Faced by Near East and North Region Due to the Ukraine Crisis Regional Overview*. Cairo, FAO. https://www.fao.org/3/cb9926en/cb9926en.pdf

FIGURE 27
PERCENTAGE OF IMPORTS OF NITROGEN FERTILIZER FROM THE RUSSIAN FEDERATION AND BELARUS BY COUNTRY (2018–2020 AVERAGE)



Source: FAO. 2022b. *Addressing Food Security Challenges Faced by Near East and North Region Due to the Ukraine Crisis Regional Overview*. Cairo, FAO. https://www.fao.org/3/cb9926en/cb9926en.pdf
Note: Figure 27 and Figure 28 show a high reliance on nitrogen and potassium fertilizers from the Russian Federation and Belarus in NENA region countries.

FIGURE 28
PERCENTAGE OF IMPORTS OF POTASSIUM FERTILIZER FROM THE RUSSIAN FEDERATION AND BELARUS BY COUNTRY (2018–2020 AVERAGE)



Source: FAO. 2022b. *Addressing Food Security Challenges Faced by Near East and North Region Due to the Ukraine Crisis Regional Overview*. Cairo, FAO. https://www.fao.org/3/cb9926en/cb9926en.pdf
Note: Figure 27 and Figure 28 show a high reliance on nitrogen and potassium fertilizers from the Russian Federation and Belarus in NENA region countries.

The war in Ukraine poses several risks to the region. Even before the conflict, most countries in the NENA region were increasingly importing food to meet domestic consumption needs. They were already grappling with the adverse effects of high international food and fertilizer prices. The region is particularly vulnerable to a rise in food prices due to its reliance on imported food and subsidies for basic foodstuff (FAO, 2022b). The continuation of the conflict raises concerns about Ukraine's production and export capacity (production and export risks). Between 20 and 30 percent of areas sown to winter crops in Ukraine may remain unharvested during the 2022/23 season, with the yields of these crops also likely to be adversely affected.

Economic sanctions imposed on the Russian Federation could disrupt its imports of agricultural inputs resulting in fewer plantings, lower yields and lower quality products. Russian export prospects are uncertain. The potential supply gaps could leave the NENA region countries, whose imports are highly dependent on Ukraine and the Russian Federation, unable to meet food demands. The conflict damaged inland transport infrastructure, storage and processing infrastructure and caused port closures (logistical risks). Many NENA countries relied on grains from the Russian Federation and Ukraine because of the lower shipping costs due to their proximity to the Black Sea basin and the relative price advantage of grains from this region. The coming global supply gap could raise international food and feed prices (price risks) by 8 to 22 percent above their already elevated (2021) baseline levels (FAO, 2022f). As most NENA countries are net food importers, they could be significantly affected by this expected food price increase.

The surge in international prices has put pressure on the international reserves of food-importing countries and, consequently, on their exchange rates (exchange rate, debt and growth risks) with the exception of oil exporting Gulf Cooperation Council (GCC) countries. In addition, currency depreciation generates further price inflation of essential food items. For instance, as of 31 October 2022, the Egyptian pound has devaluated by 53.3 percent, the Sudanese pound by 27.5 percent, and the Tunisian dinar by 11.4 percent against the United States dollar since the beginning of the war in Ukraine.[7] Furthermore, the Russian Federation is a key player in the global energy market. Therefore, agriculture, a highly energy-intensive industry, will be affected by rising input prices (energy risks). This will result in high production costs and ultimately lower input use and lower production.

The United Nations-led Black Sea Grain Initiative allowed the shipment of more than 9 million tonnes of grain and other food exports during the first three months of the initiative. It has helped to stabilize and subsequently lower global food prices and move precious grain from one of the world's breadbaskets to the world market (UNCTAD, 2022b). The deal also involves increasing the flow of crucial fertilizers from the Russian Federation. In the first three months of the initiative (until 31 October 2022), 10.3 percent of the shipments were destined for the NENA region.

Even before the conflict, the NENA region was already suffering from a high prevalence of undernourishment (as highlighted in Chapter 1). If the conflict results in a sudden and prolonged reduction in food exports by Ukraine and the Russian Federation, it will exert additional upward pressure on international food commodity prices to the detriment of economically vulnerable countries leading to an increase in food insecurity

7 Author's calculations based on exchange rate dada from tradingeconomics.com, accessed in November 2022.

and malnutrition (humanitarian risks) (FAO, 2022b). FAO predicts that the number of undernourished people could increase by 7.6 million globally and by 0.4 million in the NENA region in the short term under a moderate shock scenario and by 13.1 million globally and by 0.96 million in the NENA region under a more severe shock (FAO, 2022f).

Although Arab governments tried to mitigate the rising costs of imported food, they could not prevent food price inflation. As a result, food prices increased to varying extents, and government expenditures on maintaining food subsidies and cushioning the impact also increased. Countries in the region have implemented a wide range of measures to tackle food security challenges and increase resilience to global shocks, such as supporting domestic agriculture, expanding the area of the wheat crops to raise self-sufficiency (Egypt), reference price increases for purchasing local production (Algeria, Tunisia, Iraq), storage premium for wheat (Morocco), irrigation water subsidy (Algeria) or providing animal feed at reduced prices to offset the rising costs of feed (Morocco). In addition, many countries in the region have increased subsidies to vulnerable people. In some cases, however, the reduction of seed and fertilizer subsidies has negatively affected wheat output (Iraq). Many countries are boosting food stocks; for example, increased food reserves in Jordan have limited recent food price inflation (FAO, 2022c).

Since the war in Ukraine, most trade-related measures adopted in the region were export bans (13 measures), followed by production subsidies (6 measures) (Global Trade Alert, 2022). In addition, some measures restricted export licensing requirements (Tunisia) or obliged farmers to sell a certain share of their crop to the Government (Egypt). In some instances, import tariffs have been liberalized (Morocco, oil seeds), or the import ban lifted (Saudi Arabia, poultry) to enhance food supply in the domestic market. In other instances, import tariffs have been raised (Saudi Arabia) to promote domestic production (livestock, fish and vegetables), or an import ban has been introduced (Algeria, seeds). In addition, due to their dependence on international commodities markets, including the Russian Federation and Ukraine, to a large extent, several countries in the region aim to increase the diversification of imports (Egypt, Morocco) from countries such as Argentina, Brazil or India. However, budgetary constraints often limit the ability of regional countries to mitigate food security risks. As a result, national and international financial institutions have been stepping up efforts to raise funds for Arab countries to support vulnerable households, strengthen the resilience of countries to food crises and enhance reforms in food security policies (FAO, 2022c).

The COVID-19 pandemic and the war in Ukraine and their associated economic repercussions have revealed many vulnerabilities in global trade logistics. In the context of the NENA region, supply chain disruptions contributed to trade instability and have increased the prices of commodities and nutritious food, which increased food insecurity, malnutrition, and the cost of healthy diets (see the relevant analyses in Chapters 1 to 4 of this report).

5.4. NUTRITION-RELATED CHALLENGES IN THE ARAB REGION AND THE NEED FOR AN AGRIFOOD SYSTEMS APPROACH

A healthy diet is one that promotes growth and development, and prevents malnutrition (FAO and WHO, 2019). The exact make-up of a healthy diet varies depending on individual characteristics, cultural context, local availability of food, climatic and ecological conditions, and dietary customs and preferences (FAO *et al.,* 2022). One key element of diet quality is dietary diversity, or the variety of foods from different food

groups that make up the diet. Consuming a healthy diet throughout the life-course helps to prevent against all forms of malnutrition, favours child growth and development, and protects against diet-related non-communicable diseases (NCDs) such as diabetes, heart disease, stroke and cancer. Prevention of all forms of malnutrition is linked with adult productivity and is vital, therefore, for the development of nations.

Studies have shown a strong correlation between inadequate dietary diversity and malnutrition, including micronutrient deficiencies such as lower consumption of iron or Vitamin A-rich foods (Arimond and Ruel, 2004). According to the WHO, poor dietary quality and diversity mainly influence the health outcomes of the most vulnerable groups, such as young children and pregnant and lactating women, as they are more susceptible to the harmful consequences of these deficiencies. For example, vitamin and mineral deficiencies translate into an increased prevalence of stunting, underweight, and wasting in children under 5 years (WHO, WFP and UNICEF, 2006). Iron deficiency is the leading cause of anaemia in young children and pregnant women. Vitamin A deficiency has been attributed to preventable blindness in children and in an increased risk of dying due to an infectious disease. Empirical evidence supports preventing and controlling micronutrient deficiencies to positively impact key development outcomes, including the physical and mental development of children, vulnerability or exacerbation of diseases, blindness, and general gains in productivity and potential (Ritchie *et al.,* 2017).

Price monitoring data indicates that for most food commodities, prices are increasingly rising. The COVID-19 pandemic exposed many of the existing fragilities in agrifood systems, particularly the economic accessibility of foods in poor and vulnerable households. As food prices continue to rise, the food security and nutrition status of people worsens because the cost and affordability of a healthy diet is 60 percent more than diets that only meet the requirements for essential nutrients (FAO, 2020a). In the most affected countries, price increases are having a detrimental impact on dietary patterns. Rising costs adversely affect the purchasing power, dietary diversity and nutritional status of the most vulnerable segment of the population. Children, adolescent girls and women are part of the most vulnerable population, particularly children under 5 years of age, girls, and pregnant and lactating women. They are at higher risk of malnutrition, mortality and morbidity. Populations need a diverse range of nutritious foods at a lower cost because price and affordability remain key barriers to healthy diets, especially for the most marginalized.

As discussed in Chapters 2 and 3, the Arab region continues to suffer from multiple forms of malnutrition. The prevalence of obesity among adults (18 years and above) has been increasing steadily in the region since 2000. The latest estimate for the Arab region shows that 28.8 percent of the adult population was obese, which is more than double the global average of 13.1 percent. High-income countries exhibited the highest prevalence of adult obesity in the region, whereas low-income countries had the lowest levels. Nine out of 22 countries in the region displayed exceptionally high rates of adult obesity, exceeding 30 percent (FAO, 2021e). The rates of obesity and diet-related NCDs in the Arab region are among the highest in the world and are growing rapidly. NCDs cause three times more premature deaths and disabilities than communicable, maternal, neonatal and nutritional diseases.

As was highlighted in Chapter 4, more than half the population of the Arab region (52.6 percent) could not afford a healthy diet in 2020. This is higher than the global average of 42 percent. Almost 92 percent of people in the low-income Arab

States, and 88.3 percent in the Arab LDCs, were unable to afford the cost of a healthy diet. The percentage of people unable to afford a healthy diet is significantly higher in conflict-affected countries at 71.6 percent, compared to 45.5 percent in non-conflict countries.

Rich countries in the region are experiencing variability in their consumption patterns, and other forms of malnutrition are on the rise due to transformative socio-economic changes. The prevalence of undernourishment in these countries was very low in 2019–21, such as in Algeria and Kuwait (2.5 percent) and in Tunisia (3.1 percent) (FAO *et al.,* 2022). The prevalence of obesity is growing in some countries due to the increasing consumption of foods of high energy density with minimal nutritional value. In Saudi Arabia, for example, carbonated beverages and canned fruit drinks represented 26 percent and 25 percent, respectively, of daily fluid consumption by adolescents (Bello and Al-Hammand, 2006).

Socio-economic inequalities have been exacerbated within and between Arab countries, worsening malnutrition. A significant income distribution disparity is a key contributor to the population's overall lack of accessibility to healthy diets. As a result, the population's food security and nutrition status prospects remain dire for many countries in the region. Given the region's dependence on food imports, many countries are vulnerable to price swings (see Chapter 6). As a result, the availability and price of such products are often unstable, thereby shaping outcomes of food security and nutrition.

Trade can not only enhance food security and nutrition, as will be discussed in Chapters 6 and 7, trade and market interventions can also act as barriers to nutritious foods undermining the availability and affordability of healthy diets. In many countries, fiscal subsidies have increased the availability and reduced the price of staple foods and their derivatives, discouraging and making relatively more expensive the consumption of unsubsidized or less subsidized commodities such as fruit, vegetables and pulses (FAO *et al.,* 2022). In the NENA region, agricultural subsidies and food security policies have been implemented generally in favour of staple food production (see section 5.6.2. on repurposing agricultural subsidies). While their key objective is to stabilize or raise farm income and ensure the supply of staple foods, they may also implicitly discourage the production of other foods that are necessary for healthy diets. Many governments in Arab countries tend to provide significant tax preferences for cereals and other agricultural commodities to reduce production costs and artificially lower consumer prices for the end user. While such policies are often linked to promoting self-sufficiency and reducing import dependence, subsidies create incentives for overconsumption and production of foods of high energy density and minimal nutritional value, thereby discouraging the consumption of nutritious foods. For example, prevalent cereal policies within the region encourage farmers to produce wheat through state subsidies and public procurement. Such a support mechanism is geared towards increasing self-sufficiency. However, as producers continue to strive towards improving productivity, they exacerbate other problems such as the diminishing agricultural and natural resources such as water and arable land, while producing foods that lead to nutrition-poor diets.

An agrifood systems approach that considers the broader impacts of sectoral policies on several sustainability outcomes is needed. Assessing the possible impact of a particular agriculture policy on other dimensions and how it would affect different stakeholders across agrifood systems is vital, as well as having all relevant sectors (health, energy, environment, trade, etc.) involved in the decision-making process so that all actions

proceed in concert across entire agrifood systems. Section 5.5 will discuss in detail the importance of an agrifood systems approach in the Arab region by focusing on the significant economic, social and environmental trade-offs of specific policy interventions aiming to transform agrifood systems including through some examples, such as imposing targeted consumption taxes on some unhealthy foods, repurposing agricultural subsidies to support healthy diets, food safety regulation and crop production diversity.

5.5. THE NEED AND RATIONALE FOR ADDRESSING TRADE-OFFS IN AGRIFOOD SYSTEMS

As the NENA region is now preparing to transform agrifood systems at local, national and regional levels to improve the food security, nutrition and health status of the region's population, there are some priority impact areas to consider associated with the overarching goal of ending hunger by 2030, such as:

- nutrition and food security;
- poverty reduction, livelihoods and jobs;
- gender equality, youth and social inclusion;
- climate adaptation and greenhouse gas reduction; and
- environmental health and sustainable use of natural resources and water.

FAO's defines sustainable agrifood systems as those that deliver food security and nutrition for all in such a way that the economic, social and environmental dimensions of generating food security and nutrition for future generations are not compromised (FAO, 2018b). All three dimensions of sustainability can be influenced by trade (FAO, 2021f).

The behaviour of relevant stakeholders (for example, farmers, food processors, retailers and consumers) shapes agrifood systems, which is determined by their capacities and incentives. The sustainability of agrifood systems must be weighed against the potential trade-offs and synergies in economic impacts (e.g. incomes, profits, taxes and food supply), social impacts (e.g. gender equality, nutrition and animal welfare) and environmental impacts (e.g. conservation of ecosystems, biodiversity, soil and water). The trade-off is defined as "a compromise between two desirable, but to some extent incompatible, objectives" (Kanter *et al.,* 2018). Trade-offs should be managed in such a way as to maximize the overall level of the desired outcome. Trade-offs become particularly difficult when resources are constrained and the goals of stakeholders conflict. For example, there are higher-level trade-offs between food and nutrition security objectives and economic inclusion, economic efficiency or environmental sustainability.

The Arab region has diverse economic resources, policies, histories and political ideologies. External revenues such as oil exports play a significant role in the development strategies of most of the countries. Food security can be increased with a focus on domestic production (economic sustainability), but this is constrained by limited natural resources. Any fluctuation in prices in the international commodity market have an effect on the region's oil and food prices. Some interventions, if they rely on monoculture cropping systems, may have a positive economic impact for some stakeholders but erode genetic diversity and increase the system's vulnerability to climate change.

Some interventions may have adverse social impacts (social sustainability), such as worsening nutritional outcomes, if they promote calorie-rich but nutrient-poor,

highly-processed foods over fresh produce. Equally, food value chain interventions that prioritize environmental elements, such as the reduction of carbon emissions through reduced fertilizer use or the introduction of new technology, may lead to negative economic impacts in terms of reduced profits and potential job losses, as well as adverse social outcomes, such as an unwillingness to embrace the introduction of non-traditional foods.

Most Arab countries have policies that enhance local production to decrease import dependency. However, the environment has already been harmed by the resulting increase in the use of fertilizers, water and land (negative effect on environmental sustainability). Factors affecting the environmental sustainability of the resource base also should be considered to ensure sustained growth. Several water and land use practices currently affect the agricultural sector's productivity and growth in the region. Climate-smart interventions aim to harness synergies among the different dimensions of sustainability to deliver environmental, social and economic benefits. Climate-smart agriculture interventions may bring additional income to value chain actors, increase household food and nutrition security, build resilience to market fluctuations and safeguard ecosystems by protecting biodiversity, reducing soil erosion and increasing soil carbon sequestration (FAO, 2019). To ensure the outcomes of climate-smart agriculture interventions are sustainable and scalable, it is critical to examine all factors within the dimensions of economic, social and environmental sustainability to minimize trade-offs and capture synergies.

5.6. IDENTIFYING THE MAJOR TRADE-OFFS FOR ENSURING FOOD SECURITY AND NUTRITION

Given that each country has different conditions, each country must understand and minimize the trade-offs among competing policy objectives. Improved governance should ensure that trade-offs can be identified and jointly assessed from a cross-sectoral perspective to prioritize the best way forward for the whole system. For instance, while adopting more sustainable technologies is better for the environment, it may cause comparatively higher food prices which could jeopardize food security and nutrition for the poor. Similarly, increasing production to enhance agricultural exports may result in an excessive use of fertilizers and pesticides and could deplete natural resources such as groundwater. To address this trade-off, each country needs to invest in research and development and in infrastructure to increase productivity and efficiency. Better investment and increased trade can improve income distribution across and within countries and increase purchasing power. Linkages between research and extension, data analysis, evidence, and decision-making tools are critical. Furthermore, other key agrifood systems policies will be needed to ensure shifts in food supply chains, food environments, and in encouraging consumer behaviour towards healthy eating patterns, regulations for food labelling and marketing (FAO *et al.,* 2022). In addition, social protection policies may be necessary to mitigate possible trade-offs.

More analysis and evidence on the possible trade-offs of different food and agriculture decisions are needed. One of the challenges for effective decision-making is that the trade-offs are often unknown and unquantified on the ground, which makes decisions more difficult. This section identifies significant economic, social, and environmental trade-offs of specific policy interventions that aim to transform agrifood systems and improve the nutrition and health status of the region's population.

Imposing targeted consumption taxes to discourage the consumption of unhealthy foods

Imposing targeted consumption taxes and escalating import tariffs will discourage the consumption of unhealthy food categories (foods high in fat, sugar, salt, and also processed food). Generally, taxes and subsidies create fiscal incentives for consumers to consume less (or more) of targeted foods, thus improving overall diets (FAO, 2022e). Reducing the consumption of processed foods by imposing a consumption tax increases the cost of food. If not well targeted on ultra-processed foods, micronutrient consumption may decrease, as overall, processed food is an essential channel for nutrients. Processed, energy-dense foods may have become important sources of calories for the poor, particularly in urban areas. Thus, policies aimed at making these products more expensive could contract the demand for primary production and push the poorest consumers further towards being underweight (negative social impact). Moreover, considering the typical properties of processed foods, such as ease of storage, long shelf-life, and high energy density, these foods might also be vital for food security in remote areas or in times of scarcity. Reducing demand for processed food could decrease the production of such foods, negatively affecting the food industry, which could cause a reduction in employment, and discourage the flow of foreign direct investment, including investment in food processing industries (negative economic impact).

Repurposing agricultural subsidies

As discussed in section 5.4., fiscal subsidies allocated to specific commodities or factors of production have significantly contributed to diets with deficiencies, excesses, and unbalanced energy and nutrients, contributing to a rise in malnutrition in all its forms (FAO *et al.,* 2022). For instance, the food subsidy programme in Egypt has significantly contributed to increasing obesity rates, cardiovascular diseases and micronutrient deficiencies across all income groups. Baladi bread (a traditional Egyptian staple), wheat flour, sugar and oil are estimated to encompass only 4 percent of average food expenditures. However, they comprise 31 percent of the total calories available in Egyptian households. The programme offers reduced sugar and cooking oil prices for ration holders, providing low-cost, nutrient-poor cooking materials to low-income households (FAO, 2022e). Empirical models suggest that altering the subsidy profiles will significantly reduce welfare for most of the Egyptian population across both low- and middle-income groups (HLPE, 2017). Reforming subsidies to increase access to fruit, vegetables, nuts and whole grains rather than refined grains and simple carbohydrates could shift agrifood systems towards healthier dietary patterns and better health outcomes. For example, the Egyptian study showed that a 1 percent decrease in the price of fruit, eggs and dairy products could translate into a 0.08 percent to 0.12 percent reduction in the body mass index of mothers (FAO *et al.,* 2020).

The most common trade-off for reforming consumption subsidies toward nutritious foods is the accompanying cost. Increasing spending on food subsidies in developing countries within the NENA region may contribute to the countries' growing fiscal deficits. In addition, fruit, vegetables and nuts are among the leading agricultural exports for most of the countries in the region, which is associated with the foreign currency flow required to pay import expenditures. Therefore, subsidizing fruit and vegetables for local consumption may reduce the availability of crops for exportation and thus contribute negatively to the foreign currency flow. A possible measure to mitigate such an impact is to intensify the agricultural production of such healthy crops as fruit

and vegetables. However, there could be an environmental trade-off regarding higher pressure on irrigation systems and agricultural land (Kuiper and van den Bos Verma, 2021). This sustainability trade-off would be of significant concern in the context of the NENA region, with limited arable land and water resources. Furthermore, increasing the consumption of fruit and vegetables can boost labour-intensive fruit and vegetable production and increase agricultural wages. Higher agricultural wages keep more low-skilled workers in agriculture, resulting in a notable decline in the share of non-agricultural employment in the poorest regions, thus, slowing down a diversification of the economy towards industry and services, including agro-industry.

Food safety regulations

Food safety is essential to improving nutrition, reducing foodborne diseases, and making fresh and safe food more readily available. The strategic objective of improving food safety includes policy measures for designing and enforcing more stringent food safety regulations, such as aligning standards to those of high-income countries. A review of the literature shows that higher food safety standards may increase food costs, making food less affordable for poor households. Smallholder farmers could also be excluded if they cannot adapt to more stringent food safety requirements, resulting in reduced employment and job losses (Balié, 2020). Higher food safety standard levels (e.g. lower tolerance levels for pesticides) can be beneficial for the environment and biodiversity. However, those farmers who do not have the resources to apply more expensive, alternative pesticides that are less harmful to the environment, could be hurt. More expensive inputs render the price of agricultural products less affordable, increasing food insecurity and inequality. As well, best before dates can lead to consumers believing the food is instantly bad after that date and throwing it away, which reduces the amount of food available and increases food waste.

Crop production diversification

Healthy and sustainable diets supporting efficient, inclusive, resilient and sustainable agrifood systems would require a shift to foods that are both healthy and that require fewer environmental resources, such as fruit, vegetables, legumes, nuts and seeds (Springmann and Freund 2022). Monotonous, staple-based diets are still the case in many countries in the NENA region, especially among the poor. Crop diversification can improve food security through improving food quantity and variety and increasing farm income, thus enhancing both the availability and access to food. Crop diversification may have synergies with other nutrition-sensitive interventions, including reforming agricultural subsidies as noted above. However, crop diversification may also cause competition for resources among various crops and put pressure on natural resources. To mitigate the trade-offs, crop diversification has to fulfill the multiple objectives of sustainable agriculture in terms of efficient use of natural resources, producing nutrients for human consumption, climate resilience and farmer income. In this regard, understanding which crops, or combinations, are most suitable for a particular region or country is important (FAO, 2022e).

CHAPTER 6

THE REGIONAL SITUATION ON FOOD PRODUCTION, SUPPLY AND TRADE

Key messages

- NENA countries are net food importers and highly depend on global agrifood markets. The Arab region accounted for 7.6 percent of the world's total agricultural imports in 2020. NENA countries are among the largest cereal importers globally. Between 2010 and 2020, Algeria, Egypt and Saudi Arabia were the region's largest cereal importers. Arab countries accounted for only 2.3 percent of the world's total agricultural exports in 2020 due to their relatively low natural resource endowments.
- Almost half the region's food supply came from cereals. The dietary energy supply from cereals is particularly high in Egypt and Morocco. Dietary energy supply in the area from sugar, syrups and honey was 31 percent higher than the world average in the past decade. On average, less than 5 percent of calorie availability per person per day comes from fruit and less than 3 percent from vegetables.
- Egypt, Iraq and the Syrian Arab Republic were the primary cereal producers, and Algeria, Egypt and Morocco were the top producers of fruits and vegetables within the Arab region in 2020. Regional production contributes to a high share of regional fruits and vegetables consumption. Egypt, Morocco and Tunisia had the highest self-sufficiency ratio in fruits, whereas Egypt, Jordan and Tunisia have the highest self-sufficiency ratio in vegetables in the region in 2020.
- A simple average among NENA countries shows that imports provided 62 percent of the region's food supply over 2017–2019. The population-weighted import dependency was around 50 percent.
- For 11 of the 17 Arab countries for which data are available, the import dependency was above 60 percent, whereas in Jordan, Kuwait, Saudi Arabia, the United Arab Emirates and Yemen, more than 80 percent of the total domestic availability of calories came from imports.
- The estimated import dependency for cereals in Jordan, Kuwait, Lebanon, Libya, Oman, Saudi Arabia and the United Arab Emirates is greater than 90 percent.
- Most countries in the region depend on a few countries of origin for food imports (especially Algeria, Iraq and Libya). NENA countries with a higher dependency on imported dietary energy show a more diverse range of global suppliers; this is especially true for Jordan, Kuwait and the United Arab Emirates.

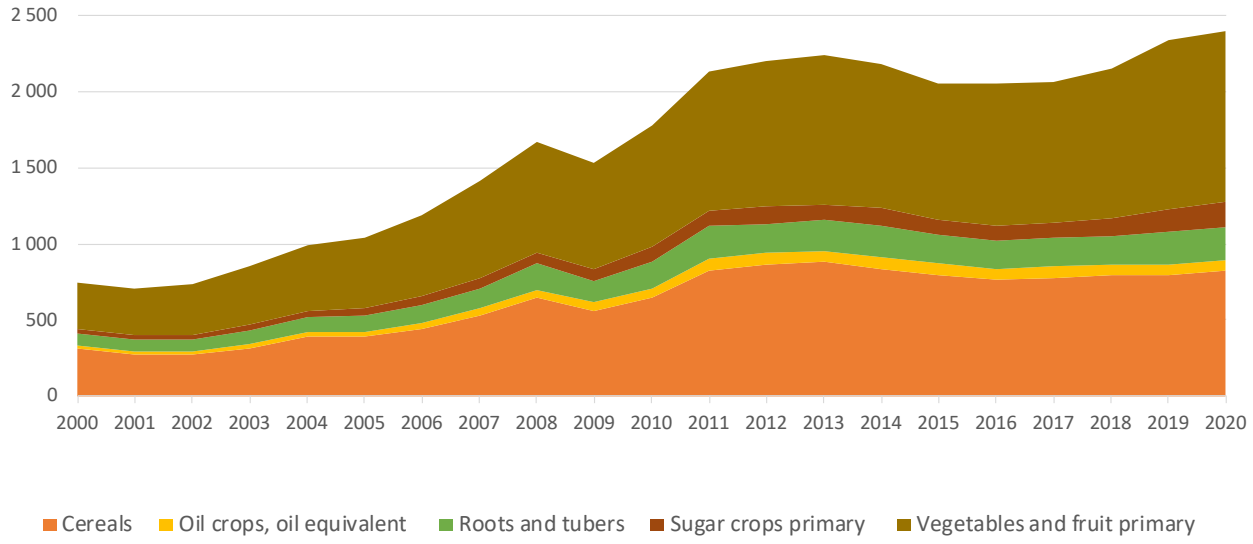
- A high import dependency combined with a reliance on very few suppliers leaves a country vulnerable to shocks. Risks of high import dependency and vulnerability to external shocks can be reduced by diversifying import sources across countries and regions with different socio-economic and climatic profiles, combined with building food stocks.
- International trade is essential for diverse and healthy diets in the region. Imports contribute substantially to the diversity of available food items in the Arab region. In the case of fruits and vegetables, which are not produced in significant quantities in the region but are essential to healthy and nutritious diets, imports contribute to the variety available for domestic supply, especially in Kuwait, Oman, Saudi Arabia and the United Arab Emirates.

Chapter 5 discussed the region's limited natural resources for food production, its growing population, and how these factors translate into high food import dependency. Chapter 6 analyses the region's food production, dietary energy supply, and trade patterns and assesses the vulnerabilities of NENA countries because of an import dependency and lack of supplier diversification.

6.1. FOOD PRODUCTION

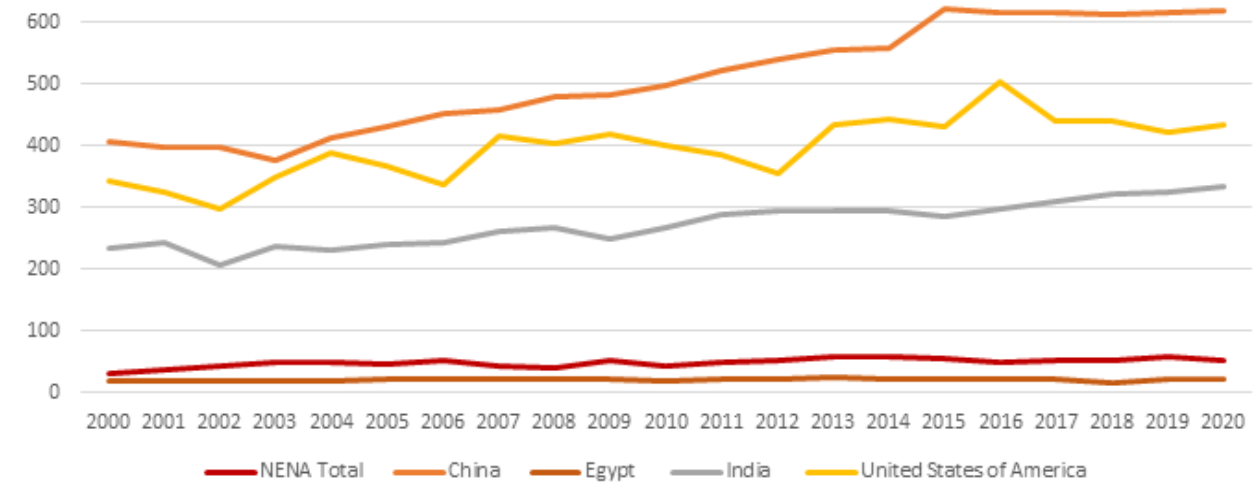
Between 2000 and 2020, the global production value of primary crops increased more than threefold in nominal terms, from USD 849 billion to USD 2 783 billion. Figure 29 illustrates the world gross production value growth of five commodity groups: cereals, vegetables and fruit, roots and tubers, sugar crops and oil crops. Cereal production, which is mostly concentrated in China, India and the United States, was recorded at 2 996 billion tonnes in 2020 (Figure 30). The NENA region contributed an estimated 53 million tonnes (1.76 percent) to total cereal production, with Egypt producing 22 million tonnes annually. As a result, the region's participation in the global trade for agricultural products has increased over the last decade, mainly due to rising imports.

FIGURE 29
WORLD GROSS PRODUCTION VALUE OF CROPS BY COMMODITY GROUP (USD BILLION)



Source: FAO. 2022. FAOSTAT: Value of Agricultural Production. In: *FAO*. Rome. Cited November 2022. https://www.fao.org/faostat/en/#data/QV

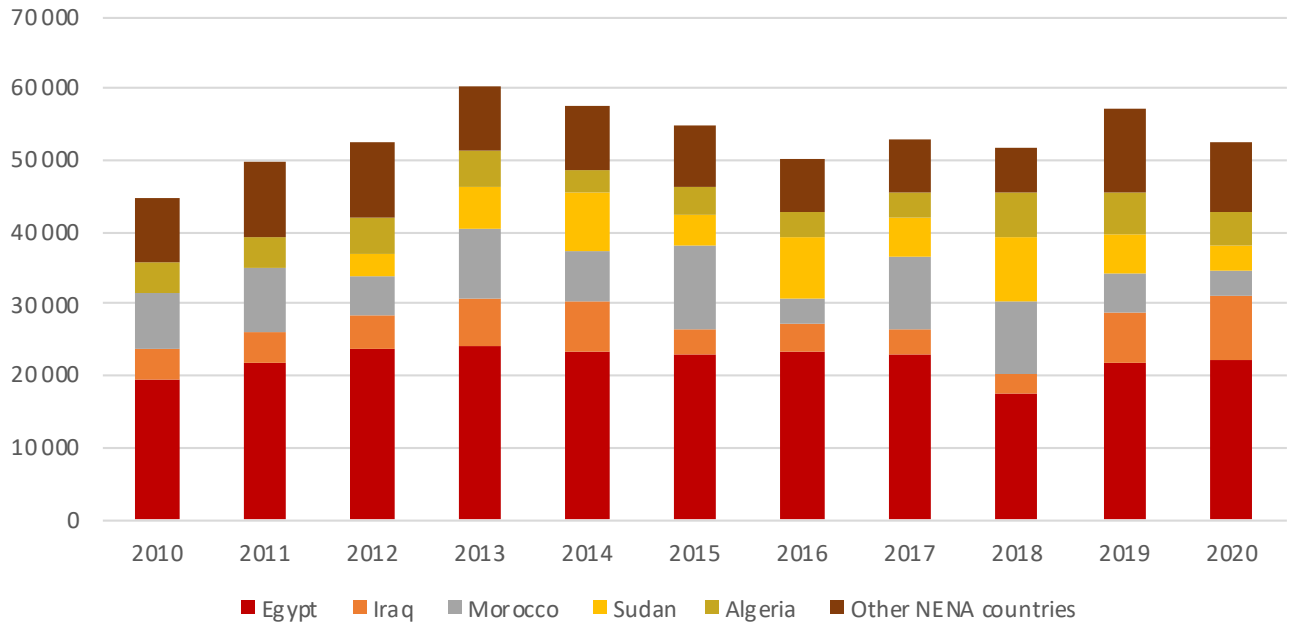
FIGURE 30
PRODUCTION OF TOTAL CEREALS (MILLION TONNES)



Source: FAO. 2022. FAOSTAT: Production. In: *FAO*. Rome. Cited November 2022. https://www.fao.org/faostat/en/#data/QCL

On the production side, the NENA region's total contribution to the world's cereal production is insignificant. Cropping patterns in the region are difficult to reconcile with the region's agricultural limitations, particularly water and land scarcity. For example, over the last decade, the production of cereals (i.e. barley, wheat and rice) has increased in the region (Figure 31), despite challenges related to water scarcity and arable land. It should be noted that cereals are far more water-intensive than fruit and vegetables, which also provide higher economic returns. Despite having a comparative advantage in the export of fruits and vegetables, about 60 percent of harvested land in the region remains in cereals, with Egypt as the top contributor to cereal production in the region, followed by Iraq (Annex 5). This does not translate, however, to higher yields in low-temperature crops such as wheat, which is far below world levels (except for Egypt). The main crops in Egypt are maize, wheat and rice.

FIGURE 31
TOP FIVE CEREAL PRODUCERS IN THE NENA REGION (THOUSAND TONNES)



Source: FAO. 2022. FAOSTAT: Production/Crops and livestock products. Cited: September 2022. https://www.fao.org/faostat/en/#data/QCL

The quantity of vegetables produced within the region increased by 14.7 percent over the last ten years (Annex 5). The top producers of vegetables within the Arab region are Algeria, Egypt and Morocco. Egypt, Jordan and Tunisia had the highest self-sufficiency ratios (119 percent, 140 percent and 110 percent, respectively) in vegetables in the region in 2020 (FAO, 2022g). The lowest producers of vegetables are Bahrain, the Comoros, Djibouti, Mauritania, Qatar and Somalia producing only a few thousand tonnes annually. In the last decade, production has remained stagnant in the Comoros, Egypt, Jordan, Libya and Palestine. It has decreased in Morocco considerably, and has fallen back substantially in Iraq, Lebanon, Saudi Arabia and Yemen.

In the region, Algeria, Egypt and Morocco are the top producer of fruits (representing 32, 16 and 12 percent of the region's fruits production in 2020 respectively). Egypt, Morocco and Tunisia had the highest self-sufficiency ratios (114 percent, 241 percent and 127 percent, respectively) in fruits in 2020. Some countries, such as Bahrain, the Comoros, Djibouti, Mauritania and Qatar, produced less than 100 000 tonnes of fruits in 2020 (Annex 5). Overall, the region's production of fruits increased by 33.1 percent between 2010 and 2020. The top types of fruits produced in the region in 2020 were dates, followed by watermelons, oranges, grapes, bananas, apples and mangoes. In some countries, a high share of increasing disposable incomes tend to make consumers shift from a carbohydrate-based staple diet to a nutrition-rich diet.

6.2. FOOD SUPPLY

The composition of the dietary energy supply, detailed in food balance sheets, varies greatly between countries in the regions. The average dietary energy supply adequacy (ADESA)[8] has decreased in some countries in the NENA region (in Egypt, Jordan, Kuwait, Lebanon, Mauritania, Oman and Yemen). The regional average of ADESA showed a marginal increase (0.8 percent) between 2010 and 2020 (Annex 6), while world average ADESA grew by 4.2 percent in the same period.[9] This supports the assumption that the heterogeneity of countries translates into disparities in nutrition-related indicators. The average level of ADESA in the NENA region was at the same level in 2020 as the global average (124 percent).

The average food supply of all food categories decreased in the region slightly (-1.3 percent) over the past decade from 2 978 kcal/capita/day to 2 940 kcal/capita/day (Figure 32 and Annex 6); it fell back in Egypt, Jordan, Lebanon, the Syrian Arab Republic and Yemen. The daily per capita food supply was the lowest in Yemen and the Comoros in the region (2 019 and 2 285 kcal/capita/day, respectively). The average availability per person per day of roots and tubers, and meat decreased (-4.6 percent and -4.7 percent, respectively), while that of milk and vegetables increased significantly (17.5 percent and 5.6 percent, respectively). There was a marginal increase in the availability of fruit and cereals (2.8 percent and 1.1 percent, respectively). In the last decade, 48.8 percent of calorie availability per person per day on average was provided by cereals (1 444 kcal/capita/day), 5.1 percent by milk (151 kcal/capita/day), 4.7 percent by fruit (138 kcal/capita/day), 4.4 percent by meat (129 kcal/capita/day), 2.7 percent by vegetables (81 kcal/capita/day) and 2.1 percent by roots and tubers (6 kcal/capita/day).

The dietary energy supply (average of 2010–2019) from cereals in the region (1 444 kcal/capita/day) is significantly higher than the world average of 1 308 kcal/capita/day and is particularly high in Egypt (2 168 kcal/capita/day) and Morocco (1 972 kcal/capita/day), and lower than the world average in the Comoros, Jordan, Lebanon, Oman and the United Arab Emirates.

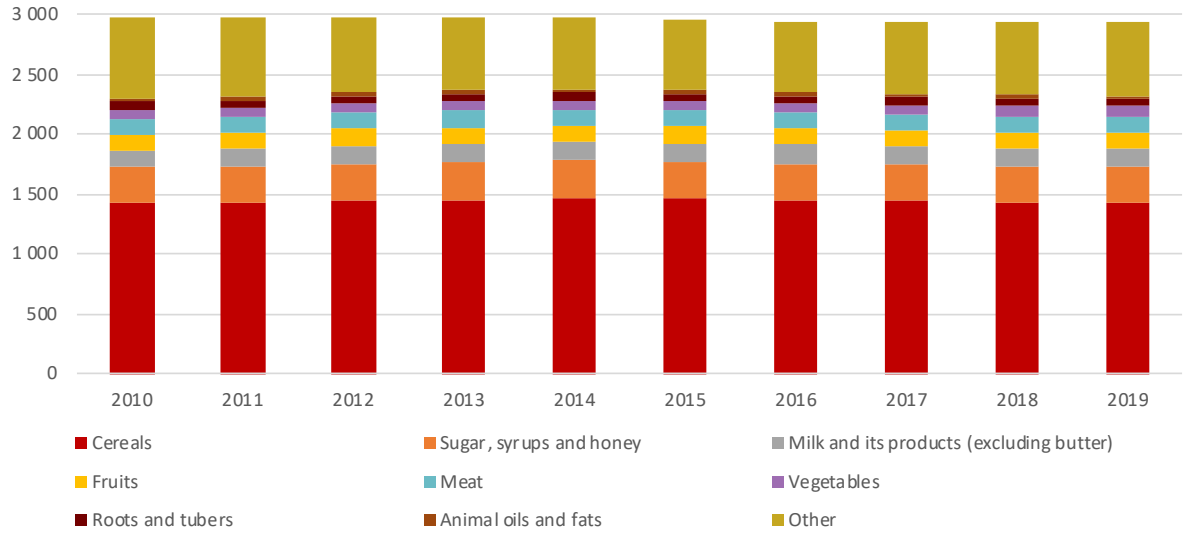
8 The indicator expresses the dietary energy supply as a percentage of the average dietary energy requirement (ADER). Each country's or region's average supply of calories for food consumption is normalized by the average dietary energy requirement estimated for its population to provide an index of adequacy of the food supply in terms of calories (source: FAOSTAT, https://www.fao.org/faostat/en/#faq)

9 The averages are unweighted averages, which do not count the different population sizes of the countries concerned.

The second highest dietary energy supply in the region comes from sugar, syrups and honey (305 kcal/capita/day on average in 2010–2019), which is 31 percent higher than the world average in the same period (233 kcal/capita/day). The dietary energy supply form sugar, syrups and honey in all NENA countries is higher than the world average except for in the Comoros and Iraq, and it is especially high in Jordan, Kuwait and Lebanon. This can explain at least partly the high obesity rates observed in the region (see Chapter 3).

The food supply of the countries varies substantially within the region. As can be seen in the tables in Annex 6, the availability of fruit in the region was highest in Algeria and Oman and very low in Djibouti, Mauritania and Yemen. The supply of vegetables was high in Algeria, Egypt, Libya and Tunisia in 2010–2019 and very modest in the Comoros and Yemen. Meat supply in 2010–2019 was the highest in Kuwait, Oman and Saudi Arabia and it was the lowest in the Comoros and Iraq. The supply of milk was higher among Arab countries in Algeria, Mauritania and Oman, and the lowest in the Comoros, Iraq and Yemen. The availability of roots and tubers was the highest in the Comoros and the lowest in the United Arab Emirates.

FIGURE 32
THE AVAILABILITY OF MAJOR FOOD GROUPS IN THE ARAB REGION (KCAL/CAPITA/DAY)



Source: FAO. 2022. FAOSTAT: Supply Utilization Accounts. In: *FAO*. Rome. Cited: September 2022. https://www.fao.org/faostat/en/#data/SCL
Note: The figure contains simple averages (not population weighted averages)

Over the last decade, the supply of meat has decreased in the region marginally (by 1.3 percent). Data on the average supply of protein of animal origin (kcal/capita/day) (3-year average) indicate a significant increase in Libya, the Sudan and the United Arab Emirates, as well as a marginal increase in Algeria, the Comoros, Djibouti, Egypt, Mauritania, Morocco, the Syrian Arab Republic and Tunisia (Annex 6). In contrast, the supply of meat decreased substantially in Iraq, Lebanon, Oman and Kuwait. The dietary energy supply in the region from animal oils and fats (30 kcal/capita/day on average in 2010–2019) is half the world average in the same period (60 kcal/capita/day). The share

of dietary energy supply from fat has increased in the Arab countries by 3.4 percent, most notably in the Comoros, Iraq, the Sudan, the Syrian Arab Republic and Tunisia (Annex 6). However, in Djibouti, Kuwait, Morocco and Yemen, the increase in the dietary energy supply from fat is marginal. The supply of fat decreased significantly in Egypt, Libya and Oman. An increase in meat and fat consumption is often influenced by changing consumer preferences and income growth. These nutrient intake changes may affect the incidence rate of obesity, heart disease, diabetes and cancers. The average supply from vegetable oils (oil crops and oil equivalent) in 2010–2019 in the region was 7 kcal/capita/day, lower than the world average (9 kcal/capita/day). However, the average supply from vegetable oils in the same period was higher than the world average in the Comoros, Kuwait, Lebanon, Libya and Tunisia.

The relative analysis of the food supply is critical for understanding dietary patterns and needs. The prevalence of undernourishment in the Arab region has increased in almost all the countries over the last decade (see Chapter 1).

6.3. AGRIFOOD TRADE

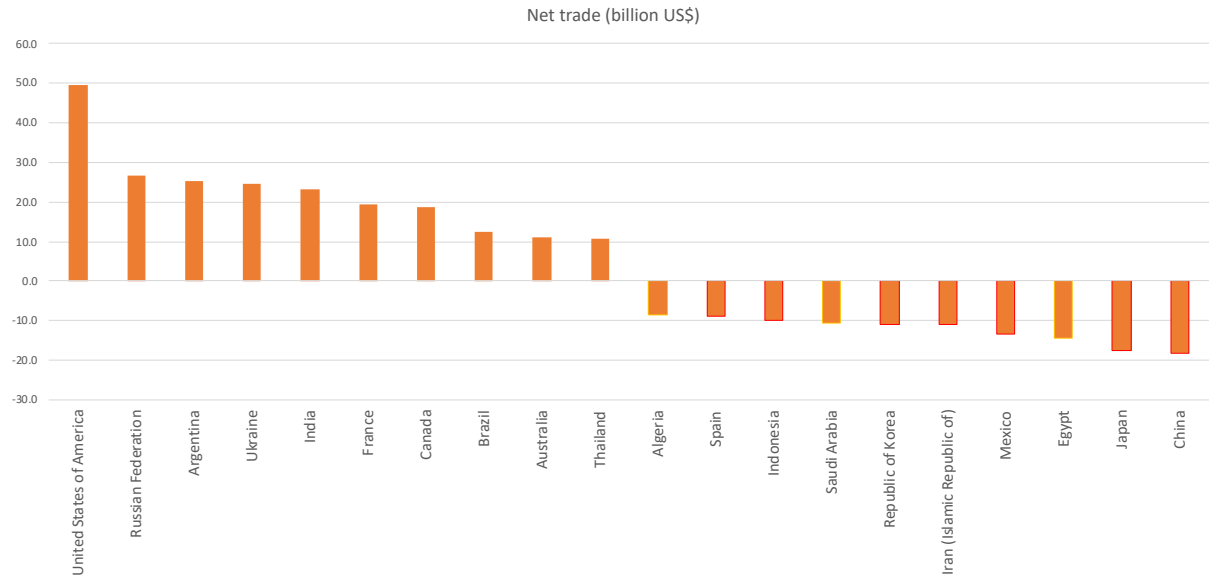
The Arab region accounted for 7.6 percent of the world's total agricultural imports in 2020 (FAOSTAT, 2022). This share is significant if one compares it to the region's share of global GDP (2.9 percent)[10] or world population (5.6 percent)[11] in 2020. For example, NENA countries are among the largest cereal importers globally. Yet, Arab countries accounted for only 2.3 percent of the world's total agricultural exports in 2020 due to their relatively low natural resource endowments (FAO, 2022h). These figures underline that NENA countries are net food importers and highly depend on global agrifood markets.

These shares have changed little over the years. Among the largest importers, Saudi Arabia comes 19th in the world with an average of about USD 20 billion in imports for 2018–2020 (Figure 33) followed respectively by the United Arab Emirates at 23rd and Egypt at 26th with about USD 17 billion and USD 14.4 billion, respectively. Among the largest exporters, the United Arab Emirates was 28th in the world with about USD 12.8 billion in exports followed by Egypt and Morocco as 52nd and 55th in the world with export in value averaging USD 5.2 billion and USD 4 billion, respectively in 2018–2020. However, it should be noted that the United Arab Emirates is a significant re-exporter, which may explain the large quantity of imports and exports.

10 Author's calculations based on International Monetary Fund, World Economic Outlook Database, accessed in October 2022

11 Author's calculations based on World Bank World Development Indicators, accessed in October 2022.

FIGURE 33
NET AGRICULTURAL TRADE OF SELECTED COUNTRIES IN THE WORLD (USD BILLION, AVERAGE VALUE IN 2018–2020)

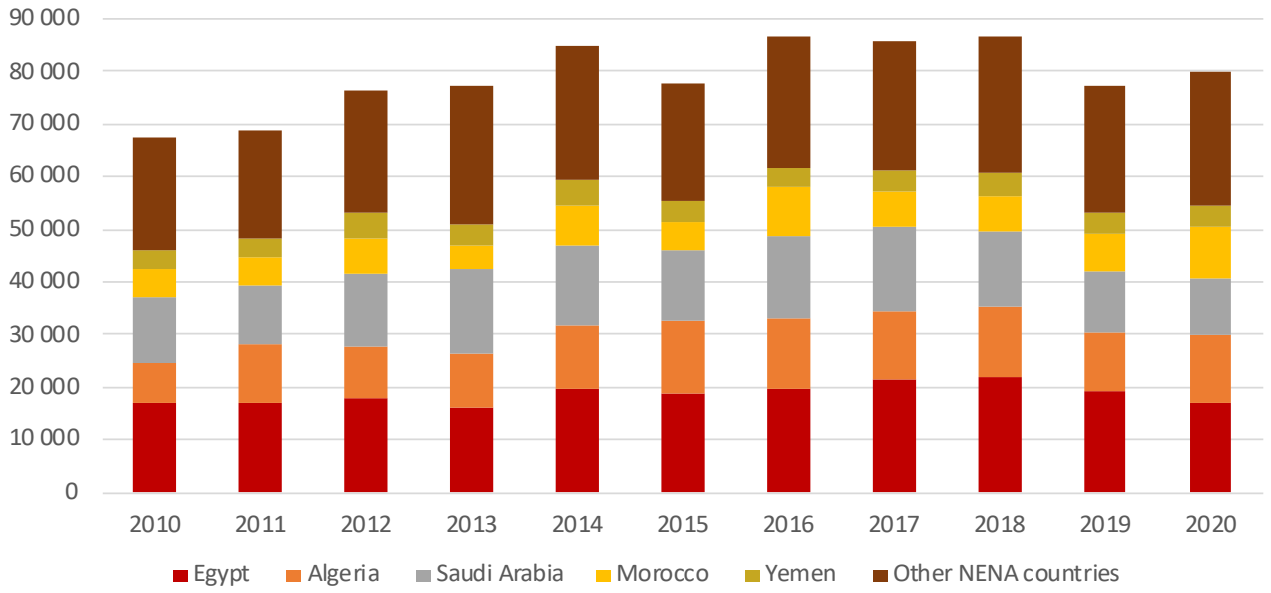


Source: UNESCWA calculations based on FAO. 2022. FAOSTAT: Trade. In: *FAO*. Rome. Cited November 2022. https://www.fao.org/faostat/en/#data/TCL

Cereals were the largest imported agricultural commodity in the Arab region with an average of about USD 67 billion for 2018–20. Algeria, Saudi Arabia and Egypt are among the 20 largest net importers of cereals in the world with negative values of USD 8.6 billion, 10.7 billion and 14.4 billion, respectively (UNESCWA, 2013, updated with data from FAOSTAT, 2022).

In fact, the region is the world's major importer of cereals. In 2020, NENA countries accounted for 17.9 percent of world cereal imports (FAOSTAT, 2022). Empirical data indicate that the total cereal import in the region has increased about 20 percent over the last decade. It is suggested that rising income levels, increasing population, and low domestic production relative to other countries are driving the higher demand. Egypt, which contributes the most to the global share of cereal production, is the region's largest importer (with an average 24 percent of the region's imports between 2010 and 2020), followed by Saudi Arabia and Algeria (17 percent and 15 percent share, respectively). Cereal imports decreased dramatically in the Syrian Arab Republic (-88 percent) and have fallen back substantially in Palestine (-27 percent) and Saudi Arabia (-12 percent) over the last decade (Figure 34). The region's cereal exports were less than 1 million tonnes in 2020 and the region's cereal exports have shown large fluctuations between 2010 and 2020.

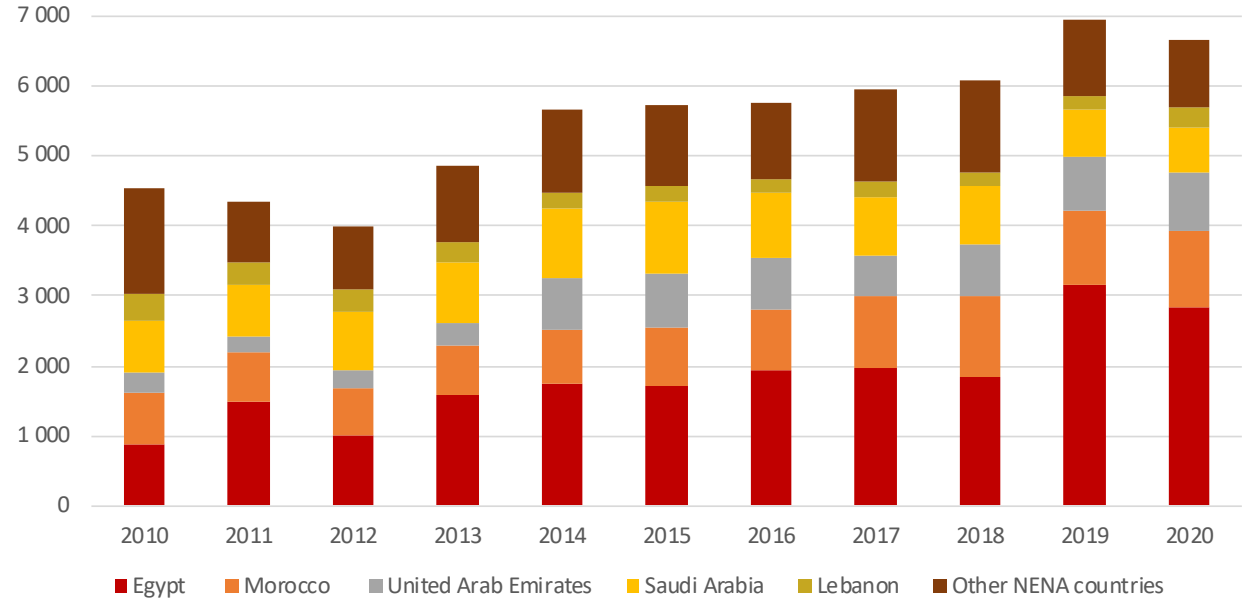
FIGURE 34
TOP 5 CEREAL IMPORTERS IN THE NENA REGION (THOUSAND TONNES)



Source: FAO. 2022. FAOSTAT: Trade/Crops and livestock products. In: *FAO*. Rome. Cited: September 2022. https://www.fao.org/faostat/en/#data/QCL

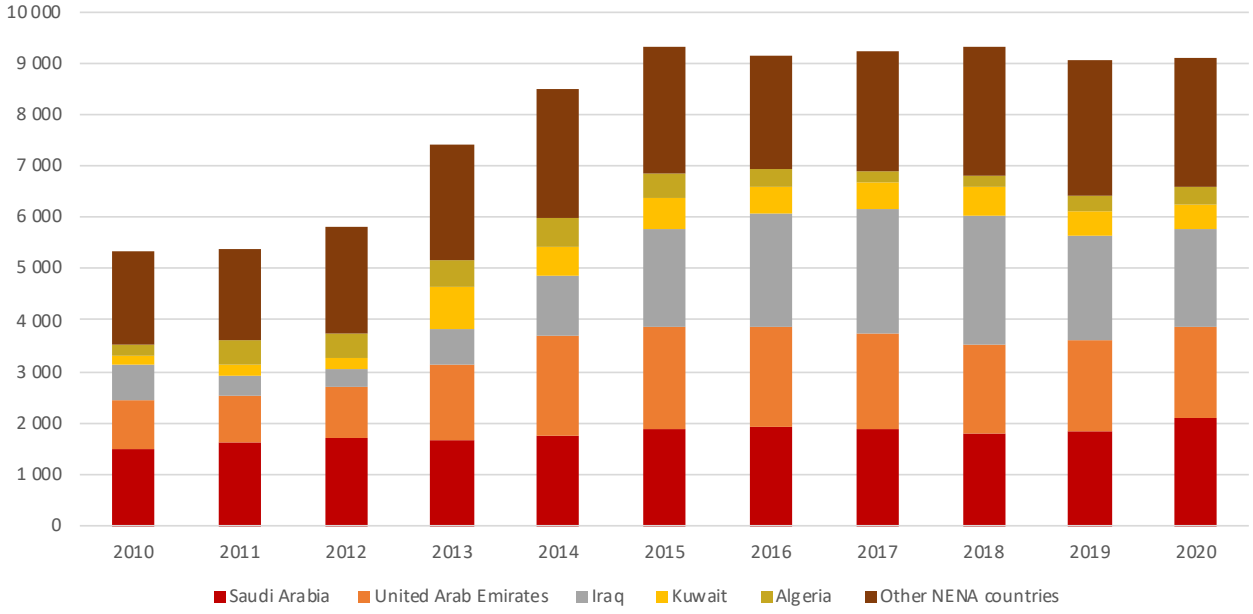
The imports (51.7 percent) and exports (46.6 percent) of fruit in Arab countries have increased almost at the same rate over the last ten years. Egypt and Morocco are the leading exporters of fruit in the region, whereas Iraq, Saudi Arabia and the United Arab Emirates represent the main importers (Figure 35 and Figure 36); the Islamic Republic of Iran, Türkiye, Egypt, South Africa, United States of America, India were their major import sources in 2021 (ITC, 2023). Fruit imports increased by 70 percent on average in the NENA region, imports doubled or increased by even more in Bahrain, the Comoros, Djibouti, Iraq, Kuwait, Mauritania, Qatar, Somalia, Tunisia and Yemen. Fruit exports grew by 47 percent on average in the NENA region, with a more than tenfold increase in Algeria. Egypt's fruit exports have tripled over the last decade, which may be attributed to the significant efforts the country has made to develop production methods.

FIGURE 35
TOP 5 FRUIT EXPORTERS IN THE NENA REGION (THOUSAND TONNES)



Source: FAO. 2022. FAOSTAT: Trade/Crops and livestock products. In: *FAO*. Rome. Cited: September 2022. https://www.fao.org/faostat/en/#data/QCL

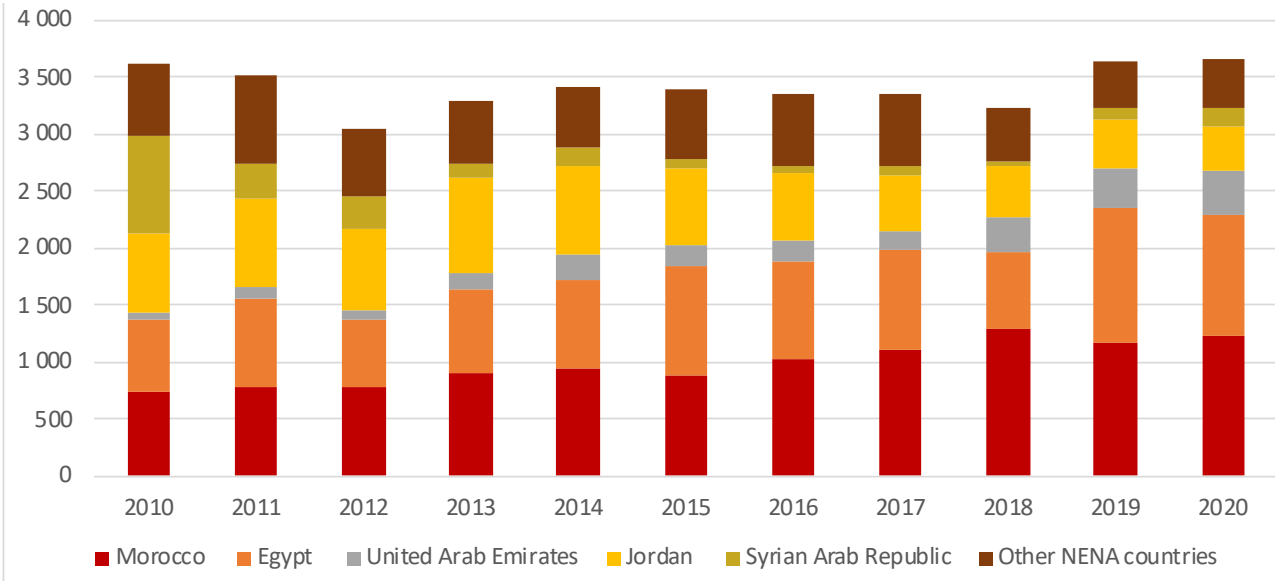
FIGURE 36
TOP 5 FRUIT IMPORTERS IN THE NENA REGION (THOUSAND TONNES)



Source: FAO. 2022. FAOSTAT: Trade/Crops and livestock products. In: *FAO*. Rome. Cited: September 2022. https://www.fao.org/faostat/en/#data/QCL

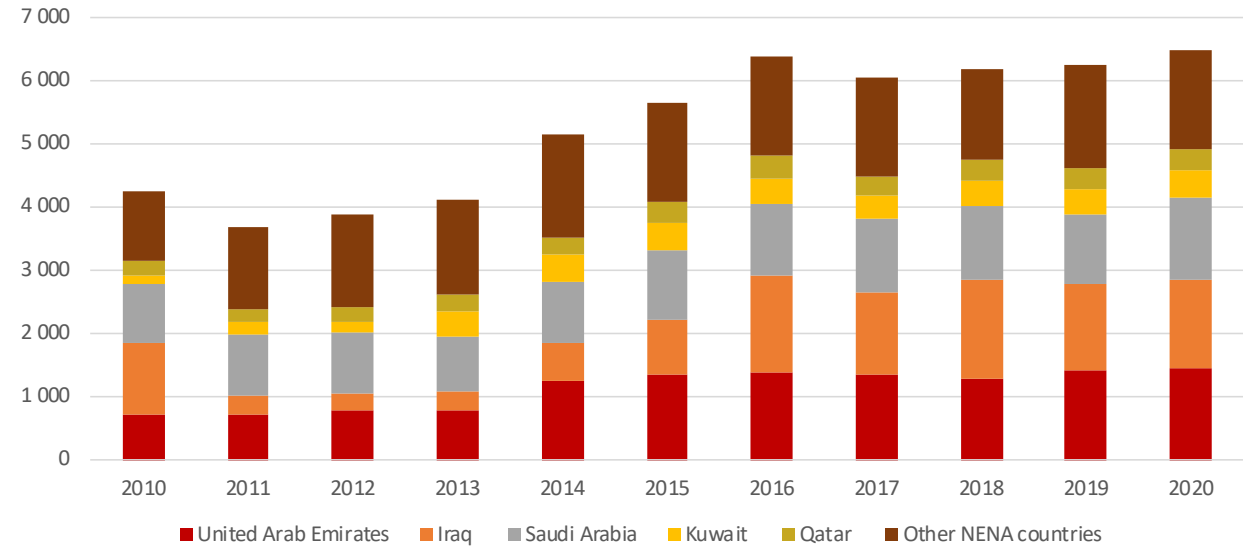
Overall, the region does not produce a substantial quantity of vegetables; therefore, its contribution to global trade is small. However, regional vegetable production contributes to a high share of regional vegetable consumption. In fact, the region has the highest self-sufficiency ratio in fruits and vegetables (OECD and FAO, 2018). Three countries exported 71 percent of the vegetables: Egypt, Jordan and Morocco, on average over the last decade (Figure 37). Growth in vegetable exports has been stagnant over the last ten years. In contrast, vegetable exports have grown dynamically in Egypt, Morocco and the United Arab Emirates. Yet, imports of vegetables have surged in the region, with an increase of 52 percent in ten years. Iraq, Saudi Arabia and the United Arab Emirates are substantial importers of vegetables contributing to almost 60 percent of the total regional imports of vegetables (Figure 38). Their major import partners were the Islamic Republic of Iran, Türkiye, Jordan, Egypt, Canada, India and Australia in 2021 (ITC, 2023).

FIGURE 37
TOP 5 VEGETABLE EXPORTERS IN THE NENA REGION (THOUSAND TONNES)



Source: FAO. 2022. FAOSTAT: Trade/Crops and livestock products. In: *FAO*. Rome. Cited: September 2022. https://www.fao.org/faostat/en/#data/QCL

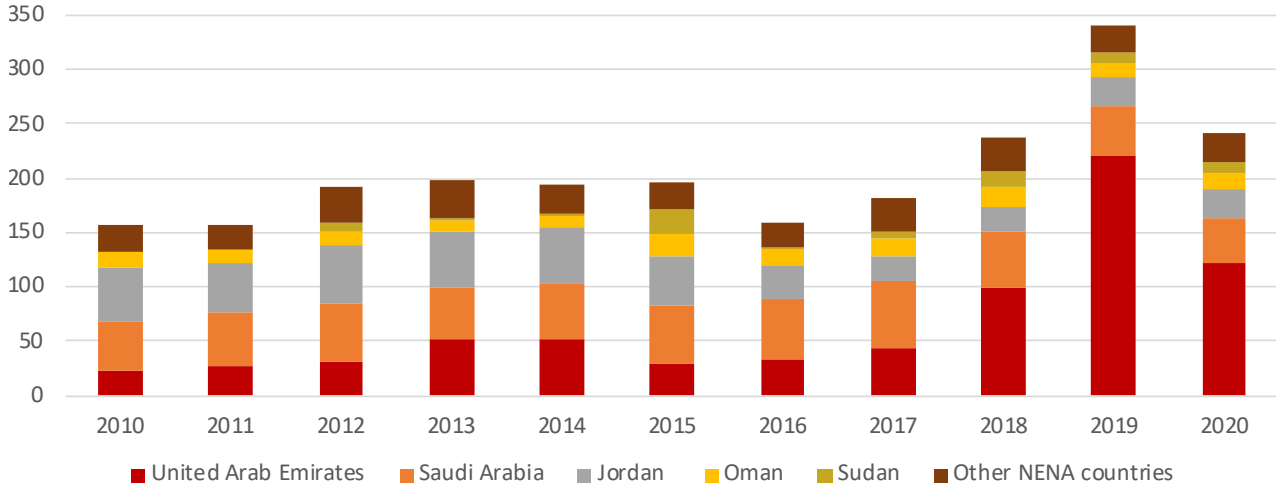
FIGURE 38
TOP 5 VEGETABLE IMPORTERS IN THE NENA REGION (THOUSAND TONNES)



Source: FAO. 2022. FAOSTAT: Trade/Crops and livestock products. In: *FAO*. Rome. Cited: September 2022. https://www.fao.org/faostat/en/#data/QCL

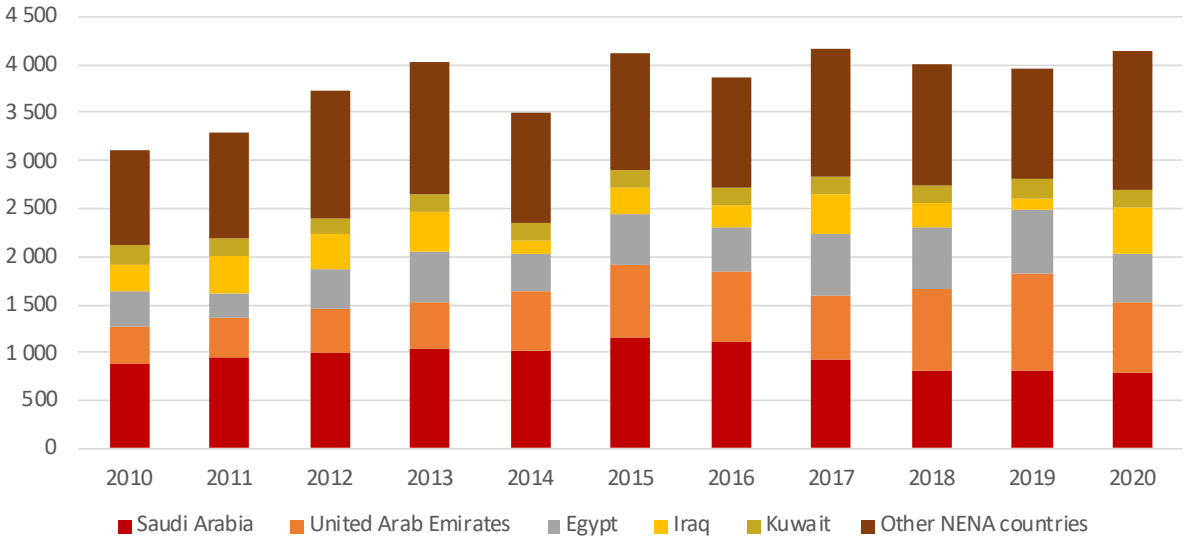
Although they make a minor contribution to the world's overall exports, regional pulses exports are driven by Egypt and the United Arab Emirates, which made up roughly 80 percent of total exports in the region on average between 2010 and 2020. Concerning imports, more than 46 percent of pulses imports are destined for Egypt and the United Arab Emirates on average in the same period; however, there has been a significant increase (52 percent) in pulses imports within the region between 2010 and 2020.

FIGURE 39
TOP 5 MEAT EXPORTERS IN THE NENA REGION (THOUSAND TONNES)



Source: FAO. 2022. FAOSTAT: Trade/Crops and livestock products. In: *FAO*. Rome. Cited: September 2022. https://www.fao.org/faostat/en/#data/QC

FIGURE 40
TOP 5 MEAT IMPORTERS IN THE NENA REGION (THOUSAND TONNES)



Source: FAO. 2022. FAOSTAT: Trade/Crops and livestock products. In: *FAO*. Rome. Cited: September 2022. https://www.fao.org/faostat/en/#data/QCL

Meat consumption has increased in some countries, as have exports, with the latter growing by 55 percent over the last ten years (Figure 39). The Arab region exported more than 400 000 tonnes of meat in 2020. The United Arab Emirates exported 16 percent and Saudi Arabia exported 12 percent of the region's total meat exports on average in the last decade. However, there has been a dynamic increase in exports (up 424 percent) from the United Arab Emirates between 2010 and 2020. Studies have indicated the net economic benefit of the production of red meat in the Arab region. Due to the high cost of the domestic output, poultry production does not bring significant net economic benefit to most of the countries in the region. The Arab countries with a comparative advantage in producing red meat and poultry are Bahrain, Egypt, Iraq, Lebanon and Tunisia. Egypt, Saudi Arabia and the United Arab Emirates were the major meat importers, accounting for 13 percent, 25 percent and 17 percent of the region's total meat imports, respectively, on average over the period 2010–2020 (Figure 40). There has been an increase of 33 percent in meat imports in the region over the last ten years.

6.4. IMPORT DEPENDENCY AND VULNERABILITY TO SHOCKS

As discussed in Chapter 5, most countries in the NENA region have limited agricultural resources, which limits their ability to meet their food needs by expanding and diversifying domestic agricultural production. Given their limited land and water resources, they may need to maximize efficiency by specializing in products for which they have comparative advantages (see section 6.1) while engaging in international trade to source other products (see section 6.3). This leaves the region reliant on imports for the essential food items and products necessary for diverse and healthy diets (e.g. fruit and vegetables) that cannot be produced locally or in sufficient quantities. However, countries with agrifood systems that are highly connected to global and regional markets may become more exposed to outside shocks, such as supply-side or policy-induced shocks, such as trade restrictions (FAO, 2021a). For Arab countries facing this trade-off, managing international

trade connectivity is critical to reducing exposure to external shocks. The risks of high import dependency can be mitigated by diversifying import sources from countries and regions with different socio-economic and climate profiles, combined with building food stocks to deal with supply uncertainties in times of crisis.

This section explores the NENA region's import dependency and vulnerability. The objective is twofold: to assess import dependency for the domestic availability of dietary energy, and to identify vulnerabilities stemming from the absence of trading partner diversification. This section is divided into three strategic parts: First, a brief introduction to the key indicators used for the purpose of the analysis; second, the role of imports in the domestic availability of calories; and third, an analysis that combines measures of import dependency for aggregate calories and individual food groups with metrics that capture the degree of diversification of a NENA country's international supplier network. The last section aims to determine the risks and vulnerabilities of NENA countries concerning food security and dietary diversity due to possible disruptions in global trade and country of origin-specific shocks.

Indicators for import dependency and exporter concentration

Two key indicators are crucial to the following analysis. The first assesses the extent to which a country relies on imports for its total domestic availability of dietary energy. The second determines whether a country's imports are sourced from a wide range of international suppliers or if they are highly concentrated among a few global exporters.

For time and product coverage, all indicators introduced below are calculated for the following food groups: cereals, fruit and vegetables, meat, pulses and aggregate agrifood items.[12] For the aggregates, indicators are presented in caloric terms after applying appropriate conversion factors detailing the caloric content of various food items. Indicators are presented in weight terms for the four food groups. Some aggregates (i.e. fruit and vegetables or meat), are essential not only because of their calories but also because of the nutrients such as vitamins, in the case of fruit, or iron, fats and protein, in the case of meats, that are required for a healthy diet. Throughout the analysis, average data over 2017–2019 are presented to smooth out possible year-specific effects.

Metrics for import dependency

To assess the role of imports in the availability of calories in NENA countries, this analysis uses two indicators. First, considering recent analytical advances proposed by FAO (2021a) to assess the role of imports in the context of food security, the import dependency ratio is calculated as the ratio of a country's net import of calories (imports minus exports) to its domestic production plus its net imports. This indicator expresses the share of imports in the maximum amount of calories theoretically available for human consumption, even if a sizable share of imported items may be channeled towards processing or animal feed (e.g. barley). This metric, which is critical to this study, assesses the role of imports in the domestic availability of calories after accounting for a sizeable share of home products that may be exported.[13] In the context of the NENA region, this

12 "Food" is defined as all products included in FAO's Food Balance Sheets, with a few exceptions. Annex 8 provides details on the data employed for this analysis and shows the individual items included under the four food groups.

13 If exports are zero, the import dependency ratio becomes imports/(imports+production).

definition of the import dependency ratio is especially useful since a large share of a country's imports may be re-exported, as is the case in regional trade hubs like the United Arab Emirates.[14] Annex 8 lists the import dependency shares and net imports per capita in kilograms for four food groups (2017–2019 averages) in the Arab region.

An import dependency ratio of one suggests that a country has no domestic production and is, thus, entirely dependent on imports for the domestic availability of dietary energy. Yet, lower values indicate the smaller role of imports in domestic food availability. The ratio can become negative if a country is a net exporter of dietary energy or any item under consideration. For this analysis, in these cases, the ratio is equal to zero, and it is concluded that the country is not dependent on imports for the food group under consideration.

A distinct shortcoming of the import dependency ratio is that a country can have a high reliance on imports for the availability of food or food groups but not import (or produce) much overall. For example, Jordan has an import dependency rate of almost one for pulses, but net imports per capita of pulses were only about six kilograms per year between 2017 and 2019. Thus, the analysis also presents imported food per capita (in kcal) and weight (in the case of the four food groups) as an alternative metric for the role of imported food and to contextualize the results.

Metrics for exporter concentration

For each of the four food groups and aggregate calorie imports, measures of "exporter concentration" are calculated. These describe the extent to which food imports of a NENA country are spread across global exporters. Specifically, for each NENA country and food group combination, the Herfindahl-Hirschman Index (HHI) is calculated as the sum of squares of each exporting country's share in a NENA country's imports of food and food groups. The HHI can range from zero to one, with larger values indicating less diversification. A value of one suggests that an importing country relies on only one exporting country to supply calories. In contrast, a value of zero implies that a country sources its imports from an infinite number of exporters, which all have an equal share in the importer's import basket.[15] While the HHI is a widely used measure of market concentration, individual values have no natural interpretation (Kelly, 1981). To facilitate a more intuitive understanding of obtained results, the analysis also refers to the share of the three largest suppliers in a country's aggregate imports of any given food group and calorie imports overall. Larger values indicate less diversification, the same as for HII. Annex 8 lists the exporter concentration metrics for four food groups (2017–2019 averages) in the NENA countries.

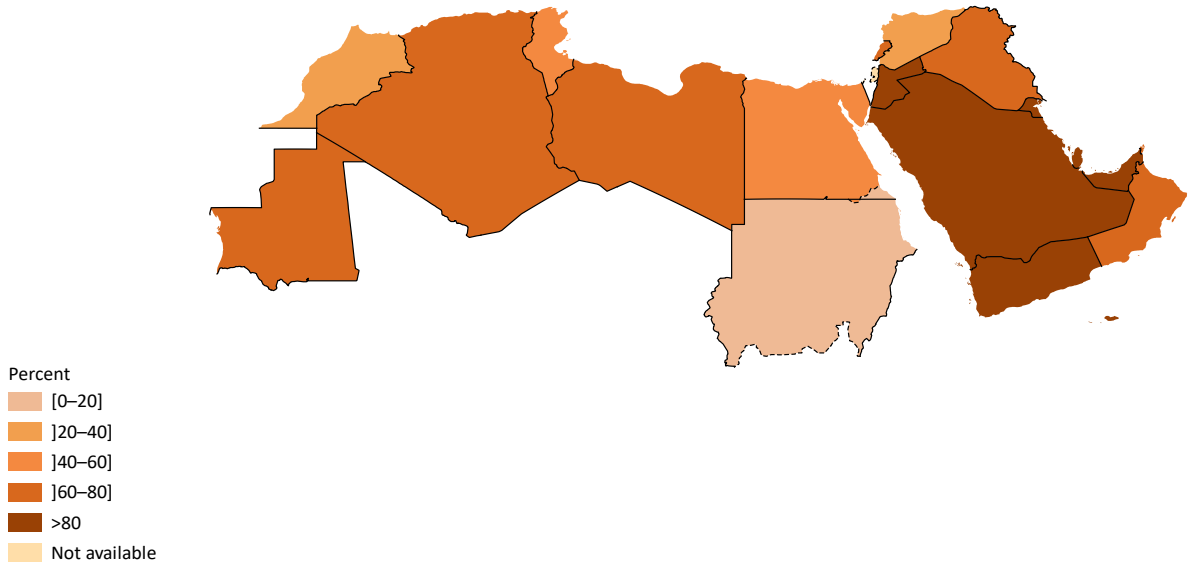
14 An alternative would be to adjust imports and exports by re-exports. However, in the case of the NENA region, this information is scarce, and FAO's trade data include re-exports. To illustrate, according to the data, Jordan imported 928 tonnes of "wheat and products" in 2019, produced only 26 tonnes, but exported 77 tonnes.

15 Formally, $HHI_j = \sum^{n}_{(i=1)}(s_i^2)$, where sj is a trading partner's share in the imports of a NENA country for any given good, and n is the total number of the country's suppliers. The HHI is used as a measure of concentration in many contexts, including international trade (see Ludema and Mayda (2013), for example).

Aggregate import dependency ratios in the Arab region

Putting the above approach into practice, import dependency ratios in the NENA region and yearly net imports of calories per capita as an alternative metric are, respectively, illustrated in Figure 41 and Figure 42. Both indicators are calculated based on production and trade data obtained in weights, which are then converted into calories to better explore the role of imports in food security.

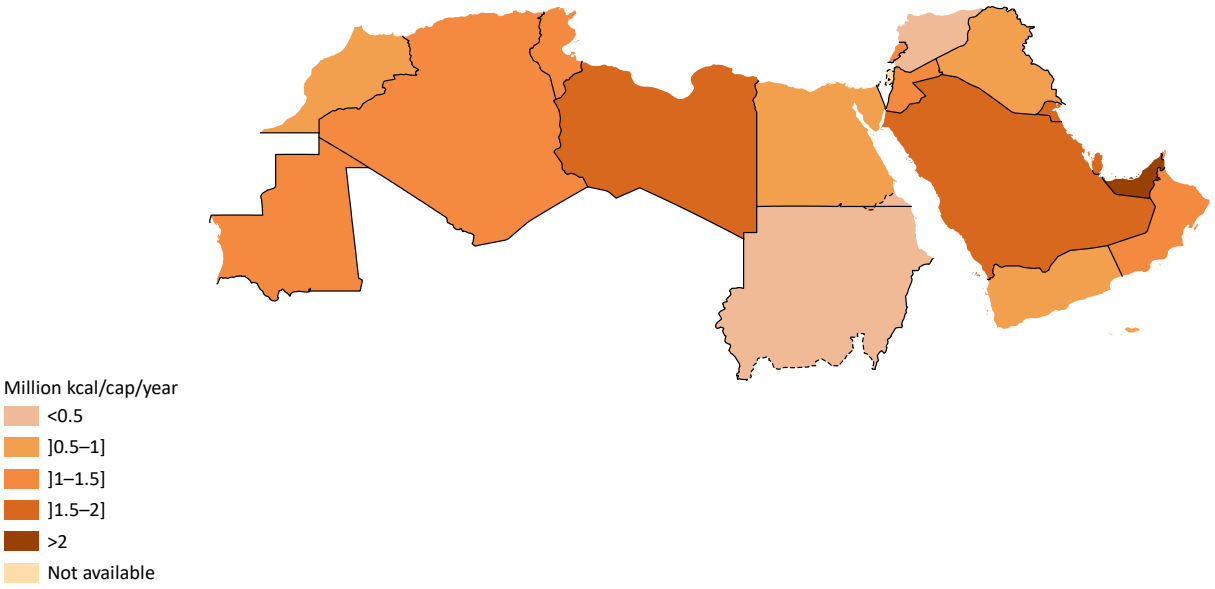
FIGURE 41
IMPORT DEPENDENCY RATIOS ACROSS THE NENA REGION, 2017–2019 (KCALS, SHARE)



Source: FAO. 2022. FAOSTAT: Food Balances (2010-). In: *FAO*. Rome. Cited October 2022. https://www.fao.org/faostat/en/#data/FBS based on UN Geospatial. 2020. Map geodata [shapefiles]. New York, USA, UN.
Note: Data are not available for Comoros, Djibouti and Somalia. Final boundary between the Sudan and South Sudan has not yet been determined. Final status of the Abyei area is not yet determined.

As illustrated by the findings, imports play an essential role in the availability of calories in almost all NENA countries. The only countries where imports contribute less than 40 percent to the maximum amount of calories available for human consumption are Morocco, the Sudan and the Syrian Arab Republic (Figure 41). For 13 out of the 18 NENA countries for which data are available, the import dependency ratio stands at above 0.6, with Bahrein, Jordan, Kuwait, Qatar, Saudi Arabia, the United Arab Emirates and Yemen showing ratios of above 0.8. Across the region, the simple average of food import dependencies was 0.67 over the period 2017–2019. However, since the largest countries in terms of citizens (Egypt and the Sudan) have ratios below this average, the population-weighted average for the region as a whole stands at around 0.5.

FIGURE 42
NET IMPORTS OF KCAL PER CAPITA AND YEAR (MILLIONS)



Source: FAO. 2022. FAOSTAT: Food Balances (2010-). In: *FAO*. Rome. Cited October 2022. https://www.fao.org/faostat/en/#data/FBS based on UN Geospatial. 2020. Map geodata [shapefiles]. New York, USA, UN.
Note: Data are not available for Comoros, Djibouti and Somalia. Final boundary between the Sudan and South Sudan has not yet been determined. Final status of the Abyei area is not yet determined.

Exploring dependency in terms of net imports of calories per capita per year instead confirms and contextualizes these results further (Figure 42). NENA countries with higher import dependency ratios are generally found to import more calories per person.[16] A notable exception to this pattern is Yemen, which despite having a high import dependency ratio of 0.83 over the period 2017–2019, only imported around 0.66 million kcal per person per year or just above 1 810 kcal per day.[17] This is reflective of the economic ramifications of the ongoing conflict in the country, which resulted in a stark reduction in economic output and a weak currency that continues to hamper commercial food imports. Additionally, available reports suggest interrupted imports due to disputes over the country's most crucial port of Hodeida. From the point of view of healthy diets, it is worth underlining that almost 90 percent of Yemeni agrifood imports were staples and high caloric unhealthy foods, with cereals contributing to 70 percent and sugar and honey to nearly 20 percent of agrifood imports in 2020.

Vulnerability: High import dependency and lack of supplier diversification

High import dependency combined with a reliance on very few suppliers can render a country vulnerable to shocks from fluctuations in origin country production or interrupted transport routes. However, a high dependency on imported food may not necessarily contribute to food insecurity if a country sources goods from a broad and diversified range

16 Not all net-imported calories are available for human consumption but may be imported as animal feed or seeds or for further processing. Additionally, food loss will further reduce available calories.

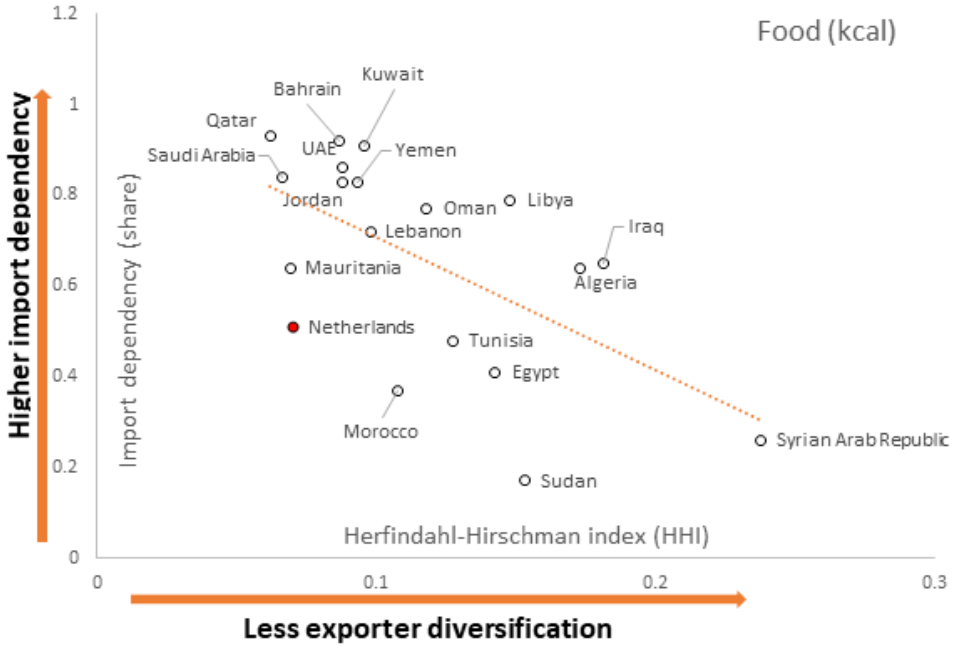
17 According to FAO-Food Balance Sheets, the daily food supply per person in 2019 was about 2 019 kcal in Yemen.

of suppliers. Likewise, if imports do not contribute much to the aggregate availability of food in a country, sourcing from only a few partners may be unproblematic as it relates to food security.

Building upon the previous analysis on import dependency, this part of the report considers a country's vulnerability to global shocks by combining import dependency with data on how diversified a NENA country's global network of agrifood suppliers is. Concentrating on aggregate agrifood in caloric terms, Figure 43 presents the import dependency ratio (Y-axis) and the HHI as a measure of exporter concentration (X-axis). To provide a benchmark for results, the figure additionally shows values for the Netherlands. This country has demonstrated a high degree of flexibility in food supply by diversifying imports (FAO, 2021a).

Several results emerge from this analysis. First, none of the NENA countries included in this illustration can absorb supply shocks to an extent like the Netherlands. Compared to this worldwide benchmark, many NENA countries are both highly dependent on imported food and vulnerable to shocks due to a lack of diversified supplier relationships. The results also suggest that NENA countries with a higher dependency on imported food generally show a more diversified range of global supplier relationships. However, this is not the case for the region overall, as some countries (Algeria, Iraq and Libya) are highly dependent on imported food, from few countries. A high degree of imported calories coupled with a lack of supplier diversity will likely render these countries vulnerable to country-of-origin-specific shocks and interruptions of key transport corridors.

FIGURE 43
IMPORT DEPENDENCY AND EXPORTER CONCENTRATION IN THE NENA REGION (KCAL MEASURES)



Source: FAO. 2022. FAOSTAT: *Food Balance Sheets and Detailed Trade Matrix. In FAO. Rome*. https://www.fao.org/faostat/en/#data/FBS and https://www.fao.org/faostat/en/#data/TM
Note: Data are not available for Bahrain, Palestine, Somalia and Qatar. Calculations of the import dependency ratio for the United Arab Emirates (United Arab Emirates) are based on 2011–2013 data. Both the import dependency ratio and the HHI are calculated in terms of kcal, following the conversion of food items into caloric equivalents using FAO conversion factors. A higher value of the HHI indicates less diversification across trading partners.

These findings are also supported by FAO's recently developed indicator that measures the capacity of national agrifood systems to absorb shocks – the dietary sourcing flexibility index (DSFI). The indicator is used to measure the diversity of food supply in terms of sourcing channels and food commodities to highlight the role of trade in enhancing absorptive capacity in the time of domestic and external disruptions (FAO, 2021d). The DSFI captures multiple sourcing pathways of a unit of food (for nutritional outcomes, such as kilocalories) based on a country's domestic production, food imports, and public and private stocks. A high value indicates multiple possible sourcing pathways for a unit of food (i.e. redundancy of sources). The DSFI measures flexibility in sourcing a specific food unit. National agrifood systems supplying food from different sources are more flexible and capable of absorbing supply shocks (FAO, 2021a).

The DSFI for fruit and vegetables is informative because this food category is essential to a healthy diet and, if availability is limited, it will likely affect the affordability of a healthy diet (FAO, 2021a). The Netherlands was also included in Table 15 as a model country for this analysis. The higher the value, the more possible sourcing pathways. The results suggest that those countries where domestic production is low, yet the diversity of its imports is high have a DSFI value similar to that of the Netherlands, like in Kuwait, Saudi Arabia and the United Arab Emirates. This implies that these countries can better buffer supply shocks. Conversely, lower DSFI values suggest that trade is constrained. Therefore, policymakers are encouraged to (i) reduce trade barriers by digitizing, improving transparency, and strengthening governance and coordination of trade policies; (ii) develop new free trade areas and/or expand the commodity and product coverage of existing ones; and (iii) promote collaboration and coherence between countries and the global community.

TABLE 15

DIETARY SOURCING FLEXIBILITY INDEX FOR TONNES OF FRUIT AND VEGETABLES IN THE NENA REGION, 2016–2018

	Diversity of domestic production	Diversity of imports	Diversity of food stocks	Total DSFI value
United Arab Emirates	0.07	0.71	0.072	0.85
Netherlands	0.15	0.63	0.05	0.84
Kuwait	0.08	0.60	0.06	0.75
Saudi Arabia	0.16	0.50	0.07	0.73
Oman	0.19	0..38	0.03	0.60
Lebanon	0.40	0.12	0.06	0.55
Jordan	0.33	0.16	0.04	0.53
Mauritania	0.02	0.44	0.04	0.50
Morocco	0.43	0.04	0.02	0.49
Egypt	0.42	0.02	0.01	0.45
Yemen	0.26	0.14	0.04	0.45
Tunisia	0.33	0.03	0.07	0.42
Algeria	0.31	0.04	0.05	0.40

Source: FAO. 2021a. *The State of Food and Agriculture 2021*. Making agrifood systems more resilient to shocks and stresses. Rome. https://www.fao.org/3/cb4476en/cb4476en.pdf

Note: Values for Bahrain, Comoros, Djibouti, Iraq, Libya, Palestine, Qatar, Somalia, Sudan, and the Syrian Arab Republic were unavailable and thus omitted from this analysis. Netherlands included in the table as a model country for this analysis.

An assessment of four food groups expands on the analysis of import dependency and exporter concentration: cereals, fruit and vegetables, meat, and pulses. Calculations for these groups are in weight, given that the nutritional profile of the commodity (i.e. the vitamins and fibre provided) being studied is more informative than other elements such as caloric intake, as is the case with fruit and vegetables.

The relative importance of imports of a food group can be determined based on the import dependency ratio, the export concentration and net imports per capita. Beyond the previously used import dependency ratio (Y-axis) and the HHI as a metric of exporter concentration (X-axis), the size of each circle in Figure 44 is proportional to net imports per capita of the food group (in weights). In addition, these circles are scaled relative to an import volume of 1 000 kg per capita per year across all graphs, which is represented by the blue circle in the upper left panel. This allows for comparing imports per capita across food groups as well as across countries.[18] Complementing the import dependency ratio with data on the absolute magnitude of imports is essential in the case of individual food groups: a country may have a high share of imports in the overall availability of a particular group, but imports per person can be low in absolute terms. For example, Jordan imports more than 90 percent of its pulses. Still, yearly imports per capita of this food group are only around 6 kg per person, suggesting it has a minor role in consumption. Finally, for food groups for which a country is a net exporter, such as Morocco for fruit and vegetables, the import dependency is negative, suggesting self-sufficiency. Therefore, these instances are dropped from the graph.[19]

In the context of the NENA region, Jordan, Kuwait, Lebanon, Libya, Oman, Saudi Arabia and the United Arab Emirates have an estimated import dependency greater than 0.9 for cereals, suggesting an almost complete dependence on imports.[20] As indicated by the size of the circles, cereal net imports per capita are large, confirming the essential role of these imports in regional food availability. Additionally, as indicated by the HHI values on the X-axis, for some NENA countries, supplier relationships for cereals are undiversified as most countries source more than half of their cereal imports from only three supplier countries. At the extreme are countries like Algeria, with a cereal import dependency of 0.71 and a share of the top three suppliers in total cereal imports of 0.81. Similarly, Kuwait has a cereal import dependency ratio of 0.99 and a top-three supplier share of 0.73 for this food group. Based on the empirical evidence, the absorptive capacity for these countries in the time of domestic and external disruptions is very weak. This is further aggravated by the fact that in addition to high overall concentration, some countries share cereal suppliers from the same geographical region. For example, Tunisia sources almost 60 percent of its cereal imports from Ukraine and France, which supply around 40 percent of the cereal imports to Algeria and Libya.

With respect to the other three food groups, it is sensible to consider fruit and vegetables, and meat, and pulses separately. In the context of fruit and vegetables, countries are either net exporters of this food group (and therefore dropped from the graph due to suggested self-sufficiency, such as Morocco) or import sizable volumes of this food group. For example, Kuwait's net imports per capita of fruit and vegetables stand at around 147

18 For example, Kuwait's circle for cereals imports (337 kg per capita) is smaller than the blue circle but larger than the country's circles representing fruit and vegetable imports per capita (147 kg), meat (49 kg) and pulses (9 kg). Similarly, the United Arab Emirates's imports of meat (46 kg) exceed Saudi Arabia's imports of pulses (6 kg).

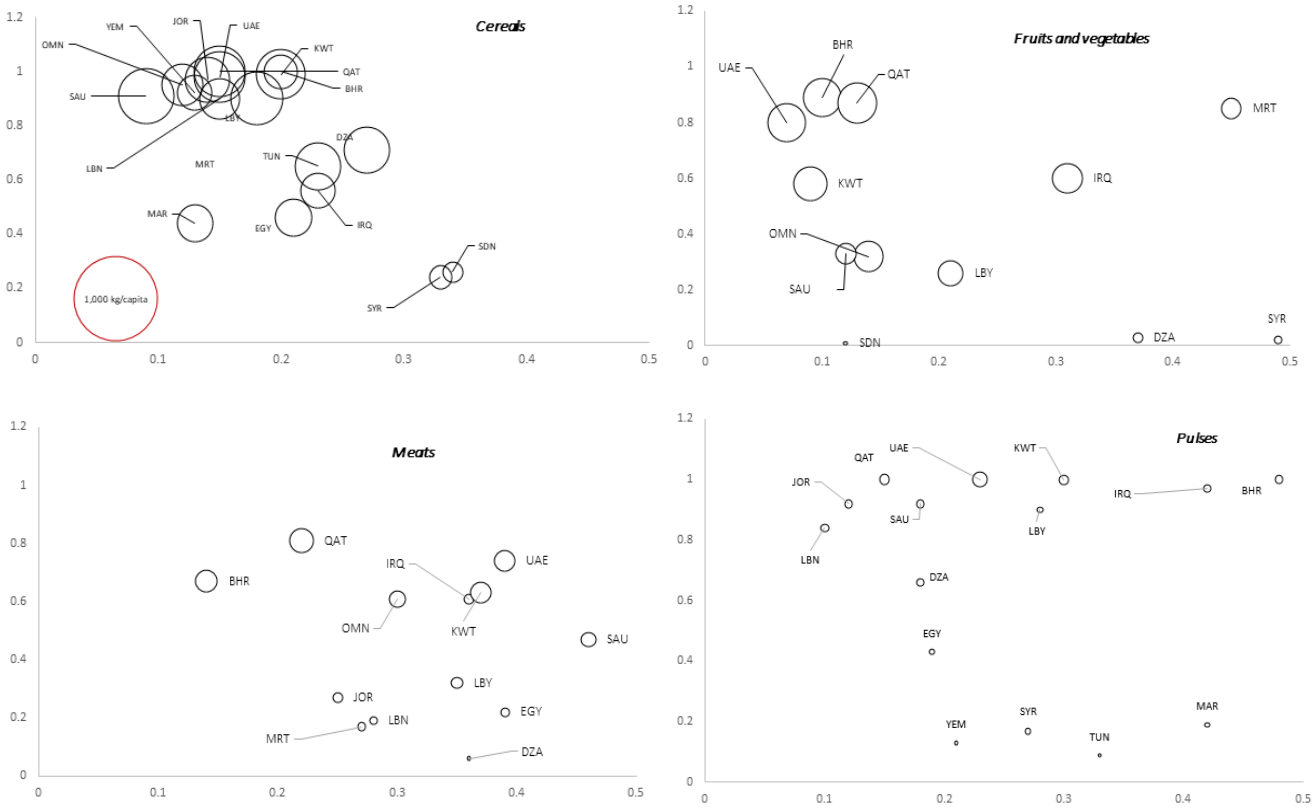
19 Annex 8 provides the same data as bar graphs, along with the top-three supplier share per group and country.

20 Corroborating this result, imports of cereals are at least nine times as high as domestic production in these countries.

kg per year. However, countries with a higher import dependency on fruit and vegetables show a more significant degree of diversification, except for Iraq and Mauritania. On the contrary, for meat and pulses, NENA countries have high degrees of global supplier concentration and considerable variety concerning import dependencies. It is the case throughout that net imports per capita for these two groups are positive but comparatively small.[21] This suggests that these foods matter less to food security (availability of calories) but to diverse diets through the supply of nutrients like fats, protein, vitamins or minerals.

FIGURE 44

IMPORT DEPENDENCY RATIO (Y-AXIS), EXPORTER CONCENTRATION (X-AXIS) AND NET-IMPORTS PER CAPITA (CIRCLES)



Source: FAO. 2022. FAOSTAT: Food Balance Sheets and Detailed Trade Matrix. In *FAO*. Rome. https://www.fao.org/faostat/en/#data/FBS and https://www.fao.org/faostat/en/#data/TM

Notes: Y-axis = Import dependency ratio. X-axis = HHI of trading partner concentration, with higher values indicating less diversification. Circle size = Net imports per capita/year relative to 1 000 kg (red circle in the top left panel). In cases where a country is a net exporter of a food group, they are dropped. All data are averaged over the period 2017–19, except for the import dependency ration of the United Arab Emirates (2011–2013). Data for Comoros, Djibouti, Palestine and Somalia are missing. In addition, the following data points are dropped for improved legibility but provided in Annex 8 to this note: Yemen and Syrian Arab Republic in "Meats" and Oman in "Pulses."

21 Net imports per capita of pulses are 5 kg per person per year across the NENA countries.

Imports contribute substantially to the variety of available food items in the NENA region. Focusing on 2019 as the latest year for which FAO Food Balance Sheet data are available, on average, a third of all food items available for human consumption in the NENA countries are not produced in significant quantities domestically and are only supplied through imports.[22] In line with the sizeable fruit and vegetable imports documented above, for some countries (Kuwait, Oman, Saudi Arabia and the United Arab Emirates), this pattern is especially strong for this food group. This provides additional evidence that international trade is a potentially important factor for diverse and healthy diets in the region.

22 A minimum production threshold of 1 tonne per year is imposed.

CHAPTER 7

THE ROLE OF TRADE IN ENHANCING FOOD SECURITY

Key messages

- Trade is essential in ensuring all four dimensions of food security and nutrition: availability, access, utilization and stability. Trade can increase the quantity and variety of food and decrease its price for net-food importing countries, and it can support Arab countries to overcome constraints in land and water endowments and meet their food requirements.
- However, countries with agrifood systems highly connected to global and regional markets may become more exposed to outside shocks, such as supply-side or policy-induced shocks as trade restrictions. Carefully managing international trade connectivity is critical to reducing exposure to external shocks.
- Simplifying and digitalizing customs and trade-related procedures and setting up appropriate storage conditions for inspections of perishable goods decrease administrative burdens and trade costs, shipping losses and time necessary to deliver food to markets.
- Despite the efforts in NENA countries to promote trade liberalization and reduce trade costs in recent decades, protection in most countries in the region remains high and has increased in the past decade. The average applied tariff on imported food more than doubled between 2010 and 2019 in NENA countries and was, on average, 31.6 percent in 2019.
- Lowering tariffs is essential to move food from other areas of the world with ample supply and diversity at a lower cost to the Arab region, where there is insufficient domestic supply to meet demand due to natural resource constraints. It would lower input costs for farmers and the food processing industry. However, reducing tariff protection should safeguard the interests of small-scale food producers.
- Non-tariff measures (NTMs) comprise policy measures other than tariffs and tariff-rate quotas that have a direct effect on international trade as they affect the price of traded products, the quantity sold, or both. In the Arab region the countries that apply the most NTMs are those that import the most and have a high import dependency on fruit and vegetables (Kuwait, Saudi Arabia and the United Arab Emirates).
- Most NTMs in the region are sanitary and phytosanitary measures (most frequently testing products for maximum residue limits), followed by export-related measures (mostly inspection and certification requirements) and technical barriers to trade (for example labelling).
- Harmonizing NTMs, closer regulatory environments between countries at the regional and multilateral level, and basing NTMs on international standards, guidelines or recommendations can help reduce trade costs while fulfilling the objective of the regulations.

7.1. TRADE AS AN IMPORTANT ENABLER OF FOOD SECURITY AND NUTRITION

Section 7.1 is an in-depth discussion of the role of trade as an essential enabler in all four dimensions of food security and nutrition (availability, access, utilization and stability). Furthermore, it elaborates on how trade can contribute to environmental sustainability and resource use efficiency and support countries to overcome constraints in land and water endowments, meeting their food requirements. However, the section provides a more nuanced approach, as the positive effects of trade on food security, nutrition and environmental sustainability are not always straightforward and depend on several factors. Finally, the section presents the important role trade facilitation plays in increasing agrifood trade, food security and nutrition in the Arab world.

Trade and the four dimensions of food security

FAO (2008) identifies four main dimensions of food security: (i) physical availability of food;[23] (ii) economic and physical access to food;[24] (iii) food utilization[25] and (iv) stability of the other three dimensions over time.[26] These four dimensions are, to a certain extent, related to international trade. Two of the four main dimensions of food security as defined by FAO, i.e. physical availability of food and economic and physical access to food, can be addressed directly through international trade, while the other two are indirectly related to trade.[27]

Trade is essential in ensuring all four dimensions of food security and nutrition. Figure 45 shows how trade affects four pillars of food security and nutrition (FAO, 2015). International trade has fueled economic growth and reduced poverty worldwide. Trade directly affects critical economic parameters, such as domestic food production, food prices, employment and government revenues. In the longer run, trade also affects competition, infrastructure development, and the development of marketing channels and distribution networks by influencing the incentives for public and private investments and the entry of new players into markets. The direct effects of trade on the key variables translates into changes in food security indicators through three main intervening factors: total food supply, household income and government services. Production and net trade determine domestic food supplies and the availability of food. Food prices and household income determine the purchasing power of consumers and their access to food. The public sector has a crucial role in fostering agricultural development and addressing poverty through income redistribution, affecting availability and access.

23 Food availability addresses the "supply side" of food security and is determined by the level of food production, stock levels and net trade.

24 An adequate supply of food at the national or international level does not guarantee household-level food security. Concerns about insufficient food access have resulted in a greater policy focus on incomes, expenditure, markets and prices in achieving food security objectives.

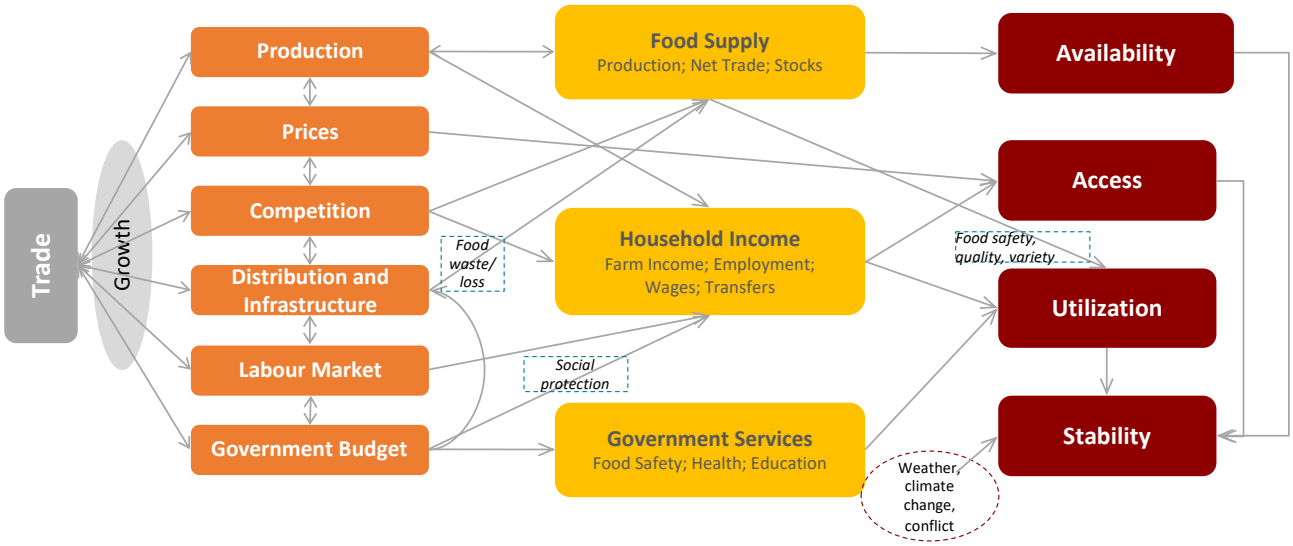
25 "Utilization" refers to how the body makes the most use of the various nutrients in the food, which involves good care and feeding practices, food preparation, diversity of the diet and intra-household distribution of food. This determines the nutritional status of individuals.

26 Even if individuals' food intake is adequate today, they are still considered food-insecure if periodically they have inadequate access to food, risking deterioration of their nutrition status.Adverse weather conditions, political instability, or other economic factors impact food security status.

27 It is worthy to note that the High-Level Panel of Experts on Food Security and Nutrition has proposed to expand these dimensions mentioned above as the concept of food security has evolved beyond availability, access, utilization, and stability. The proposal seeks to recognize the centrality of agency – that is, the capacity of individuals to make their own decisions – and sustainability – the long-term ability of food systems to provide food security (HLPE, 2020).

Government services that ensure food safety and consumer rights are also essential for the utilization component of food security. Trade can increase the variety and quality of food supplies (e.g. fruit and vegetables) through imports and lower their price, thus promoting a more nutritious and balanced diet. Stability, the sustainable and consistent performance of availability, access and utilization, requires coordinated and predictable government policies. However, stability also depends on external factors that the government may not be able to control, such as global economic turmoil and trade policies of trading partners.

FIGURE 45
PATHWAYS BETWEEN TRADE AND FOOD SECURITY AND NUTRITION



Source: FAO. 2015. The State of Agricultural Commodity Markets 2015–16. Trade and food security: achieving a better balance between national priorities and the collective good. Rome. https://www.fao.org/3/i5090e/i5090e.pdf

However, greater trade openness can affect food security and nutrition both positively and negatively. Trade can help to balance food deficits and surpluses across countries, it can ensure sufficient quantities and adequate diversity of food supply, both of which are important for reducing hunger and addressing some forms of malnutrition. Trade can improve the availability and affordability of different foods and provide more choices for consumers, helping to diversify diets (FAO, 2018a). Likewise, economic access to food is highly dependent on the prices of the products, which are partly determined by the tariffs and the non-tariff measures a country applies. Further, the implementation of sanitary standards for international trade related to the utilization, while ensuring regular and secure food trade channels, is vital for food stability. In addition, measures and trade policy adjustments such as public food security stocks, regional risk pooling, optimizing cropping patterns and adjusting trade patterns could also facilitate risk management to address the impacts of productivity shocks.

It is also possible that countries with agrifood systems that are highly connected to global and regional markets may become more exposed to outside shocks, such as supply-side or policy-induced shocks as trade restrictions. Careful management of international trade

connectivity is critical to reducing exposure to external shocks. In addition, trade together with foreign direct investment, can contribute to increased availability and lower prices of nutritionally inadequate diets with excesses and unbalances of energy and nutrients, such as ultra-processed foods, contributing to a rise in malnutrition in all its forms, and exacerbating the health issues related to overweight and obesity (see Chapter 3). For some producers – particularly small-scale producers – exposure to the competition may undermine their livelihoods and their ability to bear the costs of complying with environmental and other international standards.

Table 16 looks at the possible positive and negative short-, medium-, and long-term effects of trade across these four dimensions. A number of underlying factors affect the way in which trade interacts with food security outcomes, ultimately determining whether the impact is positive or negative, including how well domestic markets function, how producers respond to changing market incentives and whether smallholders have appropriate access to evolving agricultural markets (FAO, 2016).

TABLE 16

POSSIBLE SHORT-, MEDIUM- AND LONG-TERM EFFECTS OF TRADE ON THE FOUR DIMENSIONS OF FOOD SECURITY

	Diversity of food stocks	Total DSFI value
Availability	Trade boosts imports and increases the quantity and variety of food available.	Food production may increase due to greater specialization, and productivity improvements may be triggered by greater competition
	Trade may decrease the domestic availability of crops in net exporting countries.	In net food-exporting countries, domestic availability of staples may decline, as production is diverted toward exports; in net food importing countries, some producers are likely to curtail production, forgoing the multiplier effects of agricultural activities in rural areas.
Access	Food and input prices are likely to decrease for net food importing countries.	Incomes would rise in competitive sectors, due to greater market access, and growth and employment would be supported by export growth and inflow of FDI.
	Domestic prices of exportable products may increase for net food-exporting countries.	Incomes may decline in import-competing sectors, with some producers transitioning out of agriculture. Also, unequal distribution of gains may occur due to enclave developments in export crops to the detriment of broad-based smallholder food crop production
Utilization	Greater variety of food available may promote a more balanced diet.	Food safety and quality may improve if international standards are applied more rigorously.
	There may be greater consumption of food that is cheaper, high in calories and low in nutritional value.	Prioritization of commodity exports may divert land and resources from traditional and indigenous foods, which are often superior from a nutritional perspective.
Stability	Imports mitigate likelihood of shortages resulting from local production risks.	Global markets are less prone to policy- or weather-induced shocks.
	Countries may be more vulnerable to changes in trade policy by exporters, such as export bans.	Sectors at earlier stages of development may become more susceptible to price shocks and import surges.

Possible positive effects Possible negative effects

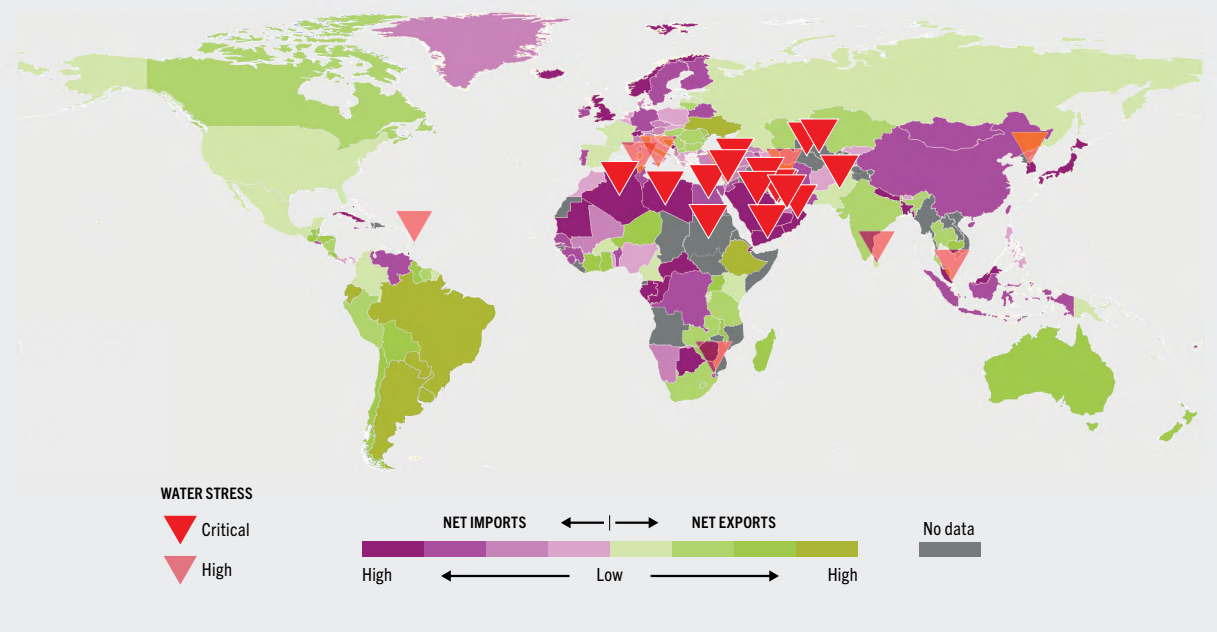
Source: FAO, 2016. *How does agricultural trade impact food security?* Trade policy brief no. 17. Trade and Food Security, May 2016. Rome. https://www.fao.org/3/i5738e/i5738e.pdf

Trade and environmental sustainability

Trade can play a role in contributing to the three dimensions of sustainability (economic, social and environmental) in the context of agrifood systems transformation; however, like any economic activity, it is also associated with risks and negative externalities that can undermine sustainability objectives (FAO, 2021d). For instance, trade can help allocate the production of food and agricultural products to countries with relatively higher resource use efficiency. Trade can support countries to overcome constraints in land and water endowments, meeting their food requirements in terms of quantity and diversity at levels above what domestic production could sustain. Open global food and agricultural markets can help alleviate pressure on natural resources and support climate change adaptation and mitigation. Land and water are crucial factors in food production, and their availability can influence the relative cost of agricultural products and shape comparative advantage (FAO, 2022d). Countries with relatively high-stress levels of renewable water resources tend to import relatively more water-intensive goods and, therefore, are net importers of agricultural products. This is precisely the case in the NENA region (Figure 46).

Trade can also generate negative environmental externalities. Greater trade openness may exacerbate the extensive use of environmentally unsustainable means of production, the depletion of natural resources, unsustainable freshwater withdrawals, pollution, biodiversity loss and greenhouse gas emissions. Negative environmental impacts depend on local conditions and are more pronounced in poorly regulated settings. Most countries in the region have small landholders. Increasing competition and compliance with environmental and other international standards can have a crowding-out effect on small landholders. This can undermine their livelihood and income. Bringing down the farm-gate price of products can promote consumption with high environmental footprints. This can also make it difficult for small farmers to adopt environmentally smart technologies. Meeting SGD 2 requires sustainable agrifood systems and sound agricultural policies (see SDG target 2.4). Countries must align their policies while keeping in view the country contexts that can affect trade, farm output and the ability to achieve the SDGs. Critical trade-offs with different policy measures should be analysed when designing and implementing policies (see Section 5.5).

FIGURE 46
THE RELATIONSHIP BETWEEN WATER STRESS AND NET TRADE POSITIONS, 2018 AND 2019



Source: FAO. 2022d. *The State of Agricultural Commodity Markets 2022. The geography of food and agricultural trade: Policy approaches for sustainable development*. Rome. https://www.fao.org/3/cc0471en/cc0471en.pdf
Note: Final boundary between the Sudan and South Sudan has not yet been determined. Final status of the Abyei area is not yet determined. The final status of Jammu and Kashmir has not yet been agreed upon by India and Pakistan.

The role of trade facilitation in securing food imports and enhancing global value chain participation

Trade facilitation plays an integral role in securing food imports. Trade facilitation covers the simplification, modernization and harmonization of export and import processes. The existing literature highlights how reducing logistical constraints on import, export and transit formalities can yield efficiency gains. Introducing trade facilitation measures that simplify, harmonize and standardize procedures in developing countries can result in a 15 percent decrease in trade costs (Moïsé and Sorescu, 2013). Thus, trade facilitation remains a vital element to the efficacy of intra-regional and international trade, given its association to lower transaction time and cost at borders.

To improve trade facilitation, weaknesses in trade formalities must be identified, including identifying inefficiencies in border management and ensuring alignment with national policies and objectives. Compared to other types of goods, food products are often subjected to more complex trade formalities, given the high stringency of food safety regulations. For instance, agricultural products are required to provide sanitary and phytosanitary certificates and, in some cases, undergo quarantine measures; in addition, these goods are also subjected to inspection, controls or export quota clearance. This translates into cumbersome administrative requirements, higher costs and delays for traders and consumers.

Inefficiencies presented at borders often lead to longer delays, thereby compromising the quality, safety, price of food products, and, in the worst cases, food loss. Perishable agricultural products are highly sensitive to delays, which affects quality and often leads to waste. Empirical evidence estimates that the absence of border formalities produces savings of approximately five percent of the product value (Hummels and Schaur, 2013). For agricultural and perishable products, these savings can rise to 9 and 17 percent, respectively.

Weaknesses in border management also implicate international disaster response. For example, recent literature pointing to inefficiencies observed at customs are among the most prevalent challenges in deploying aid. Compounded by weak institutions, the influx of food relief consignments often overwhelms authorities, magnifying problems such as lengthy clearance procedures, opaque regulations and administrative complexity. By remedying border inefficiencies, import costs will decrease, reducing food loss along the value chain and ensuring the safe trade of food. These corrective measures will be integral to increasing the affordability of healthy diets and improving food security in ordinary times and emergencies.

Due to reforms in domestic policies and technological advances, trade in agrifood products is increasingly organized in Global Value Chains (GVCs). The agrifood sector has also become increasingly integrated and has developed deeper links between agriculture and other sectors. However, policies such as tariffs, distortive subsidies, NTMs and services restrictions reduce GVC participation. Thus, measures taken to promote growth in domestic value added in GVCs can improve access to new markets and increase productivity gains from technological spillovers along the supply chain. Improving trade facilitation and repealing measures that limit participation in GVCs also positively contribute to other socioeconomic development outcomes. Trade facilitation inherently benefits the firms and households that are actively participating in GVCs; however, simplifying trading procedures, as well as reassessing policies, can make it easier for small and marginalized producers to participate in trade. For example, the livelihoods of small-scale producers – youth and women in particular – depend on the income earned from trading their products across borders. Alleviating barriers to entry, such as high transaction costs, can allow small-scale producers to harness intra-regional and international trade opportunities, thus indirectly promoting sustainable economic empowerment.[28] While supply chains held up reasonably well during the COVID-19 pandemic, some disruptions were experienced in transport, logistics and border controls. Since the pandemic, experience shows the importance of specific policies to streamline border controls (e.g. set-up "green lanes" for essential goods) and documentation requirements and promote the use of digital tools for addressing these challenges (OECD, 2020a; OECD, 2021).

Digital technologies are increasingly used to support streamlining formalities behind and at-the border. A scan of existing country activity in using digital technologies in sanitary and phytosanitary (SPS) systems indicates that the most significant area of activity appears to be in verifying SPS compliance to facilitate the movement of products, specifically the use of bilateral, plurilateral and multilateral systems to exchange SPS electronic certificates (e-certificates) (OECD, 2021).

28 Sustainable economic empowerment is in line with FAO's Regional Priority 1 to enhance rural transformation for youth employment and income.

The most important consideration in border controls applied to agrifood products generally relates to NTMs, which can increase the cost of importing, particularly if they differ significantly from those applied in the exporting country. Many NTMs can translate into specific documentary controls or physical inspections at the border. For instance, even if the procedures for obtaining documents such as import licences, or the origin, product testing, health, phytosanitary, or fumigation certificates occur before the border, controls on the existence and conformity of documents are performed at the border (Moïsé and Sorescu, 2021).

According to the OECD Trade Facilitation Indicators, timeliness and storage conditions for inspections of perishable goods, in particular treatment for perishable goods in providing separation of release from payment of duties and taxes, remain challenging in the NENA region (Moïsé and Sorescu, 2021). Comprehensive trade facilitation reform in areas such as domestic and cross-border co-operation, streamlining procedures, automation and simplifying documents, has the potential to increase agrifood trade through overall gains arising from reduced shipping losses and increased speed of product delivery to markets (OECD, 2018).

Trade facilitation reforms can play an important role in net-food importing Arab countries in ensuring a sufficient quantity, quality and adequate diversity of food supply. Adopting trade facilitation practices quickly improves the efficiency and transparency in trade related administrative and customs procedures, and in applying SPS measures. To assess where bottlenecks occur in the border clearance of different agrifood products, identifying NTMs and documentation requirements or border controls stemming from them can enhance trade facilitation reforms, such as advancing regional regulatory cooperation on relevant measures, simplifying and harmonizing documentary requirements, automating and streamlining procedures at the border (such as related to demonstrating SPS compliance) including by the use of digital technologies, co-operation between customs agencies responsible for agrifood trade, and strengthening institutional ability to adopt and implement relevant multilateral and regional trade agreements.

7.2. EVOLUTION OF THE POLICY AND REGULATORY FRAMEWORK LINKING FOOD SECURITY AND TRADE IN THE NENA REGION

As underlined in section 7.1, economic access to food is highly dependent on the prices of the products, which are determined to a great extent by tariffs and the non-tariff measures a country applies. This section presents the policy and regulatory framework in NENA, discusses more in detail the level of applied import tariffs in the region, the importance of non-tariff measures in international trade and identifies a wide range of non-tariff measures applicable in Arab countries.

Development of the policy and regulatory framework affecting agriculture in recent decades

Between 1950 and 2021, policy development and formulation in the NENA region evolved through four distinct periods, shaping many development elements, including food security and nutrition. The first period, between the 1950s to the early 1970s, was marked by high public investment in infrastructure, health and education. The second, between 1973 and 1984, was characterized by the bust of the oil price bubble and then the following economic crisis. The third, between the late 1980s to 2000, was most

notably marked by significant policy changes that served as a mechanism to reduce public expenditure, reform exchange rates and alleviate the debt burden. The fourth period, between 2000 and the present day, has seen accelerated growth and economic diversification. The economic and political circumstances of each period have shaped the contours of food security and nutrition as it stands today.

Between 1950 to 1970, the agriculture sector in the NENA region followed a state-led development strategy in which governments regularly intervened in the commercialization of cereals, vegetables, oil and sugar. Under a state-led strategy, the government intervenes in purchasing and financing substantial amounts of these commodities. They also provided output support to farmers and agro-industries and subsidized purchases of inputs and machinery. Other measures included mandated delivery quotas for the crops at fixed prices (which were substantially lower than international prices). Institutionally, agricultural cooperatives were created in each village to control the production and marketing of major/strategic crops, provide agricultural inputs to farmers, impose crop rotation schedules, procure crop quotas and ultimately market the major crops.

However, state-led policies such as subsidies and agriculture-related expenditures are often costly and unsustainable. In the 1970s, production shortfalls resulted in many governments adopting policies such as export taxes, restrictions, subsidized consumer prices, and bans to insulate domestic markets from rising costs. While effectively reducing the financial burden on farms and households, it represented a considerable share of the government budget, leading to the economic crisis in the early 1980s. In efforts to promote recovery, major trade reforms were introduced. The objective of such structural adjustment was to minimize the state's role in marketing both agricultural outputs and inputs. The efforts were redirected to provide market and price information, enhance market infrastructure, promote the private sector and cooperative involvement in production and marketing activities, and support national agricultural research systems.

Agricultural and trade policy reforms of varying extent, objectives and pace began in the Arab region in the mid-1980s. Reduced tariffs increased the integration of domestic and international markets. But, "strategic commodities" guaranteed production prices (such as wheat in most countries, sugar, beets, tobacco in Lebanon and the Syrian Arab Republic, and cotton in Egypt). Cereal producers in Algeria and Morocco continued to benefit from subsidies even after the reforms, and feed subsidies remained one of the significant government expenditures on agriculture. It should be noted that fruit and vegetables were among the activities with minimal government intervention.

During the 1990s, consumer subsidies were phased out or were better targeted to ensure that such policy instruments were economically, socially and politically feasible. Although effective in reducing the fiscal burden of production on farmers and households, subsidies tend to benefit the urban non-poor. The large majority food subsidies actually benefit the middle- and higher-income groups much more than the poor – mostly because the poor spend a higher share of income on food and energy but far less in absolute terms (Vidican Auktor-Loewe, 2021; World Bank, 2022b). As a result, governments in the region began to either improve targeting or eliminate subsidies to generate considerable savings, which were reallocated to more productive, pro-poor strategies.

For example, in Tunisia, food subsidies were introduced in the 1970s to maintain prices for the end-user. These generous subsidies were universal across all households, regardless of socioeconomic considerations. Studies indicate that the policies were universal because of the large informal sector, high levels of poverty and lack of information systems and registries to identify the most vulnerable. The food subsidy program was reformed gradually in the 1990s in Tunisia to contain costs by following a 'self-targeting' approach, retaining subsidies only items primarily consumed by poorer households and phasing out those consumed mainly by wealthier households, resulting in a drop in total food subsidy spending from 4 percent of GDP in 1984 to 2 percent in 1993. This effort was coupled with an awareness campaign, increases in the minimum wage and strengthened social production programmes. Many consider these efforts to have been relatively successful because they targeted specific segments of the population in need of food aid. Tunisia spent 3.2 percent of GDP on social assistance in 2016, the bulk of which was allocated to direct price subsidies for food and energy products with food subsidies accounting for 1.8 percent of GDP (World Bank, 2016).

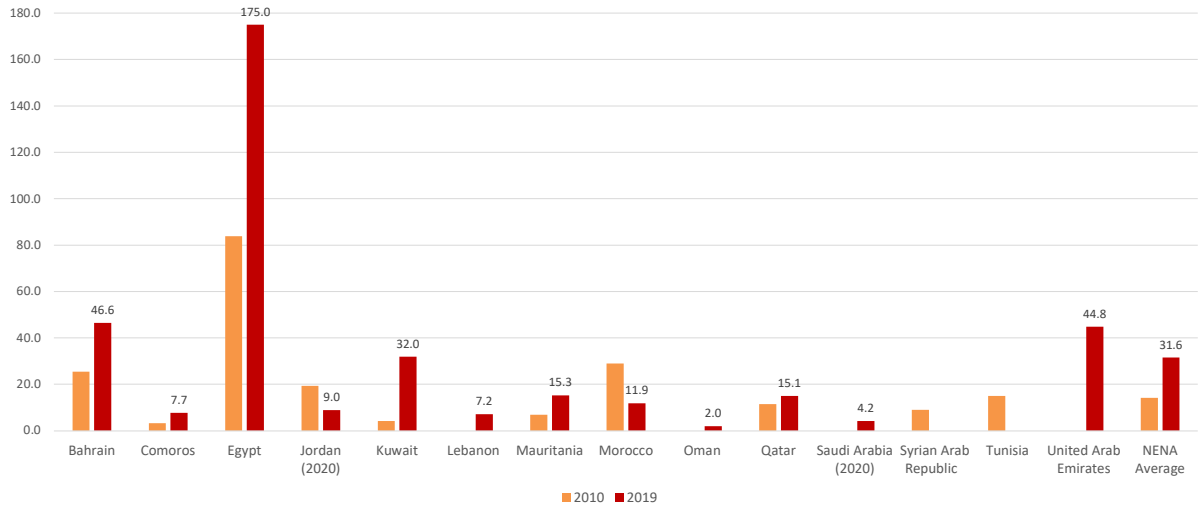
Applied import tariffs

Despite these measures, the Arab region still relies heavily on global trade for food and agricultural products. Notwithstanding efforts to promote trade liberalization and reduce tariffs, protection in most countries remains high (Figure 47) and on average has been increasing in the past decade (Figure 48). The average applied tariff on imported food more than doubled between 2010 and 2019 in NENA countries, to an average of 31.6 percent in 2019. Applied tariffs of imported food products are extremely high in Egypt (175 percent in 2019) and elevated in the United Arab Emirates (44.8 percent), Bahrain (46.6 percent) and Kuwait (32 percent).

While tariffs may help raise government revenue, they are often applied to provide a form of support to domestic producers of a given product by making imported goods more expensive and less competitive on the domestic market. While domestic producers can benefit from the higher prices of the protected product, domestic consumers can be adversely affected by higher prices (FAO, 2020d). Furthermore, as actors within the food value chain often rely on imported goods as an input in the production process, high tariffs can negatively affect the food processing industry. Reducing high import tariffs would lower food prices and enhance access to markets for agrifood products, improving food security. Furthermore, it would improve nutrition and health outcomes by diversifying the healthy food supply. Trade can help move food from regions of low production cost and ample supply to the Arab region, where there is insufficient supply to meet demand due to natural resource constraints. However, such an approach should consider small-scale food producers, who might be exposed to increased international competition due to reductions in tariffs. Progressive trade liberalization supported by other policies, such as social safety net measures, can address such vulnerabilities.

FIGURE 47

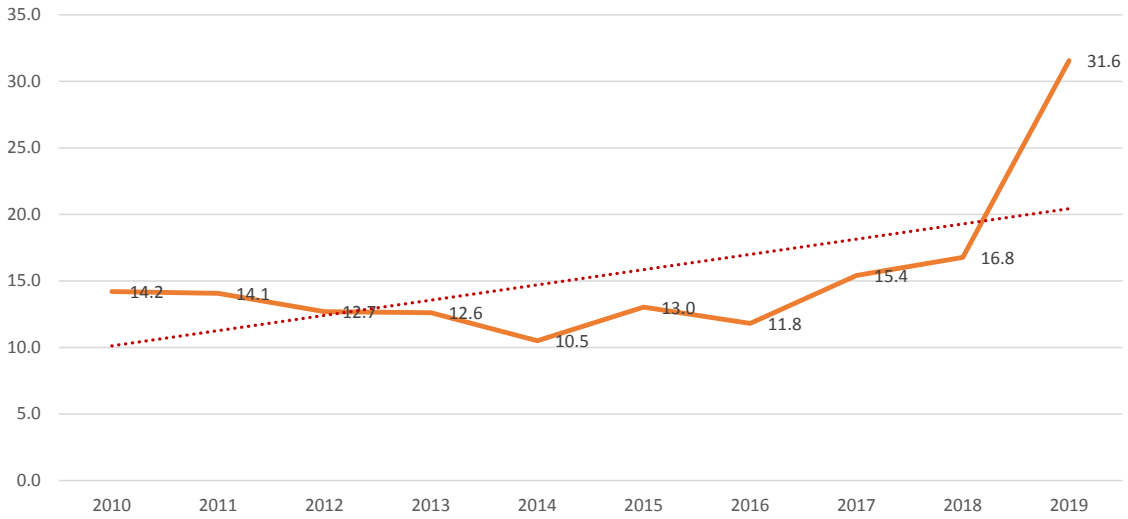
EFFECTIVELY APPLIED WEIGHTED AVERAGE IMPORT TARIFFS (PERCENT) IN ARAB COUNTRIES FOR FOOD PRODUCTS (2010–2019 FOR JORDAN AND 2010–2020 FOR SAUDI ARABIA)



Source: World Bank. 2022. World Integrated Trade Solution (WITS) database. AHS Weighted Average By Country Product from World. In: World Bank, Washington. Cited: November 2022. https://wits.worldbank.org/CountryProfile/en/country/by-country/startyear/ltst/endyear/ltst/tradeFlow/Import/indicator/AHS-WGHTD-AVRG/partner/WLD/product/Total
Note: Effectively applied weighted average import tariffs are calculated as the average of tariffs weighted by their corresponding trade value.

FIGURE 48

AVERAGE OF THE EFFECTIVELY APPLIED WEIGHTED AVERAGE IMPORT TARIFFS OF ARAB COUNTRIES FOR FOOD PRODUCTS WITH LINEAR TREND LINE (2010–2019 FOR JORDAN AND 2010–2020 FOR SAUDI ARABIA)



Source: World Bank. 2022. World Integrated Trade Solution (WITS) database. AHS Weighted Average By Country Product from World. In: *World Bank*, Washington. Cited: November 2022. https://wits.worldbank.org/CountryProfile/en/country/by-country/startyear/ltst/endyear/ltst/tradeFlow/Import/indicator/AHS-WGHTD-AVRG/partner/WLD/product/Total
Note: Calculation – for each year the simple average of the effectively applied weighted average import tariffs of the different Arab countries were taken.

Currently, most countries in the Arab region aim to prioritize agriculture as an essential sector in diversifying their economy and offsetting the trade balance. Several countries of the region [e.g. Djibouti, Morocco (Green Generation Program], the Sudan and Tunisia), depending on their socioeconomic factors and agricultural profile, have adopted different policies mainly aimed at food security. On the other hand, some countries, such as the Comoros and Somalia, have no policies. Most countries must incorporate nutrition and environmental sustainability aspects (see the Policy recommendations at the end of this report) in their agricultural and trade policies.

Each country's prevalent regulatory frameworks, which influence food security and nutrition, are provided in the Addendum of this report.

Non-tariff measures

Over the years, NTMs have gained importance in international trade, particularly in the Arab/NENA region. Countries apply NTMs to traded goods separate from ordinary customs tariffs. As global trade negotiations have significantly reduced tariffs, export subsidies and trade-distorting domestic support in agriculture, NTMs have become more important and complex (FAO, 2017b). NTMs use is higher on agricultural tariff lines than on manufactured products. Furthermore, NTMs for processed agricultural products can have a higher impact on trade than plain tariffs.

NTMs impact many elements of trade, including quantities and price. In the context of food products, imposing NTMs could affect the availability of goods within the region and their price. In addition, regulations that set the conditions to allow a product into a country (i.e. import requirements) affect availability and price because the procedures required to comply with the regulations are often costly. In general, the purpose of NTMs is not to affect the trade but to ensure that other policy objectives are met, such as food quality, consumer safety, or protection of the environment. These regulations must be designed and implemented so that they can function effectively with minimum cost for trade.

It is essential to understand the different types of regulations and measures used in the NENA region. This section focuses on the NTMs placed on food products trading within the NENA region. It analyses these NTMs based on the NTM classification initiated by the United Nations Conference on Trade and Development (UNCTAD).[29] They are categorized into 16 chapters, as shown in Table 17, which are further divided into three levels.

Methodology for measuring non-tariff measures

The fundamentals of food security should include the dimensions defined by FAO (availability, accessibility, utilization and stability), and they must be sustainable long term. This is relevant to food safety, consumer safety, protection of human life, planetary health and sustainability. Countries are focused on protecting people from unsafe, pest infected and disease-causing food products.

29 In 2006, in collaboration with the Multi-Agency Support Team, UNCTAD began to develop a definition and common taxonomy of NTMs. The common language was intended to create a shared understanding of NTMs and to enable data collection, quantification, analysis and increased transparency. The Multi-Agency Support Team is comprised of UNCTAD, FAO; International Trade Centre; OECD; United Nations Industrial Development Organization (UNIDO); World Bank; and World Trade Organization (WTO) (UNCTAD, 2022).

To support such efforts, the World Trade Organization (WTO) Agreement on the Application of Sanitary and Phytosanitary (SPS) Measures sets out rules for applying measures for food safety and requirements for animal and plant life and health. It also recognizes the right of governments to adopt and enforce measures necessary to protect human, animal or plant life or health. The WTO Technical Barriers to Trade (TBT) Agreement covers all industrial and agricultural products with respect to three types of measures: technical regulations, conformity assessment procedures and standards. It intends to help governments achieve a balance between legitimate regulatory policy objectives and respect for the key disciplines of multilateral trade rules. A significant focus of this analysis is placed on NTMs that are specific to agrifood trade: sanitary and phytosanitary measures (SPS), TBT and export-related measures (export-license, -quota, -prohibition and other quantitative restrictions): Chapters A, B and P (Table 17). The data used in this analysis comes from the UNCTAD-TRAINS NTM database.[30]

TABLE 17

MULTI-AGENCY SUPPORT TEAM NON-TARRIF MEASURES CLASSIFICATION

Imports	Technical measures	A	Sanitary and phytosanitary measures
		B	Technical barriers to trade
		C	Pre-shipment inspection and other formalities
	Non-Technical measures	D	Contingent trade-protective measures
		E	Non-automatic import licensing, quotas, prohibitions, quantity-control measures and other restrictions not including sanitary and phytosanitary measures or measures relating to technical barriers to trade
		F	Price-control measures, including additional taxes and charges
		G	Finance measures
		H	Measures affecting competition
		I	Trade-related investment measures
		J	Distribution restrictions
		K	Restrictions on post-sales services
		L	Subsidies and other forms of support
		M	Government procurement restrictions
		N	Intellectual property
		O	Rules of origin
	Exports	P	Export-related measures

Source: UNCTAD. 2019. *International Classification of Non-tariff Measures 2019 Version*. New York, UN Publications. https://unctad.org/system/files/official-document/ditctab2019d5_en.pdf; UNCTAD. 2022a. *Non-tariff Measures from A to Z*. New York, UN Publications. https://unctad.org/system/files/official-document/ditctab2021d3_en.pdf

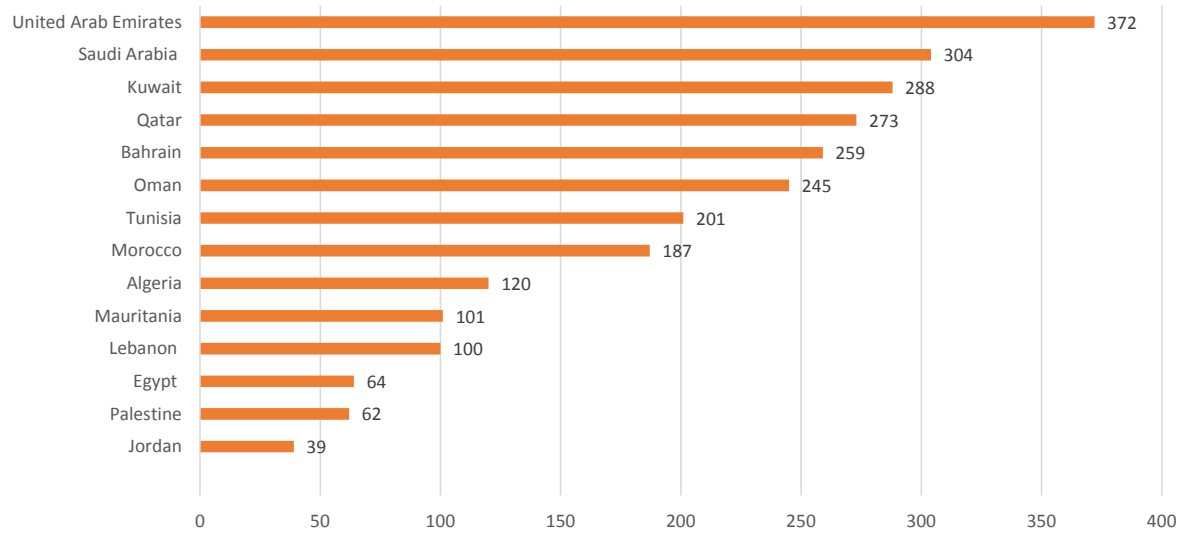
30 The data compiled includes policy measures applied by the Arab region for importing and exporting food products ranging from HS01 to HS22 across all the NTM chapters.

In most cases, NTMs affect all countries, i.e. imports from any origin, but sometimes only to some countries, for example, from specific high-risk areas. The implementing authority of these measures in the Arab region includes, but is not limited to, the central government, ministry of food, agriculture, finance and trade, department of development, and environment and food agencies.

Results: Non-tariff measures in the region

Figure 49 gives a general overview of the number of NTMs taken by country concerning food trade. There is a vast difference between the number of measures applied by Jordan (39) and the United Arab Emirates (372). Saudi Arabia uses the second highest number of measures (304), followed by Kuwait (288). Each of the measures may affect a wide range of products or only a few.

FIGURE 49
TOTAL NUMBER OF NON-TARRIF MEASURES IMPOSED IN FOOD TRADE BY COUNTRIES IN THE ARAB REGION



Source: UNCTAD. 2022. TRAINS Database. In *UNCTAD*, Geneva. Cited: September 2022. https://trainsonline.unctad.org/home

Overall, the countries focus more on SPS measures. Countries tend to take a maximum number of measures in food safety and human health, followed by export-related actions. There are 1 630 measures taken for SPS purposes, followed by 473 for export-related measures and 216 as TBT (Table 18).

TABLE 18
NUMBER OF NON-TARRIF MEASURES OCCURRING IN DIFFERENT CHAPTERS

Country	SPS	TBT	Export-related measures
Algeria	90	16	7
Bahrain	161	8	62
Egypt	40	13	3
Jordan	18	2	12
Kuwait	199	9	55
Lebanon	74	5	10
Mauritania	58	24	14
Morocco	134	28	16
Oman	143	24	51
Palestine	40	8	6
Qatar	156	41	52
Saudi Arabia	172	22	54
Tunisia	102	7	55
United Arab Emirates	243	9	76
Total	**1630**	**216**	**473**

Source: UNCTAD. 2022. TRAINS Database. In *UNCTAD*, Geneva. Cited: September 2022. https://trainsonline.unctad.org/home

Testing products for "maximum residue limits" is the most frequent measure used for food products. This is followed by "authorization and licensing requirements", and "inspection requirements, excluding laboratory analysis". Under TBT, countries have employed many measures classified as "labelling requirements for products", and "product quality, safety or performance requirements". Under export-related measures, exporting countries applied mostly inspection and certification requirements.[31]

Regulations can increase importing costs, especially if they differ significantly from those applied in the exporting country. These may be related to identifying and processing the information on relevant requirements in the target market (information costs), the need to adjust the product or production process to the requirements of the importing country (specification costs), to verifying and proving that these requirements are actually met (conformity assessment costs), or a combination of the three (OECD, 2017). The trade cost associated with NTMs often reduce trade volume. However, research also shows that by increasing consumer confidence in imported products, many such measures enhance trade in these goods even though trade costs rise, particularly in the SPS area (Cadot, Gourdon and van Tongeren, 2018). Harmonizing NTMs, closer regulatory environments between countries both at the regional and multilateral level, and basing NTMs on international standards, guidelines or recommendations can help ensure that these regulations are designed and implemented in a way that realizes their intended purpose with minimum cost to trade (see policy recommendations at the end of this report).

31 Complete list of NTM codes https://unctad.org/topic/trade-analysis/non-tariff-measures/NTMs-classification.

Across many countries, however, these tariffs and trade barriers have imposed substantial costs on consumers, distorted production and trade patterns, and reduced economic efficiency. As a result, many trade policies were reformed to facilitate agricultural growth and national and regional competitiveness. For example, such approaches were designed to promote intra-Arab trade by establishing various bilateral and multilateral trade agreements such as the "Arab Trade Financing Facilities," Greater Arab Free Trade Area, the Gulf Cooperation Council, the Arab Maghreb Union (AMU), and the Agadir Free Trade Area (AFTA). Moreover, in most countries, Intra-Arab trade is low as long-standing top trade partners remain China, India and European countries.

CHAPTER 8
CONCLUSIONS: POLICY RECOMMENDATIONS

Part 1 of this report stated that the Arab region is not on track to achieve Zero Hunger (SDG 2) by 2030, as hunger and food insecurity have continued to increase in the region due to various factors, including the COVID-19 pandemic. The number of undernourished people reached 54.3 million in 2021 or 12.2 percent of the population. Moderate or severe food insecurity affected an estimated 154.3 million people in 2021, up from 142.7 million in 2020 – an increase of 11.6 million. Furthermore, the region continued to suffer from multiple forms of malnutrition, including stunting, wasting, overweight among children and obesity among adults. More than half the population in the Arab States, or 162.7 million people, could not afford a healthy diet in 2020. The war in Ukraine and its effects on international agrifood markets with supply shocks and increasing global food and energy prices are further exacerbating the food security and nutrition challenges of the region, which is highly dependent on imported foodstuffs, including wheat and fertilizers from the Black Sea region.

In this UN Decade of Action on Nutrition, achieving the ambitious development agenda necessitates accelerated action to end hunger and eliminate malnutrition in all its forms by ensuring that sufficient quantities of safe, nutritious, as well as affordable foods are available to all in a sustainable fashion. Part 2 showed that trade presents a significant opportunity as an enabler to achieving the four dimensions of food security and supporting progress towards achieving the SDGs.

In the region, trade policies and investment rules play a key role in reshaping agrifood systems to improve the affordability of healthy diets, influencing food security and nutrition. Increases in per capita income and rapid economic growth in the region in some cases coupled with low domestic agricultural productivity fuel growth in their agrifood-import bill. Trade allows for an adequate supply of diversified food to all countries, especially those with constrained domestic production, and helps countries to overcome constraints in land and water endowments. Almost all the countries of the Arab region rely on imports to achieve food security and nutrition. In addition, trade can enhance the supply of nutritious foods that contribute to healthy diets (e.g. fish, dairy, pulses, fresh fruit and vegetables) by mitigating production gaps in the NENA area. On the other hand, as Arab countries are dependent on international food markets, they are more exposed to shocks, as highlighted by the COVID-19 pandemic and war in Ukraine. For the region, managing international trade connectivity is critical to reducing exposure to external shocks.

The region needs to improve agrifood systems to deliver food security and better nutrition for all, to be economically sustainable, inclusive and to have a positive impact on climate and the environment. After carefully assessing strengths, weaknesses and gaps, the following key considerations should be taken as a means to enable agrifood systems transformation in the region that leverages trade and investment.

- Trade can contribute to reducing food prices, making it more affordable, particularly for the most vulnerable populations within the region facing hunger. Furthermore, trade can ensure more diverse and healthy regional diets and reduce pressures on natural resources such as water. The role of trade as an enabler for food security could be achieved by harnessing the potential of intra-regional trade, including progressive liberalization of tariffs on agriculture and food products. However, tariff reduction should consider small-scale food producers, who might be exposed to increased international competition due to reductions in tariffs. Progressive trade liberalization supported by other policies, such as social safety net measures, can address such vulnerabilities. In addition, managing international trade connectivity in a resilient manner is critical to reducing exposure to external shocks. National agrifood systems supplying food from diversified import sources are more flexible and resilient to supply shocks.
- Arab countries must leverage intra-regional trade and rely more on each other's capacities. One lesson of the recent food supply chain disruptions has been to rely more on regional trade when there are surpluses in one country and shortages in another to avoid shocks and ensure food security, especially for the countries that are most heavily reliant on food imports. To support environmentally sustainable, nutritious, safe and inclusive agrifood systems, countries should jointly pursue trade agreements that reinforce non-market values, such as food safety, environmental quality or nutritional content as well as decent labour conditions. Regional trade can boost the productivity and income of farmers. It can increase their participation in markets and value chains and contribute to more efficient use of natural resources. Regional trade helps reduce seasonal food scarcities during normal agricultural production cycles and provides an important mechanism to address production shortfalls or supply chain disruptions caused by adverse and unforeseeable events, such as COVID-19 pandemic. By focusing on regional trade, countries can further exploit and develop their comparative advantages on nearby markets, using their existing social connections and understanding of local consumer tastes and how to serve them with short chains in which small-scale farmers and traders can participate.
- Participation in global and intra-regional trade can be enhanced by harmonizing non-tariff measures and basing them on international standards, guidelines or recommendations to facilitate international trade since products meeting the same standards may be more widely accepted, resulting in fewer unnecessary trade restrictions and trade costs. International standards and harmonization, furthermore, provide a sound scientific and technical basis for measures taken to achieve policy objectives related to food and lower cost for consumers (FAO and WTO, 2017). To enter and benefit from these markets, low-income countries must invest in efforts to raise domestic production and consumption standards and in programmes to reinforce compliance. Including smallholder farmers in food value chains subject to international standards poses multiple challenges. Poor farmers lack the necessary resources to invest in standards compliance, and local institutions are not equipped to guarantee surveillance. This requires innovative strategies for involving key stakeholders in the design of, implementation and compliance with food safety and quality standards.

- Implementation and compliance with the WTO Trade Facilitation Agreement would simplify and streamline procedures for imports and exports, reduce administrative burdens in moving agrifood goods across borders (FAO, 2017b), and thus enhance the participation of smallholder farmers and small and medium-sized enterprises in global value chains and boost intra-regional trade opportunities.
- Arab countries must also strengthen their governance, human capital and institutions. They need to attract private capital to increase their participation in global value chains and regional and global trade. For this, institutional capacity needs to be strengthened; for example, the region needs to reduce the delays in processing and strengthen land and other regulations. Effective regulation can enhance market competition, attract foreign direct investment and improve infrastructure, improve access to digital technologies, enhance the coordination of actors along the food value chain and promote productivity (FAO, 2020c) and income growth. Strengthening governance can also provide better opportunities for the less powerful actors in agrifood systems, leading to improved livelihoods and more equal income distribution.
- Improving governance and policy coherence between trade and other sectors has become increasingly important. Trade and related policies to support the implementation of agricultural strategies and investment plans are essential to achieving food security and nutrition objectives. However, in most developing countries, agriculture and trade-related objectives are developed through separate negotiation and coordination processes (FAO, 2017a). This gap in sectoral approaches translates to a weakened capacity to design and implement appropriate trade strategies, thereby challenging a country's ability to realize food security objectives. Bridging this divide and improving policy coherence will require leadership, political commitment, institutional strengthening, capacity building, and continuous policy dialogue with relevant stakeholders. Improving governance and coordination mechanisms across sectors for more coherent decision-making on trade, agriculture, nutrition, environment protection, etc., can consider different dimensions of the agrifood systems when making decisions.
- Each country needs to consider their specific conditions and to understand better and minimize the trade-offs between competing policy objectives. Policy interventions aiming at transforming agrifood systems and improving the nutrition and health status of the region's population must be appraised holistically, considering potential trade-offs and synergies in economic, social and environmental impacts. Improved governance should ensure that trade-offs can be identified and jointly assessed from a cross-sectoral perspective to prioritize the best way forward for the system. One of the recommendations could be to strengthen efforts at national and regional levels to improve the evidence generation on impact in different sustainability dimensions and the capacities for trade-off analysis across different agrifood systems outcomes. Specific bodies at the country and regional level could be mandated (and supported) to lead such analysis to ensure access to healthy diets for all while minimizing trade-offs.
- Conservation of nature and climate resilience. Due to minimal natural resources, some countries must conserve and sustainably manage natural resources and increase resilience to climate change. The region needs to consider the implications of any policy on climate change and environmental sustainability. As part of the SDGs, trade can help these regional countries in climate change adaptation and mitigation by promoting the use of natural resources, which can help enhance the efficiency of land and water use, preventing their over-exploitation. This requires an agrifood systems approach that considers the broader implications of sectoral policies on several

sustainability outcomes. This implies a multi-country and multi-stakeholder dialogue, coordination and joint decision-making with all implications considered (climate change, natural resources, health, energy, trade, etc.).

- Food loss and waste. Reduced food loss and waste, increased economic value of food trade, increased income opportunities and reduced health risks for the more vulnerable population are all benefits of policies and regulations preventing food loss/waste and maintaining the quality of food traded from the farm to the shop through best practices. In addition to the positive environmental impact, it reduces poverty and hunger.
- Countries in the area could start rethinking how they can reallocate their existing public budgets to make them more cost-effective and efficient in reducing the cost of nutritious foods and increasing the availability and affordability of healthy diets (FAO et al., 2022) while at the same time considering and tackling the food security and environmental challenges in the NENA region. Changing the composition of agricultural support can ensure useful results while minimizing trade-offs. For example, agricultural subsidies may be targeted to promote food items that are often more expensive and unaffordable such as pulses and legumes, nuts and seeds, and vegetables and fruit, which can contribute to healthy and nutritious diets. This may involve an extra fiscal burden in some cases, but this could be offset by additional taxation on less nutritious foods such as the ones high in sugar and salt. Furthermore, fiscal support should target economically efficient areas with better output and efficiency in agriculture and agrifood systems. Repurposing border measures, market price controls and fiscal subsidies will be used to assess the commitments and flexibilities of countries under current WTO rules in ongoing negotiations. Repurposing agricultural subsidies could even open a new chapter for agricultural trade negotiations at the multilateral level. NENA countries should take a bigger role in multilateral discussions, such as the WTO negotiations on agriculture, to achieve an outcome that meets the region's aspirations.
- International trade enhances technology and knowledge spillovers that can increase productivity, improve employment opportunities and raise incomes. Many countries in the region should leverage innovative technologies and approaches to transform agrifood systems, putting young people at the center of this effort. Technology plays a critical role in the transformation of agrifood systems. With limited arable land and freshwater resources, a rapid scaling-up of technology and innovation is vital in the Arab region to enhance productivity, quality, diversity, efficiency and environmental sustainability in agrifood systems. However, a holistic approach should be taken to identify the appropriate types of innovation – specific to each context – and manage the distribution of impacts of such innovation on different stakeholders (especially the most disadvantaged). As critical enablers driving innovation and entrepreneurship, young men and women have a crucial role in fostering sustainability, equity and efficiency in food. Each country should be proactive in supporting youth innovation while creating decent employment opportunities in agrifood value chains and agricultural technology.
- Trade should be inclusive. Its benefits should be distributed equally across and within countries and contribute to gender equality. New trade opportunities must be complemented with measures that contribute to women's economic empowerment and higher wages for women. Such measures include advancing women's equal rights and their equal access to and control over productive land, natural resources, inputs and productive tools. Women must have access to extension, advisory and financial services, education, training, markets and information.

BIBLIOGRAPHY

Arimond, M. and Ruel, M.T. 2004: Dietary diversity is associated with child nutritional status: *Evidence from 11 demographic and health surveys.* The Journal of Nutrition, 134(10): 2579–2585. https://doi.org/10.1093/jn/134.10.2579

Balié, J. 2020. The trade-offs of healthy food from sustainable agriculture in the Global South. *Global Food Security*, 100384. https://doi.org/10.1016/j.gfs.2020.100384

Bello, L.L. and Al-Hammad, N. 2006. Pattern of fluid consumption in a sample of Saudi Arabian adolescents aged 12–13 years. *International Journal of Paediatric Dentistry*, 16(3): 168–173. https//doi.org/10.1111/j.1365-263X.2006.00715.x

Cadot, O., Gourdon, J. and van Tongeren, F. 2018. *Estimating Ad Valorem Equivalents of Non- Tariff Measures: Combining Price-Based and Quantity-Based Approaches.* Paris, OECD Publishing. https://www.oecd-ilibrary.org/docserver/f3cd5bdc-en.pdf?expires=1667644368andid=idandaccname=guestandchecksum=4BE22BE87D408A4AD534CF60149DAABC

FAO (Food and Agirculture Organization of the United Nations). 2001. *The State of Food Security and Nutrition in the World.* Rome, FAO. https://www.fao.org/agrifood-economics/publications/detail/en/c/122100/

FAO. 2008. *An Introduction to the Basic Concepts of Food Security.* Rome, FAO. https://www.fao.org/3/al936e/al936e.pdf

FAO. 2015. *The State of Agricultural Commodity Markets 2016–16. Trade and food security: achieving a better balance between national priorities and the collective good.* Rome, FAO. https://www.fao.org/3/i5090e/i5090e.pdf

FAO. 2016. *How does agricultural trade impact food security?* Trade and Food Security. Trade Policy Briefs, No. 17. May 2016. Rome, FAO. https://www.fao.org/3/i5738e/i5738e.pdf

FAO. 2017a. *Strengthening Sector Policies for Better Food Security and Nutrition Results.* Trade, Policy Guidance Note 9. Rome, FAO. https://www.fao.org/3/i7910en/I7910EN.pdf

FAO. 2017b. *Non-tarrif measures in agricultural trade*. FAO Support to the WTO Negotiations at the 11th Ministerial Conference in Buenos Aires. Trade Policy Briefs, No. 26. October 2017. Rome, FAO. https://www.fao.org/3/i8002e/i8002e.pdf

FAO. 2018a. *Trade and Nutrition Technical Note.* Trade and Food Security. Trade Policy Technical Notes, No. 21. Rome, FAO. https://www.fao.org/3/I8545EN/i8545en.pdf

FAO. 2018b. *Sustainable food systems. Concept and framework.* Rome, FAO. http://www.fao.org/3/ca2079en/CA2079EN.pdf

FAO. 2019. *Climate-smart agriculture Sustainable Development Goals.* Rome, FAO. https://www.fao.org/3/ca6043en/CA6043EN.pdf

FAO. 2020a. *The State of Food Security and Nutrition in the World: Transforming Food Systems for Affordable Healthy Diets.* Rome, FAO. https://www.fao.org/3/ca9692en/ca9692en.pdf

FAO. 2020b. *The impact of COVID-19 in the Near East and North Africa Region and FAO's Response Plan.* FAO Regional Conference for the Near East. Thirty-fifth Session. Rome, FAO. https://www.fao.org/3/nd678en/nd678en.pdf

FAO. 2020c. *The State of Agricultural Commodity Markets 2020. Agricultural markets and sustainable development: Global value chains, smallholder farmers and digital innovations.* Rome, FAO. https://www.fao.org/3/cb0665en/cb0665en.pdf

FAO. 2020d. *Trade and Sustainable Development Goal 2 – Policy options and their trade-offs*. Rome, FAO. https://www.fao.org/3/cb0580en/CB0580EN.pdf

FAO. 2021a. *The State of Food and Agriculture 2021. Making agrifood systems more resilient to shocks and stresses.* Rome, FAO. https://www.fao.org/3/cb4476en/cb4476en.pdf

FAO. 2021b. *Agricultural Trade and Policy Responses During the first wave of the COVID-19 Pandemic in 2020.* Rome, FAO. https://www.fao.org/3/cb4553en/cb4553en.pdf

FAO. 2021c. *Policy responses to the COVID-19 crisis in the Near East and North Africa – keeping food and agriculture systems alive.* Rome, FAO. https://www.fao.org/3/cb3874en/cb3874en.pdf

FAO. 2021d. *International trade and the resilience of national agrifood systems.* FAO Agricultural Development Economics, Policy Brief 41. Rome, FAO. https://www.fao.org/3/cb7662en/cb7662en.pdf

FAO. 2021e. *Near East and North Africa, Regional Overview of Food Security and Nutrition 2021: Statistics and trends.* Cairo, FAO. https://www.fao.org/3/cb7495en/cb7495en.pdf

FAO. 2021f. *Trade and Sustainable Agrifood Systems: Pathways of Interaction.* Trade Policy Briefs. No. 47. October 2021. Rome, FAO. https://www.fao.org/3/cb7270en/cb7270en.pdf

FAO. 2021g. *Policy responses to the COVID-19 crisis in the Near East and North Africa – keeping food and agriculture systems alive.* A review based on the FAO Food and Agriculture Policy Decision Analysis (FAPDA) database. Rome, FAO. https://www.fao.org/3/cb3874en/cb3874en.pdf

FAO. 2022a. *The state of food security in the Near East and North Africa.* FAO Regional Conference for the Near East. Thirty-sixth Session. Rome, FAO. https://www.fao.org/3/nh890/nh890.pdf

FAO. 2022b. *Addressing Food Security Challenges Faced by Near East and North Region Due to the Ukraine Crisis.* Regional Overview. Cairo, FAO. https://www.fao.org/3/cb9926en/cb9926en.pdf

FAO. 2022c. *Food Policy Bulletin in the Near East and North Africa region.* 4th Quarter 2022. Cairo, FAO. https://www.fao.org/documents/card/en/c/cc3210en/

FAO. 2022d. *The State of Agricultural Commodity Markets 2022. The geography of food and agriculture trade: Policy approaches for sustainable development.* Rome. https://www.fao.org/3/cc0471en/cc0471en.pdf

FAO. 2022e. *Healthy Diet in the NENA region – Addressing Trade-Offs and Challenges*. To be published in 2023. Cairo, FAO.

FAO. 2022f. *Information Note - The Importance of Ukraine and the Russian Federation for Global Agricultural Markets and the Risks Associated with the War in Ukraine.* Rome, FAO. https://www.fao.org/3/cb9013en/cb9013en.pdf

FAO. 2022g. FAO. 2022. FAOSTAT: Production and Trade. Cited: February 2023 **https://www.fao.**

org/faostat/en/#data/QV and https://www.fao.org/faostat/en/#data/TCL

FAO. 2022h. FAO. FAOSTAT: Trade. Cited November 2022. https://www.fao.org/faostat/en/#data/TCL

FAO, IFAD (International Fund for Agricultural Development), UNICEF (United Nations Children's Fund), WFP (World Food Programme) and WHO (World Health Organization). 2020. *Regional Overview of Food Security and Nutrition in the Near East and North Africa 2019 – Rethinking food systems for healthy diets and improved nutrition*. Rome, FAO. https://www.fao.org/3/ca8684en/ca8684en.pdf

FAO, IFAD, UNICEF, WFP and WHO. 2021. *The State of Food Security and Nutrition in the World 2021. Transforming food systems for food security, improved nutrition and affordable healthy diets for all.* Rome, FAO. https://www.fao.org/3/cb4474en/cb4474en.pdf

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://www.fao.org/3/cc0639en/cc0639en.pdf

FAO and WHO (World Health Organization). 2019. *Sustainable Healthy Diets Guiding Principles*. Rome, FAO. https://www.fao.org/3/ca6640en/ca6640en.pdf

FAO and WTO. 2017. *Trade and Food Standards 2017*. Geneva, WTO and Rome, FAO. https://www.wto.org/english/res_e/booksp_e/tradefoodfao17_e.pdf

Global Trade Alert. 2022. Global Trade Alert Database. In: *Global Trade Alert*. St. Gallen. Cited: October 2022. https://www.globaltradealert.org/data_extraction

Herforth, A., Venkat, A., Bai, Y., Costlow, L., Holleman, C. and Masters W.A. 2022. *Methods and options to monitor the cost and affordability of a healthy diet globally.* Background paper for The State of Food Security and Nutrition in the World 2022. Rome, FAO. https://www.fao.org/3/cc1169en/cc1169en.pdf

HLPE (High Level Panel of Experts). 2017. *Nutrition and food systems. A report by the High Level Panel of Experts on Food Security and Nutrition*. Rome. https://www.fao.org/3/i7846e/i7846e.pdf

HLPE. 2020. *Food Security and Nutrition*. Building a Global Narrative Towards 2030. Report 15. Rome. https://www.fao.org/3/ca9731en/ca9731en.pdf

Hummels, D.L. and Schaur, G. 2013. Time as a Trade Barrier. *American Economic Review*, 103(7): 2935–2959. https://doi.org/10.1257/aer.103.7.2935

ITC. 2023. International Trade Centre. Trade Map. In: *International Trade Centre*, Geneva. Cited: February 2023.
https://www.trademap.org/Country_SelProductCountry.aspx?nvpm=1%7c368%7c%7c%7c%7c08%7c%7c%7c2%7c1%7c2%7c1%7c1%7c1%7c2%7c1%7c1%7c1

Kanter, D.R., Musumba, M., Wood, S.L.R., Palm, C., Antle, J., Balvanera, P., Dale, V.H. *et al*. 2018. Evaluating agricultural trade-offs in the age of sustainable development. *Agricultural Systems*, 163: 73–88. https//doi.org/10.1016/j.agsy.2016.09.101

Kelly, W.A., Jr. 1981. A Generalized Interpretation of the Herfindahl Index. *Southern Economic Journal*, 48(1): 50–57. https//doi.org/10.2307/1058595

Kuiper, M. and van den Bos Verma, M. 2021. *Identifying synergies and trade-offs with food system*

interventions: Projected changes by 2050 in inclusiveness, nutrition, economy and sustainability using global CGE modelling. Rome, IFAD. https://www.ifad.org/documents/38714170/43704363/rdr2021_sinergies.pdf/a40f6da5-0a67-5b73-9e60-e2efc4e7a82b?t=1631621453329

Ludema, R. D., Mayda A. M. 2013. Do terms-of-trade effects matter for trade agreements? Evidence from WTO countries. *The Quarterly Journal of Economics*, Vol. 128, No. 4 (November 2013), pp. 1837-1894 (58 pages), Published By: Oxford University Press

Matoo, A., Rocha, N. and Ruta, M. 2020. *Handbook of Deep Trade Agreements.* Washington, DC., World Bank. https://openknowledge.worldbank.org/handle/10986/34055

Moïsé, E. and Sorescu, S. 2013. *Trade Facilitation Indicators: The Potential Impact of Trade Facilitation on Developing Countries' Trade.* OECD Trade Policy Papers No. 144. Paris, OECD Publishing. https://www.oecd-ilibrary.org/docserver/5k4bw6kg6ws2-en.pdf?expires=1661004392andid=idandac-cname=guestandchecksum=8CDF649F80BC710BE105B33C804EC63A

Moïsé, E. and Sorescu, S. 2021. *Trade facilitation in perishable agro-food products: A feasibility study for addressing at-the-border challenges.* OECD Trade Policy Papers, No. 254. Paris, OECD Publishing. https://doi.org/10.1787/a2995a7a-en.

OECD. 2017. *International Regulatory Co-operation and Trade: Understanding the Trade Costs of Regulatory Divergence and the Remedies.* Paris, OECD Publishing. http://dx.doi.org/10.1787/9789264275942-en

OECD. 2018. *Trade Facilitation and the Global Economy*. Paris, OECD Publishing. http://dx.doi.org/10.1787/9789264277571-en

OECD. 2020a. *Trade Facilitation and the COVID-19 Pandemic.* Paris, OECD Publishing. https://read.oecd-ilibrary.org/view/?ref=130_130609-v8jn83j1j3andtitle=Trade-facilitation-and-the-COVID-19-pandemic

OECD. 2020b. *OECD Trade Facilitation Indicators.* Paris, OECD Publishing. https://www.compareyourcountry.org/trade-facilitation?cr=oecdandlg=en

OECD. 2021. *Digital opportunities for Sanitary and Phytosanitary (SPS) Systems and the trade facilitation effects of SPS Electronic Certification.* Paris, OECD Publishing. https://doi.org/10.1787/cbb7d0f6-en

OECD and FAO. 2018. *OECD-FAO Agricultural Outlook 2018-2027*. Special Focus: Middle East and North Africa. Paris, OECD Publishing and Rome, FAO. https://doi.org/10.1787/agr_outlook-2018-en

OECD and FAO. 2022. *OECD FAO Agricultural Outlook 2021-2030.* Paris, OECD Publishing. https://www.oecd-ilibrary.org/agriculture-and-food/oecd-fao-agricultural-outlook-2021-2030_19428846-en

Ritchie K., Carrière I., Su L., O'Brien J.T., Lovestone S., Wells K. and Ritchie C.W. 2017. The midlife cognitive profiles of adults at high risk of late-onset Alzheimer's disease: The PREVENT study. *Alzheimer's and Dementia,* 13(10): 1089–1097. https//doi.org/10.1016/j.jalz.2017.02.008

Springmann, M. and Freund, F. 2022. Options for reforming agricultural subsidies from health, climate, and economic perspectives. *Nature Communications*, 13(82). https://doi.org/10.1038/s41467-021-27645-2

UNCTAD (United Nations Conference on Trade and Development). 2019. *International*

Classification of Non-tariff Measures, 2019 Version. New York, United Nations Publishing. https://unctad.org/system/files/official-document/ditctab2019d5_en.pdf

UNCTAD. 2022a. *Non-tariff Measures from A to Z.* New York, United Nations Publishing. https://unctad.org/system/files/official-document/ditctab2021d3_en.pdf

UNCTAD. 2022b. *A trade hope: The role of the Black Sea Grain Initiative in bringing Ukrainian grain to the world.* New York, United Nations Publishing. https://unctad.org/system/files/official-document/osginf2022d6_en.pdf

UNESCWA (United Nations Economic and Social Commission for Western Asia). 2013. *Green agricultural value chains for improved livelihood in the Arab region.* Beirut, UNESCWA. https://www.unescwa.org/publications/green-agricultural-value-chains-improved-livelihood-arab-region

Vidican Auktor, G., Loewe, M. 2021. *Subsidy reforms in the Middle East and North Africa - Strategic options and their consequences for the social contract*. Discussion Paper. https://www.idos-research.de/uploads/media/DP_12.2021.pdf

WFP, FAO, IFAD and World Bank. 2020. *Jordan Food Security Update*. Implications of COVID-19. https://docs.wfp.org/api/documents/WFP-0000119472/download/

WHO, WFP and UNICEF. 2006. *Preventing and controlling micronutrient deficiencies in populations affected by an emergency: multiple vitamin and mineral supplements for pregnant and lactating women, and for children aged 6 to 59 months.* Joint Statement by the World Health Organization, the World Food Programme and the United Nations Children's Fund. Geneva, WHO. https://www.who.int/publications/m/item/WHO-WFP-UNICEF-statement-micronutrients-deficiencies-emergency

World Bank. 2016. *Renewing the Social Assistance Contract: From Subsidies to Targeted and Expanded Safety Nets in Tunisia Public Expenditure Review*. Washington, DC., World Bank. https://documents1.worldbank.org/curated/en/225051591252911165/pdf/Tunisia-Public-Expenditure-Review-A-New-Pact-for-the-Transition-Modernizing-the-State-for-Better-and-Fairer-Public-Spending-Overview-Report.pdf

World Bank. 2022a. World Development Indicators. In: *World Bank.* Washington, DC. Cited November 2022. https://databank.worldbank.org/source/world-development-indicators

World Bank. 2022b. *MENA: Uniform cash transfers are better than subsidies.* In: *World Bank.* Washington, DC. Cited February 2023. https://blogs.worldbank.org/arabvoices/mena-uniform-cash-transfers-are-better-subsidies

OMAN
Omani coastal women preparing to crush and grind dried sardines to prepare a local dish known as Qashea'a.
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ANNEXES

ANNEX 1
DATA TABLES PART 1

TABLE 19
PREVALENCE OF UNDERNOURISHMENT (PERCENT)

	2000–2002	2004–2006	2009–2011	2014–2016	2017–2019	2018–2020	2019–2021
World	13.1	12.2	8.9	7.9	7.8	8.3	9.0
Arab States	12.4	11.9	10.6	11.2	11.7	11.7	11.8
Low-income countries	25.8	24.7	23.3	26.8	28.1	27.3	27.3
Lower-middle-income countries	6.4	6.4	4.8	4.2	4.4	4.4	4.7
Upper-middle-income countries	16.4	13.8	11.7	13.9	14.8	15.3	15.2
High-income countries	5.1	5.3	6.2	4.5	4.5	4.6	4.5
Arab States LDCs	9.2	8.7	6.6	8.4	9.4	9.6	9.6
Conflict countries	23.7	22.1	20.5	23.8	24.6	24.0	23.7
Non-conflict countries	6.3	6.3	5.1	4.3	4.7	5.0	5.3
Algeria	8.0	6.7	4.3	2.8	<2.5	<2.5	<2.5
Bahrain							
Comoros							
Djibouti	42.0	31.3	22.4	14.2	13.1	13.1	13.5
Egypt	5.2	6.4	4.5	4.4	4.9	5.0	5.1
Iraq	22.1	17.9	15.0	18.4	18.1	17.4	15.9
Jordan	9.7	5.5	6.2	6.3	11.2	14.6	16.9
Kuwait	2.6	<2.5	<2.5	<2.5	<2.5	<2.5	2.7
Lebanon	7.8	10.9	5.7	5.9	7.1	9.0	10.9
Libya							
Mauritania	8.3	9.4	8.2	8.3	8.6	9.2	10.1
Morocco	6.3	5.5	5.1	3.8	3.8	4.4	5.6
Oman	12.3	9.6	7.7	8.1	7.9	8.8	9.8
Palestine							
Qatar							
Saudi Arabia	4.9	4.8	5.9	3.7	3.8	3.9	3.7
Somalia							
Sudan	21.5	18.9	16.5	11.2	11.8	11.7	12.8
Syrian Arab Republic							
Tunisia	4.4	4.3	3.4	2.5	<2.5	2.6	3.1
United Arab Emirates	2.8	8.0	8.4	6.5	6.2	6.0	5.6
Yemen	26.7	27.8	27.1	43.4	44.7	42.8	41.4

Source: FAO. 2022. FAOSTAT: Suite of Food Security Indicators. In: *FAO*. Rome. Cited November 2022. https://www.fao.org/faostat/en/#data/FS

TABLE 20

NUMBER OF UNDERNOURISHED PEOPLE (MILLIONS)

	2000–2002	2004–2006	2009–2011	2014–2016	2017–2019	2018–2020	2019–2021
World	816.7	798.9	620.6	581.8	594.1	643.5	702.7
Arab States	35.9	37.6	37.8	44.3	49.1	49.9	51.5
Low-income countries	18.5	19.7	21.2	26.1	28.7	28.6	29.3
Lower-middle-income countries	9.4	10.1	8.2	7.8	8.7	9.0	9.8
Upper-middle-income countries	6.4	5.9	5.6	8.0	9.2	9.7	9.8
High-income countries	1.5	1.9	2.8	2.4	2.5	2.7	2.7
Arab States LDCs	11.4	11.7	9.9	14.0	16.5	17.1	17.5
Conflict countries	24.1	24.8	26.1	33.1	36.3	36.2	36.6
Non-conflict countries	11.8	12.8	11.7	11.2	12.8	13.8	14.9
Algeria	2.5	2.2	1.6	1.1	n.r.	n.r.	n.r.
Bahrain							
Comoros	0.2	0.1	0.1	0.2	0.2	0.2	0.2
Djibouti	0.3	0.2	0.2	0.1	0.1	0.1	0.1
Egypt	3.7	4.9	3.7	4.1	4.8	5.0	5.2
Iraq	5.4	4.8	4.5	6.5	6.9	6.8	6.4
Jordan	0.5	0.3	0.5	0.6	1.1	1.5	1.7
Kuwait	<0.1	n.r.	n.r.	n.r.	n.r.	n.r.	0.1
Lebanon	0.3	0.5	0.3	0.4	0.5	0.6	0.7
Libya							
Mauritania	0.2	0.3	0.3	0.3	0.4	0.4	0.5
Morocco	1.8	1.7	1.6	1.3	1.4	1.6	2.1
Oman	0.3	0.2	0.2	0.3	0.4	0.4	0.5
Palestine							
Qatar							
Saudi Arabia	1.0	1.1	1.6	1.2	1.3	1.3	1.3
Somalia							
Sudan	6.0	5.8	5.7	4.4	4.9	5.0	5.6
Syrian Arab Republic							
Tunisia	0.4	0.4	0.4	0.3	n.r.	0.3	0.4
United Arab Emirates	<0.1	0.4	0.7	0.6	0.6	0.6	0.6
Yemen	4.8	5.6	6.3	11.5	12.7	12.5	12.3

Source: FAO. 2022. FAOSTAT: Suite of Food Security Indicators. In: *FAO*. Rome. Cited November 2022. https://www.fao.org/faostat/en/#data/FS
Note: n.r. = data not reported as the prevalence is less than 2.5 percent.

TABLE 21

PREVALENCE OF FOOD INSECURITY (PERCENT)

	Moderate or severe food insecurity				Severe food insecurity			
	2014–2016	2017–2019	2018–2020	2019–2021	2014–2016	2017–2019	2018–2020	2019–2021
World	21.8	24.8	26.6	28.1	7.7	8.9	9.7	10.7
Arab States	30.3	32.0	31.7	32.7	11.2	11.4	11.1	11.4
Low-income countries	39.3	43.1	44.2	46.0	14.6	16.3	16.7	17.3
Lower-middle-income countries	26.2	27.3	26.1	27.1	8.9	7.7	7.1	7.7
Upper-middle-income countries	37.7	40.6	40.9	41.4	17.1	19.0	17.9	17.3
High-income countries	19.9	19.2	18.8	18.3	6.7	7.2	7.0	6.7
Arab States LDCs	41.8	46.0	47.2	49.0	15.6	17.3	17.7	18.4
Conflict countries	40.4	43.9	44.3	45.0	16.1	18.2	17.8	17.6
Non-conflict countries	24.8	25.6	24.9	25.9	8.5	7.7	7.4	7.9
Algeria	22.9	17.6	17.6	19.0	13.0	9.3	6.9	6.2
Bahrain								
Comoros	n.a.	n.a.	n.a.	79.7	n.a.	n.a.	n.a.	27.4
Djibouti	n.a.	n.a.	n.a.	49.2	n.a.	n.a.	n.a.	16.5
Egypt	27.8	31.2	27.8	27.3	8.4	7.4	6.7	7.1
Iraq								
Jordan	30.2	35.6	37.7	43.0	14.3	13.2	15.1	17.0
Kuwait	12.6	12.3	12.2	12.2	4.9	4.9	4.9	4.9
Lebanon	n.a.	14.7	21.2	29.1	n.a.	4.2	6.9	10.2
Libya	29.1	35.7	37.4	39.4	11.2	16.7	18.6	20.7
Mauritania	26.3	35.9	41.2	45.3	4.6	5.9	6.6	7.2
Morocco	26.7	26.7	28.0	31.6	6.0	6.0	7.1	9.7
Oman	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Palestine	n.a.	26.8	27.8	28.7	n.a.	4.2	3.8	3.5
Qatar	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Saudi Arabia								
Somalia	n.a.	n.a.	n.a.	77.4	n.a.	n.a.	n.a.	41.6
Sudan	41.4	48.9	49.4	50.7	13.4	16.4	16.8	17.4
Syrian Arab Republic	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Tunisia	18.2	22.1	25.1	28.0	9.1	9.7	10.7	12.6
United Arab Emirates	n.a.	n.a.	n.a.	7.5	n.a.	n.a.	n.a.	0.8
Yemen	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

Source: FAO. 2022. FAOSTAT: Suite of Food Security Indicators. In: *FAO*. Rome. Cited November 2022. https://www.fao.org/faostat/en/#data/FS
Note: n.a. = data not available.

TABLE 22

NUMBER OF FOOD INSECURE PEOPLE (MILLIONS)

	Moderately or severely food insecure				Severely food insecure			
	2014–2016	2017–2019	2018–2020	2019–2021	2014–2016	2017–2019	2018–2020	2019–2021
World	1 609.1	1 888.9	2 053.0	2 187.4	569.3	675.4	751.5	830.2
Arab States	119.9	134.5	135.9	142.6	44.4	47.9	47.3	49.6
Low-income countries	38.3	44.1	46.3	49.3	14.2	16.7	17.5	18.6
Lower-middle-income countries	49.4	54.4	53.0	56.0	16.8	15.4	14.5	16.0
Upper-middle-income countries	21.7	25.1	25.8	26.6	9.8	11.8	11.3	11.1
High-income countries	10.6	10.9	10.9	10.7	3.5	4.1	4.1	3.9
Arab States LDCs	35.5	42.1	44.3	47.1	13.3	15.8	16.6	17.7
Conflict countries	56.3	64.7	66.8	69.5	22.5	26.9	26.8	27.2
Non-conflict countries	63.7	69.8	69.1	73.1	21.9	21.0	20.5	22.3
Algeria	9.1	7.4	7.6	8.3	5.2	3.9	3.0	2.7
Bahrain								
Comoros	n.a.	n.a.	n.a.	0.7	n.a.	n.a.	n.a.	0.2
Djibouti	n.a.	n.a.	n.a.	0.5	n.a.	n.a.	n.a.	0.2
Egypt	25.7	30.7	27.9	27.9	7.8	7.3	6.8	7.3
Iraq								
Jordan	2.8	3.5	3.8	4.4	1.3	1.3	1.5	1.7
Kuwait	0.5	0.5	0.5	0.5	0.2	0.2	0.2	0.2
Lebanon	n.a.	1.0	1.5	2.0	n.a.	0.3	0.5	0.7
Libya	1.9	2.4	2.5	2.7	0.7	1.1	1.3	1.4
Mauritania	1.1	1.6	1.9	2.1	0.2	0.3	0.3	0.3
Morocco	9.3	9.6	10.2	11.7	2.1	2.2	2.6	3.6
Oman	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Palestine	n.a.	1.3	1.4	1.5	n.a.	0.2	0.2	0.2
Qatar	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Saudi Arabia								
Somalia	n.a.	n.a.	n.a.	12.3	n.a.	n.a.	n.a.	6.6
Sudan	16.1	20.4	21.2	22.2	5.2	6.8	7.2	7.6
Syrian Arab Republic	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Tunisia	2.0	2.6	2.9	3.3	1.0	1.1	1.2	1.5
United Arab Emirates	n.a.	n.a.	n.a.	0.8	n.a.	n.a.	n.a.	<0.1
Yemen	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

Source: FAO. 2022. FAOSTAT: Suite of Food Security Indicators. In: FAO. Rome. Cited November 2022. https://www.fao.org/faostat/en/#data/FS
Note: n.a. = data not available.

TABLE 23

PREVALENCE OF STUNTING AMONG CHILDREN UNDER 5 (PERCENT)

	2000	2005	2010	2015	2018	2019	2020
World	33.1	30.7	27.7	24.4	22.9	22.4	22.0
Arab States	28.7	27.1	24.5	21.9	21.0	20.8	20.5
Low-income countries	40.6	39.9	37.3	35.7	34.1	33.5	32.9
Lower-middle-income countries	24.8	22.1	19.7	17.9	17.6	17.4	17.3
Upper-middle-income countries	24.3	23.0	19.8	16.1	14.6	14.0	13.5
High-income countries	12.7	8.8	6.5	5.5	5.2	5.2	5.1
Arab States LDCs	43.5	42.0	39.3	36.1	34.1	33.5	32.9
Conflict countries	37.1	36.1	33.3	30.7	29.0	28.4	27.8
Non-conflict countries	22.3	19.5	17.2	15.7	15.4	15.3	15.2
Algeria	22.1	17.9	13.7	11.1	9.9	9.5	9.3
Bahrain	11.0	8.6	6.8	5.8	5.3	5.2	5.1
Comoros	42.4	38.8	34.7	28.7	24.9	23.7	22.6
Djibouti	30.0	29.8	30.8	33.1	33.9	34.0	34.0
Egypt	26.9	25.1	23.7	21.9	22.2	22.3	22.3
Iraq	28.4	26.3	21.8	16.2	13.4	12.5	11.6
Jordan	11.0	9.7	8.2	7.7	7.6	7.5	7.3
Kuwait	4.2	4.2	4.5	5.3	5.7	5.8	6.0
Lebanon	16.0	16.6	15.7	11.4	10.9	10.6	10.4
Libya	20.5	22.6	26.2	34.8	40.1	41.5	43.5
Mauritania	40.4	32.3	27.9	26.0	25.1	24.7	24.2
Morocco	25.2	20.3	17.4	15.1	13.8	13.4	12.9
Oman	15.1	12.3	11.3	11.7	12.0	12.1	12.2
Palestine	9.9	11.0	11.1	9.0	8.1	7.9	7.8
Qatar	9.4	7.3	6.2	5.6	4.9	4.7	4.6
Saudi Arabia	13.3	8.9	6.2	4.7	4.2	4.1	3.9
Somalia	31.9	32.6	31.9	29.7	28.3	27.9	27.4
Sudan	40.8	38.6	36.7	35.3	34.4	34.1	33.7
Syrian Arab Republic	28.1	28.8	26.9	30.5	30.9	30.3	29.6
Tunisia	12.9	11.1	9.5	8.8	8.7	8.6	8.6
Yemen	55.2	55.0	50.1	43.1	39.3	38.2	37.2

Source: UNICEF, WHO and World Bank. 2021. *Levels and Trends in Child Malnutrition. UNICEF/WHO/World Bank Group Joint Child Malnutrition Estimates. Key findings of the 2021 edition.* https://data.unicef.org/resources/jme-report-2021

TABLE 24

PREVALENCE OF WASTING AMONG CHILDREN UNDER 5 (PERCENT)

	2000	2005	2010	2015	2018	2019	2020
World							6.7
Arab States							7.8
Low-income countries							16.3
Lower-middle-income countries							6.6
Upper-middle-income countries							3.8
High-income countries							6.7
Arab States LDCs							15.8
Conflict countries							10.2
Non-conflict countries							6.6
Algeria	3.1					2.7	
Comoros	13.3						
Egypt		5.3					
Iraq	6.6				3.0		
Kuwait		3.3	2.4	3.1			
Mauritania	15.3			14.8	11.5		
Palestine	2.0		3.3				1.3
Sudan			15.4				
Syrian Arab Republic	4.9		11.5				
Tunisia	2.9				2.1		
Yemen		13.8					

Source: UNICEF, WHO and World Bank. 2021. *Levels and Trends in Child Malnutrition. UNICEF/WHO/World Bank Group Joint Child Malnutrition Estimates. Key findings of the 2021 edition*. https://data.unicef.org/resources/jme-report-2021

TABLE 25

PREVALENCE OF OVERWEIGHT AMONG CHILDREN UNDER 5 (PERCENT)

	2000	2005	2010	2015	2018	2019	2020
World	5.4	5.7	5.6	5.6	5.7	5.7	5.7
Arab States	9.4	9.8	10.0	10.4	10.6	10.6	10.7
Low-income countries	6.7	6.7	6.3	4.9	4.6	4.6	4.7
Lower-middle-income countries	12.4	13.0	13.5	14.3	14.8	14.9	15.0
Upper-middle-income countries	9.7	10.3	10.7	11.0	11.0	11.0	10.9
High-income countries	3.4	4.4	5.6	6.8	7.2	7.3	7.4
Arab States LDCs	4.2	3.9	3.0	2.7	2.7	2.7	2.8
Conflict countries	7.5	7.7	7.5	6.7	6.4	6.4	6.4
Non-conflict countries	10.9	11.5	12.1	13.0	13.5	13.7	13.8
Algeria	13.0	13.7	13.6	13.2	13.0	12.9	12.9
Bahrain	4.1	4.7	5.4	6.0	6.2	6.3	6.4
Comoros	12.3	14.2	11.7	10.1	9.8	9.7	9.6
Djibouti	8.0	9.0	7.6	6.9	7.1	7.2	7.2
Egypt	13.9	14.6	15.4	16.5	17.3	17.6	17.8
Iraq	8.6	9.0	9.1	9.2	9.1	9.1	9.0
Jordan	5.1	5.1	5.5	6.1	6.6	6.8	7.1
Kuwait	7.9	8.1	8.0	7.6	7.3	7.2	7.1
Lebanon	17.6	18.7	19.4	19.8	19.8	19.7	19.7
Libya	17.6	21.4	24.8	26.0	25.9	25.8	25.4
Mauritania	3.4	3.3	2.1	2.0	2.4	2.5	2.7
Morocco	12.2	12.3	11.9	11.5	11.4	11.3	11.3
Oman	1.8	2.0	2.6	3.6	4.3	4.5	4.8
Palestine	7.1	7.6	7.9	8.3	8.4	8.5	8.5
Qatar	9.9	11.4	12.6	13.5	13.8	13.9	13.9
Saudi Arabia	3.1	4.1	5.5	6.9	7.4	7.5	7.6
Somalia	4.5	4.5	3.4	2.9	2.9	2.9	2.9
Sudan	3.5	3.5	2.7	2.4	2.6	2.6	2.7
Syrian Arab Republic	16.9	18.4	19.2	18.7	18.4	18.3	18.2
Tunisia	4.6	6.4	9.5	13.3	15.4	16.0	16.5
Yemen	4.8	3.8	3.1	2.7	2.6	2.6	2.7

Source: UNICEF, WHO and World Bank. 2021. *Levels and Trends in Child Malnutrition. UNICEF/WHO/World Bank Group Joint Child Malnutrition Estimates. Key findings of the 2021 edition.* https://data.unicef.org/resources/jme-report-2021

TABLE 26
PREVALENCE OF ANAEMIA AMONG WOMEN AGED 15 TO 49 YEARS (PERCENT)

	2000	2005	2010	2015	2017	2018	2019
World	31.2	29.9	28.6	28.8	29.3	29.6	29.9
Arab States	38.1	36.2	33.8	32.8	32.9	33.0	33.2
Low-income countries	47.2	45.3	43.1	43.2	43.5	43.7	43.8
Lower-middle-income countries	35.9	34.4	32.1	30.7	30.4	30.3	30.3
Upper-middle-income countries	35.8	33.0	29.9	29.1	29.6	29.8	30.2
High-income countries	31.2	28.6	26.1	25.8	26.5	26.7	27.1
Arab States LDCs	50.4	48.6	46.6	45.8	45.8	45.8	45.9
Conflict countries	44.5	42.2	39.6	38.7	38.9	39.0	39.2
Non-conflict countries	34.9	33.2	30.8	29.8	29.8	29.8	29.9
Algeria	37.6	35.2	33.3	32.8	33.0	33.1	33.3
Bahrain	43.3	40.1	36.9	35.7	35.6	35.5	35.4
Comoros	38.4	35.8	33.2	33.0	33.3	33.5	33.8
Djibouti	37.2	33.3	31.0	31.3	31.8	32.0	32.3
Egypt	35.5	34.5	31.9	29.7	28.8	28.5	28.3
Iraq	39.5	35.9	31.2	28.6	28.4	28.4	28.6
Jordan	30.4	29.0	29.3	33.2	35.6	36.6	37.7
Kuwait	24.1	21.2	20.4	22.4	23.1	23.4	23.7
Lebanon	26.6	25.6	25.0	26.7	27.5	27.9	28.3
Libya	32.6	30.7	28.8	28.9	29.4	29.6	29.9
Mauritania	48.7	47.7	45.9	44.2	43.7	43.5	43.3
Morocco	35.3	33.2	30.5	29.5	29.6	29.7	29.9
Oman	37.8	33.8	29.7	28.8	29.1	29.1	29.1
Palestine	36.7	34.5	31.3	30.2	30.5	30.7	31.0
Qatar	31.4	29.2	27.4	27.2	27.6	27.9	28.1
Saudi Arabia	31.7	29.2	26.4	26.0	26.8	27.1	27.5
Somalia	47.9	46.6	44.6	43.5	43.3	43.2	43.1
Sudan	42.9	40.2	37.4	36.3	36.4	36.4	36.5
Syrian Arab Republic	36.8	34.4	32.1	31.9	32.2	32.5	32.8
Tunisia	31.5	30.9	30.3	30.8	31.4	31.7	32.1
United Arab Emirates	24.3	23.4	23.8	23.7	23.7	24.0	24.3
Yemen	66.1	64.3	62.1	61.3	61.4	61.5	61.5

Source: WHO. 2021. Global anaemia estimates, Edition 2021. In: *Global Health Observatory (GHO) data repository.* Geneva. Cited 25 May 2021. www.who.int/data/gho/data/indicators/indicator-details/GHO/prevalence-of-anaemia-in-women-of-reproductive-age-(-)

TABLE 27

PREVALENCE OF OBESITY AMONG ADULTS (PERCENT)

	2000	2005	2010	2013	2014	2015	2016
World	8.7	9.9	11.2	12.1	12.5	12.8	13.1
Arab States	19.5	22.0	25.0	26.9	27.5	28.2	28.8
Low-income countries	11.7	13.7	16.3	17.5	17.9	18.3	18.8
Lower-middle-income countries	19.4	22.0	25.0	27.0	27.6	28.3	29.0
Upper-middle-income countries	23.3	25.5	28.2	29.9	30.5	31.1	31.7
High-income countries	25.2	27.4	30.1	32.0	32.7	33.3	34.0
Arab States LDCs	7.1	8.9	11.1	12.5	13.1	13.6	14.1
Conflict countries	16.3	18.4	20.8	22.4	23.0	23.5	24.1
Non-conflict countries	20.6	23.2	26.4	28.4	29.0	29.7	30.4
Algeria	17.4	20.2	23.3	25.3	26.0	26.7	27.4
Bahrain	22.9	24.7	26.6	28.2	28.8	29.3	29.8
Comoros	4.1	5.1	6.2	6.9	7.2	7.5	7.8
Djibouti	9.3	10.5	11.8	12.6	12.9	13.2	13.5
Egypt	22.2	24.9	28.0	30.0	30.6	31.3	32.0
Iraq	22.2	24.4	26.9	28.6	29.2	29.8	30.4
Jordan	26.4	29.2	31.9	33.7	34.3	34.9	35.5
Kuwait	29.6	32.0	34.6	36.2	36.8	37.4	37.9
Lebanon	24.6	26.3	28.7	30.3	30.8	31.4	32.0
Libya	23.5	26.0	28.8	30.6	31.3	31.9	32.5
Mauritania	6.7	8.4	10.3	11.4	11.8	12.3	12.7
Morocco	16.7	19.2	22.1	24.1	24.7	25.4	26.1
Oman	18.0	20.0	23.1	24.9	25.6	26.3	27.0
Qatar	26.2	28.7	31.1	33.1	33.8	34.5	35.1
Saudi Arabia	26.2	28.4	31.5	33.4	34.1	34.7	35.4
Somalia	4.1	5.2	6.4	7.3	7.6	7.9	8.3
Syrian Arab Republic	18.2	20.7	23.8	25.8	26.4	27.1	27.8
Tunisia	18.2	20.7	23.4	25.1	25.7	26.3	26.9
United Arab Emirates	21.8	24.5	27.7	29.7	30.3	31.0	31.7
Yemen	8.8	11.0	13.5	15.2	15.9	16.5	17.1

Source: WHO. 2020. Global Health Observatory (GHO) data repository. In: *World Health Organization.* Geneva. Cited 28 April 2020. https://apps.who.int/gho/data/node.main.A900A?lang=en

TABLE 28
PREVALENCE OF EXCLUSIVE BREASTFEEDING AMONG INFANTS 0–5 MONTHS (PERCENT)

	2000	2005	2010	2012	2015	2019	2020
World				37.1			43.8
Arab States				34.8			36.9
Low-income countries				33.1			46.2
Lower-middle-income countries				39.7			35.3
Upper-middle-income countries				20.0			25.8
High-income countries				n.a.			n.a.
Arab States LDCs				29.6			49.4
Conflict countries				29.0			40.0
Non-conflict countries				38.8			34.7
Algeria	12.6			25.4		28.6	
Comoros	10.2			11.4			
Djibouti				12.4			
Egypt	56.1	41.1					
Iraq	11.6						
Jordan				22.7			
Mauritania	20.2				41.1		
Palestine			28.7				38.9
Qatar				29.3			
Sudan			41.0				
Syrian Arab Republic			42.6			28.5	
Tunisia				8.5			

Source: UNICEF. 2021. Infant and young child feeding. In: *UNICEF*. New York. Cited 6 April 2022. https://data.unicef.org/topic/nutrition/infant-and-young-child-feeding

TABLE 29
PREVALENCE OF LOW BIRTHWEIGHT (PERCENT)

	2000	2005	2010	2012	2013	2014	2015
World	17.5	16.4	15.3	15.0	14.8	14.7	14.6
Arab States				11.8			11.6
Low-income countries				13.6			13.5
Lower-middle-income countries				11.6			11.4
Upper-middle-income countries				10.1			9.9
High-income countries				9.1			9.1
Arab States LDCs				14.7			14.4
Conflict countries				12.4			12.3
Non-conflict countries				11.3			11.2
Algeria	7.7	7.5	7.3	7.3	7.3	7.3	7.3
Bahrain	8.5	8.9	9.5	10.2	10.6	11.2	11.9
Comoros	25.9	25.4	24.6	24.2	24.1	23.9	23.7
Jordan	14.6	14.3	14.0	13.9	13.9	13.8	13.8
Kuwait	10.2	10.1	10.0	9.9	9.9	9.9	9.9
Lebanon	9.8	9.5	9.3	9.3	9.3	9.3	9.2
Morocco	18.8	18.2	17.7	17.5	17.4	17.4	17.3
Oman	10.9	10.7	10.6	10.6	10.6	10.5	10.5
Palestine	8.8	8.6	8.5	8.5	8.4	8.4	8.4
Qatar	9.1	8.3	7.7	7.5	7.4	7.4	7.3
Tunisia	8.2	7.8	7.6	7.5	7.5	7.5	7.5
United Arab Emirates	13.0	12.9	12.8	12.7	12.7	12.7	12.7

Source: UNICEF and WHO. 2019. UNICEF-WHO joint low birthweight estimates. In: *UNICEF*. New York and Geneva. Cited 28 April 2020. www.unicef.org/reports/UNICEF-WHO-low-birthweight-estimates-2019

TABLE 30
AFFORDABILITY OF A HEALTHY DIET

	Number of people unable to afford a healthy diet (millions)				Percentage of people unable to afford a healthy diet (percent)			
	2017	2018	2019	2020	2017	2018	2019	2020
World	3 049.1	2 973.8	2 961.9	3 074.2	42.9	41.5	40.9	42.0
Arab States	158.5	164.1	163.7	162.7	54.3	55.1	53.9	52.6
Low-income countries	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Lower-middle-income countries	101.7	104.9	102.9	101.0	52.3	52.9	51.0	49.2
Upper-middle-income countries	21.6	21.9	21.3	21.5	45.6	45.3	43.1	42.6
High-income countries	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Arab States LDCs	38.5	40.6	42.8	43.7	83.7	86.1	88.5	88.3
Conflict countries	55.2	57.7	59.3	60.2	70.5	71.9	72.2	71.6
Non-conflict countries	103.3	106.4	104.4	102.5	48.3	48.9	47.1	45.5
Algeria	14.6	14.3	13.7	13.2	35.2	33.9	31.8	30.2
Bahrain	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Djibouti	0.6	0.6	0.6	0.6	64.6	62.7	62.0	63.9
Egypt	73.5	77.3	76.2	74.6	76.2	78.5	75.9	72.9
Iraq	20.0	20.4	19.9	19.9	53.3	53.2	50.6	49.6
Jordan	1.6	1.5	1.4	1.5	15.8	14.9	14.2	14.9
Kuwait	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Mauritania	2.7	2.7	2.7	2.8	62.9	62.4	60.7	60.7
Morocco	6.7	6.3	6.1	6.2	18.9	17.5	16.7	16.7
Oman	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Palestine	1.1	1.2	1.2	1.1	25.4	25.8	25.4	23.1
Qatar	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Saudi Arabia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Sudan	35.2	37.3	39.4	40.3	86.3	89.1	92.1	91.8
Tunisia	2.5	2.5	2.4	2.4	21.8	21.2	20.8	20.3
United Arab Emirates	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Source: FAO. 2022. FAOSTAT: Cost and Affordability of a Healthy Diet. In: *FAO*. Rome. Cited November 2022. https://www.fao.org/faostat/en/#data/CAHD
Note: Values for the low-income countries and high-income countries aggregates are not available due to insufficient country coverage.

TABLE 31
COST OF A HEALTHY DIET (USD PER PERSON PER DAY)

	2017	2018	2019	2020
World	3.31	3.35	3.43	3.54
Arab States	3.22	3.31	3.40	3.47
Low-income countries	n.a.	n.a.	n.a.	n.a.
Lower-middle-income countries	3.29	3.35	3.40	3.39
Upper-middle-income countries	3.40	3.46	3.52	3.58
High-income countries	3.02	3.11	3.21	3.38
Arab States LDCs	3.31	3.45	3.65	3.70
Conflict countries	3.53	3.69	3.92	3.92
Non-conflict countries	3.18	3.26	3.33	3.40
Algeria	3.76	3.82	3.80	3.76
Bahrain	3.38	3.46	3.57	3.84
Djibouti	2.80	2.87	2.99	3.11
Egypt	3.46	3.51	3.50	3.370
Iraq	3.38	3.46	3.53	3.54
Jordan	3.41	3.45	3.50	3.61
Kuwait	3.34	3.41	3.47	3.61
Mauritania	3.45	3.57	3.65	3.69
Morocco	2.71	2.75	2.76	2.80
Oman	2.82	2.84	2.92	3.02
Palestine	3.34	3.40	3.49	3.36
Qatar	2.38	2.43	2.48	2.58
Saudi Arabia	3.44	3.66	3.89	4.15
Sudan	3.67	3.92	4.31	4.31
Tunisia	3.48	3.56	3.63	3.64
United Arab Emirates	2.76	2.84	2.90	3.11

Source: FAO. 2022. FAOSTAT: Cost and Affordability of a Healthy Diet. In: *FAO*. Rome. Cited November 2022. https://www.fao.org/faostat/en/#data/CAHD
Notes: Values for the low-income countries aggregate are not available due to insufficient country coverage.

ANNEX 2
DEFINITIONS PART 1

Undernourishment

Undernourishment is defined as the condition of an individual whose habitual food consumption is insufficient to provide, on average, the amount of dietary energy required to maintain a normal, active and healthy life. The indicator is reported as a prevalence and is denominated as "prevalence of undernourishment", which is an estimate of the percentage of individuals in the total population who are in a condition of undernourishment.

Source: FAOSTAT: Suite of Food Security Indicators. In: *FAO*. Rome. Cited November 2022. https://www.fao.org/faostat/en/#data/FS

Food insecurity as measured by the Food Insecurity Experience Scale

Food insecurity as measured by the Food Insecurity Experience Scale (FIES) refers to limited access to food, at the level of individuals or households, due to a lack of money or other resources.

The severity of food insecurity is measured using data collected with the FIES survey module (FIES-SM), a set of eight questions asking respondents to self-report conditions and experiences typically associated with limited access to food. For the purposes of annual SDG monitoring, the questions are asked with reference to the 12 months preceding the survey.

FAO provides estimates of food insecurity at two different levels of severity: moderate or severe food insecurity and severe food insecurity. People affected by moderate food insecurity face uncertainties about their ability to obtain food and have been forced to reduce, at times during the year, the quality and/or quantity of food they consume due to a lack of money or other resources. Severe food insecurity refers to situations when individuals have likely run out of food, experienced hunger and, at the most extreme, gone for days without eating. The prevalence of moderate or severe food insecurity is the combined prevalence of food insecurity at both severity levels.

Source: FAOSTAT: Suite of Food Security Indicators. In: *FAO*. Rome. Cited November 2022. https://www.fao.org/faostat/en/#data/FS

Stunting, wasting and overweight in children under 5 years

Stunting (children under 5 years): Height/length (cm) for age (months) < -2 standard deviations (SD) of the WHO Child Growth Standards median. Low height-for-age is an indicator that reflects the cumulative effects of undernutrition and infections since and even before birth. It may be the result of long-term nutritional deprivation, recurrent infections and lack of water and sanitation infrastructures. Stunted children are at greater risk for illness and death. Stunting often adversely affects the cognitive and physical growth of children, making for poor performance in school and reduced intellectual capacity.

Prevalence cut-off values for public health significance are as follows: very low <2.5 percent; low 2.5–<10 percent; medium 10–<20 percent; high 20–<30 percent; very high >=30 percent.

Wasting: Weight (kg) for height/length (cm) < -2 SD of the WHO Child Growth Standards median. Low weight-for-height is an indicator of acute weight loss or a failure to gain weight and can be the result of insufficient food intake and/or an incidence of infectious diseases, especially diarrhoea. Wasting indicates acute malnutrition and increases the risk of death in childhood from infectious diseases such as diarrhoea, pneumonia and measles.

Prevalence cut-off values for public health significance for wasting are as follows: very low <2.5 percent; low 2.5–<5 percent; medium 5–<10 percent; high 10–<15 percent; very high >=15 percent.

Overweight: Weight (kg) for height/ length (cm) > +2 SD of the WHO Child Growth Standards median. This indicator reflects excessive weight gain for height generally due to energy intakes exceeding children's energy requirements. Childhood overweight and obesity is associated with a higher probability of overweight and obesity in adulthood, which can lead to various non-communicable diseases, such as diabetes and cardiovascular diseases.

Prevalence cut-off values for public health significance for child overweight are as follows: very low <2.5 percent; low 2.5–<5 percent; medium 5–<10 percent; high 10–<15 percent; very high >=15 percent.

Source: UNICEF, WHO and World Bank. 2021. *UNICEF-WHO-World Bank: Joint child malnutrition estimates - Levels and trends (2021 edition)*. Cited 6 April 2022. https://data.unicef.org/resources/jme-report-2021, www.who.int/data/gho/data/themes/topics/joint-child-malnutrition-estimates-unicef-who-wb, https://datatopics.worldbank.org/child-malnutrition

Exclusive breastfeeding

Exclusive breastfeeding for infants under 6 months is defined as receiving only breastmilk and no additional food or drink, not even water. Exclusive breastfeeding is a cornerstone of child survival and is the best food for newborns, as breastmilk shapes the baby's microbiome, strengthens the immune system and reduces the risk of developing chronic diseases. Breastfeeding also benefits mothers by preventing postpartum haemorrhage and promoting uterine involution, decreasing risk of iron-deficiency anaemia, reducing the risk of various types of cancer and providing psychological benefits.

Source: UNICEF. 2021. Infant and young child feeding. In: *UNICEF*. New York. Cited 6 April 2022. https://data.unicef.org/topic/nutrition/infant-and-young-child-feeding

Low birthweight

Low birthweight is defined as a weight at birth of less than 2 500g (less than 5.5 lbs), regardless of gestational age. A newborn's weight at birth is an important marker of maternal and foetal health and nutrition.

Source: UNICEF and WHO. 2019. UNICEF-WHO joint low birthweight estimates. In: *UNICEF*. New York and Geneva. Cited 28 April 2020. www.unicef.org/reports/UNICEF-WHO-low-birthweight-estimates-2019

Adult obesity

The body mass index (BMI) is the ratio of weight-to-height commonly used to classify the nutritional status of adults. It is calculated as the body weight in kilograms divided by the square of the body height in metres (kg/m^2). Obesity includes individuals with BMI equal to or higher than 30 kg/m^2.

Source: WHO. 2020. Global Health Observatory (GHO) data repository. In: *WHO*. Geneva. Cited 28 April 2020. https://apps.who.int/gho/data/node.main.A900A?lang=en

Anaemia in women aged 15 to 49 years

Definition: percentage of women aged 15 to 49 years with a haemoglobin concentration less than 120 g/L for non-pregnant women and lactating women, and less than 110 g/L for pregnant women, adjusted for altitude and smoking.

Prevalence cut-off values for public health significance are as follows: no public health problem <5 percent; mild 5–19.9 percent; moderate 20–39.9 percent; severe ≥40 percent.

Sources: WHO. 2021. Vitamin and Mineral Nutrition Information System (VMNIS). In: *WHO*. Geneva. Cited 25 May 2021. www.who.int/teams/nutrition-food-safety/databases/vitamin-and-mineral-nutrition-information-system. WHO. 2021. Global anaemia estimates, Edition 2021. In: *WHO | Global Health Observatory*. Geneva. Cited 25 May 2021. www.who.int/data/gho/data/indicators/indicator-details/GHO/prevalence-of-anaemia-in-women-of-reproductive-age-(-)

Cost and affordability of a healthy diet

The cost of a healthy diet is defined as the amount needed to buy the least expensive locally available foods to meet energy requirements of 2 330 kcal/capita/day, and nutritional standards determined by national food-based dietary guidelines around the world, with sufficient diversity and quantity between and within food groups. The final cost is the sum of the least expensive food items across six identified food groups of a healthy diet: fruit; vegetables; starchy staples; animal-source foods; legumes, nuts and seeds; and oils and fats. For each country, the cost of a healthy diet is compared with country-specific income distributions available in the Poverty and Inequality Platform (PIP) of the World Bank https://pip.worldbank.org/home. It allows for estimations of the two affordability indicators that measure, respectively, the percentage and the number of people in a country who are unable to afford a healthy diet because their food budget is below the estimated cost.

Source: FAOSTAT: Cost and Affordability of a Healthy Diet. In: *FAO*. Rome. Cited November 2022. https://www.fao.org/faostat/en/#data/CAHD

ANNEX 3
NOTES TO PART 1

For specific country notes, please refer to Tables A.1.1 and A.1.2 in 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://www.fao.org/documents/card/en/c/cc0639en

Prevalence of undernourishment

Regional estimates were included when more than 50 percent of the population was covered. National estimates are reported as three-year moving averages to control for the low reliability of some of the underlying parameters such as the year-to-year variation in food commodity stocks, one of the components of the annual FAO Food Balance Sheets, for which complete and reliable information is scarce. Regional and global aggregates are reported as annual estimates because possible estimation errors are expected not to be correlated across countries.

Food insecurity

Regional estimates were included when more than 50 percent of the population was covered. To reduce the margin of error, national estimates are presented as three-year averages. FAO estimates refer to the number of people living in households where at least one adult has been found to be food insecure.

Country-level results are presented only for those countries for which estimates are based on official national data or as provisional estimates, based on FAO data collected through the Gallup© World Poll, for countries whose national relevant authorities expressed no objection to their publication. Note that consent to publication does not necessarily imply validation of the estimate by the national authorities involved and that the estimate is subject to revision as soon as suitable data from official national sources are available. Global, regional and subregional aggregates are based on data collected in approximately 150 countries.

Child stunting, wasting and overweight

The collection of household survey data on child height and weight were limited in 2020 due to the physical distancing measures required to prevent the spread of COVID-19. Only four national surveys included in the database were carried out (at least partially) in 2020. The estimates on child stunting, wasting and overweight are therefore based almost entirely on data collected before 2020 and do not take into account the impact of the COVID-19 pandemic.

For child wasting regional estimates, values correspond to the model predicted estimates for the year 2020 only. Wasting is an acute condition that can change often and rapidly over the course of a calendar year. This makes it difficult to generate reliable trends over time with the input data available – as such, this report provides only the most recent global and regional estimates.

Some aggregates are calculated by FAO.

Exclusive breastfeeding

Regional estimates are included when more than 50 percent of the population is covered.

Some aggregates are calculated by FAO.

Low birthweight

Some aggregates are calculated by FAO.

Adult obesity

Some aggregates are calculated by FAO.

Anaemia in women aged 15 to 49 years

Some aggregates are calculated by FAO.

Cost and affordability of a healthy diet

The cost of a healthy diet is estimated in 2017 (benchmark year) using the latest retail price data available from the International Comparison Programme (ICP) led by the World Bank. To update the series in years 2018–2020, where ICP data are not available, the 2017 cost indicator was inflated using FAOSTAT data for each country's consumer price index (CPI), and World Development Indicators data for purchasing power parity exchange rates. Regarding affordability indicators, income distributions in the Poverty and Inequality (PIP) platform are currently available for years 2017, 2018 and 2019, but are unavailable for year 2020. Thus, the percentage of people who cannot afford a healthy diet in 2020 was calculated using the 2020 CPI-inflated cost of the diet and the corresponding 2019 income distributions available in PIP. Therefore, while affordability estimates in 2020 reflect food price shocks induced by the COVID-19 pandemic, the income shocks are not yet captured. Regional and country aggregates indicating the share of people unable to afford a healthy diet are expressed as weighted percentages using population weights.

ANNEX 4
COUNTRY GROUPINGS PART 1

FAO uses the World Bank income groups: https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups

The groupings are:

- high-income economies: Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates;
- lower-middle-income economies: Algeria, the Comoros, Djibouti, Egypt, Mauritania, Morocco, Palestine and Tunisia;
- low-income economies: Somalia, the Sudan, the Syrian Arab Republic and Yemen; and
- upper-middle-income economies: Iraq, Jordan, Lebanon and Libya.
- In addition, the following groupings are used for information:
- Arab States LDCs: the Comoros, Djibouti, Mauritania, Somalia, the Sudan and Yemen;
- conflict countries: Iraq, Libya, Somalia, the Sudan, the Syrian Arab Republic and Yemen; and
- non-conflict countries: Algeria, Bahrain, the Comoros, Djibouti, Egypt, Jordan, Kuwait, Lebanon, Mauritania, Morocco, Oman, Palestine, Qatar, Saudi Arabia, Tunisia and the United Arab Emirates.

The categorization of countries as being affected or not affected by conflict used in this report is determined by the FAO Regional Office for Near East and North Africa and is not necessarily aligned with the classification used in *The State of Food Security and Nutrition in the World* report.

ANNEX 5

CEREAL, VEGETABLE AND FRUIT PRODUCTION IN THE ARAB REGION (2010–2020)

TABLE 32

CEREAL PRODUCTION IN THE ARAB REGION IN TONNES (2010–2020)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Algeria	4 211 355	4 247 535	5 137 455	4 912 551	3 435 535	3 761 230	3 445 228	3 478 161	6 066 235	5 633 586	4 393 322
Comoros	29 214	31 893	32 363	35 154	36 197	36 500	37 300	36 666	36 822	36 929	36 806
Djibouti	14	15	16	16	16	18	17	17	17	17	17
Egypt	19 464 743	22 014 225	23 755 745	24 123 416	23 323 609	23 141 275	23 385 497	22 920 861	17 562 759	21 913 681	22 320 185
Iraq	4 362 383	4 270 151	4 790 950	6 498 524	7 048 606	3 471 116	4 007 685	3 735 255	2 615 277	6 913 550	8 885 242
Jordan	87 266	83 062	84 041	102 175	90 770	95 323	99 170	99 289	84 784	114 217	95 201
Kuwait	20 303	35 457	26 862	33 254	53 636	9 312	5 257	6 103	11 217	31 382	20 688
Lebanon	111 784	158 638	188 629	178 659	176 627	180 116	181 184	166 851	163 620	175 491	174 469
Libya	243 539	275 210	307 526	305 900	304 363	254 600	299 288	209 417	279 435	219 380	209 411
Mauritania	278 473	199 092	343 848	311 756	373 295	315 852	308 605	372 303	434 503	479 831	486 125
Morocco	7 834 479	8 689 334	5 311 219	9 874 544	6 936 818	11 687 923	3 560 829	9 786 680	10 388 498	5 314 207	3 303 527
Oman	46 034	58 015	52 464	50 873	40 664	78 950	63 203	63 412	64 777	65 414	182 051
Palestine	26 980	24 652	35 904	59 055	59 112	50 142	57 727	51 066	50 162	50 668	50 655
Qatar	2 665	1 700	1 908	2 259	2 455	1 801	1 377	1 374	2 308	1 011	1 803
Saudi Arabia	1 565 155	1 414 016	1 084 597	881 553	1 568 940	1 616 813	1 507 153	1 493 943	1 280 769	1 262 801	1 180 993
Somalia	355 815	118 873	385 345	383 243	256 620	265 481	142 414	174 691	234 527	184 325	177 226
Sudan			3 026 000	5 947 000	8 063 900	4 088 600	8 509 000	5 546 184	8 860 000	5 630 000	3 821 458
Syrian Arab Republic	3 900 866	4 826 031	4 597 304	4 204 517	2 696 840	3 975 474	3 028 655	2 934 172	1 733 868	6 356 573	5 322 612
Tunisia	1 113 434	2 343 805	2 305 900	1 328 220	2 350 003	1 339 798	1 324 695	1 637 768	1 444 244	2 426 801	1 564 798
United Arab Emirates	5 336	4 590	3 779	772	2 580	3 695	5 988	17 143	8 170	26 072	15 978
Yemen	1 012 945	816 555	909 741	863 334	699 962	459 246	357 068	358 355	344 648	456 714	447 496
NENA Total	44 672 783	49 612 849	52 381 596	60 096 775	57 520 548	54 833 265	50 327 340	53 089 711	51 666 640	57 292 650	52 690 063

Source: FAO. 2022. FAOSTAT: Production. In: *FAO*. Rome. Cited: September 2022. https://www.fao.org/faostat/en/#data/QCL

TABLE 33

PRIMARY VEGETABLE PRODUCTION IN THE ARAB REGION IN TONNES (2010–2020)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Algeria	4 116 878	44 22 555	4 688 991	5 483 498	5 849 537	5 985 283	6 446 878	6 523 552	6 908 955	7 293 991	7 986 465
Bahrain	15 324	14 414	14 829	14 961	15 134	15 597	15 990	16 843	17 564	18 332	18 179
Comoros	5 019	5 037	5 370	5 031	5 071	5 336	5 190	5 153	5 261	5 277	5 295
Djibouti	31 337	32 255	36 912	33 958	34 776	36 044	35 013	35 386	35 546	35 370	35 486
Egypt	16 773 785	16 444 457	16 942 842	1 510 3208	1 635 4977	1 639 6416	1 525 6770	15 516 968	15 384 986	16 006 802	16 135 024
Iraq	3 059 473	3 349 278	2 981 238	3 228 583	2 627 614	1 106 412	833 353	663 861	1 010 940	1 275 678	1 733 642
Jordan	1 412 842	1 574 761	1 426 037	1 602 829	1 558 344	1 690 762	1 889 673	1 426 199	1 509 832	1 211 476	1 401 350
Kuwait	334 009	328 999	280 518	407 153	300 146	296 352	313 961	348 128	322 065	388 489	376 740
Lebanon	879 599	865 683	798 467	805 474	821 114	754 543	661 296	694 475	713 734	688 707	680 318
Libya	652 469	655 268	678 629	675 589	680 420	677 741	680 455	684 875	682 394	685 931	688 745
Mauritania	4 410	4 492	4 700	4 633	4 635	4 649	4 674	4 720	4 743	4 769	4 794
Morocco	4 379 584	4 242 357	4 442 713	4 418 834	4 062 936	4 213 408	3 652 446	3 973 859	4 491 254	4 213 753	3 983 906
Oman	302 928	254 990	254 830	319 261	324 228	385 066	378 868	619 516	632 863	632 659	836 190
Palestine	435 421	551 072	550 881	636 850	429 167	290 637	532 805	524 907	478 206	471 067	465 434
Qatar	41 347	34 858	32 334	33 221	38 029	34 955	31 736	36 920	52 002	62 299	71 035
Saudi Arabia	1 271 985	1 281 482	1 292 036	1 296 039	678 809	648 299	664 457	659 753	699 228	818 036	1 052 171
Somalia	96 252	94 554	97 758	101 112	101 643	103 858	105 972	103 649	104 442	104 688	104 260
Sudan			2 293 152	2 338 345	3 074 568	3 276 697	3 277 027	3 263 798	3 435 341	3 798 767	3 868 342
Syrian Arab Republic	2 368 171	2 437 434	1 871 672	1 481 671	1 656 038	1 775 644	1 847 882	1 649 180	1 613 149	1 932 746	2 088 946
Tunisia	2 541 536	2 525 519	2 792 447	2 618 390	2 862 573	3 140 932	3 056 695	2 940 000	2 902 514	3 242 871	3 138 362
United Arab Emirates	188 242	187 657	195 937	175 030	223 747	184 898	171 177	246 181	260 000	311 153	233 009
Yemen	646 029	552 132	631 634	541 697	515 408	482 325	426 320	416 278	457 594	476 429	480 563
NENA Total	39 556 640	39 859 254	42 313 927	41 325 367	42 218 914	41 505 854	40 288 638	40 354 201	41 722 613	43 679 290	45 388 256

Source: FAO. 2022. FAOSTAT: Production. In: *FAO*. Rome. Cited: September 2022. https://www.fao.org/faostat/en/#data/QCL

TABLE 34

PRIMARY FRUIT PRODUCTION IN THE ARAB REGION IN TONNES (2010–2020)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Algeria	4 447 608	4 904 459	5 247 002	5 642 475	5 719 859	6 235 744	6 193 175	6 379 277	6 613 971	7 070 006	7 055 092
Bahrain	20 154	20 045	19 916	19 702	21 686	22 987	25 550	21 410	21 595	21 795	21 284
Comoros	61 690	56 482	50 548	51 780	50 968	49 815	50 869	50 553	50 406	50 607	50 526
Djibouti	4 152	4 219	4 298	4 355	4 430	4 553	4 657	4 683	4 737	4 805	4 873
Egypt	12 313 121	12 467 394	13 497 668	13 263 864	14 781 554	15 395 048	15 058 945	14 774 364	14 911 115	14 334 264	14 733 617
Iraq	15 43 569	16 176 72	17 698 02	18 802 53	1 690 474	1 109 403	1 195 588	1 251 553	1 427 301	1 922 953	2 160 646
Jordan	475 795	469 911	467 873	451 228	469 351	589 532	615 680	546 418	557 183	539 449	558 727
Kuwait	37 734	114 783	121 436	118 246	127 031	104 812	102 096	96 211	104 941	116 853	124 522
Lebanon	852 574	843 534	861 833	846 946	975 684	1 053 911	1 277 944	1 159 228	1 076 297	1 048 861	1 036 334
Libya	648 862	649 667	657 616	661 301	665 787	668 487	686 156	680 288	679 760	683 190	685 416
Mauritania	25 773	26 072	26 595	26 904	25 019	27 970	28 476	29 748	29 462	28 702	29 055
Morocco	4 297 236	4 989 770	5 047 937	4 879 024	5 764 685	5 642 885	4 906 880	6 218 434	6 085 031	6 377 488	5 586 937
Oman	382 421	376 587	382 491	391 497	386 583	416 832	427 567	495 765	505 114	514 751	505 249
Palestine	94 317	123 376	132 640	145 954	162 367	102 937	119 602	112 522	110 751	110 138	109 350
Qatar	24 634	22 543	23 533	33 807	29 118	28 890	30 533	29 876	32 170	28 896	29 144
Saudi Arabia	2 155 020	2 244 607	2 240 151	2 319 965	1 676 214	2 051 296	2 223 631	2 370 735	2 368 205	2 686 093	2 913 925
Somalia	207 780	208 125	212 309	211 101	208 584	209 967	212 424	212 931	213 256	213 873	214 348
Sudan			3 002 164	3 069 022	3 270 740	3 618 376	3 292 745	3 202 433	3 162 737	3 191 744	3 263 482
Syrian Arab Republic	2 753 720	2 970 548	2 579 220	2 450 013	2 333 630	2 429 353	2 487 010	2 564 399	2 737 092	2 603 154	2 449 998
Tunisia	1 704 534	1 757 644	1 830 529	1 897 925	1 966 984	2 168 329	2 037 072	2 194 089	2 352 714	2 418 701	2 389 063
United Arab Emirates	858 950	270 024	258 669	262 379	358 222	435 844	445 361	376 829	381 346	371 219	361 471
Yemen	1 253 538	1 162 820	1 210 468	1 207 117	1 180 228	1 112 288	1 085 944	1 079 309	1 013 127	1 158 415	1 173 553
NENA Total	34 163 182	35 300 282	39 644 698	39 834 858	41 869 198	43 479 259	42 507 905	43 851 055	44 438 311	45 495 957	45 456 612

Source: FAO. 2022. FAOSTAT: Production. In: *FAO*. Rome. Cited: September 2022. https://www.fao.org/faostat/en/#data/QCL

ANNEX 6

AVERAGE DIETARY ENERGY SUPPLY ADEQUACY AND THE AVAILABILITY OF MAJOR FOOD GROUPS IN THE ARAB REGION

TABLE 35
AVERAGE DIETARY ENERGY SUPPLY ADEQUACY (PERCENT, 3-YEAR AVERAGE)

	2009–2011	2010–2012	2011–2013	2012–2014	2013–2015	2014–2016	2015–2017	2016–2018	2017–2019	2018–2020	2019–2021
Algeria	140	143	146	147	149	149	149	149	149	151	153
Comoros	102	102	102	103	103	104	104	105	104	103	103
Djibouti	104	105	106	109	112	114	115	115	116	116	115
Egypt	145	148	148	147	146	145	145	144	144	143	143
Iraq	115	115	114	114	114	113	113	114	115	116	118
Jordan	123	124	123	124	124	123	120	117	113	109	108
Kuwait	142	141	142	141	141	140	139	139	139	138	136
Lebanon	124	128	127	126	124	123	122	121	120	119	119
Mauritania	127	127	128	129	129	128	128	128	128	128	126
Morocco	139	141	142	143	143	144	143	144	143	143	142
Oman	119	121	121	121	120	118	117	117	118	116	115
Saudi Arabia	129	131	130	133	134	136	136	137	136	136	136
Sudan	111	112	116	117	117	117	116	116	116	117	116
Tunisia	141	142	143	144	146	147	147	148	148	149	149
United Arab Emirates	111	110	112	113	114	114	115	114	115	115	116
Yemen	103	105	105	104	100	94	92	91	93	95	96
NENA Average	123	125	125	126	126	126	125	125	125	125	124
World Average	119	121	121	122	122	123	123	124	124	124	124

Source: FAO. 2022. FAOSTAT: Suite of Food Security Indicators. In: *FAO*. Rome. Cited: September 2022. https://www.fao.org/faostat/en/#data/FS
Note: Averages for the NENA region are simple (arithmetic) means and not weighted by population size.

TABLE 36

GRAND TOTAL FOOD SUPPLY IN THE ARAB REGION (KCAL/CAPITA/DAY)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Algeria	3 250	3 350	3 366	3 436	3 424	3 417	3 443	3 383	3 382	3 493
Comoros	2 272	2 251	2 252	2 289	2 301	2 299	2 332	2 331	2 314	2 285
Djibouti	2 462	2 510	2 552	2 600	2 691	2 764	2 746	2 760	2 790	2 795
Egypt	3 487	3 452	3 455	3 411	3 388	3 388	3 336	3 344	3 298	3 307
Iraq	2 608	2 569	2 523	2 590	2 606	2 532	2 539	2 588	2 613	2 615
Jordan	2 847	2 803	2 821	2 820	2 866	2 842	2 786	2 739	2 606	2 529
Kuwait	3 443	3 477	3 471	3 495	3 466	3 466	3 440	3 444	3 447	3 449
Lebanon	3 126	3 080	3 049	3 010	2 958	2 930	2 921	2 892	2 851	2 870
Libya	3 113	3 057	3 115	3 114	3 122	3 125	3 132	3 116	3 130	3 141
Mauritania	2 789	2 837	2 875	2 879	2 882	2 878	2 850	2 854	2 891	2 875
Morocco	3 289	3 337	3 353	3 355	3 396	3 384	3 421	3 366	3 409	3 365
Oman	2 943	2 950	2 990	3 023	2 989	2 948	2 886	2 936	2 946	2 951
Saudi Arabia	3 124	3 103	3 268	3 255	3 274	3 291	3 312	3 299	3 308	3 302
Sudan			2 520	2 575	2 595	2 589	2 579	2 549	2 599	2 581
Syrian Arab Republic	3 307	3 267	3 164	3 103	2 972	2 889	2 820	2 750	2 778	2 760
Tunisia	3 345	3 368	3 393	3 397	3 435	3 454	3 451	3 457	3 491	3 499
United Arab Emirates	2 967	2 984	3 017	3 062	3 056	3 070	3 049	3 074	3 048	3 084
Yemen	2 261	2 208	2 273	2 267	2 157	2 032	1 936	1 991	2 009	2 019
NENA Average	2 978	2 977	2 970	2 982	2 977	2 961	2 943	2 937	2 939	2 940

Source: FAO. 2022. FAOSTAT: Food Balances. In: *FAO*. Rome. Cited: September 2022. https://www.fao.org/faostat/en/#data/FBS
Note: Averages for the NENA region are simple (arithmetic) means and not weighted by population size.

TABLE 37

FOOD SUPPLY OF FRUIT (INCLUDING MELONS) IN THE ARAB REGION (KCAL/CAPITA/DAY)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Algeria	190	207	219	231	231	241	237	232	227	239
Comoros	133	119	104	104	102	115	112	98	95	51
Djibouti	23	21	20	42	55	59	62	50	46	50
Egypt	181	177	186	175	187	201	187	185	178	171
Iraq	101	93	88	118	94	93	97	119	123	132
Jordan	75	76	76	74	67	77	80	72	71	66
Kuwait	114	208	234	235	250	207	212	176	179	171
Lebanon	97	102	104	101	122	115	112	112	107	115
Libya	164	139	170	175	153	157	143	145	147	146
Mauritania	37	35	36	35	35	40	36	36	38	36
Morocco	117	126	129	122	143	139	131	148	149	155
Oman	447	392	424	402	383	385	390	403	378	389
Saudi Arabia	209	217	221	222	124	179	193	203	224	221
Sudan	110	109	116	115	119	129	117	111	106	107
Syrian Arab Republic	100	117	107	105	100	109	110	119	123	135
Tunisia	129	139	135	128	137	150	146	158	156	161
United Arab Emirates	124	80	88	117	86	94	99	98	85	85
Yemen	69	61	62	64	58	57	51	47	44	55
NENA Average	134	134	140	142	136	142	140	140	138	138

Source: FAO. 2022. FAOSTAT: Food Balances. In: *FAO*. Rome. Cited: September 2022. https://www.fao.org/faostat/en/#data/FBS
Note: Averages for the NENA region are simple (arithmetic) means and not weighted by population size.

TABLE 38

FOOD SUPPLY OF VEGETABLES IN THE ARAB REGION (KCAL/CAPITA/DAY)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Algeria	105	112	115	126	123	126	129	125	134	151
Comoros	9	9	8	10	11	12	14	12	12	13
Djibouti	39	43	45	43	68	73	68	74	66	58
Egypt	132	129	131	113	127	127	122	130	130	125
Iraq	102	86	78	82	69	38	49	44	55	59
Jordan	80	73	67	65	64	71	86	70	68	79
Kuwait	103	114	91	151	125	117	112	119	116	111
Lebanon	138	124	116	109	106	102	104	95	103	89
Libya	155	161	150	164	151	152	167	153	149	148
Mauritania	13	18	22	25	25	27	27	29	38	30
Morocco	99	101	98	87	83	81	70	72	80	80
Oman	90	76	71	77	74	72	77	110	116	111
Saudi Arabia	82	74	76	77	57	57	53	52	56	101
Sudan	41	41	43	45	56	58	55	52	55	62
Syrian Arab Republic	68	94	83	65	67	70	81	72	80	92
Tunisia	142	142	150	154	154	172	161	158	160	170
United Arab Emirates	41	45	46	46	48	60	63	57	41	47
Yemen	20	16	19	17	18	14	13	10	12	14
NENA Average	81	81	78	81	79	79	81	80	82	85

Source: FAO. 2022. FAOSTAT: Food Balances. In: *FAO*. Rome. Cited: September 2022. https://www.fao.org/faostat/en/#data/FBS
Note: Averages for the NENA region are simple (arithmetic) means and not weighted by population size.

TABLE 39

FOOD SUPPLY OF CEREALS IN THE ARAB REGION (KCAL/CAPITA/DAY)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Algeria	1 614	1 597	1 641	1 597	1 581	1 598	1 560	1 549	1 645	1 637
Comoros	945	957	976	999	998	1 004	1 025	1 039	1 025	1 044
Djibouti	1 387	1 411	1 432	1 449	1 439	1 464	1 490	1 495	1 506	1 521
Egypt	2 212	2 222	2 213	2 215	2 180	2 156	2 147	2 137	2 080	2 120
Iraq	1 519	1 491	1 510	1 527	1 571	1 498	1 490	1 530	1 570	1 572
Jordan	1 271	1 300	1 251	1 294	1 312	1 265	1 251	1 247	1 076	1 000
Kuwait	1 416	1 370	1 425	1 320	1 381	1 402	1 388	1 408	1 401	1 430
Lebanon	1 161	1 174	1 202	1 179	1 179	1 235	1 246	1 232	1 148	1 167
Libya	1 463	1 434	1 395	1 480	1 597	1 594	1 605	1 494	1 444	1 480
Mauritania	1 486	1 517	1 455	1 509	1 532	1 562	1 555	1 547	1 591	1 552
Morocco	1 907	1 948	1 929	1 957	1 987	2 018	2 036	1 987	1 993	1 957
Oman	1 099	1 101	1 096	1 143	1 204	1 232	1 143	1 150	1 151	1 192
Saudi Arabia	1 472	1 417	1 438	1 426	1 587	1 590	1 574	1 591	1 594	1 576
Sudan	742	847	1 276	1 352	1 311	1 316	1 331	1 339	1 361	1 303
Syrian Arab Republic	1 596	1 459	1 445	1 474	1 349	1 235	1 193	1 124	1 178	1 235
Tunisia	1 639	1 699	1 625	1 648	1 681	1 645	1 675	1 649	1 657	1 651
United Arab Emirates	1 211	1 202	1 236	1 204	1 215	1 150	1 202	1 131	1 081	1 077
Yemen	1 442	1 411	1 440	1 417	1 394	1 305	1 246	1 297	1 313	1 339
NENA Average	1 421	1 420	1 444	1 455	1 472	1 459	1 453	1 441	1 434	1 436

Source: FAO. 2022. FAOSTAT: Food Balances. In: *FAO*. Rome. Cited: September 2022. https://www.fao.org/faostat/en/#data/FBS
Note: Averages for the NENA region are simple (arithmetic) means and not weighted by population size.

TABLE 40

FOOD SUPPLY OF SUGAR, SYRUPS AND HONEY IN THE ARAB REGION (KCAL/CAPITA/DAY)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Algeria	266	267	268	269	271	273	275	274	273	271
Comoros	94	78	72	87	81	78	81	84	121	116
Djibouti	307	309	312	316	322	331	333	336	364	401
Egypt	294	294	298	297	297	299	299	299	301	299
Iraq	157	155	160	173	157	167	172	175	176	172
Jordan	422	362	418	396	414	390	358	358	358	322
Kuwait	345	348	354	379	399	425	413	427	396	381
Lebanon	398	397	396	395	387	391	386	376	379	401
Libya	305	316	309	324	413	288	278	339	269	298
Mauritania	345	346	350	355	359	359	357	358	358	359
Morocco	368	381	394	392	362	352	371	348	335	332
Oman	256	289	263	261	268	253	261	250	231	222
Saudi Arabia	319	314	311	308	296	297	300	299	302	299
Sudan	418	620	317	300	297	307	278	296	271	283
Syrian Arab Republic	337	334	329	322	314	320	331	326	277	203
Tunisia	337	337	337	338	337	337	337	339	330	325
United Arab Emirates	339	326	343	346	348	355	356	382	344	340
Yemen	268	266	264	249	226	264	244	257	245	240
NENA Average	310	319	305	306	308	305	302	307	296	293

Source: FAO. 2022. FAOSTAT: Food Balances. In: *FAO*. Rome. Cited: September 2022. https://www.fao.org/faostat/en/#data/FBS
Note: Averages for the NENA region are simple (arithmetic) means and not weighted by population size.

TABLE 41

FOOD SUPPLY OF MILK AND ITS PRODUCTS (EXCLUDING BUTTER) IN THE ARAB REGION (KCAL/CAPITA/DAY)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Algeria	241	259	263	264	273	258	270	266	239	240
Comoros	38	43	40	40	35	38	37	34	25	39
Djibouti	72	82	84	102	100	126	114	115	106	85
Egypt	93	94	97	85	83	76	73	76	73	65
Iraq	47	43	40	41	60	78	80	76	76	72
Jordan	132	135	124	117	124	127	121	121	128	141
Kuwait	194	183	168	213	214	204	218	203	206	212
Lebanon	142	159	153	168	134	128	128	125	143	151
Libya	166	164	218	197	158	155	172	171	192	193
Mauritania	256	256	253	249	253	248	252	235	241	245
Morocco	63	69	73	68	70	71	71	73	80	75
Oman	245	295	301	302	289	291	285	276	266	259
Saudi Arabia	145	171	186	153	173	159	170	165	152	160
Sudan	16	12	225	222	218	215	214	208	208	204
Syrian Arab Republic	176	207	203	203	209	205	207	190	183	178
Tunisia	162	164	171	174	187	203	205	204	204	204
United Arab Emirates	116	132	121	180	201	220	190	186	232	211
Yemen	44	41	43	44	41	32	22	24	27	28
NENA Average	131	139	153	157	157	157	157	153	155	153

Source: FAO. 2022. FAOSTAT: Food Balances. In: *FAO*. Rome. Cited: September 2022. https://www.fao.org/faostat/en/#data/FBS
Note: Averages for the NENA region are simple (arithmetic) means and not weighted by population size.

TABLE 42
FOOD SUPPLY OF TOTAL MEAT PRODUCTS IN THE ARAB REGION (KCAL/CAPITA/DAY)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Algeria	86	87	88	88	91	92	90	89	88	88
Comoros	63	62	63	68	72	69	71	70	64	32
Djibouti	81	75	86	77	85	88	79	81	83	80
Egypt	98	93	97	102	106	106	102	104	109	95
Iraq	75	89	84	78	63	62	54	71	54	40
Jordan	144	145	142	147	145	144	139	130	143	135
Kuwait	343	338	311	290	266	267	267	263	269	270
Lebanon	150	145	140	129	133	126	117	113	118	119
Libya	132	142	131	126	127	157	148	158	174	147
Mauritania	128	129	125	126	129	129	127	125	124	140
Morocco	130	132	133	134	136	136	137	138	136	138
Oman	210	204	206	212	193	179	172	172	175	176
Saudi Arabia	219	218	218	243	205	213	206	187	171	193
Sudan	72	23	127	130	138	129	128	124	120	117
Syrian Arab Republic	107	118	114	114	107	107	107	108	111	112
Tunisia	111	105	116	120	117	117	116	117	116	114
United Arab Emirates	115	114	125	126	117	146	143	138	178	169
Yemen	95	92	113	114	92	77	74	72	77	83
NENA Average	131	128	134	135	129	130	127	126	128	125

Source: FAO. 2022. FAOSTAT: Food Balances. In: *FAO*. Rome. Cited: September 2022. https://www.fao.org/faostat/en/#data/FBS
Note: Averages for the NENA region are simple (arithmetic) means and not weighted by population size.

TABLE 43

FOOD SUPPLY OF TOTAL ROOTS AND TUBERS IN THE ARAB REGION (KCAL/CAPITA/DAY)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Algeria	129	129	129	129	130	130	131	131	130	130
Comoros	326	317	317	302	310	304	298	294	290	279
Djibouti	30	27	28	28	28	29	29	29	30	30
Egypt	70	70	70	70	70	75	66	71	74	68
Iraq	28	33	31	36	35	36	36	32	31	36
Jordan	45	44	43	43	41	40	45	42	31	30
Kuwait	55	56	55	68	54	54	54	52	52	55
Lebanon	78	81	77	77	78	72	77	78	84	75
Libya	54	44	61	44	35	40	43	43	64	49
Mauritania	19	19	19	19	20	20	19	20	19	15
Morocco	84	86	87	88	89	91	91	83	80	80
Oman	22	22	23	22	22	22	22	22	22	22
Saudi Arabia	18	21	21	25	21	22	22	21	22	21
Sudan	19	34	45	46	46	47	48	44	44	43
Syrian Arab Republic	59	58	54	50	51	51	51	51	53	54
Tunisia	57	56	57	57	57	57	57	58	56	55
United Arab Emirates	8	9	8	8	21	24	26	24	22	22
Yemen	25	21	21	22	20	15	14	13	12	12
NENA Average	63	63	64	63	63	63	63	62	62	60

Source: FAO. 2022. FAOSTAT: Food Balances. In: *FAO*. Rome. Cited: September 2022. https://www.fao.org/faostat/en/#data/FBS
Note: Averages for the NENA region are simple (arithmetic) means and not weighted by population size.

TABLE 44

FOOD SUPPLY OF ANIMAL OILS AND FATS IN THE ARAB REGION (KCAL/CAPITA/DAY)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Algeria	19	22	17	18	23	16	16	14	16	15
Comoros	3	3	3	2	3	3	3	3	3	16
Djibouti	16	18	15	14	17	17	18	17	16	16
Egypt	49	61	49	43	46	41	39	34	34	31
Iraq	12	10	11	10	32	23	26	26	24	26
Jordan	33	32	35	31	33	32	31	28	35	33
Kuwait	44	34	49	51	50	48	45	41	43	43
Lebanon	44	40	36	36	38	35	33	32	34	28
Libya	15	7	15	13	11	10	10	13	7	11
Mauritania	24	22	26	25	24	23	23	23	19	19
Morocco	44	43	48	50	49	44	47	43	44	42
Oman	50	46	43	40	35	32	37	34	61	39
Saudi Arabia	48	51	55	51	53	46	49	41	47	37
Sudan	6	8	13	13	15	15	15	15	15	14
Syrian Arab Republic	60	84	80	79	70	72	93	87	88	78
Tunisia	15	17	28	27	23	24	25	26	28	32
United Arab Emirates	37	31	35	41	37	36	37	37	39	37
Yemen	13	11	14	14	16	13	13	13	12	11
NENA Average	29	30	32	31	32	29	31	29	31	29

Source: FAO. 2022. FAOSTAT: Food Balances. In: *FAO*. Rome. Cited: September 2022. https://www.fao.org/faostat/en/#data/FBS
Note: Averages for the NENA region are simple (arithmetic) means and not weighted by population size.

ANNEX 7
IMPORT AND EXPORT STATISTICS

TABLE 45
CEREAL IMPORTS IN THE ARAB REGION (TONNES)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Algeria	7 912 457	11 091 246	9 913 282	10 172 077	12 429 616	13 827 675	13 358 189	12 904 349	13 074 632	11 385 668	13 071 269
Bahrain	172 580	182 386	187 546	165 903	200 097	203 158	169 477	226 910	242 295	199 107	186 333
Comoros	53 925	37 892	65 443	39 991	57 647	39 283	30 994	40 840	47 539	74 979	59 556
Djibouti	139 489	571 082	707 373	857 635	649 785	963 171	690 098	770 964	512 639	579 432	443 696
Egypt	16 888 735	16 992 099	17 840 321	16 134 418	19 460 729	18 696 448	19 746 838	21 353 140	22 032 598	19 008 436	17 005 340
Iraq	2 980 723	4 016 632	3 812 175	3 571 270	2 058 442	1 500 140	1 382 114	1 615 723	3 505 743	3 013 369	2 911 627
Jordan	1 676 335	2 243 222	2 450 680	2 113 526	2 760 180	2 325 980	3 864 264	2 804 511	2 985 437	2 693 907	2 382 479
Kuwait	820 400	886 447	912 603	1 101 838	1 450 854	1 113 713	1 262 772	1 528 544	1 360 713	1 404 776	1 328 967
Lebanon	979 868	984 710	1 041 550	1 082 119	1 200 565	1 279 987	1 300 407	1 413 118	1 297 026	1 251 187	1 369 166
Libya	2 901 098	1 512 727	2 581 439	3 415 415	3 310 355	3 035 843	3 426 700	2 766 370	3 022 029	1 485 660	2 818 056
Mauritania	441 756	417 135	719 802	563 888	613 487	719 113	495 380	620 083	850 146	759 690	747 083
Morocco	5 507 074	5 597 960	6 695 632	4 703 696	7 731 022	5 676 973	9 307 176	6 445 329	6 665 808	7 005 522	9 607 240
Oman	528 171	498 028	552 181	902 451	1 193 643	1 034 980	1 088 602	1 292 134	1 255 867	1 454 781	1 467 458
Palestine	297 507	287 539	264 025	235 663	334 412	343 460	383 290	403 713	175 383	398 100	218 503
Qatar	425 031	385 255	421 115	249 391	437 162	576 153	701 176	554 289	702 652	825 940	621 601
Saudi Arabia	12 077 212	11 192 310	13 701 001	16 050 675	14 796 617	13 319 930	15 553 619	16 351 011	14 517 327	11 673 604	10 629 615
Somalia	244 507	322 331	321 602	219 138	258 793	314 285	457 655	594 097	495 805	590 569	647 877
Sudan			881 261	2 647 401	2 935 436	1 368 720	1 857 969	2 245 547	2 748 784	2 344 994	2 619 964
Syrian Arab Republic	3 460 634	2 647 293	1 432 296	2 653 894	1 562 937	892 613	525 842	659 622	366 811	785 591	424 969
Tunisia	3 250 666	2 689 720	2 866 824	3 194 753	3 138 620	3 627 584	4 017 984	3 698 327	3 530 401	3 449 638	3 998 890
United Arab Emirates	3 226 954	2 744 994	3 843 966	3 214 161	3 406 165	3 223 034	3 080 880	3 067 202	2 938 120	2 763 550	3 195 031
Yemen	3 520 638	3 467 155	4 975 155	4 019 368	4 928 363	3 791 751	3 784 684	4 170 440	4 258 041	4 161 732	4 383 291
NENA Total	67 505 760	68 768 163	76 187 272	77 308 671	84 914 927	77 873 994	86 486 110	85 526 263	86 585 796	77 310 232	80 138 011

Source: FAO. 2022. FAOSTAT: Trade. In: *FAO*. Rome. Cited: September 2022. https://www.fao.org/faostat/en/#data/TCL

TABLE 46
FRUIT EXPORTS IN THE ARAB REGION (TONNES)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Algeria	11 039	30 473	21 268	21 550	33 779	40093	46378	58 327	63 511	104 872	129 113
Bahrain	11 324	12 351	12 666	60 788	10 607	10875	17511	17 374	10 062	9 366	3 999
Comoros	0	0	0	0	0	0		0		1	
Djibouti	699	583	583	583		3	3	6 527	52		7
Egypt	888 107	1 506 481	1 002 513	1 571 968	1 736 950	1727302	1929811	1 966 987	1 832 860	3 168 455	2 823 201
Iraq	127 308	139 382	178 834	146 065	364 191	298 380	321 661	256 417	266 757	232 937	212 456
Jordan	96 044	109 599	132 666	151 043	150 713	166 852	147 129	148 307	135 544	176 471	133 152
Kuwait	38 813	37 451	39 088	175 702	161 122	227 767	139 197	232 944	310 648	160 671	52 003
Lebanon	388 029	309 952	334 111	287 874	243 842	201 682	205 820	206 288	208 442	171 342	268 005
Libya	470	106	221	500	613	241	856	1 317	3 145	2 451	5 557
Mauritania	0	0	0	79	1 427	1 458	455	25	1 112	2 568	1 688
Morocco	719 531	695 792	677 691	712 323	770 160	817 002	874 416	1 038 270	1 154 838	1 064 933	1 093 172
Oman	43 245	47 726	37 180	33 533	32 535	29 699	40 412	56 680	49 758	25 763	31 345
Palestine	352	1 147	1 616	2 670	4 618	2 592	3 222	2 167	9 892	8 638	8 162
Qatar	639	3 696	1 033	609	2 665	5 626	1 375	310	88	88	300
Saudi Arabia	730 022	730 776	820 970	879 017	977 953	1 029 792	934 179	845 209	842 180	689 294	642 874
Somalia	287	348	255	406	11 521	12 069	20 193	20 118	7 543	5 479	14 434
Sudan			4 725	3 537	17 414	28 697	19 531	25 618	15 340	12 498	6 097
Syrian Arab Republic	892 050	167 098	119 451	173 235	104 813	78 439	85 255	127 706	91 165	65 953	102 937
Tunisia	159 240	160 281	168 593	190 654	174 477	192 994	172 015	153 581	181 766	184 619	141 417
United Arab Emirates	313 803	225 636	269 689	320 661	756 912	782 968	733 835	572 407	742 437	748 339	854 246
Yemen	113 856	178 222	186 066	139 795	108 602	89 078	80 795	208 900	140 474	100 837	123 074
NENA Total	4 534 858	43 57 100	4 009 219	4 872 592	5 664 914	5 743 609	5 774 049	5 945 479	6 067 614	6 935 575	6 647 239

Source: FAO. 2022. FAOSTAT: Trade. In: *FAO*. Rome. Cited: September 2022. https://www.fao.org/faostat/en/#data/TCL

TABLE 47
FRUIT IMPORTS IN THE ARAB REGION (TONNES)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Algeria	245 910	459 503	482 508	515 204	566 027	503 810	338 397	234 364	186 438	284 444	349 234
Bahrain	85 628	117 064	146 407	146 778	162 129	169 853	177 515	180 542	170 432	165 076	168 595
Comoros	231	175	234	490	5 403	6 166	13 512	2 891	2 462	3 126	3 873
Djibouti	1 2384	13 198	11 680	23 300	29 852	33 329	36 062	34 235	32 531	26 813	25 443
Egypt	167 500	313 299	339 197	331 214	396 999	504 452	390 976	464 402	483 873	376 840	277 634
Iraq	668 364	382 314	312 821	669 787	1 173 826	1 873 790	2 202 559	2 411 904	2 504 808	2 037 011	1 909 293
Jordan	143 978	159 815	180 322	196 610	217 268	204 346	205 098	195 321	166 051	187 545	198 587
Kuwait	162 051	212 626	242 509	816 938	560 421	602 979	528 977	518 474	563 945	470 020	447 037
Lebanon	46 047	48 687	51 500	75 397	64 603	70 471	65 204	77 877	73 697	74 297	40 043
Libya	171 022	107 396	221 896	280 525	248 167	201 715	97 978	86 680	151 418	187 431	152 545
Mauritania	12 132	14 614	18 409	18 149	30 708	54 418	31 695	32 912	29 745	35 900	41 307
Morocco	123 502	99 176	126 175	116 003	133 745	142 718	146 015	163 986	221 244	226 289	196 408
Oman	266 784	254 094	352 278	283 048	342 397	337 587	382 677	426 918	454 660	439 050	369 650
Palestine	102 659	113 702	102 841	108 830	158 915	56 663	79 679	92 672	90 437	92 660	80 011
Qatar	138 348	140 679	137 103	131 320	181 764	201 247	230 262	220 156	253 360	289 541	279 240
Saudi Arabia	1 512 356	1 633 738	1 705 460	1 686 043	1 737 643	1 872 477	1 908 651	1 896 816	1 815 552	1 837 224	2 092 476
Somalia	243	1 264	12 970	35 176	41 121	50 766	43 545	51 580	49 886	49 035	45 715
Sudan			52 702	75 941	52 110	71 289	30 885	34 022	26 472	38 007	29 030
Syrian Arab Republic	383 174	173 166	105 213	126 083	118 014	122 102	83 333	74 788	145 814	204 203	245 238
Tunisia	30 393	52 624	23 508	33 866	49 160	72 068	80 319	71 960	68 110	57 082	72 051
United Arab Emirates	942 647	910 272	1 014 499	1 467 425	1 962 158	2 004 105	1 965 514	1 849 193	1 724 277	1 777 312	178 5664
Yemen	130 358	155 427	186 056	267 164	273 253	172 541	108 655	109 650	115 136	210 025	300 829
NENA Total	5 345 711	5 362 833	5 826 288	7 405 291	8 505 683	9 328 892	9 147 508	9 231 343	9 330 348	9 068 931	9 109 903

Source: FAO. 2022. FAOSTAT: Trade. In: *FAO*. Rome. Cited: September 2022. https://www.fao.org/faostat/en/#data/TCL

TABLE 48

VEGETABLES EXPORTS IN THE ARAB REGION (TONNES)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Algeria	7 217	9 454	6 879	6 350	5 668	5 808	5 206	5 286	5 304	8 714	6 613
Bahrain	8 645	6 416	14 038	8 859	9 320	6 469	6 513	6 582	7 141	6 244	4 127
Djibouti	0	0	0	0	392	29	3	2 192	27		0
Egypt	630 169	789 898	581 262	742 566	767 749	957 611	864 337	882 242	681 011	1 172 720	1 061 893
Iraq	143	100	141	151		40		322	279	1 462	1 928
Jordan	691 285	781 765	710 775	837 314	786 296	676 821	580 388	480 416	438 524	424 422	385 342
Kuwait	1 134	1 521	2 174	9 051	12 310	34 974	35 945	23 187	19 251	2 866	3 842
Lebanon	77 570	76 527	77 017	100 854	111 408	63 962	50 137	47 555	48 376	52 914	62 886
Libya	499	480	483	265	188	1 147	3 585	2 605	92	68	0
Mauritania	0	0	0	0		60	21	72	21	0	
Morocco	736 471	776 011	791 374	901 449	953 213	879 496	1 030 604	1 107 981	1 295 177	1 178 855	1 227 018
Oman	62 218	75 332	58 922	69 717	96 221	91 370	123 845	108 080	114 827	101 389	84 330
Palestine	9 215	8 823	9 238	8 958	10 947	13 546	14 831	11 370	9 871	3 808	4 474
Qatar	236	653	562	600	152	337	170	710	573	272	213
Saudi Arabia	339 457	379 734	232 633	138 993	148 335	182 738	193 920	191 092	117 668	104 882	99 018
Somalia	0	0	8	29	23	29	1 358	5	4	36	20
Sudan			10 464	11 993	37 428	38 004	84 175	56 699	6438	4 536	23 053
Syrian Arab Republic	843 084	296 311	284 246	123 488	154 543	77 484	72 603	90 032	50 784	106 216	170 828
Tunisia	47 887	78 176	67 764	60 984	50 027	55 872	67 791	53 290	56 243	53 488	52 512
United Arab Emirates	79 261	96 138	89 495	139 713	219 464	197 139	176 303	168 958	303 458	353 362	391 628
Yemen	93 004	137 610	121 108	131 327	51 565	114 159	41 058	107 295	67 545	64 114	87 895
Total NENA	3 627 495	3 514 949	3 058 583	3 292 661	3 415 249	3 397 095	3 352 793	3 345 971	3 222 614	3 640 368	3 667 620

Source: FAO. 2022. FAOSTAT: Trade. In: *FAO*. Rome. Cited: September 2022. https://www.fao.org/faostat/en/#data/TCL

TABLE 49
VEGETABLES IMPORTS IN THE ARAB REGION (TONNES)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Algeria	83 252	108 127	150 366	130 234	122 763	133 358	138 160	93 538	102 053	111 584	92 957
Bahrain	97 463	94 853	119 617	124 665	156 507	161 065	169 632	180 093	176 544	164 525	150 259
Comoros	2 021	2 042	1 995	2 809	10 637	19 744	4 342	4 334	4 771	4 087	5 582
Djibouti	23 460	28 165	27 736	27 209	50 975	56 540	48 946	52 113	42 942	42 548	37 029
Egypt	39 714	42 665	30 218	38 550	52 188	61 846	68 791	24 879	34 955	39 736	35 306
Iraq	1 113 492	315 066	278 434	308 606	603 819	864 744	1 541 050	1 299 973	1 562 095	1 381 420	1 415 046
Jordan	83 623	88 606	83 858	89 641	106 636	66 988	86 216	72 206	74 745	66 965	69 278
Kuwait	147 943	200 482	182 310	410 019	406 422	408 693	393 923	385 383	397 561	386 118	427 152
Lebanon	130 030	129 908	149 327	129 166	137 547	135 739	115 015	137 084	72 855	95 300	87 427
Libya	83 288	125 289	70 234	140 793	92 358	102 535	169 078	128 718	134 885	189 689	117 204
Mauritania	52 511	72 993	89 352	102 118	123 231	128 417	135 264	155 660	160 637	159 663	192 800
Morocco	42 701	33 971	34 814	45 962	37 681	39 718	45 320	47 572	50 647	47 787	55 870
Oman	149 080	150 829	163 144	171 587	206 078	189 179	220 559	259 239	273 367	257 873	198 512
Palestine	23 600	23 668	27 419	48 724	19 209	18 611	27 924	61 689	39 276	48 783	43 319
Qatar	217 261	225 421	231 737	244 954	284 056	334 524	357 978	288 831	326 455	334 102	333 153
Saudi Arabia	932 127	942 539	964 970	854 955	983 489	1 127 418	1 119 749	1 149 481	1 177 686	1 101 717	1 288 300
Somalia	1 006	3 701	66 037	132 799	165 643	160 416	83 376	102 937	112 071	122 436	113 732
Sudan			30 549	31 985	34 834	45 467	48 927	39 726	36 254	50 467	34 706
Syrian Arab Republic	235 981	280 321	275 656	170 802	191 908	135 631	82 419	91 916	78 076	120 828	153 369
Tunisia	19 008	18 571	18 742	15 931	20 050	25 528	19 159	28 079	15 991	13 441	25 252
United Arab Emirates	724 216	715 601	768 832	787 197	1 242 764	1 340 331	1 386 374	1 362 518	1 277 983	1 405 192	1 443 842
Yemen	62 367	81 134	120 335	109 381	108 482	93 502	119 707	91 731	27 566	91 286	147 162
NENA Total	4 264 144	3 683 952	3 885 682	4 118 087	5 157 277	5 649 994	6 381 909	6 057 700	6 179 415	6 235 547	6 467 257

Source: FAO. 2022. FAOSTAT: Trade. In: *FAO*. Rome. Cited: September 2022. https://www.fao.org/faostat/en/#data/TCL

TABLE 50

MEAT EXPORTS IN THE ARAB REGION (TONNES)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Algeria	76	404	240	370	1 818	1 412	990	1 520	379	1 109	623
Bahrain	1 753	823	787	466	1 086	1 082	666	813	1 230	612	346
Egypt	2 978	2 954	1 795	832	1 424	1 134	2 192	2 950	2 890	4 857	5 926
Iraq	0	0	0	0	0	0	0	313	1 191	1 666	2 357
Jordan	50 874	44 722	54 404	52 501	52 485	46 019	30 492	21 995	24 271	25 146	26 259
Kuwait	697	791	988	4 855	3 917	6 125	5 767	9 873	10 575	2 840	8 809
Lebanon	6 027	5 748	9 049	8 786	10 513	7 030	4 585	6 895	6 658	6 584	6 240
Mauritania	28	0	0	0	0	4	511	966	499	282	137
Morocco	587	483	1 717	2 938	2 206	1 964	1 545	1 348	1 408	1 030	1 122
Oman	14 119	13 597	11 691	9 953	9 702	20 140	14 410	17 148	16 952	13 714	13 566
Palestine	517	1 944	12 122	11 322	1 789	1 847	1 548	1 993	1 765	1 981	1 157
Qatar	372	393	385	435	393	1 054	39	45	194	1	49
Saudi Arabia	44 561	50 191	53 958	47 136	51 270	53 529	55 924	62 475	50 465	45 292	42 557
Somalia	0	38	58	39	508	1 498	951	970	760	106	0
Sudan	0	0	7 529	2 114	3 503	21 735	3 647	4 695	14 776	9 246	11 251
Syrian Arab Republic	7 339	2 607	3 158	3 207	64	262	265	159	73	256	191
Tunisia	3 019	5 330	3 886	1 934	2 804	2 248	2 687	4 236	4 152	4 138	731
United Arab Emirates	23 098	26 014	30 479	52 042	51 205	29 510	32 532	43 676	99 317	221 820	121 048
Yemen	0	31	379	0	78	156	0	99	0	0	0
NENA Total	156 045	156 070	192 625	198 930	194 765	196 749	158 751	182 169	237 555	340 680	242 369

Source: FAO. 2022. FAOSTAT: Trade. In: *FAO*. Rome. Cited: September 2022. https://www.fao.org/faostat/en/#data/TCL

TABLE 51
MEAT IMPORTS IN THE ARAB REGION (TONNES)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Algeria	36 363	51 006	74 791	70 250	82 937	71 445	69 314	52 895	52 173	58 403	24 264
Bahrain	60 240	61 141	64 753	77 149	78 015	75 768	90 931	83 764	86 746	90 114	94 063
Comoros	11 614	8 480	13 460	8 616	12 338	10 392	13 797	15 760	15 940	15 602	28 754
Djibouti	5 974	2 546	6 121	4 227	1 930	2 523	2 393	3 331	3 901	3 922	3 877
Egypt	380 378	250 638	402 943	517 166	393 724	540 377	464 484	644 097	648 886	660 764	514 407
Iraq	269 128	379 506	364 489	427 083	151 473	274 149	231 921	402 397	246 960	129 514	468 480
Jordan	112 298	115 793	130 321	150 575	149 492	159 576	135 745	126 562	124 600	123 078	113 561
Kuwait	216 139	190 515	157 968	184 888	177 647	187 003	182 385	191 025	199 637	197 502	198 650
Lebanon	58 497	45 233	44 703	48 892	52 422	45 407	44 951	46 440	46 240	43 013	28 478
Libya	18 934	31 240	112 195	101 267	101 112	99 348	72 905	63 887	130 127	86 571	109 374
Mauritania	7 371	11 473	12 086	17362	14 927	24 492	22 613	23 661	25 600	31 065	34 920
Morocco	8 892	13 240	7 188	14 270	13 664	6 323	11 222	9 285	11 505	16 158	7 034
Oman	108 753	126 480	219 723	154 015	151 965	156 340	149 616	164 339	159 605	154 556	135 489
Palestine	12 582	11 115	8 713	6 241	23 989	20 073	15 740	16 648	20 709	23 402	236 44
Qatar	127 690	139 820	136 099	126 244	139 035	161 630	174 336	189 841	179 244	183 168	185 123
Saudi Arabia	879 379	959 094	1 004 477	1 050 463	1 015 331	1 157 434	1 109 666	924 279	801 716	804 738	793 210
Somalia	47	15	56	1 222	1 399	2 408	2 623	3 007	5 264	4 418	7 632
Sudan	0	0	1 798	4 556	4 197	851	3 140	1 513	1 960	1 467	1 311
Syrian Arab Republic	17 990	11 105	13 582	30 351	31 342	26 742	17 361	34 308	32 475	25 496	22 081
Tunisia	8 574	5 808	12 963	8 193	8 093	4 025	2 865	4 318	7 150	7 762	2 300
United Arab Emirates	383 205	406 630	458 010	477 054	615 017	749 209	733 320	674 061	854 158	1 018 737	727 653
Yemen	111 930	86 284	118 511	113 903	129 536	61 818	86 336	82 125	96 996	140 381	141 051
NENA Total	3 105 106	3 286 668	3 729 439	4 021 070	3 501 058	4 111 482	3 869 585	4 159 940	3 998 552	3 949 345	4 133 836

Source: FAO. 2022. FAOSTAT: Trade. In: *FAO*. Rome. Cited: September 2022. https://www.fao.org/faostat/en/#data/TCL

ANNEX 8
IMPORT DEPENDENCY AND EXPORTER CONCENTRATION FOR FOUR FOOD GROUPS

1. Data sources and definition of food groups (Part 2, section 6.4.)

The metrics presented in section 6.4. are calculated as averages over 2017–2019, the latest period for which all data are available at the same time (see exceptions in the text below).

The analysis employs two primary sources of data. First, FAO's Food Balance Sheets (FBS) offer data on production, imports and exports for about 120 individual food items. These data are used to develop metrics to assess the role of imports in the overall supply of food using a single, harmonized data set. Shortcomings of these data are that no data is available for Bahrain and Qatar, and that the creation of FBSs for the United Arab Emirates was discontinued in 2013 and are only now being developed again. For the United Arab Emirates, averages over 2011–2013 are used.

Second, since the FBSs only provide aggregate data on imports without revealing a country's trading partners, the analysis employs FAOSTAT trade data, which provide data on imports and exports at the level of the individual importing country, country of origin and food item. These data are used to develop the described metrics or exporter concentration. The shortcomings of these data are that FAO's Detailed Trade Matrix does not include "fish and fish products", which are excluded from the analysis on exporter concentration. Since conversions from head counts to tonnes for live animals are not currently available live animals are also excluded from the trade analysis. Lastly, since detailed trade data by product and partner for Iraq and the Sudan by trading partner are not available from FAOSTAT, these trade flows are re-constructed from the reports of trading partners ("mirrored").

Both sources of data are merged at the level of aggregate food, as well as individual food groups (see definitions below). The approximately 400 items included in FAO's trade data were mapped onto the approximately 120 items covered by the FBS, using correspondences available from FAO. Items included in the trade data, but not in FAO's FBS were dropped when calculating exporter concentration indices since these are not accounted for as "Food" but they cover other agricultural non-food items (e.g. "Wool, hair waste"). For per capita measures presented in this note, data on a country's population were taken from FAO's FBS and averaged over 2017–2019.

Table 52 details the different food items included in each of the four food groups. Aggregate "food" as defined by all items included in FAO's FBS metrics are presented in weights. For aggregate food, both trade as well as production data are converted into calories, using country<>item<>year specific conversion factors that describe the typical caloric content of a food item. These are constructed from information implicit in FAO's FBS data (e.g. an average kg of the item "Wheat and products" in the Netherlands contained about 3 115 kcal per kg in 2018). Data on the nutritive contents of different foods is further compared and validated against FAO data on "Food composition for international use."

TABLE 52

LIST OF INDIVIDUAL ITEMS INCLUDED IN THE FOUR FOOD GROUPS

Cereals	Fruits and Vegetables	Meat	Pulses
Barley and products	Apples and products	Bovine meat	Beans
Cereals - excluding beer	Bananas	Meat	Pulses
Cereals, other	Citrus, other	Meat, other	Pulses, and other products
Maize and products	Coconuts - Incl copra	Mutton and goat meat	
Millet and products	Dates	Offals	
Oats	Fruit - excluding wine	Offals, edible	
Rice (milled equivalent)	Fruit, other	Pigmeat	
Rye and products	Grapefruit and products	Poultry meat	
Sorghum and products	Grapes and products (excl wine)	Meat, chicken, canned*	
Wheat and products	Lemons, Limes and products	Meal, meat*	
Rice, paddy (rice milled equivalent)*	Olives (including preserved)		
	Onions		
	Oranges, mandarins		
	Peas		
	Pepper		
	Pimento		
	Pineapples and products		
	Tomatoes and products		
	Vegetables		
	Vegetables, other Vegetables, fresh or dried products nes*		

Source: FAO. 2022. FAOSTAT: Food Balances. In: *FAO*. Rome. Cited: September 2022. https://www.fao.org/faostat/en/#data/FBS
Notes: * are only included in the calculation of exporter concentration metrics. Aggregate "Food" in the analysis refers to all items included in FAO's Food Balance Sheets. Nes means: Not elsewhere specified or included (i.e. those not already included in another category).

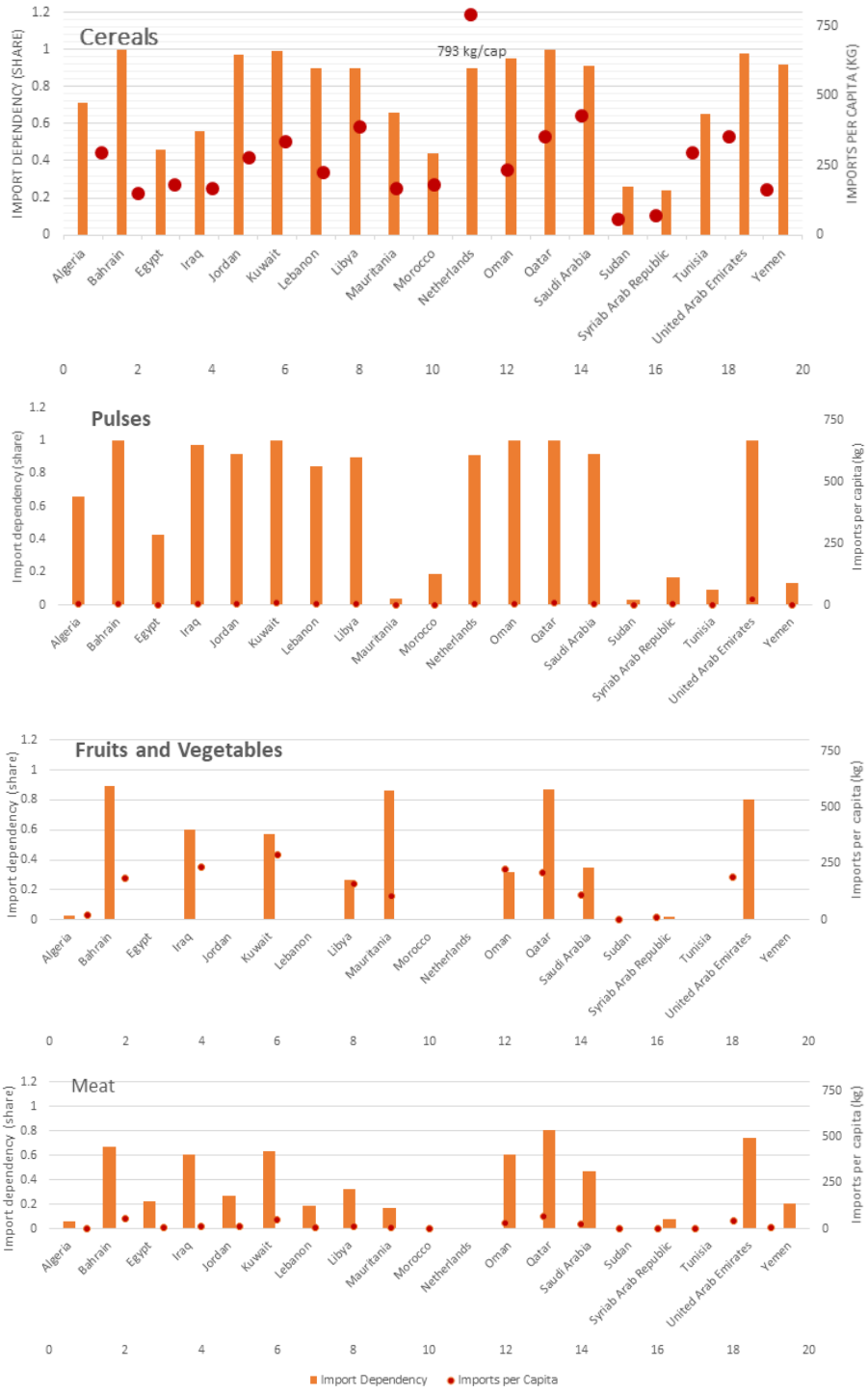
2. Import dependency

TABLE 53
CEREAL IMPORT DEPENDENCY RATIO (PERCENT) (3-YEAR AVERAGE)

	2009–2011	2010–2012	2011–2013	2012–2014	2013–2015	2014–2016	2015–2017	2016–2018	2017–2019
Algeria	70	69.7	68	70.2	72.9	76.6	77.4	74.3	70.1
Comoros		63.9	65.6	63.2				73.2	
Djibouti	100	100	98.7	98.3	98.8	99.5	100	100	97.9
Egypt	42.6	41.6	39.6	39.7	41.9	43.3	44.2	47.9	47.8
Iraq	56	50.9	47.9					61.8	57.0
Jordan	93.4	98.5	100	100	99.8	95	97.3	99.9	100
Kuwait	97.5	95.9	95	93.8	97.9	98.0	100	98.7	96.2
Lebanon	94.3	100	100	100	92.0	96.4	99	97.3	93.5
Libya		93	91.5	90.4	90.4	90.1	88.9	86.7	93.9
Mauritania	79.3	66.6	65.4	55.5	56.4	58.2			
Morocco	36.8	46.1	42	47.7	36.4	59.6	54	56.8	48.9
Oman	87.1	87.2	94.6	94.7	96.2	93.3	93	93.4	85.2
Saudi Arabia	85.7	86.3	88.8	89.1	88.5	88	89	95.2	93.8
Sudan			42.2	34.6	28.9	27.2	29.3	22.8	25
Syrian Arab Republic		38.2	33.8	37.3	36.5	35	28.7	42.7	36.5
Tunisia	55.2	56.6	57.5	58.9	67.5	66.8	71.5	70.1	63.1
United Arab Emirates	94	98.8	100	99	97.6	94.3	92.9	97.9	99.9
Yemen	86.5	81	82.5	79.6	84.6	88.8	94.3	96.3	96.3
NENA Average	77	75	73	73.6	74.1	75.6	77.3	77.4	75.3

Source: FAO. 2022. FAOSTAT: Suite of Food Security Indicators. In: *FAO*. Rome. Cited: September 2022. https://www.fao.org/faostat/en/#data/FS

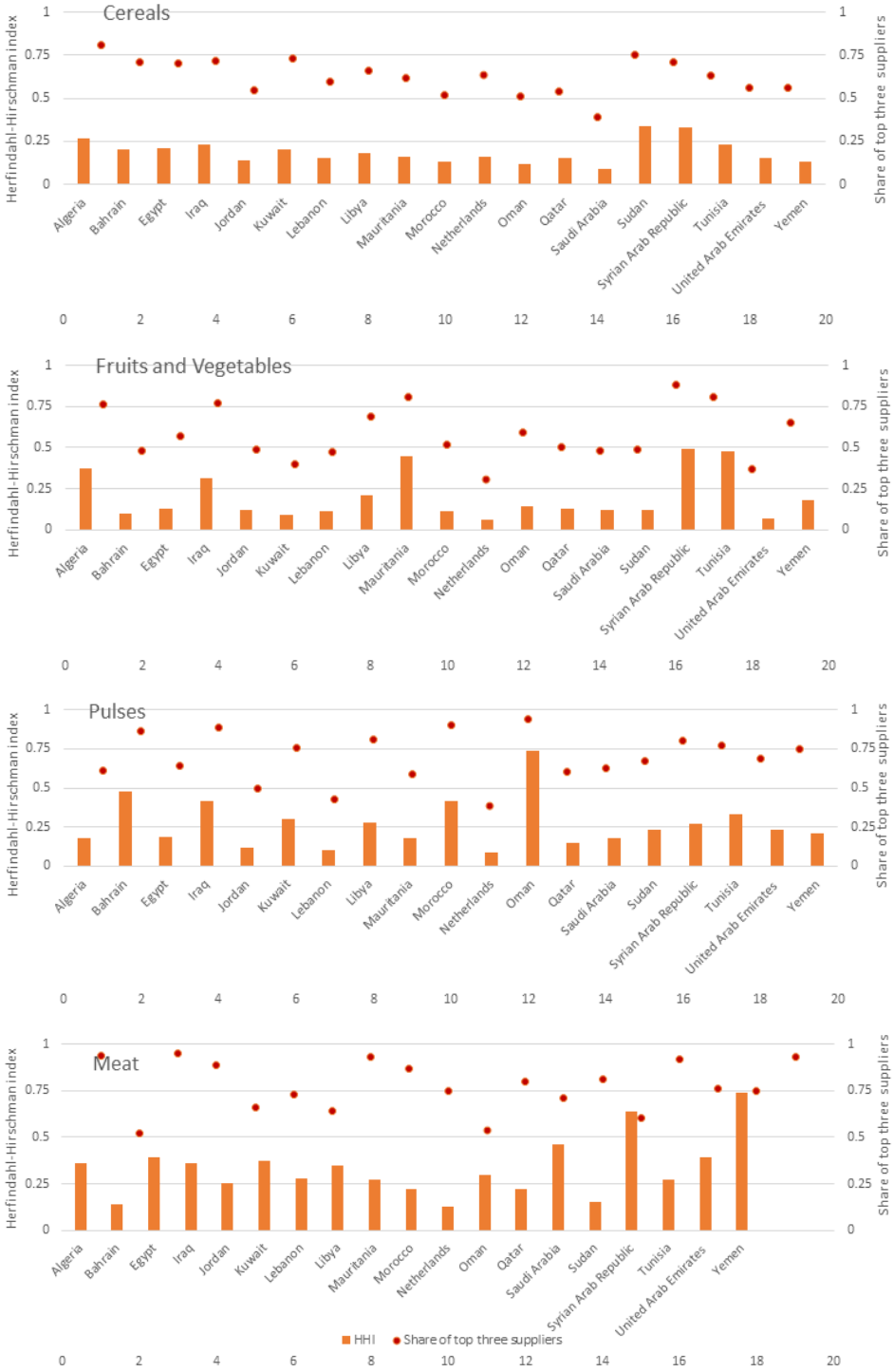
FIGURE 50
IMPORT DEPENDENCY AND IMPORTS PER CAPITA FOR FOUR FOOD GROUPS (2017–2019 AVERAGES)



Source: FAO. 2022. FAOSTAT: Food Balance Sheets and Detailed Trade Matrix. In *FAO*. Rome. https://www.fao.org/faostat/en/#data/FBS and https://www.fao.org/faostat/en/#data/TM
Notes: Data for the United Arab Emirates is from 2011–13. Blue bars are import dependency ratios (calculated based on weights) and orange dots are net-imports per capita (per year, in kg). No data is available for Bahrain and Qatar. Items included in the four food groups are detailed in Annex 8. Cases with a negative import dependency ratio are dropped, due to the country being a net-exporter of the food group (e.g. Morocco for fruits and vegetables).

3. Exporter concentration

FIGURE 51
EXPORTER CONCENTRATION METRICS FOR FOUR FOOD GROUPS (2017–2019 AVERAGES)



Source: FAO. 2022. FAOSTAT: Food Balance Sheets and Detailed Trade Matrix. In *FAO*. Rome. https://www.fao.org/faostat/en/#data/FBS and https://www.fao.org/faostat/en/#data/TM
Notes: Orange bars are values for the HHI, and red dots represent the import share of the three largest supplier countries. Data for Iraq and the Sudan are constructed from trading partner information. All values are calculated based on averages taken over 2017–2019 and are based on weights.

ADDENDA

ADDENDUM 1

OVERVIEW OF COUNTRY-LEVEL DEVELOPMENT AND NATIONAL PRIORITIES RELATED TO TRADE AND FOOD SECURITY

Many countries in the NENA region have made extensive efforts to reduce their dependency on trade by expanding their agricultural sector. Regardless of the region's level of import dependency, there have been efforts to shift towards self-sufficiency, as well as to make a strategic restructuring of their respective export-import baskets. The section below provides a snapshot of the country-level development with a focus on their alignment to national priorities.

ALGERIA

The agricultural sector contributes up to 12.4 percent of the Algerian GDP and accounts for more than 2.5 million direct jobs. The Government of Algeria believes that the global economic situation, marked by fluctuating oil prices and soaring food prices, is a lesson on the importance of achieving self-sufficiency in certain essential products. In efforts to achieve market liberalization, Algeria eliminated its generalized system of subsidies in 1994, and as of 2001, the list of administrated prices affecting the agricultural sector is limited to pasteurized milk, bread-making flour, bread, drinking water and water for agriculture use, as well as energy products.

Trade policy in Algeria is designed to enhance self-sufficiency and reduce trade dependency in agricultural products. In 2021, the Government set the goal of reducing the import of agricultural products by USD 2.5 billion, which would impact targeted commodities such as grains, sugar, milk powder and vegetable oil.

In 2020, the Government unveiled its strategy, which focuses on developing the cereal sector with emphasis on bread (common) wheat, corn, sugar crops and oilseeds. These products still constitute a significant portion of Algerian imports (more than USD 10 billion). Modernizing the irrigation system to mitigate water stress and increase the yield is also part of the strategy. The Government will continue to subsidize bread. To encourage domestic production, the Government is also providing subsidies on import substitution products (such as domestic packaged pasteurized milk instead of the imported powdered milk). The Government is also creating local collection centers to increase the storage capacity of cereals. It is also setting up agro-industrial micro areas, developing the seed sector and promoting smart agriculture (resilient to climate change). The dietary energy supply exceeds the population's energy requirements. Cereals, vegetable oils and sweeteners represent three-quarters of the energy supply. Although the food diversity index has increased, the quality of the diet is still inadequate. Undernutrition, obesity and micronutrient deficiencies are prevalent in the population, and there is dire need of focused policies to address these challenges.

BAHRAIN

Agriculture represents a meagre share of Bahrain's economy, accounting for only 0.3 percent of GDP. While Bahrain does not have a long-term national strategy to promote food security and nutrition, the Government is currently drafting it, and a national authority for food security is expected to be a means to consolidate efforts that are currently scattered among different jurisdictions. The main pillars of the long-term strategy will be the agricultural and the fisheries sector, with an established special fund for food security within the national budget. Among the recommendations included in the strategy are: (i) imposing restrictions on excessive imports that compete with local products; (ii) encouraging banks to enter as partners or to finance food security projects; (iii) seeking financial support from international organizations that Bahrain belongs to; (iv) forging unified deals with other GCC member states on food security; and (v) securing plots in other countries that Bahrainis could invest in for agriculture.

Several agricultural initiatives have been launched. They include developing agricultural laboratories, providing support to farmers with extension services, encouraging agricultural investments, and marketing to farmers. In the fisheries sector, the Government is providing the private sector the opportunity to invest in fish farming projects.

THE COMOROS

The economy of the Comoros has historically been dominated by agriculture due to fertile volcanic soil and micro-climates. Since 2000, agriculture in the Comoros has provided only slow economic growth of 2.6 percent per annum. Accounting for 38 percent of jobs and 36 percent of GDP, the relative size of the sector ranks in the 94th percentile globally. A narrow base of three export crops (cloves, vanilla and ylang-ylang) provides 90 percent of export income, with nascent attempts to diversify and revive older export products like copra, coconut oil and coffee.

Agricultural growth over the last two decades has been driven by an unsustainable strategy of bringing more marginal forest land under cultivation, rather than improving farm productivity or adding value. At least 72 percent of farmers are subsistence producers with weak linkages to a rapidly growing domestic market for food as well as a dietary shift toward consuming more meat, vegetables and dairy. Diet transformation is already underway, with spending on crop and livestock perishables now surpassing cereals. The segmentation of the Comoros's food and beverage market has caused the diet to change so that it now resemble that of the middle-class diet in low- and middle-income countries, with growing domestic demand for perishables and processed foods. Local food production is inadequate and out of sync with market demand. Despite signs of a portfolio transition from rice and coconuts to tubers and pulses, food production has been unable to align itself with the demand changes accompanying the diet transformation.

At present, the sector lacks a validated strategy outlining the path toward achieving the government's commitment to agricultural transformation. The institutional structure governing agriculture is decentralized and complex, and service delivery is poor due to the absence of sustainable revenue-generating models. Public investment in agriculture has been low for several years, with almost all agricultural support initiatives relying on donor-funded projects.

DJIBOUTI

Highly dependent on geographical conditions, including the climate, the agricultural sector accounts for only about 3 percent of GDP. Djibouti has only 10 000 hectares of arable land, of which 1 000 are cultivated. Agricultural production is of the oasis type and is primarily family-run, subsistence farming. Livestock breeding is nomadic and is the major economic activity of the rural population. Fishing is insufficiently developed. Dates, lemons, mangos, melons and vegetables are the main crops. Since Djibouti imports most of its food, the domestic market price of food items is affected by fluctuations in international food prices – it is estimated that more than 40 percent of any rise in international food prices is passed through to domestic food prices in Djibouti. Severe and prolonged droughts have affected food security of about 20 percent of the capital's population and three-quarters of rural households in the past.

The main objective of Djibouti's agricultural policy is food security. To achieve this, the Government plans to carry out the following action: (i) increase irrigated areas; (ii) diversify livestock activities; (iii) exploit the small pelagic fish to be found in Djiboutian waters; and (iv) provide safe supplies of drinking water in rural areas so as to increase the production of animals and plants and, as a result, enhance the food security of the most vulnerable sector of the population. The Government's food security strategy is aimed at: (a) developing agriculture in neighbouring countries, particularly in Ethiopia and the Sudan, to create a buffer stock of food; and (b) developing arable land within the country through irrigation systems and mobilization of surface water.

Notwithstanding many development gains, between 2008 and 2011, a long drought has had an immense effect on the sector. Such extreme weather now requires mitigation measures such as scaling up innovative approaches for water harvesting and management and strengthening rural income-generating activities (fisheries and handicrafts are possibilities). In addition, there is need for soil and water conservation activities to protect water structures, water sources and to enhance vegetation regeneration around these structures. There is also need to incorporate nutrition considerations and objectives in the agricultural and trade policies.

EGYPT

The contribution of agriculture to national income has been trending downward. Between 1970 and 2000, empirical evidence indicates that agriculture's contribution had fallen from 29 to 16.5 percent of GDP, with output falling at an annual average of 2.8 percent between 1960 and 1980. Agriculture's contribution to GDP averaged 13.2 percent between 2000 and 2017, while employment in agriculture averaged 29 percent over the same period. Overall, the country faces the challenge of a dry climate, increasing water demands for irrigated crops, and an increasing and deeply rooted dependence on crops irrigated by the Nile. These aspects add to the country's vulnerability to climate change.

Food self-sufficiency has long been a key policy goal of Egypt (Article 79 of the 2014 constitution). Two agricultural policy reform programmes were implemented between 1987 and 2002 including The Agricultural Production and Credit Project (1987–1995); and the Agricultural Policy Reform Program (1996–2002).

The Government of Egypt continues to be involved in the allocation of water through the Nile irrigation system and the maintenance of the public irrigation system. In policies related to providing agricultural inputs, the Government has gradually shifted from full control towards greater liberalization with increased involvement of private firms. The agricultural trade policy of the Government focuses on increasing production, for self-sufficiency, of crops that have high domestic consumption.

The Agricultural Development Strategy 2030 sets self-sufficiency targets for wheat and maize of 81 percent and 92 percent, respectively. Land reclamation initiatives are gradually shifting policy towards cultivating exportable high value crops on reclaimed lands. These policies have been criticized for not considering the economic value of scarce resources, such as land and water. The opportunity cost of growing cereals is considerable when compared to fruit and vegetables that have relatively high economic returns.

The Government of Egypt also promotes exports through trade zones, especially around major ports. In 2002, a new export promotion law was adopted, setting the stage for the Export Development Fund and the introduction of an export subsidy programme. There is need to formulate policies to promote better nutrition and healthy diets in the country.

IRAQ

Iraq's agricultural sector is a vital component of the economy although it accounts for just 3 percent of GDP. Agriculture is mostly practiced on small farming units, and it is a low input–low output system. Crop yields are low by any comparative standards as farmers tend to minimize costs concerned with land preparation, planting, weeding and harvesting. Crop production is the major source of income for the majority (75 percent) of farmers in Iraq, while the rest depend on livestock or mixed crop and livestock enterprises.

From being a smallholder-based, food-producing country covering its basic needs, Iraq has become a major importer of food. The sustainability of the agricultural sector has been systematically undermined by conflict and mismanagement. As a result, the capacity of its farmers to feed the population has declined. There is potential in agriculture to produce food, create jobs and generate income, but the current agrifood system is problematic because of low productivity that is blamed on the existing smallholder system. Employment in agriculture still makes up about 20 percent of total employment in Iraq.

The Public Distribution System, developed in the 1990s as a response to the international sanctions that prevented imports of agricultural commodities into Iraq, consisted of high subsidies for basic food staples as a means of preventing humanitarian crises in the country. However, it also removed incentives for private producers to react to market signals in the form of increased domestic agricultural production.

The policies of the Ministry of Agriculture are oriented toward improving the functioning of agricultural markets. The objective of these policies was to raise the efficiency of commodity markets by: (i) classifying and grading agricultural commodities; (ii) adding value and packaging for agricultural commodities; (iii) expanding agro-industry transformation and processing facilities; (iv) modernizing the cooling and refrigeration storehouses; and (v) strengthening information networks to promote competitiveness. For reasons that remain unclear, nutrition is not prominent in the existing policies of the Government.

JORDAN

The contribution of agriculture to GDP, at current prices, has declined steadily since the 1970s. Between 1971 and 1975, the share of agriculture's contribution to GDP decreased from 14.4 percent to 8.3 percent, and progressively decreased to 7.1 percent, 6 percent, and finally to 3 percent, in 1980, 1995 and 2006, respectively.

In 2002, the Government adopted a the National Strategy for Agricultural Development 2002–2010. The strategy discusses the role of the agricultural sector in social and economic development, the present situation of the sector and future scenarios under a "status quo" scenario and a "development" scenario to achieve sustainable agricultural and rural development, taking into consideration the social economic and environmental aspects of such development. The strategy presents profiles of proposed projects in the five agricultural sub sectors of rain-fed agriculture, irrigated agriculture in the Jordan Valley, irrigated agriculture in the highlands, livestock and rangelands, and marketing of agricultural produce.

The Ministry of Environment developed the Green Growth National Action Plan (GG-NAP) 2021–2025 as a next step toward implementing the recommendations in the National Green Growth Plan. The GG-NAP outlines sector-level green growth frameworks and actions for the agriculture, energy, tourism, transport, waste and water sectors to support the implementation of Jordan's green growth vision and to strengthen their future ability to recovery and contain shocks from catastrophic events such as COVID 19. There is not yet a nutrition aspect of the existing policies in the country.

KUWAIT

Kuwait's agricultural sector has increased over the years. The contribution of agriculture to GDP at current prices has increased from 0.16 percent of GDP in 2008 to 0.457 percent in 2020.

About 90 percent of the total land is not arable as neither the climate nor the natural resources support the development of the agriculture sector in the country. Natural water resources are scarce, and soil is sandy and would require supplemental irrigation. The country relies on protected greenhouse production. Vegetables, potatoes and grains make up the majority of Kuwait's crop production and family farming is not prevalent.

Kuwait relies heavily on food imports that are prone to price changes due to international price fluctuations. The COVID-19 pandemic and subsequent strains on food supply chains further emphasized the need for enhanced local production.

Kuwait's 2035 vision aims to transform the country into a financial and trade hub regionally as well as internationally and to improve the business environment to attract investors globally. One of the major pillars of Kuwait's National Development Plan is to achieve food security, improve nutrition and promote sustainable agriculture. The Government intends to achieve this with dry land urban agriculture and innovative technologies as well as other necessary resources and skilled labour to enhance its food production.

LEBANON

The share of the agricultural sector in Lebanon has decreased in recent years. It has been reduced from 6.79 percent in 1995 to 3 percent in 2020.

Lebanon has relatively diverse agricultural land, and a comparative advantage within the region in trading vegetables, fruit, wine, olive oil and tubers. Nevertheless, the development of the sector is constrained. Most of the farmers are small and semi-subsistence and land market is highly inefficient (with high rents and huge transaction and registration costs). Other major challenges to the agricultural sector include post-harvest practices, infrastructure and organization, soil degradation and pollution due to the overuse of agrochemicals, high costs of production, low plant productivity and unskilled labour.

The National Agriculture Strategy 2020–2025 (NAS) outlines agreed priorities and a related set of interventions to tackle the issues in the agriculture sector. NAS aims to maximize the efficiency of public finance and to catalyse private financing to bring results to scale. The goal of the NAS is to achieve food security and diversification. NAS aims to make the agrifood system a main contributor to achieving food security and a key driver of resilience and the transformation of the Lebanese economy into a productive economy.

For example, Pillar 1 articulates that the NAS will prioritize efforts towards reducing the risk of worsening levels of food and nutrition insecurity (including via subsidized food imports). However, as is the case with Iraq, the NAS does not specifically cater to the nutrition needs of the population.

LIBYA

The history of Libya's agricultural development has been closely, though inversely, related to the development of its oil industry. The share of agriculture as a percentage of GDP in Libya in 1958 before the era of oil wealth was more than 26 percent. It has decreased from 5.18 percent in 2002 to 1.8 percent in 2008. The proportion of Libyans engaged in some form of agricultural production is comparatively large (22 percent).

The major reasons for such a decline are conflict and political instability, water scarcity, animal and plant diseases, desertification, and a scarcity of workers. Crop productivity has been particularly affected by the high cost of agricultural equipment, such as machines, water pumps, seeds, and pesticides. This issue has compounded numerous challenges for local farmers, such as the reduced quality of available seeds and pesticides, the spread of crop pests and diseases, and a lack of access to irrigation water.

The political instability and ongoing civil war have caused population displacements and have disrupted household livelihoods. Despite this, agriculture still represents an important source of income in rural areas, with notable regional variations. As the conflict continues to displace people and as the ongoing economic crisis contributes to rising food prices, food security will remain a top priority for the Government.

While most Libyans have been able to maintain relatively high levels of food consumption, other food security indicators suggest that the situation will deteriorate. High rates of crisis and emergency coping strategies (60 percent), and high levels of expenditure on food make the current situation untenable. Households spend 53 percent of their budgets on food and 31 percent of households spend more than 65 percent. Currently, vulnerable households are increasingly unable to access food because they cannot afford it, and food prices have continued to rise as household resources and coping capacities have declined.

There is a nation-wide need for solutions to the problems created by political instability. These include conflict-resilient and climate-sensitive agricultural production, as well as facilitating farmers' access to high-quality inputs and support, such as agricultural extension services, vaccines, capacity building and financial support. Accordingly, more in-depth assessments of agricultural activities are required to identify suitable interventions for specific areas, such as drip irrigation, diversifying forage crops, recovery of fisheries and animal health services. The country needs to formulate policies with an enhanced focus on food security and nutrition.

MAURITANIA

Agriculture plays a significant role in Mauritania's economy. More than half of Mauritania's 4.4 million people earn a living from agriculture and livestock, which makes up about 60 percent of the total labour force. There has been significant volatility in the agricultural sector's share of GDP. Agriculture remains the important sector in the economy. Its share was about 33.5 percent of GDP in 1961. This was reduced to 28.1 percent in 1995 and then 20.2 percent in 2020.

Despite the significant share, domestic cereal production in this arid country only meets about one-third of national food needs. This forces a reliance on imports, especially for sorghum, millet and wheat. With respect to agricultural policies, after adopting a policy that promoted self-sufficiency in the 1990s, the Government began liberalizing the sector. As a result, the state enterprise SOMINEX lost its import monopoly. Export taxes and the import quota linking rice imports with the purchase of local rice were abolished and agricultural credit, formerly reserved mainly for rice production, was made available for other crops. The Government's priority in the sector remains food security. As is the case with other countries in the region, nutrition is not included in the existing policies.

MOROCCO

Agriculture is one of the main drivers of Morocco's economy. However, there has been significant volatility in the agricultural sector's share of GDP. The agriculture remains the important sector in the economy. Its share was about 23.4 percent of GDP in 1965. This was reduced to 13.5 percent in 1995 and then to 11.7 percent in 2020.

Along with the fishing and forestry sectors, agriculture provides jobs for about 45 percent of Morocco's workforce. It has an outsized impact on the economy due to highly variable rain-irrigation-based grain production, its role as an employer, and its role as a major export industry. The prevalence of small farms, complicated land title issues, and increasing land prices pose serious challenges to agricultural policy makers.

In February 2020, the Government of Morocco launched its second strategic plan for agriculture. The new plan, called "Generation Green," sets out an agricultural development strategy through 2030. It has two pillars that will:

1. develop a new agricultural middle class representing between 350 000 and 400 000 households by supporting young entrepreneurs by mobilizing 1 million hectares of collective land and by creating 350 000 jobs with a focus on high-value agriculture; and
2. promote human and social development.

Morocco is a net importer of agricultural and related products. Its policy is oriented towards increasing the sector's contribution to the economy and to food security. Nutrition has not been included in the policy.

OMAN

Oman has witnessed a massive decrease in agriculture's share of GDP over the last four decades. The agriculture sector remains an important sector in the economy. Its share was about 74.3 percent of GDP in 1961. This was reduced to 2.8 percent in 1995 and 3 percent in 2020. Although Oman is in a strategic location between the vast markets of Europe and Asia, it is constrained in the types of products it can easily make commercially viable due to its arid climate, soil salinity and water scarcity. Still, the country forges ahead with development plans by leveraging technology to open up new pathways to growth.

Under its ninth five-year plan for 2016–20 and the overarching Vision 2040 blueprint, the Government is prioritizing efforts to be more innovative. For instance, the Government is funding research to identify and test the most efficient and sustainable means to use available resources, including switching fields to crops that can tolerate high salinity levels, installing wireless smart metres to regulate water usage and using seawater to cool greenhouses. According to the director of strategy and planning at the Ministry of Agriculture and Fisheries, Oman could double or triple its food production simply by managing resources efficiently, with a focus on value-chain analysis and integration. To carry this out in an age of low oil prices, the country is turning to the private sector, creating new opportunities for foreign investors and multinationals. Oman lacks a policy in food nutrition.

QATAR

Qatar has made some agricultural gains, albeit insignificant relative to other countries in the region. The agriculture sector's share of GDP was about 0.373 percent in 2000. This has slightly increased to 0.339 percent in 2020. The Government is pursuing an ambitious policy to promote local agricultural products, adding that the structural changes in the farming sector are in line with the strategic objectives of the development plans.

As a result of minor development gains, the Agriculture Affairs Department is making significant strides toward changing the agricultural economic structure. Such efforts include diversifying the local production base with a focus on the optimal use and preservation of natural resources, improving economic and marketing efficiency, and continuing to improve the quality of local crops in a manner that achieves environmental balance, and prepares the sector to deal flexibly and efficiently with local, regional and international developments.

It should be noted that Qatar is a net importer of food, especially cereals. The country is implementing efforts to move towards self-sufficiency by helping farmers (providing loans, etc.) and adopting advanced farming techniques. These policies are aimed at achieving food security. Nutrition is not included in the Ministry's agenda.

SAUDI ARABIA

Agriculture's share of GDP was about 4.9 percent in 1968. This was increased to 5.9 percent in 1995 and was reduced to 2.6 percent in 2020. The country is seriously limited in natural resources for agriculture. Low rainfall and minimal available arable land are major limitations. Only about 1.5 percent of the land area of Saudi Arabia is arable, and the agriculture sector consumes more than 80 percent of the country's water resources. It relies heavily on food imports. Due to the volatile nature of food imports,

Saudi Arabia attempted to gain agricultural self-sufficiency by providing aggressive subsidies for farmers in the 1980s.

These subsidies were not very successful and were reformed in 2007. At present, Saudi Arabia subsidizes the use of manufactured feed for livestock farmers and encourages vegetable production using greenhouses and drip irrigation methods. These techniques aim to conserve water while ensuring a more sustainable food supply.

The Government is committed to improving its agricultural sector as part of its Vision 2030 program. A top priority for Saudi Arabia is increasing efficiency in its use of limited natural resources while developing rural areas. Farming is an important source of employment and supporting agribusiness in Saudi Arabia not only improves food security but the overall lives of the people. High seafood consumption levels have driven Saudi Arabia to transform and expand its aquaculture industry. Further, despite high intake of meat and sugar in the diet, and high levels of obesity among the population, the nutrition is not part of the Government's policy. Concentrated efforts are required to reform the agricultural industry.

SOMALIA

Livestock and crops remain the main sources of economic activity, employment and of exports in Somalia. Agriculture played a very important role in Somalia's economy. During the 1960s, its value added was more than 64 percent of GDP. Somalia was almost self-sufficient in cereals in the late 1980s. Agriculture's share of GDP was about 62.7 percent in 1990. It is estimated that agriculture's current share of GDP is approximately 75 percent, and represents 93 percent of total exports, mostly linked to robust livestock exports in the recent pre-drought years.

Somalia faced collapse in domestic crop production and an increase in domestic demand mainly driven by rapid population growth and urbanization. Somalia's agriculture sector faces tremendous challenges. Its livestock and crop subsectors have been buffeted by the increasingly fragile and degraded natural environment, by more frequent and extreme cycles of drought and floods that are intensifying and are related to climate change, and by the lack of research and extension services.

All these factors have contributed to a massive increase in food imports.

There are many elements to promote the recovery of agricultural production in Somalia. This will depend on better security, stronger public and community institutions, and on the rehabilitation of dilapidated flood control, irrigation and transport infrastructure. There is a lingering vacuum in the policy functions, monitoring and services normally provided by the Government. The sector's growth potential can be achieved by developing and implementing a comprehensive sector development strategy, supported by effective institutions and interventions (not only in Southern Somalia but in the entire country) that harness the dynamism of its private sector. Full implementation of Somalia's National Adaptation Program of Action to Climate Change and Intended Nationally Determined Contributions action plan is needed if its agricultural systems are to become more climate resilient.

THE SUDAN

The Sudan's economy used to rely heavily on the agriculture sector. During the 1960s, agriculture's share of GDP was more than 51.4 percent. This was reduced to 37.2 percent in 1995, but the sector employed about 80 percent of the population and contributed 80 percent of the country's exports. This share was reduced to 20.3 percent in 2020.

The Sudan's climatic conditions (mainly the rainy seasons) enable double annual harvests (in July and November) in the southern parts of the country. Most agricultural activities are concentrated near the Nile River. There is a gender gap related to food production and food security that is demonstrated by the fact that male headed households produce more food than female headed households, and that they are also much more likely to be food secure. A countermeasure may be to use policy intervention to strengthen female land ownership.

Prevalent food and agricultural policies in the country have two objectives: food security and an increased commercialization of food products. The agricultural strategy focusing on staple food production aims to achieve food self-sufficiency to enable the Sudan to utilize its own domestic production to satisfy domestic market food needs. As well, the agricultural strategy focusing on commercial agricultural production aims to increase other cash crops to enable the Sudan to engage in trade with other countries by exporting their commercial agricultural production of cash crops to the international market. However, the focus of the policy objectives is not aligned to meet the food nutrition needs of the country.

Policies related to ownership of land are important for facilitating investment in land and for supporting agricultural development and may contribute towards securing food security. Policies should target the diversification of agricultural food crops, improvement of irrigation systems and improvement of agricultural services. Policy interventions should contribute toward increasing the incomes of household by supporting the diversification of income resources. Policies that aim to improve education levels are significant for enhancing skill levels and for supporting non-farm income-generating activities.

SYRIAN ARAB REPUBLIC

Syrian Arab Republic economy has historically been relying on the agriculture sector. During 1970, its share of GDP was more than 22.4 percent. This increased to 28.2 percent in 1995 and grew to 39.7 percent in 2019.

In 1987, the Governemt of the Syrian Arab Republic started to gradually reform the country's agricultural policy with the objective of phasing out centrally planned features and to switch to more liberalized policies. This approach showed positive results in terms of output in the 1990s. At the end of the 1990s, the Syrian Arab Republic became a net exporter for many agricultural products. At the same time, significant amounts of staple products, such as sugar, rice, vegetable oil, maize, dairy products such as milk powder and butter, as well as meat were imported.

Despite liberalization, trade is still publicly controlled and non-tariff measures are still in place. Import procedures are cumbersome and export operations and domestic markets are also subjected to different degrees of public intervention. The agricultural sector in the Syrian Arab Republic is also subjected to domestic price regulations.

The Government has defined the following major agriculture and food policy objectives. The policies are more focused on achieving self-sustainability and food security. Further, nutrition is not included in the prevalent strategies and plans. The objectives are to:

- enhance self-sufficiency and improve the trade balance by reducing agricultural imports and increasing exports;
- promote the integration of the agricultural sector into the economy; and
- increase the contribution of the agricultural sector to GDP and employment.

TUNISIA

Agriculture in Tunisia constitutes nearly 10 percent of GDP, with crops contributing about 82 percent of agricultural value added. The share of agricultural value added to GDP was historically more with 20.7 percent in 1965 and 11.3 percent in 1995.

Since the 1980s, Tunisia's Structural Adjustment Program has reduced protections for the agricultural sector. These reforms included liberalizing input and output prices, cutting input subsidies and abolishing import protections. However, these reforms remained incomplete as the Government continued to intervene to protect the country's farmers and food security. An estimated 11 percent of fiscal incentives went to the agricultural sector, with no positive action in favour of exports.

The Government has developed several national economic and social plans and strategies to address agriculture and food and nutrition security. The policies are all aimed at increasing exports, enhancing the share of agriculture in GDP and achieving food security. Nutrition is not covered in the existing structure of the policies.

YEMEN

Agriculture in Yemen accounted for 24.3 percent of GDP in 1990. This share has been declining over the years and was 13.7 percent in 2000 and down to 5 percent in 2020. Yemen's economy is heavily dependent on oil exports. Agriculture is a vital sector in the economy and is the main source of employment for about 37 percent of the population. Natural resource management and water consumption concerns are highly relevant for the agriculture sector.

There are many challenges related to agriculture in Yemen. The main ones are low productivity, severe resource constraints (especially water scarcity), inadequate marketing systems, low human resources capacity, lack of infrastructure facilities and production technologies, and insufficient supply of inputs. Given the political challenges, the role of the Government in the agricultural sector has declined in recent years. The issues are compounded by other factors such as climate change, ethnic conflicts and a lack of security, which are becoming increasingly problematic.

The objectives of the policies remain increasing production, self-sustainability, enhanced food security and promotion of trade. Due to Yemen's high levels of food insecurity and limited agricultural production, several emergency food aid programmes were scaled up by development partners to address the food crisis and its aftermath. These programmes catered to the nutrition needs of the population.

ADDENDUM 2
COUNTRY CASE STUDIES

COUNTRY CASE STUDY I: TUNISIA

Characteristics and importance of the agricultural sector in Tunisia

The agricultural sector occupies an important place in the economy of Tunisia. According to official figures published by the Ministry of Agriculture, Water Resources and Fisheries in charge of the sector in Tunisia, agriculture accounted for 10.6 percent of GDP in 2019, and 8.9 percent of total Investment in 2020. On average, it contributed 11 percent to Tunisia's exports during the period 2015–2019 and employs 15 percent of the active population. The sector plays an important role in achieving food security. Tunisian agriculture is characterized by small, family farms, which face obstacles in accessing resources, inputs, technology, financing and the market. Farming's heavy dependence on climate, the degradation of natural resources, and strong fluctuations in the prices of agricultural products on international markets make the conditions for agricultural production even more difficult and precarious and requires appropriate policy support.

Agricultural trade balance and food security

Although Tunisia has attained self-sufficiency in dairy products, vegetables and fruit, the country remains extremely dependent on foreign cereal purchases, importing 50 percent of cereals used for human consumption and 60 percent of those used for livestock feed. Increasing international cereal prices generate higher budgetary costs in view of the need to supply and build up food security stocks for food commodities.

This, combined with the high prices of basic foodstuffs in international markets, puts the country in a precarious food security situation. This observation invites us to review the elements of the support policy that can have a negative effect on food security.

Support policy and food security

Most of the support to agricultural producers in Tunisia stems from policies supporting agricultural inputs and supporting market prices, particularly for basic products. Following strong increases in input prices on international markets and the depreciation of the Tunisian Dinar, input support has decreased, and production support prices are no longer sufficient to cover increasing production costs. Price incentives have become insufficient and no longer ensure fair remuneration for producers, especially for the milk and cereals sectors. The non-adaptation of producer prices to changes in production costs undermined the effectiveness of the price incentives policy, which is no longer an effective incentive for production.

Example of the cereal sector and the dairy sector

The support policy for the cereal sector includes consumption subsidies and price incentives to safeguard the purchasing power of consumers. This strongly encouraged consumption, which increased and led to imports at increasingly higher prices in international markets. This, combined with the depreciation of the Tunisian dinar has resulted in an increase in the food bill and a larger deficit in the trade balance, as well as a larger budgetary transfer through the general compensation fund, due to the policy of low consumer prices on the local market. This policy of supporting consumption, which benefits both rich and poor, has encouraged waste, which in turn has generated more structural dependence on imports, in an environment of volatility and rising prices of products and inputs on international markets, and therefore more uncertainty threatening food security.

The dairy sector has performed well, going as far as achieving self-sufficiency for milk. However, the support system focused on consumers is no longer able to address the other links in the sector. The increase in the prices of inputs imported for the dairy sector, in particular the spectacular increase in the prices of raw materials for manufacturing feed concentrate (soybeans, corn and barley), generated an increase in the production cost of local milk, which was not sufficiently offset by successive increases in support prices. This also compromises the performance of the livestock activity and leads to the deterioration of the situation of pastoralists, leading them to sell part of their herd, causing a shortage of production and supply. The consequent recourse to imports at higher prices generates greater transfers from the state to support consumption, while the productive system is damaged by this policy.

Effects of the support policy on agricultural production

The policy of low prices for agricultural products aimed at promoting all-out consumption at the expense of production has resulted in lower production and therefore lower agricultural incomes. This, in turn, leads to farmers having reduced access to inputs as well as to depreciating natural resources following their excessive exploitation. Combined with the impact of climate change, this does not encourage investment in the sector, and has made young people reluctance to work in this unprofitable and risky sector. The overall impact increases the vulnerability of the rural population as well as social inequalities, and it negatively affects both agricultural production and food security.

Olive oil sector

The olive oil sector which, apart from the packaged olive oil that receives financing for promotional activities, does not benefit from any type of support. The olive oil sector, the first agricultural sector in Tunisia, is characterized by the strong annual variation in production due to its heavy dependence on rainfall. The sector, on average experiences one good harvest in three. Thus, it is critical to ensure the full valuation of a good harvest. However, the fluctuations in international prices of olive oil, as well as speculations about drop in selling prices during seasons with abundant harvests, as recorded in the 2017–2018 season, hit operators in the sector hard. A spectacular and unforeseen drop in the export prices of olive oil during 2017–2018 caused colossal losses in a system devoid of any kind of support.

This calls for better management of the olive oil season by intervening when necessary (i.e. during periods of lower prices). This could mean introducing a storage premium in order to maintain prices and take advantage of the optimization of marketing conditions on the world market (exporting in maximum price time).

From a support system focused on consumption to a support system for production

The above-mentioned consequences of the policy of supporting consumption at the expense of agricultural production show its detrimental effects on the profitability and viability of the agricultural sector in Tunisia. This policy creates precarious conditions for agricultural production, threatening food security in the medium and long term. There is urgent need to reform the agricultural support system to create the conditions that can lead to achieving food security in a sustainable manner. Suggestions include a system that supports the incomes of farmers and a strategy that encourages production while improving the resilience of the sector as well as food security through, inter alia, support for improving the governance of the sector and its performance. This can include:

- support to encourage and facilitate organizational structures and producer groups, like agricultural service cooperatives that carry out assistance and supervision activities for small member farmers, support them and create better conditions for negotiating the prices of inputs and marketing;
- support for financing additional storage costs to take advantage of abundant harvests (example in the olive oil sector), or low prices on the international market (cereals);
- more support by the public authorities for infrastructure investments;
- support for developing vertically integrated subsectors and promoting high added value products;
- support to promote the development of geographical indications and quality labels;
- support to establish technical infrastructure, both in the public and private sectors, for testing, traceability, and compliance and conformity assessments for sanitary and technical standards; and
- support for helping the organic sector to take advantage of the strong potential in the export markets.

Sources: Acting Agriculture Minister calls for reflection on new food system in Tunisia. In: Agence Tunis Afrique Presse. Published: 28/06/2021. Cited: October 2022. https://www.tap.info.tn/en/Portal-Economy/14147688-acting-agriculture
Tunisia: Olive oil, the curse of abundance. Published: 15/12/2019. Cited: October 2022. https://www.researchmedia.org/tunisia-olive-oil-the-curse-of-abundance/

COUNTRY CASE STUDY II: JORDAN

Jordan joined the multilateral trading system by becoming a member of the WTO in April 2000. Jordan also became a member of the Greater Arab Free Trade Agreement and signed free trade agreements with the European Union, Canada, the European Free Trade Association, Singapore, the United States of America, and the United Kingdom of Great Britain and Northern Ireland.

Accordingly, Jordan's food security policy has evolved to promote trade by decreasing customs duties on various food and agricultural items. Jordan is a net-food importing country, however, almost self-sufficient in high value crops (mainly vegetables), but highly dependent on imports of staple foods, where the country imports around USD 4 billion worth of food and agriculture products and has a cereal import dependency ration of around 90 percent (Figure 50). Jordan's domestic production of cereals is negligible.

Jordan's local food production faces enormous barriers to increasing its share in the local market. Such barriers are increased taxes, increased energy costs, reduced water supply to agricultural lands and a lack of agricultural subsidies. Also, Jordan does not enjoy the WTO right to employ the special safeguards mechanism to protect its local agricultural production from "injurious" increased imports. Despite occasional "unfelt" shortages of some items, trade policy has generally enabled Jordan to secure its food supply even during the COVID-19 pandemic.

However, Jordan's main difficulty, which limits access to food, has been the significant price hikes generally affecting food products. Price increases were caused by a lack of effective enforcement of competition law and technical trade barriers on various types of imported food products. The competition law was enacted in 2004. However, to date, it has been ineffective in curtailing unfair trade practices such as collusion and abuse of dominant positions. This is due to the inability of the Government to obtain accurate day-to-day price averages for various food items, which limited its ability to monitor and investigate items where prices unreasonably increased. Also, the same law must be amended to shorten the lengthy and bureaucratic decision-making process involved.

Governemnt policies have led to various burdensome technical barriers. For instance, the Ministry of Agriculture imposes non-automatic licences on most imported food products, limiting competition in the market, causing prices to increase. On the international front, Jordan's food security may encounter challenges due to export restrictions imposed by producing countries. WTO members should update the rules to ban such export restrictions to assist low-income countries like Jordan.

COUNTRY CASE STUDY III: MOROCCO

The geopolitical dimension of agriculture has gained tremendous importance in the international agendas of governments and organizations across the world. The COVID-19 pandemic challenged health systems, political strategies, methods of work, consumption patterns and the prosperity of communities. The war in Ukraine has underlined the strategic and geopolitical importance of the agrifood sector and trade. In Morocco, agriculture has always been a vital sector with a major socioeconomic role and has been considered a key pillar of all national development plans.

Morocco's agricultural planning over the past 20 years has been successful. Morocco boosted its export production while reducing the undernourishment of the population (although, the COVID-19 pandemic has increased food insecurity). The Green Morocco Plan (GMP) launched in 2008 has promoted socio-economic development by boosting production of high-value agricultural exports. This plan has succeeded in raising the value of the country's agricultural exports by 117 percent to roughly USD 3.5 billion and created 342 000 new jobs. In 2019, Morocco's agricultural sector accounted for 13 percent of GDP and 40 percent of the country's workforce and more than 65 percent of the rural population. As a result of the GMP, Morocco's agrifood sector now accounts for 21 percent of its exports.

Notwithstanding notable achievements, the three-year average for moderate to severe food insecurity in Morocco from 2019 to 2021 stands at 31.6 percent (FAO *et al.,* 2022). This may be because of dry climate conditions with a significant decrease in the cumulative annual rainfall and uneven distribution across the growing period, which has negatively affected the cereal campaigns.

While self-sufficiency in food has been a fundamental tenet of Morocco's development strategy since independence, its growing dependence on key subsidized food imports represents an increasing danger to its socio-economic model. Like its neighbours, Morocco is heavily dependent on imported cereal grains. Morocco is expanding on its GMP with a new 10-year initiative called Green Generation 2020–2030 intended to enhance the resilience and sustainability of the country›s agricultural production for export and domestic consumption while elevating 400 000 households into the middle class. To attain these goals, Morocco will need to mitigate its vulnerability to the impact of climate change and the increasing prevalence of drought.

In terms of trade, Morocco has reduced its dependence on the European Union and made an effort to benefit from regional trade and investment opportunities, particularly within Africa. The level of Moroccan trade and investment links to sub-Saharan Africa have been steadily increasing over the last two decades because of the many trade agreements between Morocco and African countries. The country joined the African Continental Free Trade Area (AfCFTA) agreement, which came into force in May 2019[32] and applied for membership of the Economic Community of West African States in February 2017. Surprisingly, compared to imports from the European Union or other countries, sub-Saharan Africa charges the highest tariffs on products imported from Morocco.

32 Start of trading under the AfCFTA Agreement began on 1 January 2021, however, there has been no trade under the AfCFTA regime. See, https://www.tralac.org/resources/infographic/13795-status-of-afcfta-ratification.html

Morocco has signed various regional trade agreements that are designed to boost economic growth and enhance regional integration, such as the Greater Arab Free Trade Area, the Gulf Cooperation Council, the Arab Maghreb Union (AMU), the Agadir Free Trade Area (AFTA), and many other bilateral trade agreements. It is the only African country[33] that has a free trade agreement with the United States of America, which increased the total amount of trade between the two countries to USD 5 billion in 2019 compared to USD 925 million in 2005.

Despite these efforts and agreements to facilitate trade, there is currently a protected domestic market, particularly for consumer goods, which undermines the attractiveness of exporting and creates incentives for informal trade. Import tariffs on some agrifood items such as beverages, yoghurt, couscous, ice cream, tomato sauce and ketchup are high. This keeps some domestic firms protected and profitable in the domestic market, reducing their incentive to upgrade and to export.

The intraregional trade is still below its potential and the region did not witness the economic transformation that has accompanied trade arrangements in other parts of the world. Morocco has made big efforts, and it ranks at the top of the North African countries in term of the "Trading across borders" indicator by simplifying and reducing its customs clearance procedures. For example, time to export and import as a cross-border cost measure negatively and significantly affects regional bilateral trade in agrifood intermediates and Morocco has the potential to redirect a part of its capital-intensive food-processing sector in the GCC region, which is sourcing its intermediate raw materials from outside the region despite the existence of highly competitive primary agricultural production in non-GCC Arab countries.

New consumer habits and international supply patterns have changed with the COVID-19 pandemic. Moroccan organizations involved in the agricultural value chain are required to respond appropriately. The most predicted new trends in consumer habits include increased interest in local products, e-commerce and home-cooking. International trade and the global supply chain will strive to be more cost-effective, and governments will aim for self-sufficiency in the essentials of their nations.

Sources: European Training Foundation, 2021. The future of skills: A case study of the agri-food sector in Morocco. Cited: August 2022. https://www.etf.europa.eu/en/publications-and-resources/publications/future-skills-case-study-agri-food-sector-morocco
FAO. 2022. FAOSTAT: Selected Indicators. In: FAO. Rome. Cited: September 2022. https://www.fao.org/faostat/en/#country/143
H. Ghanem, 2015. AGRICULTURE AND RURAL DEVELOPMENT FOR INCLUSIVE GROWTH AND FOOD SECURITY IN MOROCCO. GLOBAL ECONOMY & DEVELOPMENT WORKING PAPER 82. Cited: October 2022. https://www.brookings.edu/wp-content/uploads/2016/07/Agriculture_WEB_Revised.pdf
Main achievements of the Green Morocco Plan. Website of the Agricultural Development Agency. Cited: October 2022. https://www.ada.gov.ma/en/main-achievements-green-morocco-plan
Middle East Institute, 2021. The Fragile State of Food Security in the Maghreb: Implication of the 2021 Cereal Grains Crisis in Tunisia, Algeria, and Morocco. Cited: August 2022. https://mei.edu/publications/fragile-state-food-security-maghreb-implication-2021-cereal-grains-crisis-tunisia
Morocco Free Trade Agreement. Website of the Office of the United States Trade Representative. Cited: August 2022. https://ustr.gov/trade-agreements/free-trade-agreements/morocco-fta
Morocco's King Launches 'Green Generation 2020-2030'. Published: 15/02/2020. Asharq Al-Awsat website. Cited: August 2022. https://english.aawsat.com/home/article/2132676/moroccos-king-launches-green-generation-2020-2030
Oxford Business Group: Green Morocco Plan increases Morocco's agricultural output. Cited: August 2022. https://oxfordbusinessgroup.com/reports/morocco/2020-report/economy/bearing-fruit-the-sector-development-plan-makes-concrete-gains-but-challenges-to-reaching-full-potential-persist

33 Qualifying sub-Saharan African countries are part of the unilateral and non-reciprocal African Growth and Opportunity Act (AGOA)

2022

NEAR EAST AND NORTH AFRICA

REGIONAL OVERVIEW OF FOOD SECURITY AND NUTRITION

TRADE AS AN ENABLER FOR FOOD SECURITY AND NUTRITION

This year's report presents evidence that Arab States face significant challenges in achieving Sustainable Development Goal 2 targets related to hunger, food security, and nutrition, as undernourishment, moderate or severe food insecurity, and malnourishment are increasing. Child wasting and overweight are higher, and adult obesity is double the global average. LDCs and conflict-affected countries suffer from even more severe hunger and malnutrition, including child stunting, wasting, and women's anaemia. The report also provides the first assessment of the cost and affordability of a healthy diet since the outbreak of the COVID-19 pandemic, which shows a growing trend in the price of nutritious diets in recent years and that more than half the Arab population cannot afford a healthy diet. The war in Ukraine, which has triggered food shortages and increased food price inflation, further adds to the burden on the region.

This year, the report focuses on how trade can enable regional food security and nutrition. Arab countries rely significantly on imports for the essential food items necessary for diverse and healthy diets that they cannot locally produce in sufficient quantities due to limited natural resource endowments. It discusses the role of trade and trade facilitation as essential enablers of all four dimensions of food security and nutrition. It also underlines how tariffs and non-tariff measures influence the economic access to food in the area.

On the other hand, countries that depend on trade may become more exposed to outside shocks, as the pandemic and the war in Ukraine have highlighted. The report assesses Arab countries' vulnerabilities, such as import dependency and lack of supplier diversification. To reduce the exposure to such external shocks, international trade must be carefully managed, sources of imports should be diversified, and international trade relations must be expanded to include new partners and markets. The report concludes with further policy recommendations that aim for the better integration of trade into food security and nutrition policies in the region.

THE STATE OF THE WORLD

ISBN 978-92-5-137711-6

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CC4773EN/1/03.23