02

Inequality
and food security

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Key messages

01

Food insecurity locks inequality into the next generation: children born to women with an iron deficiency are more likely to be born prematurely and have a lower birth weight.

02

The Arab region is characterized by severe inequalities in access to quality nutritious food; 33.3 per cent of the population are food insecure and 28.4 per cent are obese.

03

Undernourishment affects 11.9 per cent of the region's population (53 million people), higher than the global average of 9.3 per cent.

04

The Arab region produces less than half of the food it consumes.

05

A third of the women of reproductive age in the Arab region suffer from anaemia.

06

Floods and droughts, hyperinflation, and conflict and occupation contribute to high levels of food insecurity in Iraq, Libya, the State of Palestine, Somalia, the Sudan, the Syrian Arab Republic and Yemen.

07

Between 76 and 120 kg of food is wasted per person per year in the Arab region, with varying rates between countries; wealthy households waste more food than those living in poverty.

08

The entire population of the GCC has access to safe drinking water and sanitation services while in LDCs, only two-thirds of the population have access to drinking water and less than half to sanitation services.

09

Households living in poverty in Algeria, Egypt, Morocco, the Syrian Arab Republic and Yemen experience income loss due to climate hazards two times more than the rich.

10

The average Arab household spends one third of its earnings on food.

11

Obesity rates are higher for females than for men in the Arab region.

02

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> Food security is defined as “when people have physical, social and economic access to sufficient safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life”.
>
> **Source:** FAO, The State of Food Insecurity in the World 2001

A. Introduction

Despite notable progress towards reducing hunger since the 1996 World Food Summit, there are still millions of people around the world suffering from food insecurity, with big disparities between countries and households. In the Arab region, food insecurity is most prevalent in the least developed and conflict-affected countries, while less so in high-income countries. Within countries, vulnerable groups such as refugees, women and people living in rural areas are at higher risk of food insecurity.

The relationship between inequality and food security is complex and multilayered.

This chapter explores this interconnection using the Food Security Monitoring Framework in the Arab region.[31] It analyses how inequalities exist in the four pillars of food security: availability, access, utilization and stability, and within the indicators identified in the Framework, and how they translate into inequalities in food security core indicators (undernutrition, obesity and experience of food insecurity). Inequalities are analysed at three levels: between countries; between households; and within households, and the ways they reinforce one another are considered. Figure 17 expands the Food Security Monitoring Framework to analyse the relevant indicators from an inequality lens.

Inequality in food markets

The links between food insecurity and inequality are rooted in the unequal distribution of social, political and economic power both in general terms and in how food is made and distributed. For example, in many countries, small-scale producers are excluded from participating in decision-making regarding the national and global food policies that affect them. Globally, there are clear concentrations of capital and market shares that allow agrifood corporations to influence the price of food and food inputs as well as their supply and quality. Global policymakers and private companies also have the power to block food policies and the sharing of intellectual property.

Power in the global food system is now so concentrated in the hands of these corporations that they largely determine which foods move from producers to consumers and how. Three transnational firms – Monsanto, DuPont and Syngenta – dominate commercial seed transactions globally; another three – ADM, Bunge and Cargill – are responsible for most international grain trade. This system is often visualized as an hourglass: food is grown by millions of farmers worldwide, and every person in the world eats. However, getting food from "farm to fork" is increasingly mediated by a few large commodity distributors, suppliers, retailers, and processing and packaging firms.[a]

Additionally, food speculators also play a considerable role in determining food prices globally. In the United States of America, experts predict that deregulated speculative activity is responsible for somewhere between 10 and 25 per cent of food prices.[b] Speculators rushing into the grain market when there is a supply shock exacerbate scarcity and push prices up further.

Analysing how profit is made in food markets and the role of financial regulations is key to understanding global changes in food prices and how inequality dynamics are perpetuated in food systems.

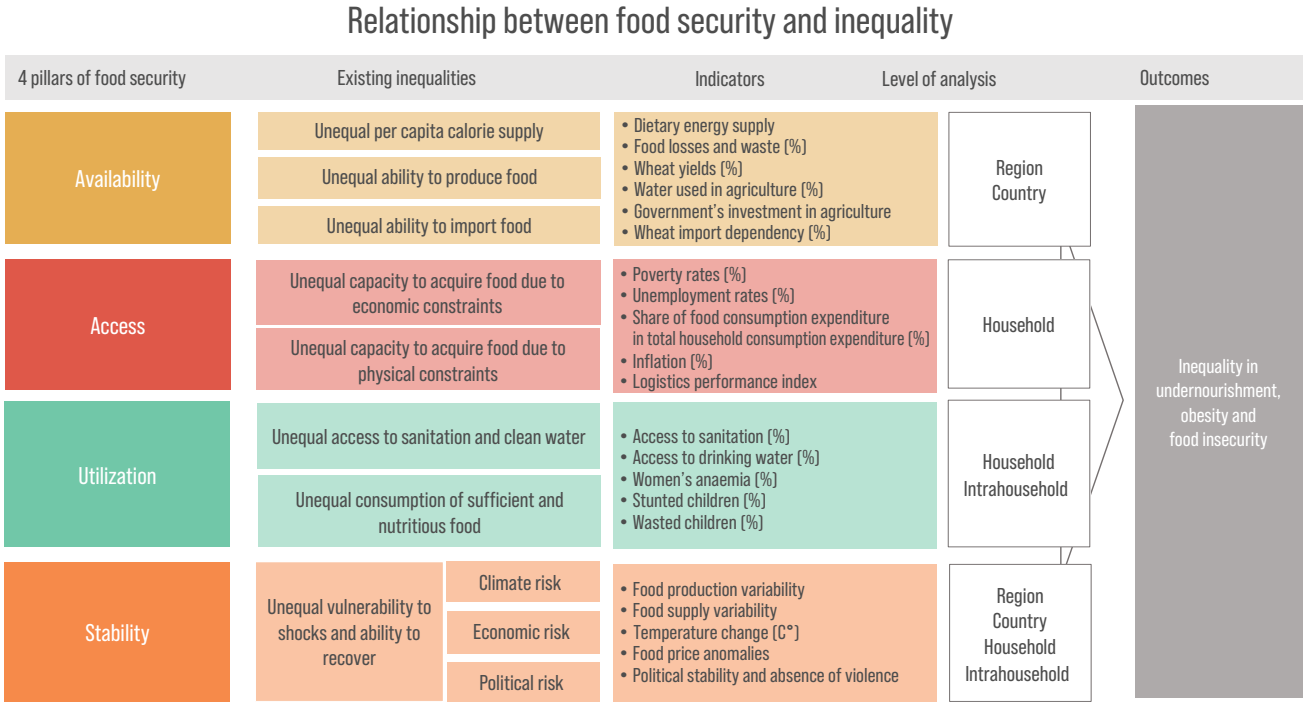
[a] https://www.globalhungerindex.org/issues-in-focus/2017.html.
[b] Ashoka Mukpo, Did Wall Street play a role in this year's wheat price crisis?, 2022.

B. An inequality lens on food security

1. Food availability

The first step towards food security is ensuring the availability of sufficient quantities of food in a country, supplied through domestic production or imports, including food assistance. Food availability can be measured through the total calorie supply in the country. It is primarily determined by two factors: national production and the ability to import food. The Arab region currently produces only approximately half of the calories it consumes[32] and faces significant challenges to increase its agricultural production. The region is highly dependent on food imports and is thus vulnerable to changes in world food prices. The region imports 61.4 per cent of its cereal,[33] which is the most important food group and main source of calories. This section describes the food availability challenges in the Arab region and the inequalities observed in all their dimensions.

Figure 17. Inequalities and the Food Security Monitoring Framework



Source: ESCWA elaboration.

• Per capita calorie supply

The amount of food available at the country level can be estimated through the calories derived from all food supplies (production and imports minus exports) each day and for each person captured in the FAO Dietary Energy Supplies (DES) indicator. Despite the Arab region having a higher average DES (3,048 kcal/capita/day) than the global average (2,693 kcal/capita/day) between 2019 and 2021, there were considerable variations amongst its countries.

The GCC and MICs have an average calorie supply of over 3,200 kcal/capita/day, while countries in conflict and LDCs have 23.69 per cent and 18.34 per cent less, with 2,442 and 2,613 kcal/capita/day, respectively. In addition, from 2010 to 2020, countries in the region witnessed unequal changes in their DES. The highest increases were experienced by both GCC and LDCs, with 5 per cent and 7 per cent increases, respectively. In contrast, calorie levels stagnated or declined in MICs and countries in conflict. The biggest decreases were experienced by Jordan (-10 per cent), followed by Yemen (-5 per cent), Lebanon (-4 per cent) and Egypt (-3 per cent).[34]

The DES indicator is not sufficient to fully assess the security of food availability in a country because it does not consider the caloric needs of individuals, nor does it account for food that is not consumed because of losses and waste. The average DES adequacy indicator usually complements analysis by presenting the calories available over the estimated calories needed by the population of the country. The Arab region's average DES adequacy was 129.2 per cent from 2019 to 2021, implying that DES were about 30 per cent higher than what was required for a healthy and active lifestyle. Nonetheless, significant differences were observed across subregions and countries, with countries in conflict and LDCs presenting 109 per cent and 117 per cent, respectively, and GCC and MICs, 131 per cent and 143 per cent respectively.[35]

Losses of soft wheat and dates in Morocco

Soft wheat losses in Morocco occurred mainly due to deficient storage practices, with up to 20 per cent losses for underground storage and 10–15 per cent losses for room storage. Dates were spoiled due to deficient storage practices, with up to 20 per cent losses for underground storage and 10–15 per cent losses for room storage. Dates were also spoiled during cultivation and harvest due to insects (10 per cent), birds (15 per cent) and poor harvesting practices (1–3 per cent).

Source: ESCWA, Working paper: food loss in Morocco, 2022.

Despite the DES and average DES adequacy indicators suggesting that there is sufficient food for everyone in the Arab region, there are inequalities in the access to food among different groups and an important proportion may not be consumed due to losses at different stages (including production, transportation, storage and consumption). It is estimated that about one third of the region's food is lost or wasted.[36] Decreases in quantity or quality of food at the supply chain level are termed food loss, while decreases that happen at retail, food service and consumer levels are referred to as food waste. In the Arab region in 2019, it is estimated that there was a food loss rate of 5.4 per cent, with higher rates in MICs (6.9 per cent) and lower rates in countries in conflict (4.4 per cent), the GCC (2 per cent) and LDCs (2.6 per cent).[37]

While reliable data on food waste are scarce, estimates suggest 76–120 kg of food per capita per year (kg/capita/year) of food is wasted at the household level in the Arab region.[38] Data suggest higher rates of food waste in low- and middle-income countries compared to high-income countries, but variations are too high to be able to draw concrete conclusions. At the household level, the studies available show higher levels of waste by wealthier households compared to poorer households in the same country. A study in Al-Kut city in Iraq, for example, found that high-income families wasted on average 166 kg/capita/year, compared to 111 kg/capita/year in low-income families.[39]

- ### Food production

The Arab region produces on average 40 per cent of its cereals needs, with higher rates among LDCs and as low as 6 per cent for GCC countries.[40] There are several factors contributing to limited national food production, including low agricultural productivity, water scarcity and limited fertile soils. These challenges are not equally apparent in all Arab countries; and the abilities of countries to overcome these challenges also differ.

Low agricultural productivity

There are continued low yields of local production, which are 20 per cent below their potential.[41] MICs account for close to 65 per cent of the cereal production in the region and have achieved much higher yield increases during the past years than countries in conflict, LDCs or GCC countries. This high performance is mostly attributable to Egypt, due to its widespread irrigation networks. In the LDCs, yields are only a fraction of what is achieved elsewhere; yields have remained low, 50 per cent or less of their potential, and stagnant for several decades.

Water scarcity

More than half of the Arab region's renewable water resources are already allocated to the agricultural sector, but there are wide disparities between countries. Iraq, Mauritania, Somalia, the Sudan and Yemen are currently using more than 90 per cent, while Bahrain, Djibouti, Lebanon and Qatar are using under 40 per cent. Water scarcity in the region coexists with low water use productivity due to wasteful irrigation practices and lack of investment in infrastructure.

Limited availability of fertile arable land

The region is very dry, with 95 per cent of land classified as hyperarid. The scarce fertile land available is shrinking due

> Long-standing conflict in the Sudan has destroyed the irrigation infrastructure and reduced productivity. It has diminished the country's ability to invest in new projects, create jobs and increase people's incomes. Conflict has also increased the country's dependency on other countries and widened the gap between the Sudan and neighbouring countries.
>
> **Source:** Jamal Al-Nil, Deputy Minister of Social Development, the Sudan.

to urbanization and land degradation, with 73 per cent of the region's arable land already degraded. High-risk areas include the mountains in Lebanon and Yemen; coastal plains susceptible to seawater intrusion such as in Gaza or the Nile Delta; desert encroachment in the Sudan and the Arabian Peninsula; and salinization in the Jordan Valley. One of the reasons for land degradation is soil erosion from reductions in vegetation cover. This phenomenon has been particularly pronounced in the Comoros, Djibouti, Mauritania, Somalia, the Sudan and Yemen in recent years, with an average reduction of 33 per cent from 1998 to 2006.[42]

At the household level, and especially in low- and middle-income countries, the agricultural sector is a critical source of income and food security for people living in rural areas, which represent 41 per cent of the Arab region.[43] The share of people employed in agriculture is a lot higher in Somalia (80 per cent), the Sudan (38 per cent), Comoros (34 per cent) or Morocco (33 per cent) than in GCC countries such as Bahrain (1 per cent), Qatar (1 per cent) and the United Arab Emirates (1 per cent).

Between 75 and 85 per cent of agricultural land holdings in the Arab region is held by family farmers that practice small scale, mostly rain-fed, traditional agriculture. Up to three quarters of them report having to work in off-farm activities to complement their income.[44] This contrasts with the existence of highly productive and mechanized commercial farms. This duality in the agricultural production system builds on structural inequalities that include access to land and agricultural inputs.

It is estimated that 84 per cent of farms worldwide belong to smallholder farmers (those owning under 2 hectares of land) that produce 35 per cent of the world's food and own just 12 per cent of agricultural land.[45] Meanwhile, the largest 1 per cent of farms operate more than 70 per cent of the world's farmlands. The Arab region has one of the most unequal farm size distributions in the world: 80 per cent of farms occupy 20 per cent of the territory while 10 per cent of farms holds 60 per cent of agricultural land.[46] In addition, some vulnerable groups, including women-headed households, are less likely to have control over agricultural land. The proportion of women landholders in the Arab region is under 10 per cent in most countries where data are available, such as in Saudi Arabia (0.80 per cent), Jordan (3 per cent), Algeria (4.10 per cent), Morocco (4.40 per cent) and Egypt (5.20 per cent), with the notable exception of the Comoros (32.60 per cent).[47]

Another level of inequality is in access to agricultural inputs, with small-scale agriculture being characterized by lower use of fertilizers, certified seeds, agricultural machinery and irrigation technologies than large-scale agriculture. This leads to comparably lower yields and, subsequently, lower income. Differences in input use can be observed between countries too, with the Sudan and the Syrian Arab Republic consuming under 10 kg of fertilizers per hectare (kg/ha) of arable land while Bahrain and Kuwait consume more than 1,000 kg/ha.[48] Similarly, the average number of tractors per 100 km^2 in Somalia is 12, compared with almost 400 in Egypt.[49] Finally, the most vulnerable farmers have limited access to information on agricultural practices and financial products, such as credit and insurance, which contributes to maintaining existing inequalities.

- **Trade**

Due to physical and environmental constraints to producing food domestically, most countries in the Arab region are and will likely remain highly dependent on the global food markets to meet their food needs. Maintaining imports of strategic food commodities remains key to ensuring

sufficient food availability. There are, however, big disparities among countries in terms of import dependency and the risk of not being able to maintain food imports in the long term. For cereals, a critical commodity for food security, the import-dependency ratio from 2018–2020 was above 90 per cent in GCC countries, Djibouti, Jordan, Libya and Yemen, while under 50 per cent in most LDCs and Egypt.[50] Given the expected population growth and current agricultural productivity, in the years to come it is estimated that the region will have a higher food trade deficit.[51]

Countries with an overall trade deficit and a high ratio of food imports may see their foreign currency reserves diminishing and experience difficulties in maintaining levels of food imports, especially when facing increasing world prices and international supply chain disruptions. The average share of food imports over total merchandise exports for the Arab region during 2018–2020 was 10.6 per cent, but with much large rates in poorer countries, such as Somalia (409 per cent), the Comoros (292 per cent) and Yemen (225 per cent). Some oil exporting countries present below the global average rates, such as Qatar (4 per cent) and the United Arab Emirates (5 per cent).[52]

A complex relationship exists between trade and inequality. On the one hand, increased international trade has the potential to reduce inequalities between countries, create employment and raise living standards. On the other hand, trade can increase inequalities within countries, with incomes rising at the top of the distribution while incomes at the bottom remain stagnant.[53] Within countries, increased international trade generally benefits both consumers and productive export-oriented sectors, while small-scale agriculture may suffer from income, wage and employment decreases due to existing market failures and asymmetries.[54] Trade can thus increase inequalities in food production in the absence of targeted policies such as the creation of farmer cooperatives, contract farming, improved transport infrastructure, and polices encouraging the consumption of products with short marketing channels.[55]

2. Access to food

Food security involves not only ensuring that enough food is produced or imported into a country, but also guaranteeing that the entire population has the economic and physical means to access to it. Amartya Sen, in his book "Poverty and Famines", stated that "some of the worst famines have taken place with no significant decline in food availability per head", showing that often the most important challenge is not lack of food availability but rather access to it.

In most countries, inequalities in access to food are related primarily to differences in income and are affected by macroeconomic conditions such as unemployment and inflation rates. For conflict areas, physical access to food may be an important constraint as well.

• Poverty, inequality and access to food

Currently, millions of people in the Arab region lack access to a healthy diet due to economic reasons. This problem is especially acute in countries such as the Sudan and Mauritania, where 91.80 per cent and 60.70 per cent of the population, respectively, cannot afford to eat healthily.[56]

Economic growth is a necessary condition to improve access to food in the region, but it is not the only contributing factor. Inequality dynamics in a country can block poorer and marginalized groups from reaping the benefits of economic prosperity while they bear many of the costs. In the absence of tailored social policies, limited ability to cope with shocks and segregation from economic activity can put poor households at a high risk of food insecurity. There is a threefold increase in severe food insecurity in countries with high income inequality (21 per cent) compared with countries with low-income inequality (7 per cent); the effect is 20 per cent higher for low-income countries (LICs) compared with MICs.[57]

The Arab Barometer (October 2021–July 2022) survey of 12 countries in the region showed a direct relationship between inequality and food insecurity. Almost half of the sample reported running out of food and not having enough money to buy more; their experience was strongly correlated with having a monthly income lower than their country's median salary. Additionally, 60 per cent of households stated that their earnings did not cover their basic expenses, and 76 per cent did not have savings. These factors severely limit the ability of households to cope with economic shocks and to maintain steady consumption of food.[58]

> Members of the ESCWA Group of Experts on Social Protection Reform believe that inequality exists in all four dimensions of food security: availability, access, utilization and stability. The economic repercussions of the COVID-19 crisis, mainly unemployment, have caused additional pressures since 2020, while the recent war in Ukraine has obstructed one of the most strategic food supply chains in the Arab region and triggered sharp economic distress and acute increases in food prices. Consequently, people living in poverty and vulnerable groups are finding it difficult to obtain adequate food due to the decrease in their purchasing power. National strategies on food security were not efficient enough to ensure that no one was left behind.
>
> Members of the ESCWA Group of Experts on Social Protection Reform

Some social and demographic groups are disproportionately at risk, such as people living in rural areas, women and other vulnerable groups. The rural-urban divide explains up to 40 per cent of the inequality in low- and middle-income countries.[59] In the Arab region, about 174 million people lived in rural areas in 2018, slightly over 40 per cent of the population. For Egypt, the Sudan and Yemen, the proportion goes up to 75 per cent. Most rural areas of the Arab region are still relatively poor, with overall rural poverty estimated at 34 per cent, ranging from 8 per cent in Tunisia to over 80 per cent in the Sudan. About two thirds of farmers practice relatively low yielding rain-fed and pastoral agriculture is dependent on a fragile natural resource base. Rural poverty can be even more acute when combined with other sources of vulnerability such as in women-headed households, the landless, and those with increased climate vulnerabilities.

- **Socioeconomic factors affecting food access**

In addition to general income inequalities, there are important economic factors that negatively affect food access for the poorest segments of the population, such as high levels of unemployment and inflation.

In 2021, the Arab region had an unemployment rate of 12.4 per cent, double the global average (6.2 per cent), but with big differences between regions. GCC countries, notably, present low unemployment rates (5.6 per cent) and act as a source of jobs for migrants from neighbouring countries. LDCs present the highest levels of unemployment (19.3 per cent). Within countries, access to employment is unequally distributed, with young people, women, persons with disabilities and refugees experiencing higher levels of unemployment and underemployment. In 2020, 35.6 per cent of young people in the region were not in employment, education or training, compared to the global average of 23.3 per cent. The labour force participation of women (over the age of 15) is markedly lower than the global average, also, with only 19.43 per cent per cent of women participating in 2021 compared to 46.18 per cent globally.[60]

Unemployment and underemployment can severely affect food security outcomes in countries with limited social security policies, which are often the most affected by poverty. Unemployment significantly exacerbates the negative effects of income inequality on food security.[61] Data from the Arab Barometer (October 2021–July 2022) survey show higher rates of food insecurity among the unemployed compared to those who are currently working.[62]

Inflation levels and economic instability due to the COVID-19 crisis and the war in Ukraine, along with other structural factors, have had a strong effect on food security outcomes in LICs and households. LDCs are usually more vulnerable to global price changes as they

Rural women and food security

Women are key players in food security, as they are involved in all stages of food systems, including farming, food processing, marketing and household consumption. While rural women are an important share of the agriculture labour force in the Arab region, they often have worse working conditions than men; they are lower paid and their work can be irregular, informal or low-skilled. Women are also more likely to undertake a disproportionate share of unpaid care work. Globally, women in food systems earn 82 cents for every dollar earned by men.[a] In addition, they are less likely to own land than men, with over 96 per cent of landowners being male in most Arab countries where data are available.[b] Gender inequalities are reinforced by poverty dynamics, resulting in rural women facing limited access to education, healthcare, sanitation and other basic services. A 2023 FAO report estimates that reducing gender inequalities in global food systems would translate into $3 million additional profit and reduce food insecurity for 45 million people.[c]

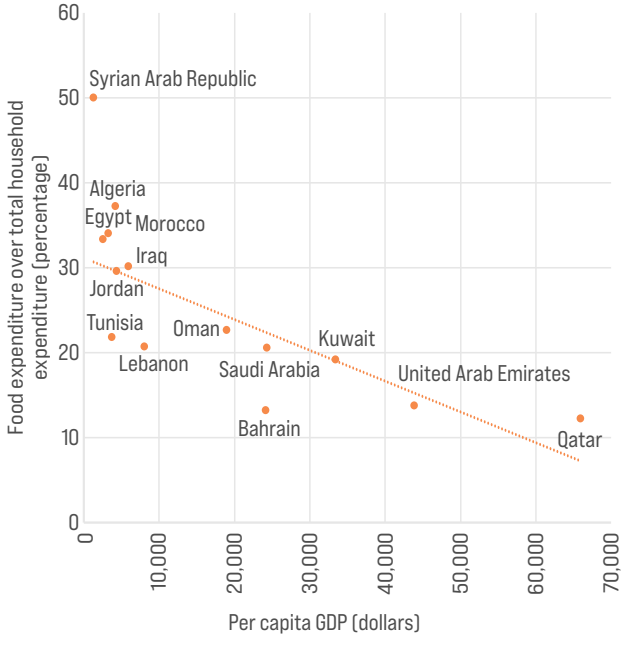
[a] FAO, The status of women in agrifood systems, 2023.
[b] World Bank data. Available at http://info.worldbank.org/governance/wgi/.
[c] FAO, The status of women in agrifood systems, 2023.

absorb them more rapidly than developed economies due to their shorter supply chains. Currently, GCC countries experience very moderate levels of inflation, below the global average. LICs present higher inflation levels. The situation is particularly acute in Lebanon, with a 154.8 per cent inflation rate in 2021, and in the Sudan, with 382.8 per cent. Additionally, Mauritania, Somalia and Yemen are at increased risk of overlapping debt and food security crises.[63]

Variations in food prices can limit the ability of the population to access the food they need. This is especially true for those lower-income households that spend a greater proportion of their income on food and that have limited ability to cope with shocks. In 2018, the average Arab household spent 31.3 per cent of its earnings on food, with substantial regional variations; GCC citizens spent 19 per cent of their income on food, compared to 50 per cent in the Syrian Arab Republic.[64]

Within countries, poorer populations spend a much higher share of their income on food than the wealthy. In Egypt, food expenditure represented 40.55 per cent of the budget of those living in poverty in 2020, compared with only 13.37 per cent for the rich.[65]

Figure 18. Relationship between per capita gross domestic product and share of income spent on food, 2018



Source: ESCWA calculations based on data from the World Bank Statistics and Knoema.

Similarly, in the State of Palestine, food accounted for 35.42 per cent of household expenses for the 10 per cent of the population with the lowest income, while the richest spent only 20.59 per cent.[66] Given that wages usually rise more slowly than prices, households that spend a high share of their income on food are more likely to be at risk of food insecurity.

- **Physical factors constraining access to food**

Despite most countries in the Arab region having enough food available at the country level, certain segments of the population might not have physical access to it. It relates to the state of the country's infrastructure and logistical systems and whether basic products reach all population groups and all regions of the country. Physical access can be a challenge for people living in rural areas, those living in countries in conflict or occupation with disrupted supply chains or damaged infrastructure, or for countries with a sudden arrival of refugees and limited infrastructure to support them. In all cases, it is often those living in poverty and the most vulnerable segments of the population who are at risk of insufficient access to food.

Well-functioning logistical processes and infrastructure are key to ensuring universal access to food. The Logistics Performance Index evaluates the efficiency of clearance processes, the quality of the transport infrastructure and services, the existing tracking systems and the timeliness of shipments. The Arab region performs poorly on average, with a score of 2.6 over 5. GCC countries present 3.2, above the global average of 2.9, while countries in conflict rank lower than the rest of the Arab region with just 2.2.[67] Logistical constraints mean that urban areas generally have better access to markets and to a wider variety of food products compared to rural areas, contributing to the inequalities between them. In urban areas where the supply of food may not be an issue, other challenges may be observed such as the affordability of nutritious food products.

Events happening at the global level have significant effects on physical access to food. The COVID-19 pandemic caused multiple countries to experience shortages of key items due to international supply chain disruptions, interruptions to production, and food hoarding behaviours. These disruptions disproportionally affect the urban poor, who rely entirely on the market for their food needs and have limited economic capacity to cope with shocks.

Conflict and occupation: a threat to stable access to food

In Yemen, multiple constraints slow down food imports and transport. The reduced traffic in Al Hodeidah Port due to the restrictions triggered by the conflict put additional pressures on the port of Aden, which is handling increased numbers of import containers. Road transport from Aden to Sana'a takes between six to nine days, compared to one day before the war, and is subject to checkpoints. In addition, conflicting regulations set by the Government of Yemen and the Houthi movement "Ansar Allah" party result in the double taxation of goods and additional bureaucratic procedures, making it increasingly complex for traders to operate.[a]

Similarly, in the State of Palestine, the Israeli closure of the Sufa and Karni ports has severely limited international trade in Gaza for years. The Salah Ad Din gate is the only entrance for international goods and is subject to severe restrictions and bureaucratic processes by the Government of Israel, which resulted in a 30 per cent reduction in the volume of truckloads entering Gaza from 2007 to 2022.[b]

[a] ACAPS, Yemen Analysis: Food supply chain, 2020.
[b] ACAPS, Briefing Note, Palestine: Flooding in the Gaza Strip, 2023.

3. Food utilization

In addition to ensuring that there is adequate food availability in a country and that households have physical access and the economic means to access to it, other factors are needed to ensure equal utilization of food. This includes access to sanitation and water to handle food in a safe way and consuming food in the right amounts to ensure proper nutritional outcomes.

• Access to sanitation and clean water

Food should be handled and prepared in a way that is safe for human consumption. Deficiencies in clean water and sanitation as well as overuse of fertilizers and pesticides impact food safety and quality and lead to higher incidence of disease. In the Middle East and North African (MENA) region, the number of people dying from diarrhea is similar to the number of casualties resulting from violent conflict.[68]

While drinking and sanitation services have good penetration rates in the Arab region on average, with of 88.8 per cent for basic drinking water and 83.4 per cent for sanitation, there are big differences between groups of countries. Only 60.7 per cent of people in 2020 in LDCs had access to basic drinking water services and only 38.8 per cent to sanitation services. In GCC countries, almost all the population have access to both (98.1 per cent and 98.6 per cent, respectively).[69]At the subregional level, rural areas generally present lower rates of sanitation infrastructure than urban areas.

• Inequalities in food consumption at the household and intra-household levels

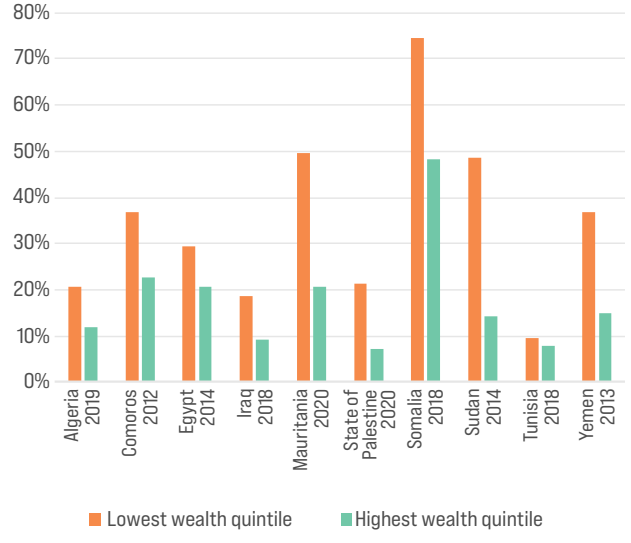
Sufficient energy and nutrient consumption by individuals results from appropriate feeding practices, food preparation techniques and diversity of diet. Poverty leads families to consume lower amounts of calories and have less diverse and nutritious diets, which impacts their health in multiple ways.

In the Arab region, some countries present big differences in total calorie intake among households, as reflected by the coefficient of variation of habitual caloric consumption presented in figure 17. High-income countries, such as the United Arab Emirates, have low variations in habitual caloric consumption, standing at 0.23, indicating low levels of food consumption inequality. Countries in conflict or under occupation present large variations reflecting significant levels of inequality in food consumption.

Diets need to provide enough calories to the entire population and, crucially, also the right level of nutrients. Detailed information on diet composition, however, is often scarce and difficult to collect. In such cases, analysis of inequalities in diet quality and diversity is conducted using self-reported consumption data and the prevalence of health problems derived from lack of proper nutrition – such as women's anaemia, child stunting or child wasting.

Household surveys show that a significant number of children under 5 years of age in the Arab region regularly consume just two food groups or less, which is considered a sign of severe food poverty given that children need to consume foods from at least five out of the eight recommended food groups to meet the minimum dietary diversity for healthy growth and development. Rates of severe food poverty are particularly high in countries in conflict and LDCs such as Somalia (63 per cent), Mauritania (38 per cent) and the Sudan (34 per cent), and among the poorest population groups in each country, as presented in figure 19.[70]

Figure 19. Percentage of children under 5 years old who consume two or less food groups per wealth quintile and country



Source: ESCWA calculations based on the United Nations Children's Fund (UNICEF) child poverty data. Only countries with data available have been included.

Iron deficiency anaemia among women is considered one of the main public health concerns in the Arab region. Almost a third of women of reproductive age in Arab countries suffered from anaemia in 2019, with higher rates among LDCs (38.5 per cent) and countries in conflict (39.5 per cent), and slightly lower rates in GCC countries (27.1 per cent) and MICs (30.3 per cent).[71] Regionally, women's anaemia is generally more present in poorer households. In Mauritania in 2021, for instance, the prevalence of women's anaemia was 68.9 per cent among the poorest population quintile while at 45 per cent among the wealthiest.[72]

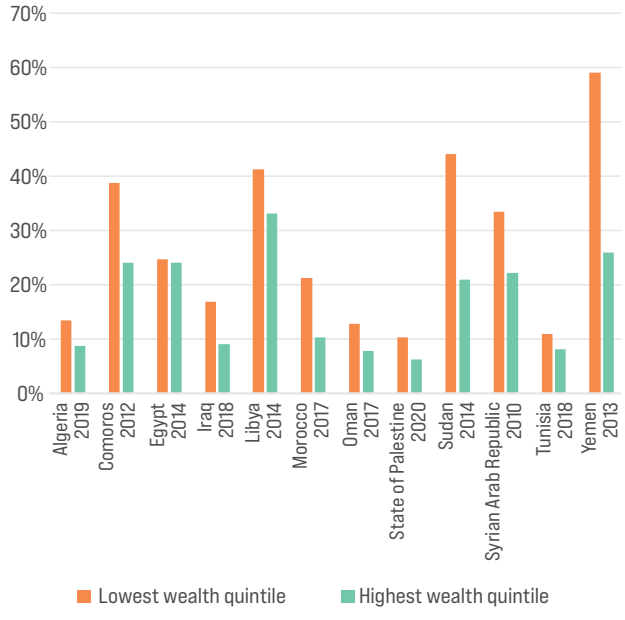
Levels of child stunting and wasting are high among some population groups, especially in LDCs and countries in conflict, as well as among specific vulnerable populations. The prevalence of stunting among children under 5 years in the Arab region was 19.4 per cent in 2020,[73] while the share of children under 5 years affected by wasting was 7.7 per cent in 2020, higher than the global average of 6.7 per cent. Regionally, child wasting and stunting are more prevalent among poorer population groups, as shown in figures 20 and 21.

Poor mother and child nutrition is of particular concern given its long-lasting effects on the lives of those living in poverty. Mothers who are lacking in iron are more likely to have children who do not grow well during pregnancy and have a low birth weight.[74] The long-term impacts of low birth weight include increased rates of diabetes,

Table 1. Changes in the coefficient of variation of habitual caloric consumption by country, 2015–2021

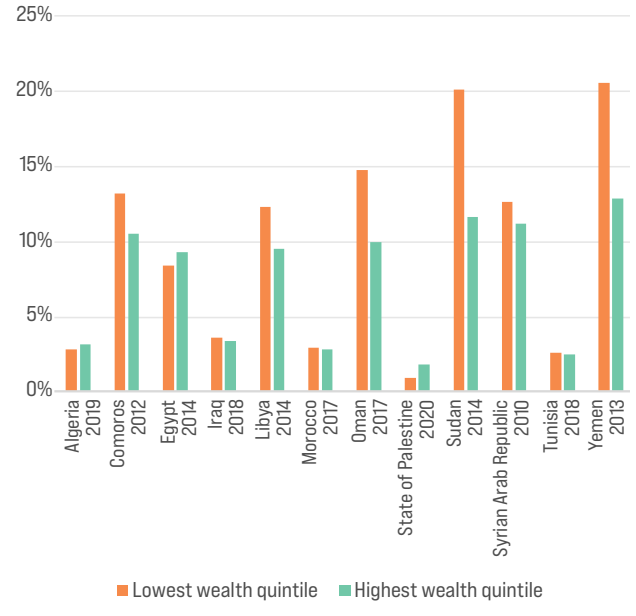
Source: ESCWA elaboration.

Figure 20. Stunting prevalence among children under 5 years old by wealth quintile and country



Source: ESCWA calculations based on UNICEF data. Only countries with data available have been included.

Figure 21. Wasting prevalence among children under 5 years old by wealth quintile and country



Source: ESCWA calculations based on UNICEF data. Only countries with data available have been included.

cardiovascular disease and obesity.[75,76] In addition, children experiencing food insecurity are more likely to suffer from cognitive losses, mental health issues and lower educational outcomes.[77] These health and developmental effects persist well into adulthood and impact employment outcomes and productivity and, consequently, the ability to escape poverty. This vicious cycle perpetuates and sustains inequality across generations.

4. Stability

Stability relates to the ability of countries and households to face various types of negative shocks without modifying their food consumption patterns. Shocks might be sudden, such an unexpected increase in food prices or a drought, or cyclical, such as food availability linked to agricultural harvest times.

The ability to cope with and recover from shocks is intrinsically linked to poverty and inequality. S. Nazrul Islam and John Winkel show that inequality leaves disadvantaged households more exposed to shocks.[78] Given the exposure level, poorer households suffer greater damages than richer households and have less ability to recover from such damages. For example, poorer households are more likely to live in flood-prone areas with insufficient infrastructure, which means they are more susceptible to the impacts of extreme rains. When a flood occurs, they might suffer increased damage to their housing given the low-quality materials used for construction. They might have less savings to cope with the losses, as well as being less likely to be covered by insurance. These same principles apply at the country level, with poorer countries being more susceptible to shocks, experiencing more damage when shocks happen and having fewer resources to recover. In turn, this process exacerbates existing inequalities, making LICs and households poorer as a result of shocks.

Shocks can impact food security both at the macro level, through changes in food supply in the country, and at the micro level, through changes in the ability of households to acquire food. At the macro level, FAO data show very

different levels of per capita food supply variability in the Arab region, with countries in conflict, notably the Syrian Arab Republic and Yemen, presenting the largest variations in available kcal per day per person.[79] Closely related to food supply, the variability of food production in the Arab region has increased in the last decade. The average per capita food production variability in the Arab region was $15,200 in 2019, compared to $14,000 in 2010. The highest variabilities were recorded in Morocco and Tunisia. At the household level, changes in the ability to acquire food are best analysed through changes in nutritional and food security outcomes over time and through households' ability to cope with shocks without depleting important resources.

Food security inequalities between and within countries contribute to poor households' inability to cope with shocks. At the same time, these inequalities are likely to exacerbate food insecurity when affected by a shock if effective action is not taken. The rest of this section briefly discusses how three different types of shocks – climate, economic and political – affect food security and inequality in the Arab region.

a. Climate shocks

Climate change is affecting food security globally through reduced crop yields, increased food loss and damaged ecosystems. The world has been witnessing extreme weather events such as floods and droughts that have an immediate impact on the livelihoods and food security of vulnerable populations. At the same time, climate change's long-term impacts, such as reduced water supplies and increased soil salinity, affect the environments in which food is produced and pose a threat to long-term food availability in vulnerable countries.

The Arab region is one of the areas most affected by climate change in the world. Some of the main environmental challenges the Arab region experiences are high temperatures, water scarcity and soil degradation. Temperatures have increased by an average of 1.9 degrees Celsius since pre-industrial levels and are projected to increase by 2.5 degrees Celsius by mid-century.[80] Higher temperatures affect agricultural production but also general productivity in urban centres. They put the safety and quality of food at risk in the absence of reliable cold chains and storage infrastructure. In addition, already scarce water resources will be under increased pressure due to a predicted decrease in precipitation of about 8–10 mm/month by the end of the century.[81] This is especially alarming for countries that depend on rain-fed agriculture, such as Algeria, Iraq, Jordan, Lebanon, Libya, Mauritania, Morocco, the Sudan, the Syrian Arab Republic, Tunisia and Yemen, where rain-fed agriculture is practiced on more than half of all arable land.[82] Cereals, a key commodity for food security, especially for people living in poverty, are particularly dependent on rainwater. In the Maghreb, the Sudan and Yemen, over three quarters of cereal production is rain-fed, and in the Mashreq, between one half and two thirds are.[83] To make matters worse, soil degradation due to the uneven distribution of rainfall and increased soil salinity due to increased evapotranspiration[84] might reduce agricultural yields, even for irrigated systems.[85]

While Arab countries share many common environmental problems, inequality between them translates into different capacities to respond effectively. Options to improve climate change adaptation include building seawalls and coastal protection, systems for storm and wastewater management, water storage, efficient irrigation systems, desalinizing sea water, new crop varieties, and early warning systems. However, LICs typically face more difficulties adapting their physical and agricultural systems than richer countries, making them particularly vulnerable to climate change. This is especially important given that agriculture represents a higher share of GDP in poorer countries. Also, they are often less able to compensate the reduced agricultural production by increasing food imports. In addition, indirect effects of climate change, such as global increases in crop prices or degradation of physical infrastructure,[86] might affect food trade in the future, further affecting the ability of LICs to ensure sufficient food availability.

At the household level, low-income households are more likely to have higher exposure to extreme weather events and have lower resources with which to recover from them.[87] A Wodon and others study shows that poor households in Algeria, Egypt, Morocco, the Syrian Arab Republic and Yemen reported income losses due to climate hazards more often than richer households (46 per cent versus 21 per cent). Poorer households reported having fewer means to recover from losses and were more likely to use extreme coping strategies such as selling assets or land, removing children from school, or eating less.[88]

Shocks from extreme weather events are being experienced and are likely to worsen in the upcoming years, including droughts (Algeria, Morocco and Tunisia); floods; higher temperatures (especially in Algeria, Iraq and Saudi Arabia); and heat waves (particularly in cities such as Baghdad, Beirut and Damascus).[89] Food insecurity has already reached alarming levels in some countries in the region due to extreme weather events. From June to September 2022, for example, floods in the Sudan affected 278,500 people, causing around 136,000 people to be displaced and destroying over 12,000 hectares of agricultural land.[90] Combined with extreme inflation levels and tribal conflicts, the number of people expected to be suffering from acute food insecurity was forecasted to be 7.7 million in October 2022–February 2023.[91]

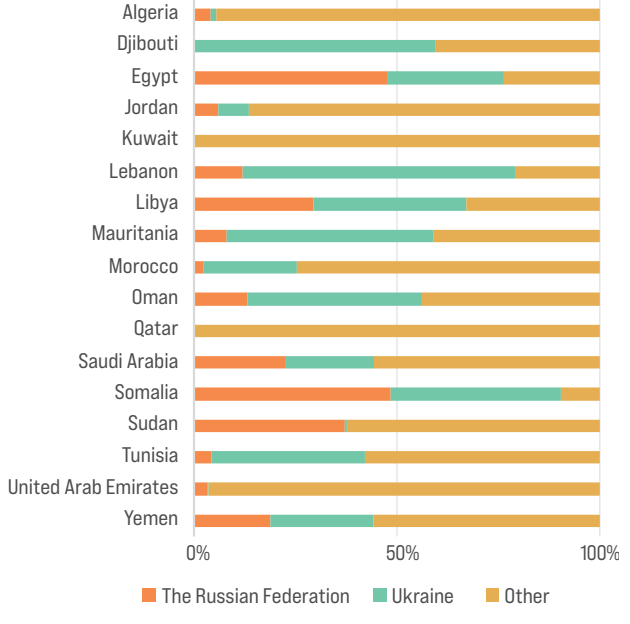
b. Economic shocks

Changes in the economy heavily impact poverty, inequality and food security. Economic shocks can be sudden, as experienced with high price volatility, or can be long-term processes such as economic recessions. People living in poverty often lack the capacity to cope with sudden price increases and are disproportionally impacted by long-term economic crises. Research suggests that economic recessions affect low- and middle-income classes most severely, pushing many additional people into poverty and increasing income inequalities.[92] This happens through a combination of factors: (a) weaker economic activity may reduce the number of jobs and push additional workers from the formal to the informal market; (b) relative price changes and currency devaluation, translating into rises in prices of imported food, particularly burden those living in poverty; and (c) fiscal retrenchment, with Governments cutting social spending programmes, causes those living in poverty to lose their safety nets.[93] In turn, all these factors affect households' ability to access sufficient and nutritious food.

The recent economic shocks from the COVID-19 crisis and the war in Ukraine have challenged the achievements made in terms of poverty and inequality reduction in the Arab region and have put food security at risk in multiple ways. COVID-19 has threatened food availability by both reducing food production and disrupting international trade. Among the main causes are shortages of farm labour, closure of production facilities, disruptions of supply chains and transport, and the sudden closure of restaurant facilities. All these disruptions have led to an increase in global food prices and shortages of certain food commodities. In Jordan, for example, the initial COVID-19 emergency plan prevented farmers from reaching the fields and disrupted the harvest season. In Tunisia, farm workers' inability to reach the fields caused shortages of locally produced fruits on local markets. The Comoros and the Sudan saw their exports reduced, which led to a reduction in foreign reserves and further pressure on the currency, respectively.[94]

Additionally, the war in Ukraine and the sanctions on the Russian Federation reduced the international supply of wheat, maize, barely, sunflower, fertilizers and oil, further increasing global market prices. This has benefited oil producing countries and harmed those importing food and oil, deepening inequalities between countries in the region. Many countries in the region were strongly dependent on imports from the Russian Federation and Ukraine for key

Figure 22. Arab countries dependency on imports. Share of wheat imports from the Russian Federation and Ukraine out of total wheat purchases in 2021 (Percentage)



Source: ESCWA elaboration based on data from FAOSTAT.

Note: Only Arab countries that import wheat from the Russian Federation or Ukraine have been included in the figure. In Kuwait, 0.07 per cent of wheat imports came from Ukraine. Qatar imported 0.04 per cent from Ukraine.

food commodities before the war: over 66 per cent of the wheat consumed in Egypt, Lebanon, Oman, Qatar and Somalia, and over 90 per cent of the sunflower oil in Algeria, Egypt, the Sudan and Tunisia. A number of key agricultural inputs, such as potassium fertilizer, were also acquired from the Russian Federation.

The increase in food and oil prices has led to many countries experiencing currency devaluations and depletion of foreign reserves while they try to maintain food and oil import levels, as is the case for Egypt, Lebanon, Morocco and Tunisia.

At the household level, COVID-19 and the war in Ukraine have affected people's ability to acquire food through different processes. The combined economic crises have resulted in a substantial rise in poverty; greater inequality; the emergence of a group of people newly living in poverty (those who were not living in poverty in the first quarter of 2020 but have become so since); and changes in the labour market at both the intensive (how hard people work) and extensive (how many people work) margins.[95] Many households lost their livelihoods. Unemployment rates increased throughout the region with low-skilled and informal workers and other vulnerable groups affected the most. In Egypt, around 1.6 million jobs in the informal sector were lost during the first months of the pandemic.[96] In Libya, 70 per cent of migrants and refugees were unemployed in 2020.[97] In Lebanon, families living in poverty are using extreme coping strategies such as eating less and poorer-quality food, sending children to work in hazardous work environments and marrying off young girls.[98]

Rising food prices have compromised many households' ability to access food. The global price of food increased by 32.54 per cent from January 2020 to October 2022. In the case of cereals, the increase was 51.27 per cent.[99] These price increases have reduced families' purchasing power and have disproportionally affected those living in poverty, who spend a higher share of their income on food.

c. Political shocks and conflict

The Arab region is one of the most crisis-affected regions in the world. The World Bank Political Stability and Absence of Violence indicator ranks most countries in the Arab region well below the global average, with Somalia, the Syrian Arab Republic and Yemen being the worst ranked in the world in 2021. Only Oman, Qatar and the United Arab Emirates rank above the global average.[100]

Assessments from humanitarian organizations in some countries in conflict confirm large numbers of people are living in extreme food insecurity. It is estimated that 53 per cent of the population in Yemen are suffering from acute food insecurity.[101] In Somalia, 33 per cent of the population is experiencing acute food insecurity, with 322,000 people at catastrophe level.[102] In Lebanon, 37 per cent of Lebanese households and Syrian refugees are affected by acute food insecurity.[103] Refugees and internally displaced persons (IDPs) have been suffering from increasingly difficult situations due to reductions in humanitarian aid during 2022, especially in Somalia, Yemen and other countries in the Sahel region.

High numbers of refugees and IDPs can present challenges regarding food security and inequality in host communities as well. The effects of refugee and IDP arrivals depend on the initial characteristics of the host community and on national policies towards refugee populations. While increased demand for food can lead to temporary increases in food prices and raise the cost of living, this effect is partially offset by international food aid and can provide economic opportunities for local producers. Additionally, job openings in the humanitarian sector and investment in infrastructure may benefit the local population. However, low-skilled workers in host communities may be negatively affected by the increased cost of living and higher competition for low-skilled jobs. Risks such as environmental degradation, poor waste management and higher incidence of disease might disproportionally affect those living in poverty. Households with initial physical, social or human capital are more likely to enjoy the economic benefits of a larger market than poorer households, pointing at the need for social protection policies that cover both refugees and vulnerable people in host communities.[104]

Identifying the causes of conflict and how it relates to food insecurity and inequality is crucial to preventing further harm to households and communities. Food insecurity and conflict are in a mutually reinforcing cycle, with each acting as a cause and consequence of the other. Conflict is currently the main driver of hunger in the world, having pushed 139 million people in 24 countries/territories into

Challenges to food security for refugees in the Arab region

Four of the top ten countries with the highest IDPs due to conflict are in the Arab region and it accounts for the largest number of refugees in the world. IDPs in Iraq, the Sudan, the Syrian Arab Republic and Yemen reached up to 15.31 million people in 2021. Somalia, the Sudan, the Syrian Arab Republic and Yemen account for the majority of new displacements.[a]

Refugees are typically at increased risk of food insecurity. While accurate and up-to-date data on refugee populations are often lacking, recent studies show how dire the situation is. Around 39 per cent of Syrian refugees in Egypt, Jordan and Lebanon presented crisis or emergency levels of food insecurity in 2021.[b] Among those in refugee camps in Jordan, food insecurity reached 58 per cent in 2022.[c] In the State of Palestine in 2017, the food expenses of families living in refugee camps were 19 per cent lower than of the rest of the population, despite food representing a higher proportion of their budget (29.64 per cent) compared to non-refugees (25.70 per cent).[d]

Refugees are highly dependent on food aid and their diets may be monotonous and not meet their full micronutrient needs, leading to health problems. A 2016 study found anaemia rates of 17 per cent among Syrian children in the Zaatari camp (Jordan), compared to the 9 per cent rate in Jordan at large.[e] In addition, some studies indicate that refugee diets might have excessive fat content, leading to problems related to obesity for some individuals. In the State of Palestine, families living in refugee camps allocated higher proportions of their food budget to oils and fats compared with the rest of the population.[f] A 2015–2016 health assessment of Syrian refugee children aged 6–59 months showed a 10.6 per cent prevalence of obesity.[g]

[a] World Bank data.
[b] ESCWA analysis based on the Global Report on Food Crises: Joint analysis for better decision, 2022.
[c] World Food Programme (WFP), Jordan Country Brief, October 2022.
[d] ESCWA calculations based on Palestine's Household Expenditure and Consumption Survey, 2016–2017.
[e] Hossain, S.M.M., Leidman, E., Kingori, J. and others, Nutritional situation among Syrian refugees hosted in Iraq, Jordan, and Lebanon: cross sectional surveys, 2016.
[f] ESCWA calculations based on Palestine's Household Expenditure and Consumption Survey, 2016–2017.
[g] Sweetmavourneen Pernitez-Agan, Kolitha Wickramage, Catherine Yen and others, Nutritional profile of Syrian refugee children before resettlement, 2019.

acute food insecurity during 2021.[105] Conflicts inflict a heavy toll on all aspects of human welfare, including destroyed livelihoods, loss of assets, and disruption of logistical networks that lead to extreme levels of food insecurity. At the same time, food insecurity is a major cause of conflict in Arab countries. The spike in global food prices in 2007–2008, for example, sparked rioting in multiple areas. High food import dependency makes the Arab region especially vulnerable to disruptions in international food trade and is thus a potential source of social unrest.

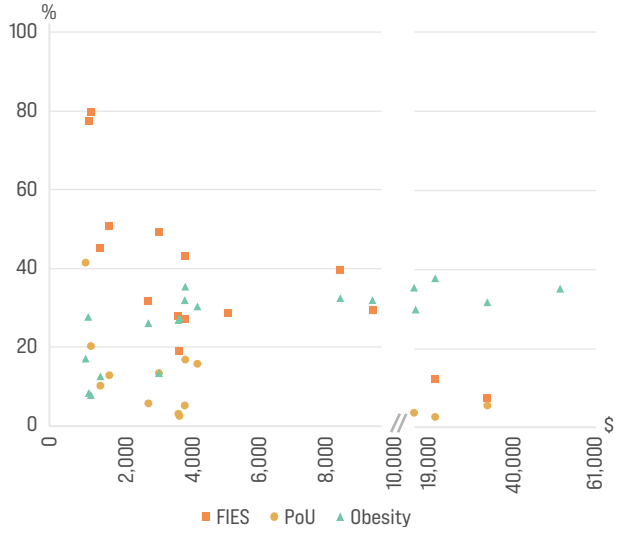
This relationship between food insecurity and conflict is, in turn, strongly linked to inequality, as poorer populations experience the effects of food insecurity the most. Breisinger and others (2014) show that households are more likely to participate in conflict if they both face adverse socioeconomic conditions and experience discrimination or inequality. To increase resilience to conflict, Governments should invest in policies that ensure food security and address structural inequalities. As stated by United Nations Secretary-General António Guterres: "If we do not feed people, we feed conflict".

C. Food security outcomes

The previous sections show that to achieve food security, countries should have sufficient food available; the population should have physical and economic access to it; and it should be consumed in a safe way and in the right quantity and quality. In addition, all this should happen at all times, regardless of external shocks. Inequalities in the four pillars identified in the previous section lead to very different degrees of food security among countries, among households, and within households. These effects can be quantified through three key indicators: undernourishment levels, obesity levels, and households' perceptions of food insecurity, measured through the Food Insecurity Experience Scale.

The Arab region is characterized by severe inequalities in access to quality nutritious food; 33.3 per cent of the population are food insecure and 28.4 per cent are obese. Additionally, 9.3 per cent of the population – about 53 million people – are suffering from undernourishment and are in urgent need of food aid and comprehensive social protection policies.

Figure 23. Distribution of the prevalence of undernourishment (2020), the Food Insecurity Experience Scale (2019–2021) and obesity rates (2016) by gross domestic product per capita (2021)



Source: ESCWA calculations based on FAOSTAT data.

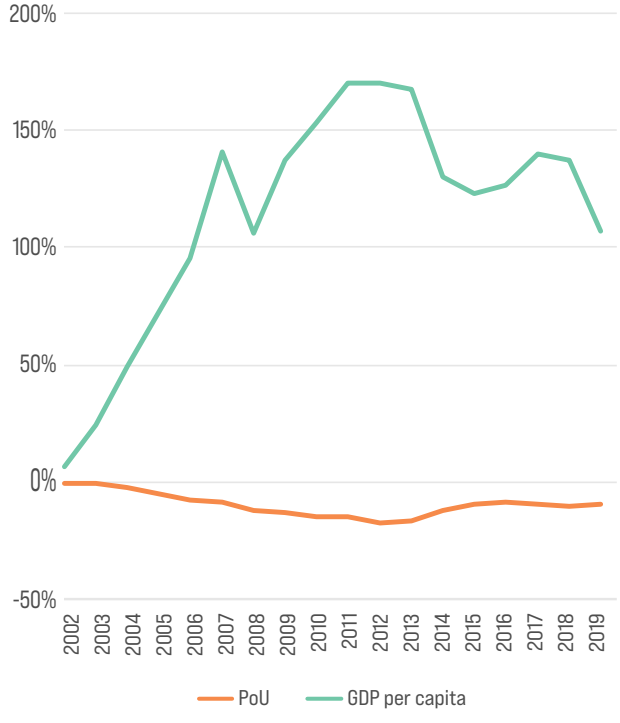
Note: FIES refers to the Food Insecurity Experience Scale and PoU refers to the prevalence of undernourishment.

At the country level, there are large disparities in nutritional outcomes between groups of countries. Figure 23 shows how food security outcomes affect countries with different levels of GDP per capita. Undernourishment and food insecurity are more apparent in LDCs and countries in conflict. Undernourishment rates are particularly high in Somalia (53.1 per cent) and Yemen (41.4 per cent) and food insecurity is as high as 79.7 per cent in the Comoros, 77.4 per cent in Somalia and 50.7 per cent in the Sudan. In recent years, undernourishment and food insecurity have also been increasing in MICs that have a high number of refugees, as is the case in Jordan and Lebanon. In Jordan, undernourishment rates increased from 6.2 per cent in 2010 to 16.9 per cent in 2020.

Obesity is more prevalent in both middle- and higher-income countries than in LDCs. The highest obesity rates in the region are found in GCC countries, with an average of 34.1 per cent in 2016. Countries such as the Comoros or Somalia present obesity rates under 10 per cent. Similarly, overweight children of 0–59 months old are more prevalent in middle-income than in LICs. Egypt, Lebanon, Libya, the Syrian Arab Republic and Tunisia presented obesity rates in infants above 15 per cent in 2020, considered very high by World Health Organization (WHO) standards. Mauritania, Somalia and Yemen had under 3 per cent prevalence of overweight children.[106]

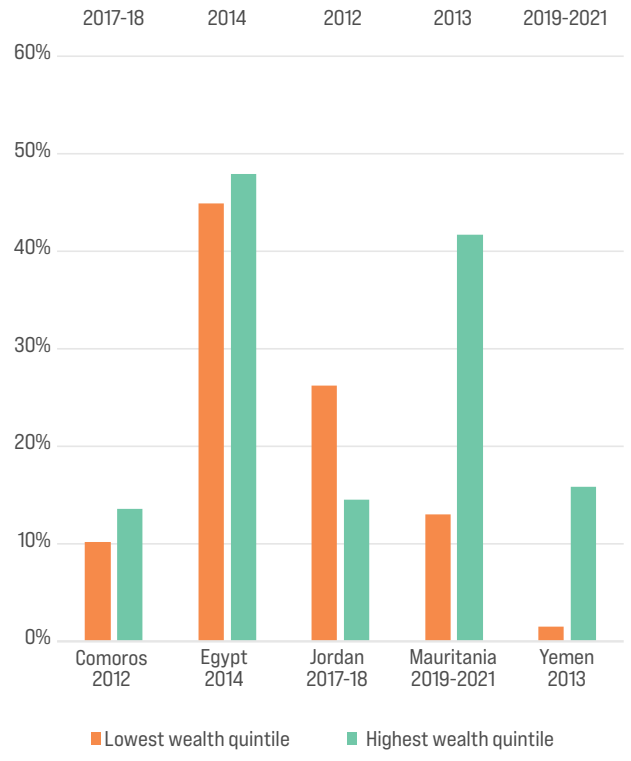
At the household level, undernourishment and food insecurity are most often found among the poor and most vulnerable population groups. Macroeconomic variables can offer some insights on the relationship between income inequality and food insecurity outcomes. Comparing GDP growth in the Arab region with the evolution of undernourishment rates shows that increases in wealth have not translated into reductions in undernourishment. While GDP per capita has more than doubled in the region since 2001, undernourishment has decreased by only 1 percentage

Figure 24. Percentage changes in gross domestic product per capita and prevalence of undernourishment in the Arab region from baseline 2001 levels



Source: ESCWA calculations based on World Bank data.

Figure 25. Women's obesity rates per wealth quintile and country



Source: ESCWA elaboration based on the Demographic and Health Surveys (DHS) Program data.

point, as illustrated in figure 24. Inequality dynamics result in economic benefits being enjoyed by only few and not reaching the lower-income deciles of the population, thus keeping undernourishment levels stagnant. While, in part, this can be explained by inequalities between countries – with undernourishment levels increasing in Jordan, Lebanon and Yemen while decreasing in Djibouti and the Sudan – most countries have experienced much higher rates of GDP per capita growth than reductions in the prevalence of undernourishment (PoU).

The relationship between obesity and income inequality is more complex. Some studies suggest that obesity rates are higher among wealthy households and urban populations in LICs, and that as countries' incomes increase, obesity rates shift to poorer populations and rural areas.[107] Following that hypothesis, obesity rates in Jordan are higher among the poor, while in Mauritania and Yemen, obesity is more prevalent among the wealthy, as illustrated in figure 25.

Within households, we observe important nutritional differences in relation to gender. In all countries in the Arab region, obesity rates are higher for women than for men, with Egypt, Tunisia and Algeria presenting the biggest disparities.[108] Some households experience malnutrition with obesity and undernutrition coexisting in the same family unit.

Food insecurity is one of the cruelest forms of inequality, directly affecting the basic human rights and dignity of those who are suffering from it. As stated by the United Nations High Commissioner for Human Rights, Louise Arbour, "Where hunger and malnutrition persist, there can be no justice or security. A just and secure world is one where every woman and man – every girl and boy – can live in dignity, without wondering where the next meal will come from".