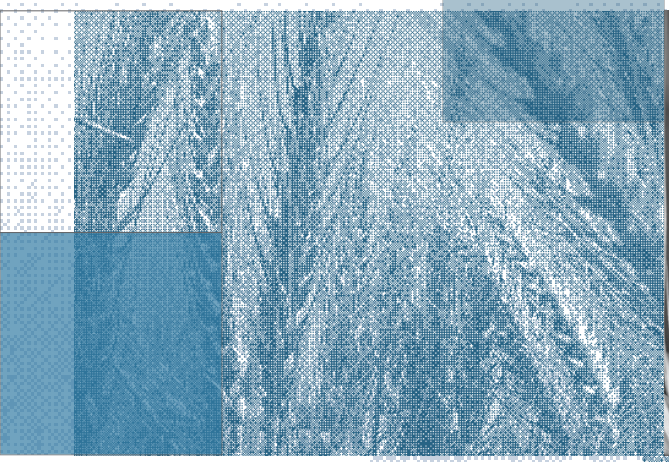
Food and Agriculture Organization of the United Nations

European Bank for Reconstruction and Development

IMPLICATIONS OF THE WAR IN UKRAINE FOR AGRIFOOD TRADE AND FOOD SECURITY IN THE SOUTHERN AND EASTERN MEDITERRANEAN

EGYPT, JORDAN, LEBANON, MOROCCO AND TUNISIA



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About this report

Under the framework of cooperation between the Food and Agriculture Organization of the United Nations (FAO) and the European Bank for Reconstruction and Development (EBRD) the analysis contained in this report was carried out by the FAO Markets and Trade Division with the support of the FAO Investment Centre. It provides an assessment of the vulnerabilities and potential impacts of the war in Ukraine on Egypt, Jordan, Lebanon, Morocco and Tunisia, with a focus on agrifood trade and food security. The findings reflect the status of the continuously evolving situation with respect to the war in Ukraine as of 26 May 2022.

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Abbreviations and acronyms

ADESA	Average Dietary Energy Supply Adequacy
CPI	consumer price index
DAP	Diammonium phosphate
EBRD	European Bank of Reconstruction and Development
FAO	Food and Agriculture Organization of the United Nations
FBS	food balance sheet
GASC	General Authority for Supply Commodities of Egypt
GDP	gross domestic product
IMF	International Monetary Fund
KCl	Potassium chloride
OECD	Organisation for Economic Co-operation and Development
PPP	purchasing power parity
SEMED	Southern and Eastern Mediterranean countries
TDM	Trade Data Monitor
UN-ESCWA	United Nations Economic and Social Commission for Western Asia
USDA	United States Department of Agriculture
WTO	World Trade Organization

Executive summary

Egypt, Jordan, Lebanon, Morocco and Tunisia - the Southern and Eastern Mediterranean (SEMED) group of countries - are net importers of calories. The SEMED group of countries are among the largest grain, wheat, and foodstuff importers globally. The share of imports in domestic availability of calories ranges from a sizeable 37 percent (Morocco) to a staggering 84 percent (Jordan). Wheat plays a crucial role in these countries, contributing more than a third to overall food supply in each of them. Governments are heavily involved in imports of wheat and other cereals, with state agencies often the largest or the only legally permitted importer.

The Russian Federation and Ukraine are key global suppliers of cereals and sunflower oil while the Russian Federation is also a leading exporter of fertilizers. As a result of the outbreak of the war in Ukraine on 24 February 2022, global food prices (especially cereals and vegetable oils) increased further from already high levels in 2021 and have been at record highs since March 2022.

Given their reliance on internationally traded food commodities, SEMED countries are generally exposed to global price surges, but additionally the Russian Federation and Ukraine are important direct suppliers of wheat, other cereals and sunflower oil. In 2021 the Russian Federation and Ukraine together accounted for about 75 percent of the total wheat and wheat flour imports of Egypt and Lebanon, close to 40 percent in Tunisia, more than 30 percent in Jordan and around 20 percent in Morocco. The Russian Federation and Ukraine are also key suppliers of sunflower oil and other cereals to these countries.

Gross food import bills in SEMED countries are high and are likely to increase further in 2022 and beyond. Food import bills in these countries largely consist of commodities whose global prices have recently peaked. After taking into consideration essential non-food imports, all SEMED countries run trade deficits. Further, the crisis is hitting some countries at a time of economic hardship driven by a severe drought (particularly in Morocco), sluggish economic growth (Tunisia), or a full economic crisis (Lebanon). Rising food import bills and insufficient foreign exchange earnings pose a challenge from the vantage point of financing crucial food imports.

For the SEMED countries, the current crisis is mostly a supply side shock. Merchandise exports to Ukraine and the Russian Federation are negligible for most SEMED countries (except for some exports by Egypt and Morocco). In line with their status as net exporters of fertilizers, SEMED countries could benefit from surging global prices, but higher prices are also likely to be passed on to farmers.

Except for Morocco, forecast production of wheat in the SEMED countries for 2022/23 – while negligible in some cases – is close to the five-year average. Due to a severe drought, Morocco is predicted to have a significantly higher import requirement than in past years and already increased wheat imports before the war in Ukraine. In terms of food stocks, estimates for wheat at the end of the 2021/22 marketing year range from just below 13.7 percent of domestic consumption in Lebanon to more than 33 percent in Jordan.

Government responses to the crisis so far have included food export bans, efforts to diversify sourcing relationships and negotiations with international financial institutions. All SEMED countries have implemented export bans on at least some food items, including cereals and their derivates, but also fruits and vegetables and other items in some cases. Tunisia and Lebanon have initiated

or concluded negotiations with the World Bank or the International Monetary Fund (IMF) for loans or aid programmes.

To prevent significant increases in hunger arising from the crisis, SEMED governments should pursue policies that take into account their reliance on imported food. In general, SEMED governments should avoid ad hoc policy reactions, keep trade open and commit to comprehensive food security strategies. Considering that SEMED countries will continue to rely on food imports also in the future, a first priority is to mobilize funding for rising food import bills, for example through a dedicated Food Import Financing Facility as proposed in FAO (2022j), and diversify import sources. In the medium- to long-run, governments should consider comprehensive reforms of their sizable food subsidy programmes as well as import regimes, build reasonable food stocks and consider new agricultural technologies, with a view to produce increased volumes domestically in a sustainable way.


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Chapter 1
The war in Ukraine: risks for global agrifood markets and effect on prices to date

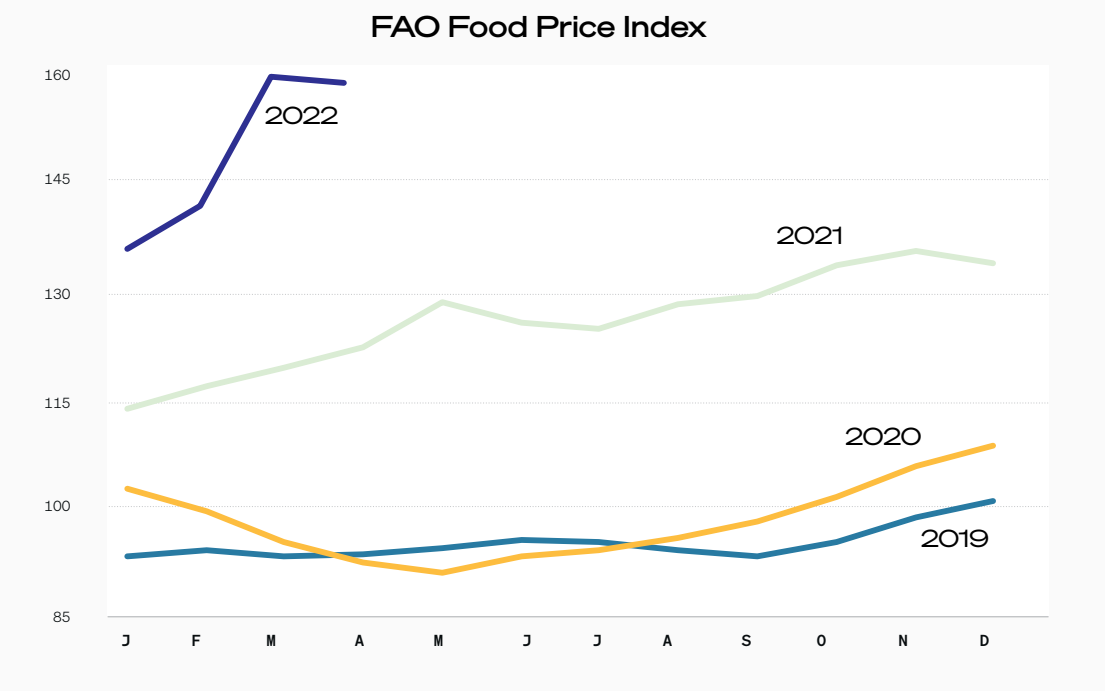
1. The war in Ukraine that began on 24 February 2022 has caused extensive loss of life, considerable displacement of people in Ukraine and damage to critical infrastructure. The war has also sparked a massive and deteriorating food insecurity challenge, has affected livelihoods in Ukraine, and has impacted on global food security (FAO, 2022a).

2. The Russian Federation and Ukraine are among the most important global suppliers of agricultural commodities. In 2021, wheat exports by the Russian Federation and Ukraine together accounted for around 25 percent of global exports. In the same year, the Russian Federation accounted for about 3 percent of global maize exports, while Ukraine held a share of around 12 percent in global exports of this commodity. With respect to their shares in global barley exports, in 2021 the Russian Federation and Ukraine accounted for about 12 percent, and 14 percent, respectively. Finally, sunflower oil exports from both countries combined represented close to a staggering 72 percent of global exports in 2021 (FAO, 2022b).[1]

3. The Russian Federation is also a key exporter of fertilizers. In 2021, the country was the top exporter of nitrogen fertilizers, the second largest supplier of potassium, and the third largest exporter of phosphorous fertilizer. Additionally, from the perspective of energy-intensive agrifood systems that absorb energy either directly through fuel for machinery or in the production of fertilizers, the Russian Federation is also a key player in global energy markets and accounted for 18 percent, 11 percent, and 20 percent of global exports of coal, crude oil, and natural gas, respectively in 2021 (FAO, 2022b).

1 The Russian Federation and Ukraine mostly export sunflower oils, rather than uncrushed seeds.

4. As a result of the outbreak of the war in Ukraine, global food prices have further increased from already high levels in 2021, reaching record highs in March 2022, followed by a limited easing in April 2022. The FAO Food Price Index averaged 159.3 points in March 2022, leaping 17.9 points (12.6 percent) from February 2022 and reaching its highest value since the creation of the index in 1990. Individual product groups for which the Russian Federation and Ukraine are key global suppliers also rose sharply in line with the overall trend, with the FAO Cereal Price Index increasing by 24.9 points in March 2022 from February 2022 (17.1 percent) and the FAO Vegetable Oil Price Index increasing by 46.9 points from February 2022, a 23.2 percent increase (FAO, 2022c). For both indices, March 2022 values represented record highs and were driven by the war in Ukraine and export reductions from Ukraine, as well as a slowdown in shipments from the Russian Federation (FAO, 2022d). In April 2022, while remaining distinctly above historical levels, all three price indices showed a reduction relative to March 2022 (FAO, 2022c).



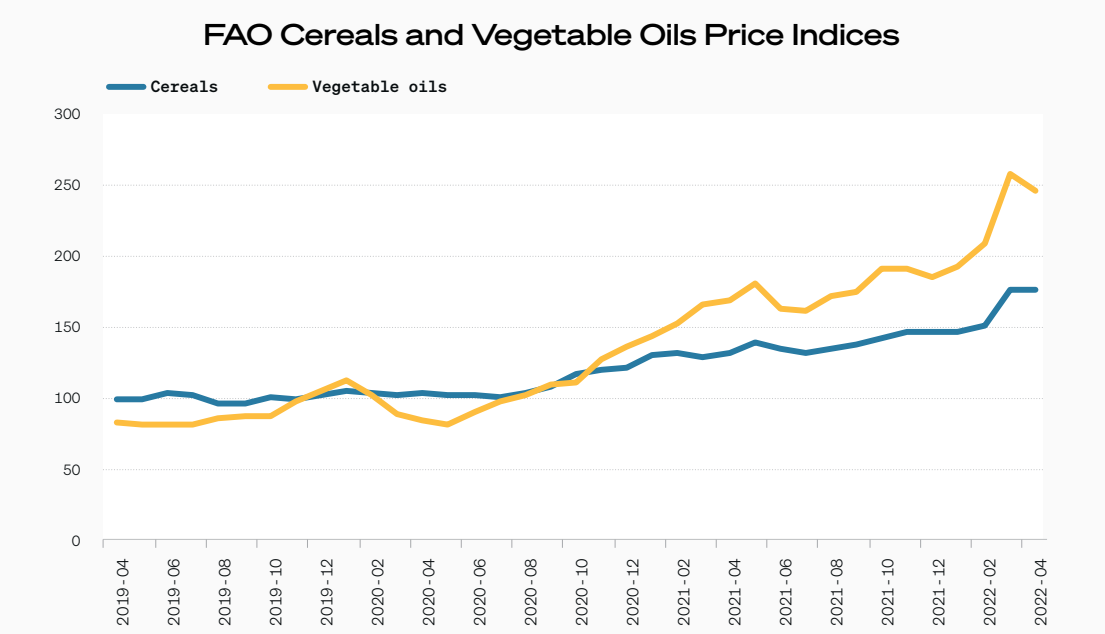


Figure 1

Food, cereal, and vegetable oil prices reached all-time highs in March and April 2022

NOTES: 2014-2016 = 100.

SOURCE: Food and Agriculture Organization of the United Nations (FAO). 2022c. *World food situation*. https://www.fao.org/worldfoodsituation/foodpricesindex/en/

5. Similar to agricultural commodities, recent prices for N-, and P-fertilizers had already risen strongly throughout 2021 and eventually reached multi-year highs in March 2022. Figure 2 presents spot prices throughout 2021, and the first four months of 2022 for urea (a critical N-fertilizer), diammonium phosphate (DAP), the most widely used P-fertilizer, as well as potassium chloride (KCl), the most widely used K-fertilizer. Both urea and DAP had shown significant price increases throughout 2021 and reached record prices in March 2021, rising even further in April 2022. While K-fertilizer prices were relatively stable throughout 2021, prices have recently risen, more than doubling from February to March 2022 and remaining virtually unchanged in April 2022.

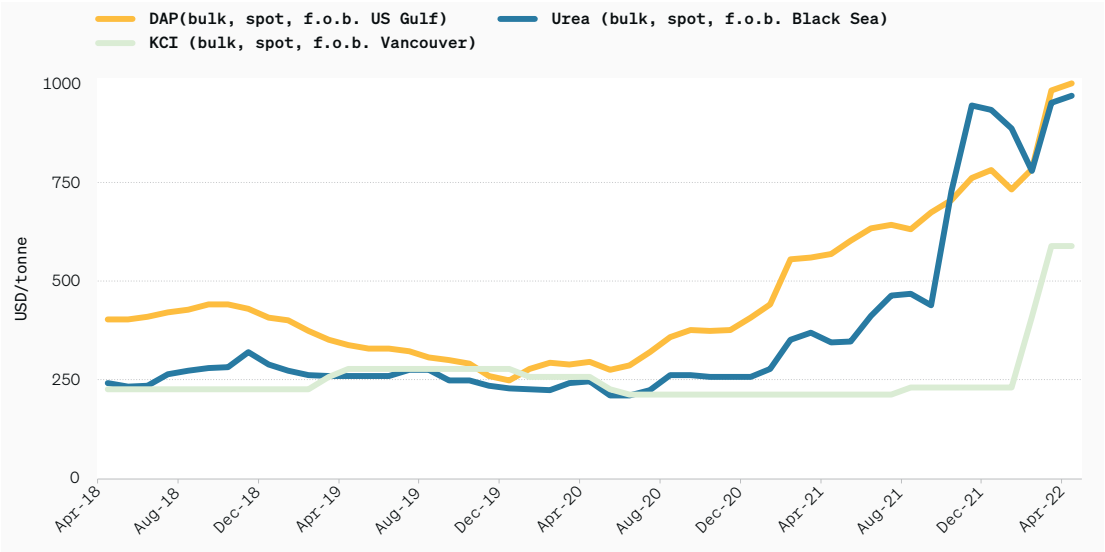


Figure 2
Fertilizer spot prices – diammonium phosphate (DAP), Urea, and potassium chloride (KCI)

NOTES: DAP = Diammonium phosphate, KCI = Potassium chloride. Urea is a nitrogen-based fertilizer.

SOURCE: INDEX MUNDI. 2022. *Fertilizer spot prices.* HTTPS://WWW.INDEXMUNDI.COM/

6. Future global price developments for important agricultural commodities and fertilizers will hinge on developments in the Russian Federation, Ukraine, as well as policy actions and harvests in other major producing countries. Future food and fertilizer prices (as well as prices for energy as a key input into agricultural production) will reflect developments in Ukraine and the Russian Federation and their ability to supply global export markets. The war is undermining the participation of Ukraine in global agrifood trade (and to a lesser extent that of the Russian Federation) and will also affect future production and logistics, including production decisions around the globe. For example, as of March 2022, FAO estimates suggest that about a third of the crops and agricultural land in Ukraine may not be cultivated or harvested in 2022 due to the war (FAO, 2022e). Policy responses by governments of other large global producers will play a critical role as well. For instance, on 28 April 2022, Indonesia banned exports of palm oil, which raised global prices for vegetable oils (FAO, 2022f). On 13 May 2022, India

banned exports of wheat in response to surging domestic food prices due to a crop damaging heat wave. International markets reacted with immediate price increases (Financial Times, 2022).[2]

7. Exports of Ukraine's agricultural commodities have already been impacted severely, primarily due to port closures, damage to critical infrastructure and displacement of people. Ukrainian exports have virtually stopped since the beginning of the war due to the closure of Ukrainian ports (which account for roughly 90 percent of Ukraine's agricultural commodity exports) as well as damage to storage and transport infrastructure. Some Ukrainian grain exports have been possible through Ukraine's western borders via rail as well as the shallow Danube Delta ports of Reni, Ismail and Kiliya. However, capacity is insufficient to make up for lost deep water maritime transport. Additionally, at the beginning of March the Ukrainian Government suspended export activities for some food products, including oats, buckwheat, millet, rye, barley, rapeseed, meat, sugar, and salt, and introduced export licenses for other commodities (FAO, 2022g). Export licenses were lifted for maize and sunflower oil on 25 March 2022 and the government started issuing export licenses for wheat on 21 April 2022 (Ukrainian Government, 2022a; Ukrainian Government, 2022b). The Russian Federation had already banned exports of grains (wheat, barley, rye, maize) to other members of the Eurasian Economic Union (Reuters, 2022a), with exports of seeds of wheat and meslin, rye, barley, as well as common corn being excluded from this ban on 31 March 2022 (Government of the Russian Federation, 2022a). Also on 31 March 2022, the Russian Government announced a temporary ban on exports of sunflower seeds and rapeseeds from 1 April to 31 August 2022 (Government of the Russian Federation, 2022a).[3] With respect to fertilizers, on 17 April 2022 the government promoted increased exports by substantially raising export quotas for fertilizers by almost 700 000 tonnes (Government of the Russian Federation, 2022b).

8. The port blockade will likely continue to severely impact on Ukraine's capacity as a supplier to global grain markets, also leading to insufficient storage capacity for the new harvest. Storage facilities remain filled with grains from the previous harvest. If these stocks cannot be exported in time, the summer harvest between July and September 2022 cannot be stored and much will be lost (SRF, 2022). There are also reports of damage to storage infrastructure such as silos, although the extent remains unknown.

2 At the time of writing it was unclear whether and under what terms some importers could be exempted from the ban.

3 Exports to the members of the Eurasian Economic Union are permitted.

9. Egypt, Jordan, Lebanon, Morocco and Tunisia - the countries comprising the SEMED group of European Bank for Reconstruction and Development (EBRD) operations - are among the largest grain, wheat and foodstuffs importers globally and therefore directly exposed to the ramifications of the ongoing war. According to the latest trade data available, it can be estimated that in 2021 the five SEMED countries accounted for 8.7 percent of global wheat imports. Egypt alone, often the world's largest wheat importer, accounted for 5.2 percent of total global wheat imports in 2021 (TDM, 2022).[4] Additionally, the global shock from to the war in Ukraine is hitting some SEMED countries at a time when their economic prospects are already bleak.

- **Lebanon** is experiencing one of the worst economic crises in the country's history. A September 2021 assessment of the United Nations Economic and Social Commission for Western Asia found that 82 percent of the population were living in multidimensional poverty, almost double the 2019 number (UN-ESCWA, 2022).
- **Tunisia,** experiencing a long period of economic stagnation after the revolution in late 2010 and early 2011, is projected to grow at 3 percent in 2022. This will not allow economic output to return to pre-pandemic levels and will keep growth well below current global projections of circa 3.2 percent (World Bank, 2022a).[5]
- **Morocco** is experiencing a severe drought, not only increasing reliance on imported agricultural commodities for which prices could further rise but also severely impeding the country's economic growth rate for 2022, forecast to be 1.1 percent, a significant drop from 7.4 percent in 2021 (World Bank, 2022a).

10. Finally, in many SEMED countries tourism is an important sector of employment and source of foreign exchange earnings that would be helpful to finance rising food (and energy) import bills. Crucially, however, the sector's performance is well below pre-pandemic levels and will also suffer from fewer Russian and Ukrainian tourists.

4 These figures are based on data obtained from TDM (2022) and compiled from the reports of 108 reporting countries using exports in quantities. Included are wheat (HS1001) and wheat flour (HS1101), which is assumed to be produced from grain with an extraction rate of 72 percent and converted back into wheat equivalent for this calculation. It should be noted that due to varying country coverage, product definitions and cleaning procedures applied to different trade databases, a country's share of global imports of any commodity can vary. For example, instead employing USDA (2022b) data covering imports of wheat and wheat flour by country suggests that in 2020/21 the SEMED countries accounted for about 11 percent of global wheat imports, with Egypt accounting for 6.2 percent of global imports.

5 On 18 April 2022, the World Bank reduced its global growth projection for 2022 from 4.1 percent to 3.2 percent, citing the war in Ukraine as reason (Reuters, 2022b).

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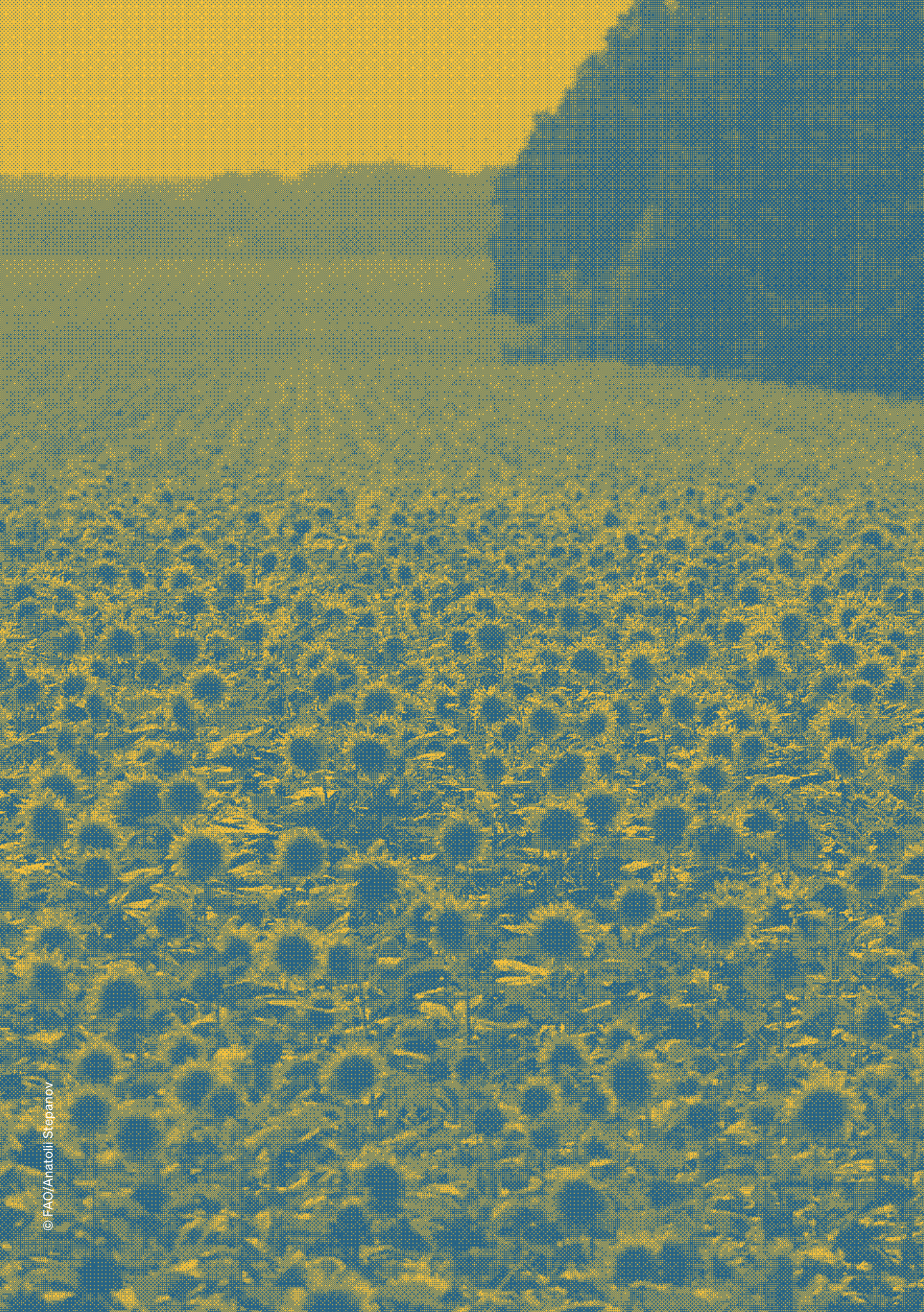

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Chapter 2
Reliance of the Southern and Eastern Mediterranean (SEMED) countries on global food markets: a general assessment

11. Imports account for a sizeable share of total domestic availability of calories in all SEMED countries, rendering them vulnerable to shocks in global food availability and prices. SEMED countries are net importers of calories (Figure 3). Import dependency ratios – defined as the ratio of net imports of calories to domestic production plus net imports – range from a considerable 0.37 (Morocco) to a staggering 0.84 (Jordan).[6] This suggests that shocks to global production volumes and food prices matter considerably for food security and nutrition in these countries.

6 Import dependency ratios are computed based on FAO food balance sheets (FBS) and reflect the contribution of imports to the number of calories available in each SEMED country that could theoretically be consumed by humans. To reflect that different agrifood items vary greatly with respect to their caloric content, all production and trade data used in the calculation of this metric are converted into calories using conversion factors provided in the FAO's FBS. When interpreting this indicator, it is critical to emphasize that not all imported, or domestically produced agrifood items will end up as "food" for humans. For example, maize may first be processed (milled), used as animal feed, stocked for later use, or simply end up as food waste/loss. It is therefore appropriate to speak of "availability" of calories rather than "food" or even "food consumption". An import dependency ratio of "one" implies total dependency on imports, while a negative ratio indicates that a country is a net exporter of calories.

12. Dependence on imported dietary energy comes with considerable prevalence of undernourishment. Two countries in the group, Jordan and Lebanon, have high import dependency ratios, while also revealing Average Dietary Energy Supply Adequacies (ADESAs) of close to or below 1.2. This suggests aggregate supply of food in calorie terms is only about 20 percent above these countries' requirements, leaving little buffer for shocks affecting imports or domestic production.[7] In line with food supply being only moderately above requirements, these countries also show high rates of undernourishment (9.5 percent and 9.3 percent over 2018-20, respectively).[8] Tunisia, Egypt and Morocco have lower import dependency ratios, higher ADESAs, and lower if still substantial rates of undernourishment, especially populous Egypt with a prevalence of undernourishment of 5.4 percent of the population.[9]

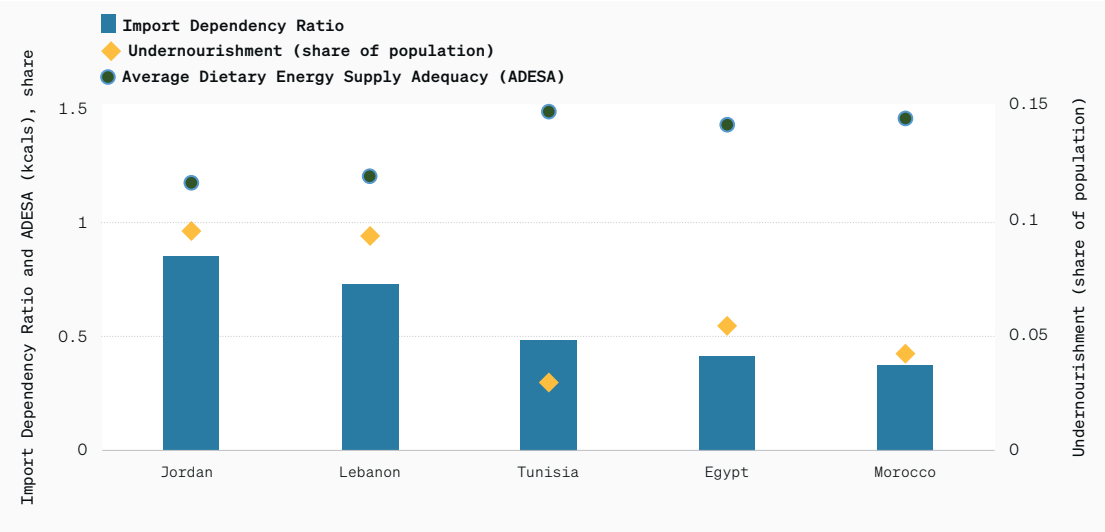


Figure 3
SEMED countries' reliance on imports for domestic availability of calories

NOTES: Employing the most recent data available for different variables, import dependency ratios are computed as 2017-19 averages, while all other indicators reflect 2018-20 averages. Import dependency ratio = (imports - exports) / (domestic production + imports - exports), in calories.

SOURCE: FAOStat. 2022a. *Food balance sheets.* https://www.fao.org/faostat/en/#data/FBS, and: FAOStat. 2022b. *Suite of food security indicators.* https://www.fao.org/faostat/en/#data/FS.

7 The ADESA expresses the Dietary Energy Supply (DES) of a country as a percentage of the Average Dietary Energy Requirement (ADER). Each country's average supply of calories for food consumption is normalized by the estimated average dietary energy requirement to provide an index of the adequacy of the food supply in caloric terms. Ratios well above one indicate an average supply of food that is sufficient for requirements while ratios close to one are problematic.

8 Prevalence of undernourishment corresponds to the probability that a randomly drawn individual from a population consumes insufficient calories for an active and healthy life. See: FAOStat. 2022b. *Suite of food security indicators.* https://www.fao.org/faostat/en/#data/FS.

9 Higher availability of calories does not imply these countries are safe from shocks. The share of the population living in moderate or severe food insecurity was 25.1 percent, 27.8 percent, and 28 percent in Tunisia, Egypt, and Morocco over 2018-20. See: FAOStat. 2022b. *Suite of food security indicators.* https://www.fao.org/faostat/en/#data/FS.

13. The combination of high adequacy of dietary energy supply and simultaneously high rates of undernourishment and malnutrition (for example in Egypt) show that besides aggregate supply of food, other aspects of the domestic food system impact on dietary outcomes. Sufficient aggregate supply of food does not imply adequate consumption across the entire population and showcases the importance of other agrifood system characteristics like access or affordability (Tufts University, 2022). Additional factors constraining food consumption may include high food loss or waste that reduce the number of calories eventually consumed by persons. Again using Egypt as an example, most recently the country was ranked seventh out of 181 geographic areas with respect to incidence of caloric losses at retail distribution level (FAOStat, 2022b).

14. Egypt stands out in terms of the number of people potentially impacted by global food price surges. When interpreting undernourishment prevalence rates in conjunction with import dependency ratios, it is important to consider that the five SEMED countries differ considerably with respect to the size of their populations and therefore the number of persons potentially impacted by global shocks affecting imports. The latest estimated figures for the number of undernourished was 5.4 million people in Egypt, compared to 1 million in Jordan, 0.6 million in Lebanon, 1.5 million in Morocco and 0.3 million in Tunisia (Figure 4).[10]

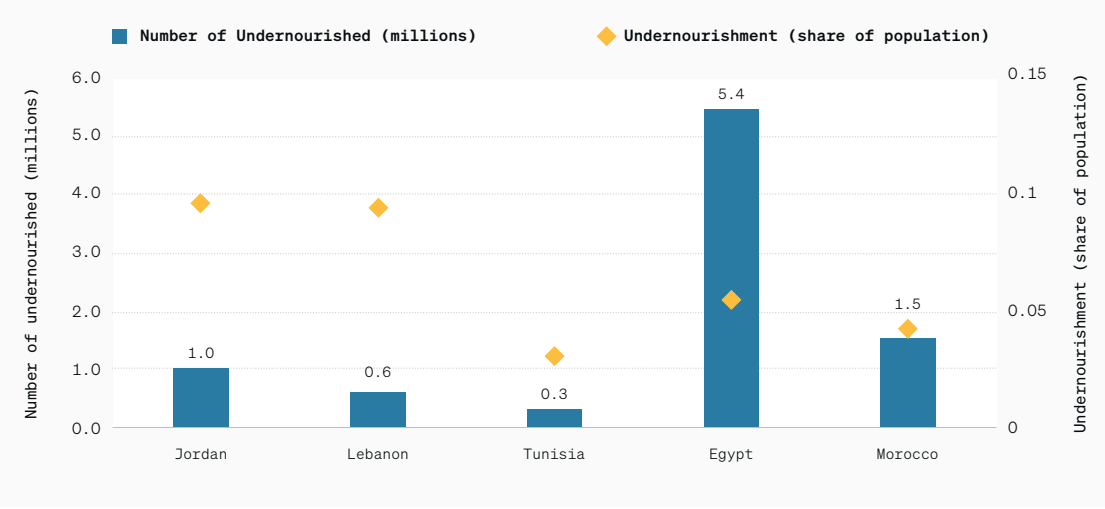
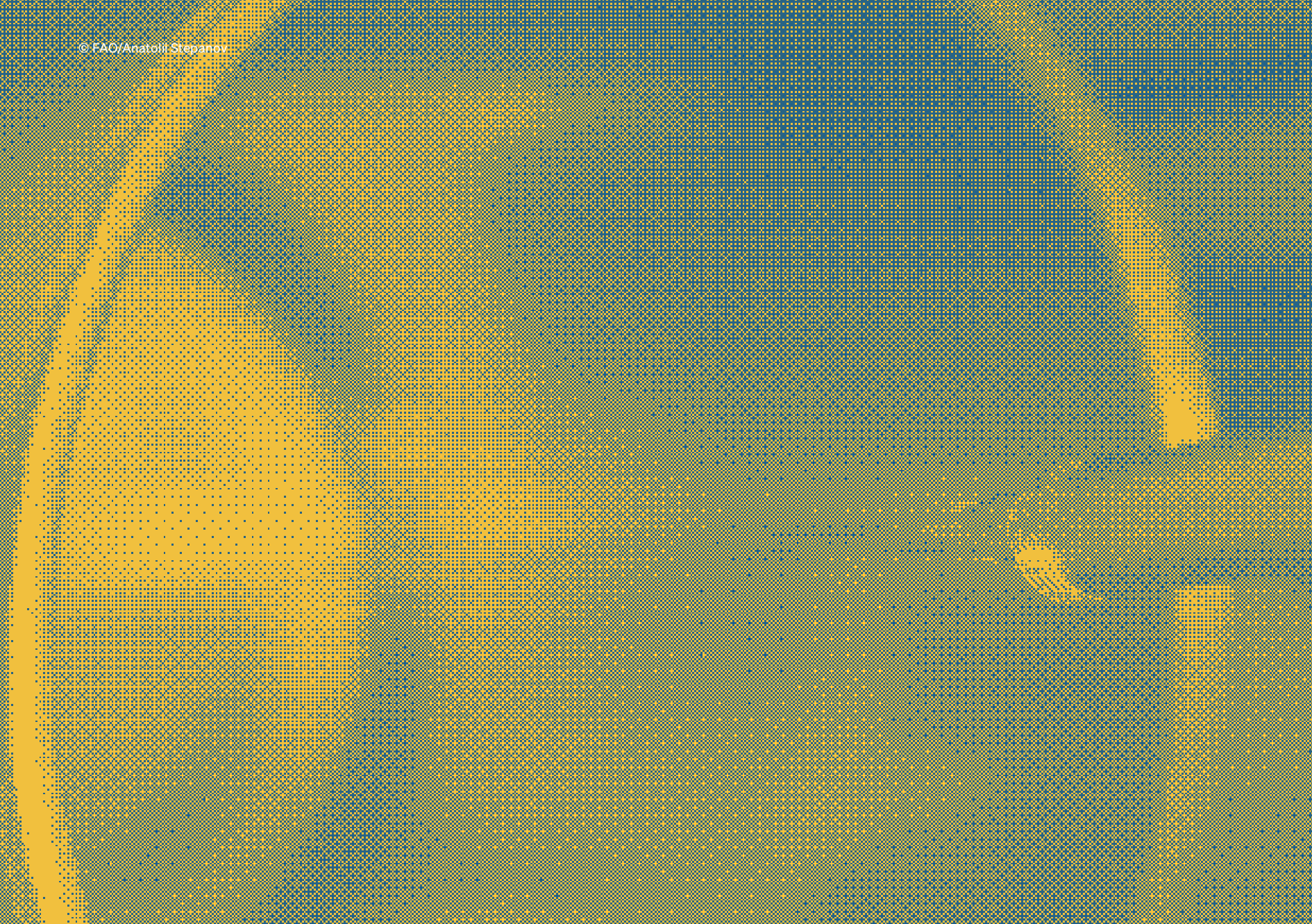


Figure 4
Prevalence of undernourishment and number of undernourished in SEMED, 2018-20

NOTES: 2018-20 averages (latest available).

SOURCE: FAOStat. 2022b. *Suite of food security indicators*. https://www.fao.org/faostat/en/#data/FS.

10 See chapter six for simulation results on the impact of the war in Ukraine on the number of undernourished persons in SEMED countries.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Chapter 3
The importance of food staples and trade relationships affected by the war

15. SEMED countries show high dependency on wheat imports for domestic availability and the commodity contributes significantly to food supply in these countries. All SEMED countries are large net importers of wheat, with import dependency ratios for this product ranging from 0.39 of total domestic availability in Morocco, to near complete dependence on imports in Jordan (Table 1, Column a). Net imports per capita are high and the share of this product group in aggregate domestic food supply is sizeable in all countries, ranging from a share of 34 percent in Jordan to 45 percent in Tunisia.[11,12] A simultaneously high import dependency ratio and a significant share of a product group in the aggregate food supply of a country could be considered especially problematic, due to a high degree of exposure to swings in global markets.

11 Product groups in Table 1 include the item itself as well as direct derivates. Wheat and products, for example, includes wheat and wheat flour and bran, pasta, bread, bulgur, pastries, starch, breakfast cereals, wafers, mixes and doughs as well as some food preparations. A high import dependency ratio alone only means that much of the product's availability comes from imports but does not permit statements about the size of imports or the role of a product in domestic food supply.

12 While the next chapter also shows the role of the Russian Federation and Ukraine as direct suppliers of these items to SEMED countries, it is critical to note that high import dependency ratios for these products are generally problematic in an environment of rising prices. See also content on recent tender prices paid by the Egyptian GASC in April 2022, presented in this note.

Table 1

Key commodities: import dependency, net imports per capita and contribution to food supply

	(a) Wheat and products			(b) Cereals and products (excl. wheat)			(c) Sunflower oil		
	Import dependency ratio (weights)	Net imports per capita/ year (kg)	Share of product group in food supply (calories)	Import dependency ratio (weights)	Net imports per capita/ year (kg)	Share of product group in food supply (calories)	Import dependency ratio (weights)	Net imports per capita/year (kg)	Share of product group in food supply (calories)
Egypt	0.53	95	35%	0.41	87	29%	0.91	2.9	1%
Jordan	0.98	102	34%	0.96	177	8%	1.00	6.1	6%
Lebanon	0.85	109	36%	0.96	117	5%	0.94	13.4	4%
Morocco	0.39	106	41%	0.55	77	17%	0.78	1.4	1%
Tunisia	0.59	150	45%	0.73	148	2%	0.90	2.3	1%

NOTE: Import dependency ratio = (imports - exports) / (domestic production + imports - exports), per product group, in weights.

Net imports per capita/year = (imports - exports) / population size, per product group, in weights.

Share of product in food supply = amount of a product group available as food for human consumption, expressed as a share of aggregate domestic food supply (in calories). Supply of "Food" corresponds to the product and its direct derivates available for human consumption after subtracting non-food uses of the product, such as feed, losses, use as seed or further processing, from the total domestic supply quantity (domestic production + imports - exports +/- stock variation).[13]

SOURCE: FAOStat. 2022a. *Food balance sheets.* https://www.fao.org/faostat/en/#data/FBS.

13 Food supply or dietary energy supply should not be equated with food consumption since this variable does not capture any information around access or availability of food but is merely an indicator of food supply at national level. Food supply does also not account for food losses at retail distribution level, plate waste, or other non-food uses at individual or household level that decrease caloric intake. See for example: INDDEX Project. 2018. *Data4Diets: Building Blocks for Diet-related Food Security Analysis.* Tufts University, Boston, MA. https://inddex.nutrition.tufts.edu/data4diets.

16. Import dependency ratios for cereals and products (excluding wheat) are even higher than for wheat and products. The direct contribution of these products to food supply is comparatively small in most SEMED countries that reveal a high import dependency ratio for them (Table 1, Column b). However, net imports per capita are sizable throughout and for three SEMED countries exceed those for wheat and wheat products. Combined this suggests that the main use of these cereals is for purposes that only indirectly contribute to food supply, for example in the form of feed for livestock. Crucially, increased feed costs are important for nutritional objectives as well since, for example, poultry is a comparatively affordable source of protein with a short production cycle.[14]

17. Similarly, SEMED countries show high dependence on imported sunflower oil and other cooking oils. While sunflower oil contributes very little to overall food supply in the SEMED countries, all five countries source the bulk of domestic availability of this commodity from abroad (Table 1, Column c). While the direct contribution of sunflower oil to food supply in caloric terms is modest, the product is widely used as a cooking oil. It is critical to point out that global supply-side disruptions for sunflower oil have resulted in price increases for other vegetable oils as well, highlighting the substitutability of different products. Demand from SEMED countries for other cooking oils is therefore likely to increase due to a reduction in the global supply of sunflower oil.[15] In fact, import data show that other oils account for a large share in net imports of vegetable oils by these countries, especially palm oil in Egypt and soybean oil in Morocco (Figure 5). All SEMED countries are net importers for each key type of vegetable oil, except Tunisia which is one of the largest global exporters of olive oil.[16] Domestic capacity to crush sunflower seed is negligible, and while there is some capacity to crush soybeans (mostly in Egypt and Tunisia), the SEMED countries are highly vulnerable to disruptions affecting vegetable oil imports.

14 In Egypt, maize imports are sizeable, and accounted for about 45 percent of cereal net imports over 2017-19. Imported maize is mostly used as animal feed and these imported grains not only provide dietary energy directly, but contribute significantly to human consumption after use as animal feed.

15 See introduction to this report. The conflict could easily affect other vegetable oils due to the substitution of different oils. To illustrate, following the beginning of the war, in late February international palm oil price quotations rose sharply, along with a sharp increase in quotations for sunflower oil from Argentina, the world's third largest exporter. See: FAO. 2022b. *Information note: the importance of Ukraine and the Russian Federation for global agricultural markets and the risks associated with the current conflict.* FAO, Rome. 25 March 2022. www.fao.org/3/cb9236en/cb9236en.pdf. Additionally, on 28 April 2022, Indonesia surprisingly implemented an export ban on palm oil, contributing to further price hikes.

16 Tunisia exports olive oil mostly to high value markets like Spain, the United States of America, Italy or Canada.

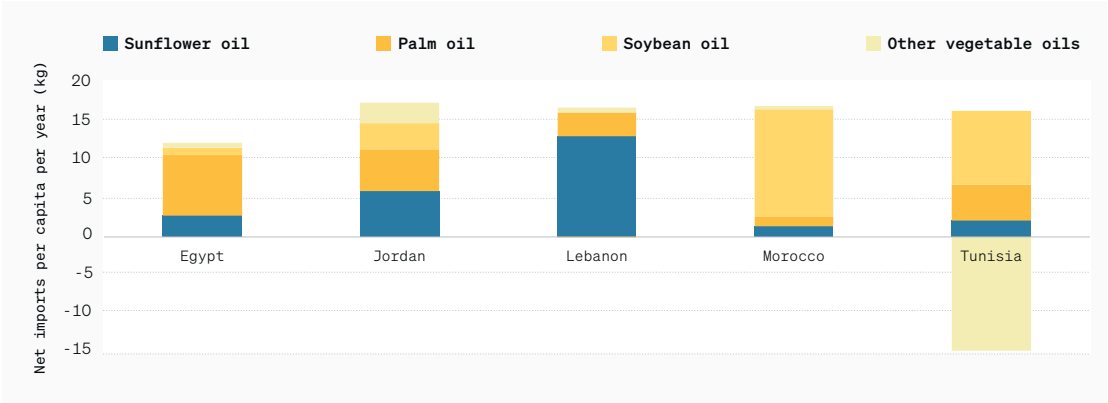

Figure 5
Net imports per capita of different vegetable oils, 2017-19 averages

NOTES: Other vegetable oils includes oils derived from olives, coconuts, cottonseed, groundnuts, palm kernels, sesame seeds, maize, other oil crops, as well as rice bran oil, rape and mustard seed oil, and maize germ oil.

SOURCE: FAOStat. 2022a. *Food balance sheets.* https://www.fao.org/faostat/en/#data/FBS.

18. The Russian Federation and Ukraine are crucial suppliers of key agricultural commodities affected by the war for four of the five SEMED countries. Figure 6 shows the 2021 shares of individual SEMED country imports directly sourced from the Russian Federation and Ukraine for the three product groups considered above. For all three items, Ukraine and the Russian Federation directly supply sizeable shares to four of the SEMED countries. With respect to wheat and wheat flour, the Russian Federation and Ukraine combined accounted for more than 75 percent of total imports of Egypt and Lebanon, close to 40 percent in Tunisia, more than 30 percent in Jordan and around 20 percent in Morocco.[17] The role of the Russian Federation and Ukraine is even more pronounced for sunflower oil where the two countries together accounted for around 72 percent of global exports in 2021 (FAO, 2022b). Tunisia and Egypt source almost all their imports of this product from the two countries, Lebanon more than 70 percent and Jordan more than 50 percent. Last, with respect to cereals other than wheat Ukraine and the Russian Federation are also important for Jordan, Tunisia, Egypt and Lebanon as they source a sizeable share of their imports directly from these two countries, mostly barley and maize that are used as feed.

17 These figures do not account for derivates of wheat and wheat flour, which however are not widely imported by SEMED countries. For example, over 2021, Egypt's imports of bread and pasta in trade values accounted for only 1.5 percent of the import value of wheat and wheat flour, items which have much lower per unit value thereby further diminishing the importance of these imports.

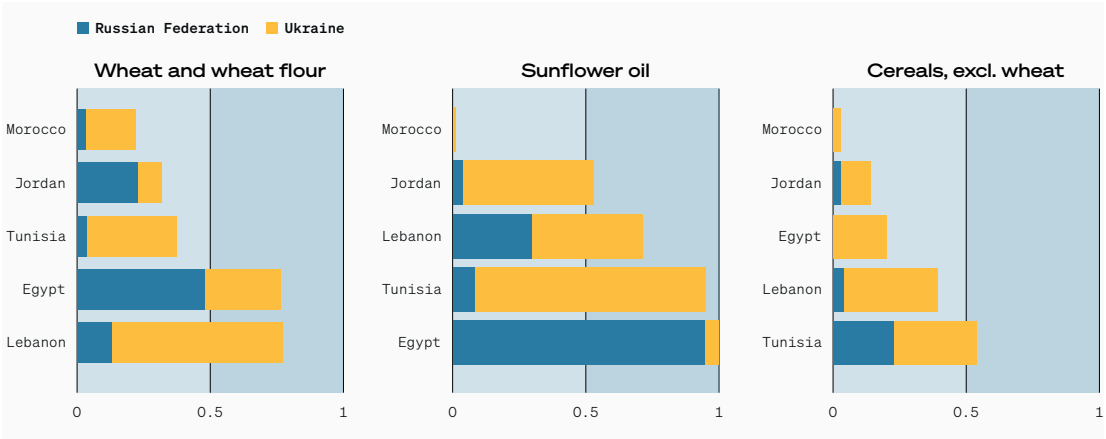

Figure 6
Key commodities – share of imports sourced directly from the Russian Federation and Ukraine, 2021

NOTES: The data show the shares of imports within a product group sourced directly from the Russian Federation (blue) and Ukraine (gold) per each SEMED country. Shares are computed on the basis of trade values, and data for Tunisia and Lebanon are constructed from the reports of trading partners. *Wheat and wheat flour*: HS4 1001 and HS4 1101. *Sunflower oil*: HS6 1512.11 and HS6 1512.19. *Other cereals, excl. wheat:* HS4 1002 - 1008. Figures for Lebanon and Tunisia are likely to be overestimates: Since values for these countries had to be constructed from trading partners' information, by default some global exporters for the three product groups may not be included in the calculations, although these remaining countries will not account for sizeable shares in global trade in wheat, sunflower oil, and other cereals.

SOURCE: Trade data taken from Trade Data Monitor. 2022. https://tradedatamonitor.com/

19. Contrary to the other SEMED countries, Morocco's immediate exposure to supply disruptions from Ukraine or the Russian Federation, in terms of direct supplier relationships, is relatively small. Morocco's three-year average import dependency ratio for wheat and wheat products is around 0.39 (see Table 1), and the Russian Federation and Ukraine combined only accounted for about 20 percent of wheat and wheat flour imports by this country in 2021. Similarly, while Morocco's import dependency ratio for cereals other than wheat is comparatively high at 0.55, again the Russian Federation and Ukraine only accounted for a fraction of imported grains in this category in 2021 (less than 4 percent). Morocco sources sunflower oil predominantly from France, Bulgaria, and Spain. While this suggests the current conflict will not immediately impact on Morocco through disrupted direct supplier relationships, global food price surges will still affect sourcing from other countries.

20. Regarding wheat products, SEMED countries mostly import wheat grain rather than flour. From 2021 trade data, flour accounted for less than 1 percent of total wheat and wheat flour imports in all five countries, although some also import small amounts of other wheat derivatives such as baked goods. It is important to note that imported wheat grain also matters for SEMED export performance. For example, Egypt and Jordan mill wheat domestically before exporting flour to other countries in the Near East and North Africa region and sub-Saharan Africa. In reaction to the crisis, Egypt already banned exports of wheat and wheat flour (see chapter five on policy responses in this note).

21. A network analysis of global trade networks for wheat and sunflower oil further illustrates the importance of the Russian Federation and Ukraine as global suppliers. Global agrifood networks have become increasingly interconnected (Puma *et al.,* 2015; Fair *et al.,* 2017; Grassia *et al.*, 2022). Because of this high level of connectivity, global trade may be vulnerable to disruptions in a major exporting economy.

22. In addition to the overall vulnerability of a trade network, analysing individual countries' vulnerability to disruptions is important as they are likely to be country-specific. Specifically, a country's exposure to trade risks depends on whether the economy is a net importer or net exporter, the number of its trading partners, the export (import) concentration between trading partners, and the respective roles of the country's trading partners in the global food network.

23. A country is directly affected by external shocks when it is highly integrated into global markets, although this also means it can easily source imports from the global market to cope with unexpected declines in domestic production. The other way around, when a critical shock to a strategic commodity affects a key exporting country, it influences the global supply and will have repercussions for most countries.

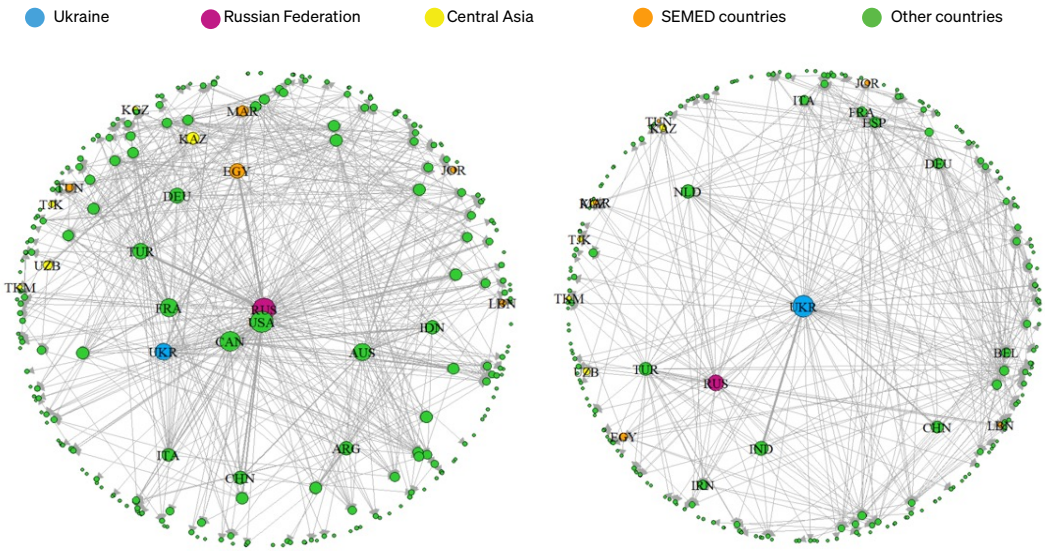

Figure 7
The global trade networks for wheat (left) and sunflower oil (right), 2019–21

NOTES: Only trade flows greater than the average bilateral trade over 2019-21 are plotted in the network representation (USD 10 million for wheat, and USD 3 million for sunflower). Country labels are iso3 codes. The size of the circle for each country is proportional to the country's participation in the international market (sum of total exports and imports). Different colours correspond to different groups of countries (right legend). Product identification in line with the HS system as defined in Figure 6.

SOURCE: Trade data taken from Trade Data Monitor. 2022. https://tradedatamonitor.com/

24. The Russian Federation and Ukraine are central players in global trade networks for wheat and sunflower oil, affecting their stability. Using average bilateral trade flows between countries over 2019-21, Figure 7 displays the global wheat (panel a) and sunflower oil (panel b) trade network. Every country is represented by circles. The size of the circle is proportional to the country's participation in the international market (sum of total exports and imports). The graph illustrates that the stability of global wheat trade depends on a very limited number of countries including the Russian Federation and Ukraine. Any disruption affecting these countries will affect most other countries worldwide. Similarly, Ukraine and the Russian Federation are central to the international trade network for sunflower oil (panel b).

25. To test the vulnerability of the global trade networks for wheat, sunflower oil, as well as other cereals (excluding wheat and rice) to the impacts of the war in Ukraine, four different scenarios were studied. These scenarios considered the impacts of reduced or no exports at all from the Russian Federation and/or Ukraine due to the war. To test vulnerability of global trade networks to such disruptions, consecutively Ukraine (scenario 1), the Russian Federation (scenario 2), or both Ukraine and the Russian Federation (scenario 3) were dropped entirely as participating countries in the international trade networks. Scenario 4 considered the effect of cutting their joint participation by half.

26. Next, the network clustering coefficient[18] for the entire network and for each country were computed to test for vulnerability. The tendency of a country or network to cluster is an important indicator of resilience, since a more clustered/interconnected network is better placed to absorb or dampen the ramifications of a trade shock (Grassia *et al.,* 2022). To consider the impact of each scenario on vulnerability, the percentage change in the clustering coefficient as an indirect measure of vulnerability was computed. A negative change to the clustering coefficient is evidence of vulnerability, while a positive change shows that the country or the network is resilient to the simulated shocks (see Figure 8 and Figure 9). Key results from this analysis can be summarized as follows.[19]

18 The clustering coefficient is a network indicator that measures the tendency of countries (nodes) to form triangle-like connections between them. The more triangular relationships a country has with its partners, the higher its clustering coefficient will be. For more technical details see the following publication: Opsahl and Panzarasa, 2009. *Clustering in weighted networks. London.* Queen Mary University of London. https://www.researchgate.net/publication/222845920_Clustering_in_Weighted_Networks

19 It is important to highlight that these results only take into account historic trade values (averages over 2019-2021), and not (for example) the financial means of a country to import commodities from different and potentially more expensive origins or the impact of supply side disruptions in Ukraine/the Russian Federation on the aggregate global availability of commodities.

- Sunflower oil trade would be the most affected if Ukraine stopped exporting this product. Figure 8 shows the resilience of the entire sunflower oil network would decrease by around 14 percent if Ukraine was completely unable to trade this product due to the war. Wheat trade and trade in other cereals would be adversely affected by the removal of Ukraine, but to a smaller extent.
- A reduction in exports from Ukraine and the Russian Federation by half would have a smaller impact on trade in selected commodities. Compared to other scenarios, a reduction of the joint participation of Ukraine and the Russian Federation leads to the smallest decrease in the clustering coefficient.
- Mirroring import shares presented in Figure 6, Lebanon is the most vulnerable country to a disruption from Ukraine. All SEMED countries would be negatively affected if for any reason Ukraine could not export wheat. Morocco is the least vulnerable in this scenario, again in line with observed import shares from the Russian Federation and Ukraine presented in Figure 6.
- A wheat trade shock from the Russian Federation would adversely impact mainly Egypt and Lebanon. Unlike a shock from Ukraine, a shock from the Russian Federation would negatively affect all SEMED countries except Jordan, which does not seem to rely heavily on the Russian Federation for wheat imports, based on historic trade flows.
- Egypt would be the most affected country if either Ukraine or the Russian Federation was not able to export sunflower oil assuming limited options for replacement with other oil imports or local processing. Jordan and Tunisia are the other most affected countries by sunflower trade shocks from Ukraine and/or the Russian Federation.
- For other cereals (except wheat and rice), Jordan, Lebanon, and Tunisia are the most vulnerable countries to a disruption in Ukraine and/or the Russian Federation.
- Morocco seems to be the least vulnerable among SEMED countries to disruptions from the two countries, again on the basis of historic trade flows.

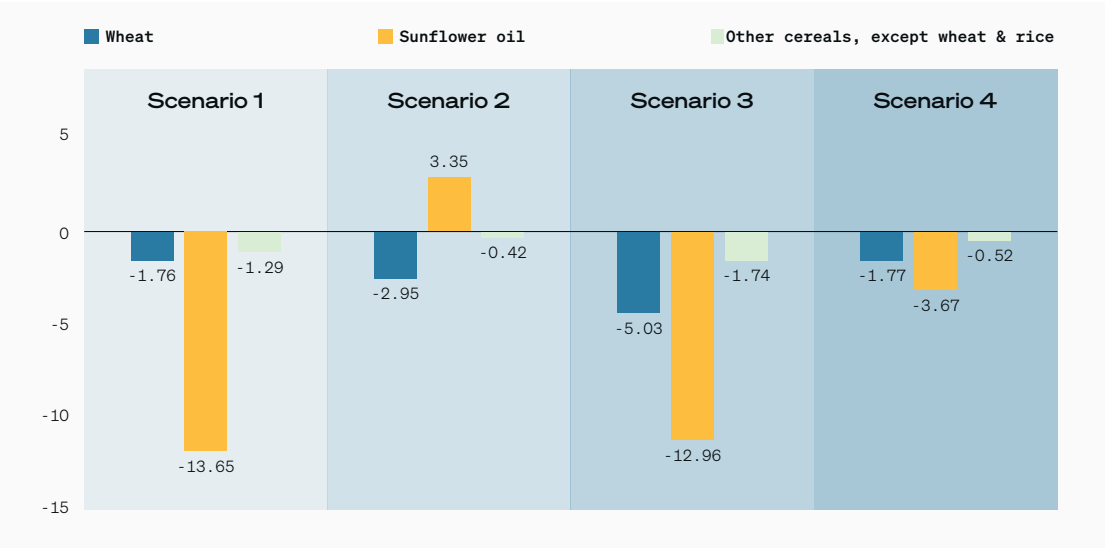

Figure 8
Global network vulnerability to trade disruption from Ukraine and the Russian Federation

NOTES: See text for the definitions of the different scenarios. Depicted are percentage changes of the clustering coefficient as an indicator of vulnerability.

SOURCE: Trade data taken from Trade Data Monitor. 2022. https://tradedatamonitor.com/

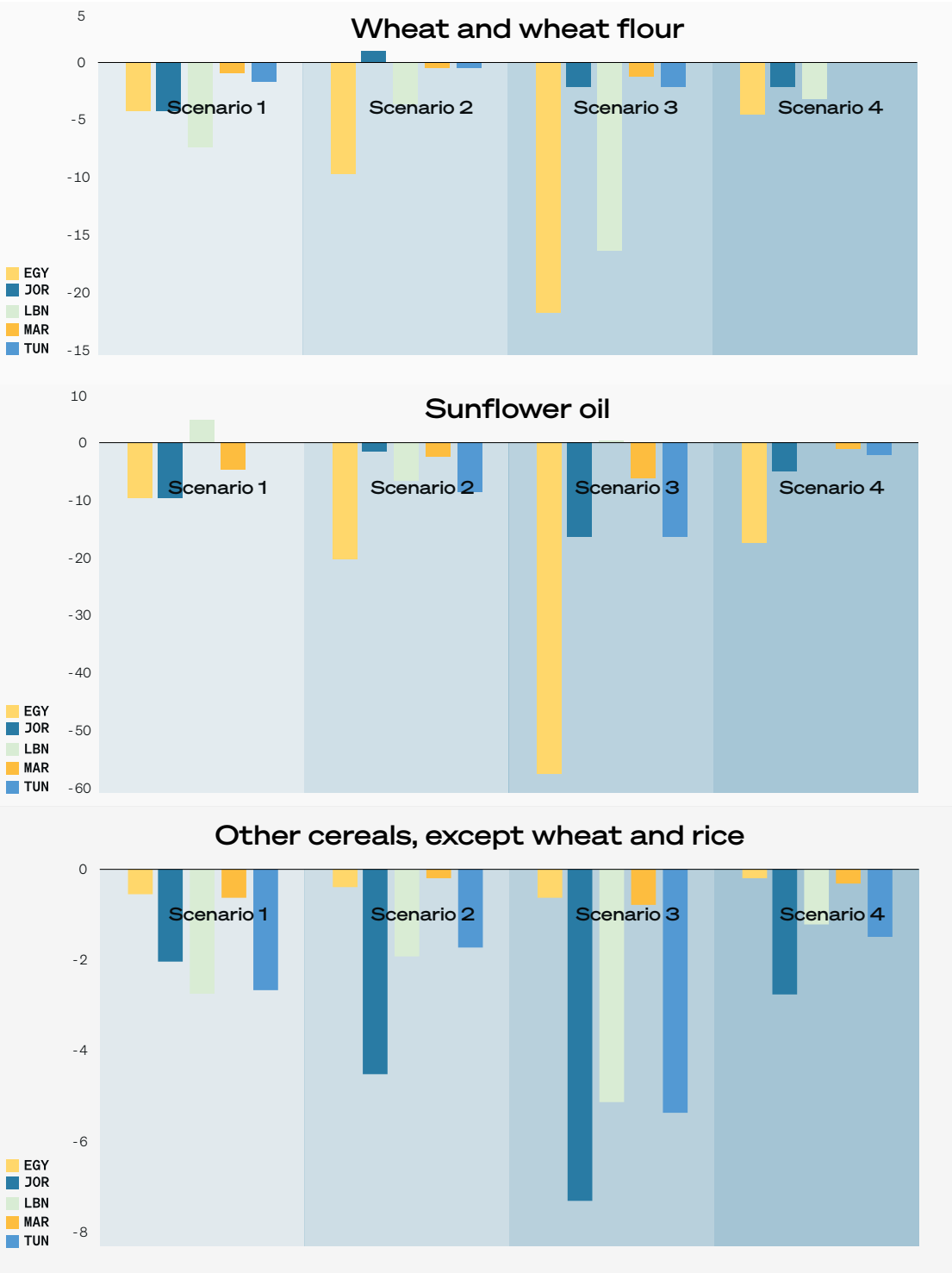

Figure 9
Countries' vulnerability to trade disruption from Ukraine and the Russian Federation

NOTES: See text for the definitions of the different scenarios. Depicted are percentage changes of the clustering coefficient as an indicator of vulnerability.

SOURCE: Trade data taken from Trade Data Monitor. 2022. https://tradedatamonitor.com/


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Chapter 4
The risks and challenges of rising food import bills

27. Food import bills per capita in the SEMED group are high in comparison to relevant benchmarks and their composition is tilted towards agrifood items for which prices have recently reached all-time highs.[20] Figure 10 shows gross food import bills per capita (in current USD) for each SEMED country and each of the three major commodity groups directly affected by the war. The right y-axis presents the share of three product groups for which prices have recently reached record highs in countries' food import bills. Mirroring high import dependencies detailed in the previous chapter, food import bills are high in the SEMED countries compared to relevant benchmarks. For example, Jordan's food import bill of USD 331 per capita in 2021 corresponds to about 3 percent of gross domestic product (GDP) per capita in the same year (USD 10 930). In comparison, for high income countries the same share can be approximated as below 2 percent, e.g. 1.93 percent in Germany, 1.91 percent in France or 1.79 percent in the United Kingdom of Great Britain and Northern Ireland.[21] A second important insight from this illustration is that for all SEMED countries product groups affected by the current crisis make up around or substantially more than 50 percent of their gross food import bills. In the case of Egypt, 72 percent of the per capita food import bill is spent on product groups whose prices have recently reached all-time highs, and that were already at elevated levels in 2021.

20 This chapter focuses on food imports. Stocks and crop prospects in SEMED are discussed in the next chapter.

21 Data on gross food import bills per capita are from FAO (2022j), and data on gross domestic product (GDP) per capita are taken from the International Monetary Fund (IMF, 2022a), using purchasing power parity (PPP) adjusted values at current prices in 2021 to facilitate cross-country comparison. The finding that gross food import bills are higher in SEMED than in high-income countries does not hold for all cases: Some high-income countries have high ratios of food import bills to GDP per capita.

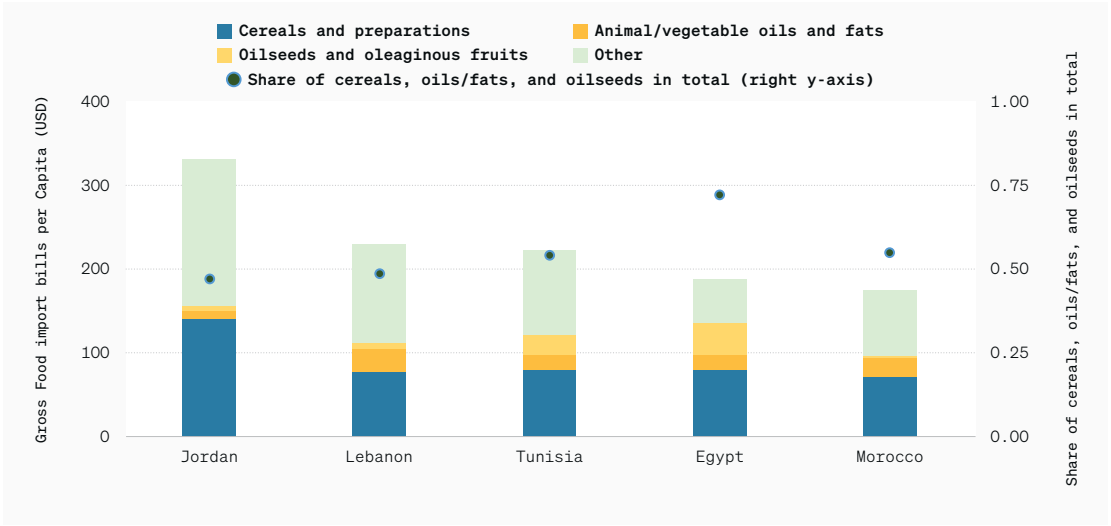

Figure 10
Gross food import bills in SEMED countries tilted towards cereals, oils and oilseeds, 2021

SOURCE: Data are taken from Schmidhuber, J. 2022. *Technical briefing to FAO-Rs in the RNE Region on the impact of COVID-19 and the war in Ukraine on the outlook for food security and nutrition.* 24 March 2022. PPT Presentation.

28. Food import bills already correspond to between 18 and 48 percent of merchandise export earnings in the SEMED countries, all of whom run trade deficits.[22] Figure 11 puts the food import bills discussed above in relation to two key sources of foreign exchange earnings in the SEMED countries: merchandise exports and remittances. Since the SEMED countries also rely on global markets to source other products critical to their economies (such as machinery or equipment), aggregate import bills are presented as well. It is unlikely that SEMED countries will be immediately able to reduce their imports of other products from global markets as food prices increase. As shown in the left graph, aggregate merchandise exports exceed countries' food import bills considerably, as indicated by the blue bars taking values below one. However, once imports of non-food items are added (yellow bars), it becomes apparent that all SEMED countries run trade deficits. This suggests that rising food prices would pose a considerable challenge from the perspective of foreign exchange mobilization to finance food imports.

22 Another source of foreign exchange for SEMED countries is inbound tourism. While important in pre-pandemic years tourism is not analysed here since no reliable data from 2020 or 2021 are available and employing 2019 data would be misleading given the ongoing pandemic. Crucially, however, the Russian Federation and Ukraine were important source countries suggesting that the sector will additionally be affected by the war. For example, for 2019 it can be estimated that 11.5 percent of tourists to Egypt originated from Ukraine. See: Ahram Online. 2022a. *Egypt reviews plans to cope with Ukraine crisis' impact on wheat imports, tourism, petroleum prices.* https://english.ahram.org.eg/News/461661.aspx

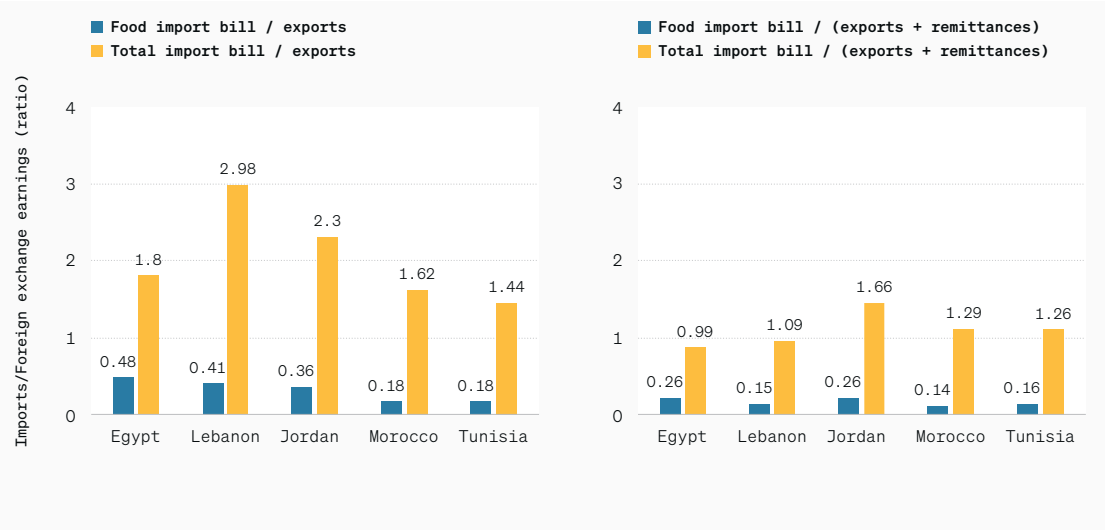

Figure 11
Import bills as a share of foreign exchange earnings: merchandise exports (left) and merchandise exports plus remittances (right)

NOTES: Lebanon and Tunisia are not included as reporters in the Trade Data Monitor and reconstructing aggregate import/export values from trading partners for these two countries would create biases in ratios if a given trading partner is more or less important as a source country than as a country of destination (see *Sources* below).

SOURCE: Trade data for Egypt, Morocco and Jordan are for 2021 and are taken from: Trade Data Monitor. 2022. https://tradedatamonitor.com/. Trade data for Lebanon and Tunisia are for 2020 and 2019, respectively and are taken from: United Nations Commodity Trade Database (UNComtrade). 2022. https://comtrade.un.org/. Data on gross food import bills per capita in 2021 are taken from: *Schmidhuber, J. 2022. Technical briefing to FAO-Rs in the RNE Region on the impact of COVID-19 and the war in Ukraine on the outlook for food security and nutrition.* 24 March 2022. PPT Presentation. Remittances data are 2021 estimates and are taken from: Global Knowledge Partnership on Migration and Development (Knomad). 2021. *Recovery: Covid-19 through a migration lens.* Migration and development brief 35, November 2021. Washington DC, World Bank Group.

29. For Lebanon, an additional challenge to sourcing food internationally is a severely depreciated exchange rate. While the currencies of other SEMED countries so far appear to have remained relatively stable, Lebanon's currency has depreciated continuously since autumn 2019, rendering it challenging to source goods internationally. Egypt – in an effort to reduce the country's widening trade deficit – allowed the exchange rate to depreciate by 16 percent on 21 March 2022 which made food imports more expensive (World Bank, 2022a). With respect to source countries, following a stark depreciation after the outbreak of the war and economic sanctions imposed by western countries, the Russian rouble essentially reached pre-crisis levels. In the future a depreciated rouble could make imports from the Russian Federation more competitive again, provided financial transactions with Russian suppliers are possible. While food is excluded from sanctions against the Russian Federation, reports suggest payments to Russian suppliers have become greatly complicated (Reuters, 2022c).

30. Remittances are an important source of foreign exchange for the SEMED countries and bolster export revenues. The SEMED countries are among the largest recipients of foreign exchange globally. For 2021, it is estimated remittances accounted for an enormous 34.8 percent of GDP in Lebanon, 8.4 percent in Jordan, 8 percent in Egypt, 7.4 percent in Morocco and 5.1 percent in Tunisia. This makes Lebanon the second largest recipient of remittances globally when calculated as a share of GDP and places Egypt among the top five largest recipients of remittances in USD terms.[23] Remittances to SEMED countries experienced a considerable rebound following reduced economic activity in many important host countries in Europe, the United States of America and the Gulf Cooperation Council countries in 2020 (Knomad, 2021).

31. Remittances significantly reduce ratios of food import bills as well as total import bills to foreign exchange earnings, but import bills still exceed foreign exchange earnings for most SEMED countries. The right graph in Figure 11 combines foreign exchange earnings with 2021 data on remittances. Ratios of (food) import bills to foreign exchange earnings are reduced considerably but are still above one for all countries, except for Egypt (0.99). However, Ukraine and the Russian Federation are not important host countries for migrants from SEMED, rendering remittances mostly protected from direct exposure to the war in Ukraine. At the same time, it is important to note that the war is also projected to lead to a reduction of economic growth globally, including in key host countries of SEMED migrants, which could exacerbate their employment and income prospects. To illustrate, on 18 April 2022 the World Bank reduced its growth forecast for the global economy in 2022 from 4.1 percent to 3.2 percent, citing the war in Ukraine as a key reason (Reuters, 2022b).

23 While Lebanon has been consistently among the largest recipients of remittances as a share of GDP for many years, 2021 reflects an extreme value. For example, in 2018, 2019, and 2020 personal remittances as a share of GDP were 12.6 percent, 14.3 percent and 20.9 percent respectively. See: World Bank. 2022b. *Personal remittances, received (% of GDP): Lebanon.* https://data.worldbank.org/indicator/BX.TRF.PWKR.DT.GD.ZS?locations=LB.

32. Neither Ukraine nor the Russian Federation are important export destinations for the SEMED countries (with the exception of some products exported by Morocco and Egypt), suggesting that immediate exposure to the war on SEMED aggregate merchandise exports could be limited. Considering most recent 2021 data, Egypt exported around 1.5 percent of its export basket to both countries (1.1 percent to the Russian Federation), followed by Morocco with 0.7 percent (0.4 percent to the Russian Federation), and Jordan with 0.3 percent of aggregate export earnings generated from shipments to these two countries. These shares have remained relatively stable over the past five years.[24] Except for Egypt and Morocco, the role of Ukraine and the Russian Federation is therefore comparatively small as immediate export destinations, suggesting that the war should not be too significant for the export performance of SEMED countries. However, uncertainties about the future value of the Russian rouble, concerns about payment methods for transactions with Russian partners, as well as disrupted shipping lines and higher freight costs will challenge the maintenance of existing export relationships. Some SEMED countries, Egypt in particular, are highly dependent on tourism from the Russian Federation and the depreciation of the rouble and the economic downturn predicted for 2022 are likely to reduce the purchasing power of Russian consumers and significantly restrict tourism.

33. Egypt and Morocco are the only SEMED countries with significant exports to the Russian Federation and Ukraine (mostly fruits and vegetables), and their agrifood export performance could be affected by lower purchasing power and/or higher costs of freight and insurance. The impact of the war could be more profound for food and agricultural exports from these two countries since the Russian Federation alone accounted for 7 percent of Egypt's and 2 percent of Morocco's agrifood exports (HS sections 1-24) in 2021, rendering them important markets for food and agricultural products. In 2021, Egypt exported mostly fruits and vegetables like citrus (oranges, mandarins), potatoes, onions, grapes, or strawberries to Ukraine and the Russian Federation. Similarly, Morocco's top exports to these countries in 2021 were fruits like mandarins or clementines, but also fish products (sardines and octopus), as well as medical items. Beyond the immediate effects of likely export losses on foreign exchange earnings, interrupted export relationships with Ukraine and the Russian Federation could also undermine employment in these sectors or hinder the further development of commercial and export-oriented agrifood value chains.

24 Trade data for 2021 for Tunisia and Lebanon are not available and reconstructing aggregate export/import flows from trading partner reports could yield biased results when computing shares. Instead using the most recent reports available from these countries themselves, both Lebanon and Tunisia exported around 0.2 percent of their exports to Ukraine and the Russian Federation in 2020. According to data obtained from: UNComtrade (United Nations Commodity Trade Database). 2022. *International trade in goods data.* https://comtrade.un.org/

34. SEMED countries are net fertilizer exporters, putting some of them in a favourable position in an environment of surging global prices, or leaving them at least less exposed to the dominance of the Russian Federation in this market. All SEMED countries are net exporters of fertilizers, a group of commodities that has seen significant price surges already prior to the war in Ukraine and have now reached multi-year highs.[25]

35. From a balance of payment perspective, given their status as net fertilizer exporters, some SEMED countries could benefit from global price surges, which could at least partly offset rising food import bills. Figure 12 correlates net exports of fertilizers per capita against previously presented food import bills, with the size of a bubble being proportional to a country's population in 2021. As per this illustration, for two SEMED countries (Morocco and Jordan), net exports per capita of fertilizers are very substantial also in relation to sizeable food import bills. For Morocco, the two variables are even comparable in magnitude with a food import bill of roughly USD 175 per capita in 2021 and net fertilizer exports per capita of around USD 202. From a balance of payments perspective, at least part of the expected burden from substantial food price increases could be compensated by simultaneously rising fertilizer prices benefiting the SEMED countries. An important caveat to this is that none of the SEMED countries produce all three types of fertilizers independently (K-, N-, and P). To illustrate, Jordan only produces K-, while Morocco is the third largest exporter of P-fertilizer but does not produce any of the other two varieties. Import requirements may therefore remain. For example, nitrogen is essential to foster the protein content of grains, but among the SEMED countries only Egypt exports substantial quantities. Additionally, higher fertilizer prices will be passed on to farmers, regardless of SEMED countries' net trade position in this product category, which will likely hamper agricultural production.

25 See Figure 2 in this report: Fertilizer prices were increasing considerably throughout 2021. The simulations described in chapter six suggest a 13 percent increase in the global reference price of fertilizers in 2022/23. The Russian Federation accounts for about 18 percent of global exports of N-Fertilizer, about 17 percent of P-Fertilizer, and 24 percent of K-Fertilizer, with Belarus, another country involved in the conflict, accounting for a further 8 percent. See: FAO, 2022b. *Information note: the importance of Ukraine and the Russian Federation for global agricultural markets and the risks associated with the current conflict.* FAO, Rome. 25 March 2022. www.fao.org/3/cb9236en/cb9236en.pdf

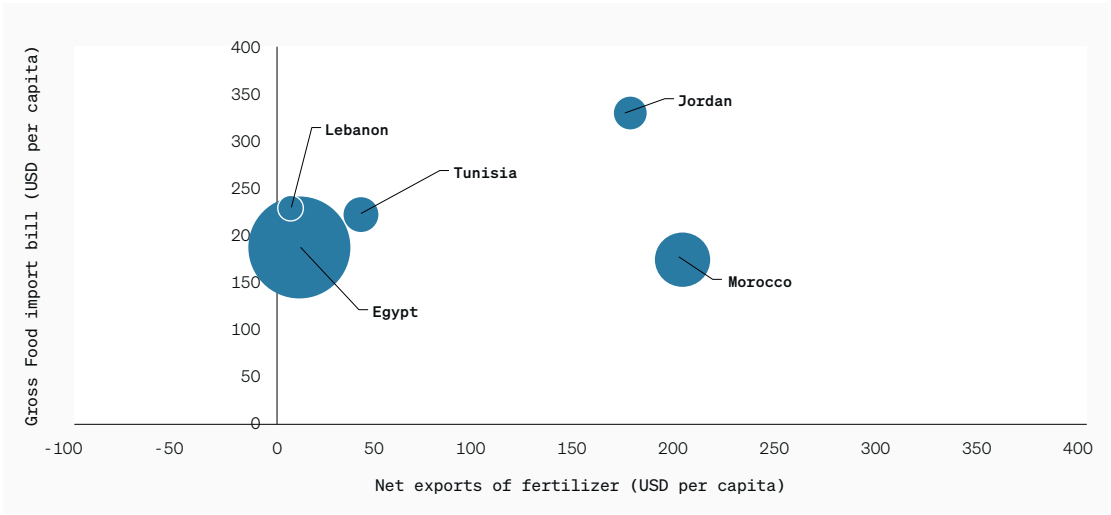

Figure 12
Gross food import bills versus net exports of fertilizers, 2021

NOTES: The size of the bubble is proportional to a country's population. Fertilizers include all items included in HS chapter 31 "Fertilizers", as well as phosphoric acids (HS 2809), and phosphinates and phosphonates (HS 2835), which are used as ingredients in the production of fertilizers.

SOURCE: Trade data for Egypt, Morocco and Jordan are for 2021 and are taken from: Trade Data Monitor. 2022. https://tradedatamonitor.com/. Trade data for Lebanon and Tunisia are for 2020 and 2019, respectively and are taken from: United Nations Commodity Trade Database (UNComtrade). 2022. https://comtrade.un.org/. Data on gross food import bills per capita in 2021 are taken from: Schmidhuber, J. 2022. *Technical briefing to FAO-Rs in the RNE Region on the impact of COVID-19 and the war in Ukraine on the outlook for food security and nutrition.* 24 March 2022. PPT Presentation. Data on countries' population are for 2021 and are taken from: United Nations Department of Economic and Social Affairs. 2022. Population Dynamics. https://population.un.org/wpp/Download/Standard/Population/

36. Besides food, SEMED countries will have to bear the burden of rising energy import prices.[26] Unlike many other countries in North Africa and the Near East, all SEMED countries are net importers of energy. Being both an importer and an exporter of oil as well as petroleum gas, Egypt registered small net exports of crude oil and oil products in 2021.[27] However, according to the data, 2021 was the first year since 2017 during which Egypt realized positive net exports for these products, casting further doubts on the country's ability to benefit from surging energy prices in the form of export earnings. All other SEMED countries are net importers of petroleum, placing further upward pressure on their import bills.

26 Simulation results presented in chapter six assume that oil prices will rise from USD 75 to USD 100 per barrel in 2022 and USD 108 per barrel by 2026.
27 Included are crude petroleum (HS 2709), refined petroleum (HS 2710), and petroleum gas (HS 2711).

Chapter 5
Recent agricultural and trade policy developments in the SEMED countries

This chapter has three sections. Section one provides a brief characterization of SEMED countries' general agrifood trade policy profiles with a focus on import regimes. Section two presents a stocktaking exercise with respect to preparedness of SEMED countries to manage emerging supply side risks and price hikes, which covers crop prospects and current food stocks in SEMED countries, as well as imports over the first three months of 2022. The final section provides a country by country overview of government responses being discussed or already enacted in response to the implications of the war in Ukraine.

5.1 FOOD IMPORT POLICY IN SEMED COUNTRIES: THE SPECIAL ROLE OF GOVERNMENTS

37. Due to their critical importance to food security, the governments of Egypt, Jordan, Tunisia, Lebanon, and Morocco all import wheat and other grains from abroad through public tenders and specialized agencies. In Egypt the General Authority for Supply of Commodities (GASC), under the Ministry of Supply and Internal Trade, is in charge of grain procurement. In Jordan, the Ministry of Industry, Trade and Supply issues public tenders to import wheat and other cereals. In Morocco, the relevant authority issuing public tenders for imports of wheat and other grains is the Moroccan Grains Agency (*Office National Interprofessionnel des Céréales et des Légumineuses* (ONICL)). In Tunisia, the Cereals Board (*Office des Céréales*) under supervision of the Ministry in Charge of Agriculture, Water Resources and Fisheries is a public entity primarily tasked with the marketing of wheat, and in charge of issuing public tenders for the procurement (domestic and international) of wheat and other cereals (Office des Céréales, Republique Tunisienne, 2022).[28] Bids for public import tenders usually have to satisfy specific rules concerning the quality of imported grain (e.g. moisture or protein content), approved origins and payment terms.

28 Lebanon is not a WTO member, and hence no WTO Trade Policy Review is available.

38. In terms of magnitude, government wheat and other cereal imports in SEMED countries are significant, with the government often being the largest or (in the case of Jordan and Tunisia) the only legal importer of wheat. In 2021, the Egyptian GASC accounted for 40 percent of total Egyptian wheat imports, while the next three largest (privately owned entities) combined accounted for circa 29 percent in the same year (Figure 13). In Jordan, the Ministry of Industry, Trade and Supply is the exclusive importer of wheat (as well as bran and wheat flour), and barley (WTO, 2015a; USDA, 2022a). In Tunisia, the Cereals Board has a monopoly on imports of durum wheat, common wheat, as well as barley. It does not have a monopoly on maize and soy cake, but has a mandate to import these commodities (WTO, 2016).

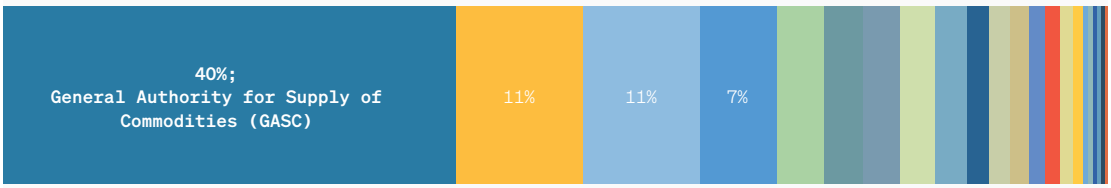

Figure 13
Egyptian wheat imports by importing entity (percent in total, 2021)

NOTES: Shares of individual entities in Egypt's total wheat imports in 2021. Total 2021 wheat imports: 11 659 618 tonnes.

SOURCE: Based on data extracted from: El Gammal. 2022. *Grain data and news in Egypt - No. 145: the first half of April 2022.* El Gammal for Research and Marketing & Business Consultancy, 17 April 2022.

39. Where private importing is permitted, many SEMED governments are heavily involved in regulating or subsidizing such imports and numerous rules and regulations affect the domestic market for wheat and its derivatives, as well as other cereals. In Lebanon, the government used to provide importers of basic commodities (grains, fuel, medicine etc.) with 85 percent of their foreign exchange needs under a special importing regime at a fixed rate of Lebanese pounds 1 508 per USD, while importers had to buy the remaining 15 percent on the parallel market (FAO, 2020).[29] Morocco fixes domestic prices for subsidized goods including sugar and wheat flour (WTO, 2015b). During the last comprehensive review in 2015, a joint report by FAO and the EBRD (2015) found that Egypt's private sector imports operated under little government regulation. However, the government engages heavily in the domestic market through its *Baladi* bread programme (see below), as well as procurement prices for locally grown wheat and input subsidies. Beyond being solely responsible for importing wheat and barley, in Jordan the Ministry of Industry, Trade and Supply also purchases wheat from domestic producers and supplies it to local mills. Flour prices for bread are subsidized, while bread is sold to consumers at fixed prices (WTO, 2015a).

29 As of March 2022, there were discussions on dismantling the system given the worsening economic situation.

40. The primary objective of GASC in Egypt is to source wheat from the domestic and international market for the country's massive public bread subsidy programme. The bread subsidy programme costs an estimated USD 3.23 billion in the 2021/2022 fiscal year (ca. Egyptian pounds 50.62 billion), or roughly 0.8 percent of Egypt's GDP in 2021 (FAO, 2021).[30] GASC works with a network of privately- and state-owned mills that deliver a coarse flour to about 30 000 bakeries to produce the subsidized bread, whose price has been fixed for decades and entitles around 60 million Egyptians to five loaves at the subsidized price (Prikhodko *et al.,* 2022).

41. SEMED countries have liberal trade regimes for wheat, wheat flour and other cereals for which the Russian Federation and Ukraine are key global suppliers.[31] Utilizing the most recent data available, Table 2 shows (average) effectively applied tariffs (percentage, import-value weighted) on wheat and wheat flour, as well as maize and barley as three commodities that are both imported by SEMED countries and whose global supplies are likely to be at risk due to the war in Ukraine.[32] As presented in this table, Egypt, Jordan, and Lebanon levy zero or close to zero tariffs on imported wheat, wheat flour, maize as well as barley (see below for a discussion of Morocco).

30 Egypt's GDP at current prices in 2021 has been estimated as USD 402.84 billion according to IMF. See: IMF (2022). *GDP, Current Prices.* https://www.imf.org/external/datamapper/NGDPD@WEO/OEMDC/ADVEC/WEOWORLD/EGY

31 Regarding participation in the WTO, Egypt, Tunisia, Jordan, and Morocco are members, while Lebanon has observer status. Lebanon's working party for WTO accession was established in 1999, but met for the last time in 2009, casting doubt over the country's pending accession. Jordan joined the WTO in 2000, while the other SEMED countries were also members of the WTO's predecessor, the General Agreement on Tariffs and Trade (GATT).

32 The "(average) effectively applied tariff" corresponds to the (average) tariff on a product (or product group) across all potential import partners, after considering that some countries have preferential access to the importing country's market due to preferential trade arrangements. If no arrangement with a source country exists, the most favoured nation tariff is used. The "average effectively applied tariff (import value weighted)", additionally weights individual effectively applied tariffs by the value of actual import flows occurring at the product<>country of origin level, thereby providing a more accurate picture of duties actually collected on goods imported by a country. For example, Egypt may have a defined tariff for imports of "wheat flour" from Zambia of 2 percent ad valorem in its tariff schedule, but actual imports of "wheat flour" from this trading partner are zero. In the import value weighted tariff, the tariff rate on imports of "wheat flour" from Zambia would therefore be assigned a weight of zero.

Table 2
Average effectively applied tariffs - percentage, import-value weighted

	Wheat / wheat flour	Maize	Barley	Veg. and animal oils and fats	Agriculture (WTO definition)
Egypt	0 / 0.7	0.0	0.0	0.6	27.2
Jordan	*N/A*	0.0	*N/A*	5.4	5.9
Lebanon	0 / 0	0.0	0.0	1.2	4.1
Morocco	37.8 / 45.7	2.4	1.8	2.8	13.7

NOTES: Data for Lebanon, Morocco and Jordan are from 2020, while data for Egypt are from 2019. Data for Tunisia were only available for 2016 and are therefore dropped from the Table. In 2016, Tunisia had an 18.6% effectively applied and import value weighted tariff on agricultural items as per the WTO definition. *N/A*: In Jordan, wheat, wheat flour and barley are exclusively imported by the government through the Ministry of Industry, Trade and Supply.

SOURCE: Based on data taken from: United Nations Conference on Trade and Development (UNCTAD) Trade Analysis Information System (TRAINS). 2022. *Data on effectively applied tariffs*, UNCTAD, Geneva, Switzerland. Retrieved via WITS: http://wits.worldbank.org.

42. SEMED tariffs on animal and vegetable oils are also low. Reductions in the global supply of sunflower oil due to the war in Ukraine are expected to increase global prices for cooking oils (FAO, 2022b). Tariffs on animal and vegetable oils in the SEMED countries range from a 0.6 percent effectively applied tariff rate (import value weighted) in Egypt to 5.41 percent in Jordan, leaving relatively little space for reducing tariffs to counter the effects of rising global prices.

43. Overall, Jordan, Lebanon and Morocco have liberalized tariff regimes for imported agricultural products. This suggests that beyond government monopolies in some markets, private sector actors can import foodstuffs without having to pay high duties, though other restrictions, such as licensing requirements, may be costly.

44. Egypt's comparatively high tariffs on overall agriculture reflect a relatively recent trend towards higher protection. At 27.2 percent Egypt's effectively applied tariff (import valued weighted average) on agricultural imports is high. Following a long period of trade liberalization during which Egypt joined regional trade agreements like the Common Market for Eastern and Southern Africa in 1998, the Greater Arab Free Trade Area in 2005 and the Agadir Agreement in 2004 (Giovanetti *et al.,* 2021), Egypt raised tariffs through a 2016 presidential decree on more than 300 items which the government described as "unnecessary". Food items targeted included products like fresh and dried fruits, food preparations including cocoa, crispbread, processed nuts and juices.[33]

33 For most lines affected, tariffs were raised by 100 to 200 percent, while for the remaining lines import tariffs were raised by 50, 125, 300, 500 or 700 percent. Targeted products also included baked goods, where tariffs doubled to 60 percent. See: International Trade Administration. 2019. *Egypt - Import Tariffs.* https://www.export.gov/apex/article2?id=Egypt-Import-Tariffs. Also see: Reuters. 2016. *Egypt sharply increases customs duties as it seeks to curb imports.* https://www.reuters.com/article/us-egypt-economy-tariffs-idUSKBN13T0DN

45. More recently, the European Union has requested dispute settlement consultations at the World Trade Organization (WTO) with Egypt, due to the country's compulsory import registration requirements. The European Union considers these requirements incompatible with WTO rules as they place import restrictions on a vast number of both agricultural and non-agricultural products. According to the European Commission, exports of targeted goods from the European Union to Egypt fell by 40 percent since the implementation of these restrictions in 2016 (European Commission, 2022). It should be noted, however, that according to the most recent trade data available, overall agrifood imports by Egypt from the European Union increased substantially over past years, from USD 3.7 million in 2018 to USD 21.6 million in 2021 (TDM, 2022).

46. Generally less import-dependent Morocco has a policy of periodically reviewing and revising its tariffs on imported wheat (and other commodities) to match local supply and demand in parallel with the harvest seasons. As shown in Table 2, Morocco applies high tariffs on wheat and wheat flour. As presented in Table 1 of this report Morocco's import dependency ratio for wheat and products was 0.39 on average over 2017-19, and high annual tariffs reflect the country's policy of periodically reviewing and revising import tariffs on wheat (and some other items like beans, lentils or chickpeas) to match domestic supply and demand in parallel with the harvest seasons. Duties are highest at harvest time and reduced following the harvest. On 1 November 2021, just three months before the current crisis, Morocco eliminated high import tariffs of 170 percent ad valorem for durum wheat and derivates and 135 percent ad valorem for soft wheat and derivates (Global Trade Alert, 2022a; World Trade Organization, 2015b).

5.2 MANAGING RISING GLOBAL FOOD PRICES: CROP PROSPECTS, IMPORTS, AND FOOD STOCKS IN SEMED COUNTRIES

47. Towards the end of 2021, year on year food price inflation remained relatively low across the SEMED countries – compared to the massive increase in global food prices in 2021 – but distinct differences across the five countries exist. Relative to 2020, the global FAO Food Price Index increased from 98.1 points to 125.7 points in 2021 (FAO, 2022c). Compared to this, in Egypt, the annual food inflation rate was volatile and increased from roughly 1 percent in the first quarter of 2021 to close to 12 percent in October, before falling again to 8.4 percent in December 2021. In Morocco, annual food inflation rose to 4.5 percent in December 2021, the highest in six years. In Tunisia, food price inflation varied between 7 and 8 percent in the second half of 2021 (FAO, 2022h). According to data from the Lebanese Central Administration for Statistics, the consumer price index (CPI) for food and beverages increased by more than a staggering 410 percent between January and December 2021 (CAS, 2022), which can be attributed to the country's ongoing economic crisis. In 2021, Lebanon's inflation was the third highest globally, after Venezuela and Sudan (World Bank, 2022a). Overall, due to existing subsidies on selected food items, global food price increases in 2021 did not seem to have affected food prices in the countries of the Near East and North Africa as much, and food price inflation in the region is generally driven by non-subsidized items like meat, dairy or fruits and vegetables (FAO, 2022h).

48. However, in March 2022 food prices in the SEMED countries rose sharply. Data from Egypt's Central Agency for Public Mobilization and Statistics show that in March 2022, the price index for food and beverages for Egypt increased by 4.5 percent overall compared to February 2022 and by 23.2 percent compared to March 2021. This increase is almost double what was recorded for Egypt's CPI covering all items, not only food and beverages (CAPMAS, 2022). Lebanon's Central Administration of Statistics published data that suggest a year on year CPI increase for food and non-alcoholic beverages of a staggering 390.4 percent (CAS, 2022). In Tunisia – where food price inflation had already fluctuated between 7 and 8 percent in the second half of 2021 – the government reports that in March 2022 year on year food prices rose by 8.7 percent (INS, 2022). While due to their specific computation methods different indices cannot be expected to follow parallel trends, it should be noted that growth in domestic prices in SEMED is still below the global food price increases captured by the FAO Food Price Index. In Jordan, the aggregate CPI for March 2022 increased by 2.47 percent year on year, with the Department of Statistics reporting increases in the price of vegetables and legumes, transportation as well as oils and fats. However, fruits and nuts, as well as beverages and refreshments showed small decreases (DOS, 2022).

49. SEMED harvest prospects for wheat (and other cereals) in 2022 are significantly affected by insufficient rainfall in Morocco. Concentrating on wheat, production in Egypt is forecast to be 9.1 million tonnes in 2022, which is above the five-year average of 8.8 million tonnes (left panel of Table 3). While in Egypt cereal crops are irrigated, rainfall dependent Morocco is experiencing a severe drought, with rainfall between November 2021 and January 2022 being only about 60 percent of the average in past years (FAO, 2022h). Estimated import requirements for Morocco in the 2022/23 year are therefore expected to be considerably above the five-year average. The same drought conditions are also affecting crop prospects in central Tunisia. For Jordan and Lebanon, domestic production is constrained by landscape and environmental conditions and is very small relative to domestic needs. Nonetheless, Jordan's wheat production in 2022 is expected to be close to the five-year average, while Lebanon's is estimated to be around 22 000 tonnes smaller than the five-year average of 122 000 tonnes (FAO, 2022i). In terms of wheat stocks, estimates for the end of the 2021/22 marketing year range from more than 33 percent of annual domestic consumption in Jordan (including all uses) to just below 13.7 percent in Lebanon (right panel of Table 3).

50. Recent accounts suggest that Egypt's stocks of wheat correspond to 2.6 months of domestic consumption. According to a report to FAO covering the first half of April 2022, Egypt's current stocks of wheat are sufficient for 2.6 months of domestic consumption, as stated by Egypt's Prime Minister on 4 April 2022 (El Gammal, 2022). This estimate mirrors data for Egypt presented in Table 3.[34]

34 19.8 percent of a calendar year corresponds to about 72.3 days, or about 2.4 months when using 30 days/month.

Table 3
Wheat in SEMED – forecast production, import requirements and stocks

	Production 5-year average*	Forecast production in 2022/23	Imports 5-year average*	Forecast import requirements in 2022/23	2021/22 ending stock	2021/22 ending stock (% of consumption**)
Egypt	8 822	9 115	12 144	13 000	4 062	19.8
Morocco	4 750	2 500	4 669	5 600	2 912	26.7
Tunisia	1 120	1 172	1 996	2 000	707	23.2
Jordan	29	30	1 250	1 300	336	33.1
Lebanon	122	100	1 100	800	185	13.7

NOTES: *2016/17-2020/21 averages. **Consumption refers to domestic consumption as defined by USDA (2022b) and includes all possible uses of the commodity: food, feed, seed, waste, and industrial processing. Ending stocks are defined as the quantity of unprocessed, dry seeds held in all known storage facilities or in transit to those facilities at the end of the marketing year. Forecast production and import requirements are estimates as of 14 April 2022, and subject to revisions in line with weather conditions for the rest of the season.

SOURCE: Based on: FAO. 2022i. *FAO/Global Information and Early Warning System (GIEWS). Country cereal balance system (CCBS).* FAO internal working data estimates, with all data in thousand tonnes. Stocks and consumption data are from: USDA (2022b). *Production, Supply, and Distribution Database.* https://data.nal.usda.gov/dataset/production-supply-and-distribution-database.

51. SEMED countries produce only small quantities of oilseeds and vegetable oils relative to their needs. Prices for vegetable/cooking oils will therefore hinge on global price developments influenced by developments in key suppliers, such as Ukraine and the Russian Federation, but also countries like France, Bulgaria, Argentina, and Spain (for sunflower oil), Malaysia and Indonesia (for palm oil) as well as Brazil and Argentina (for soybean oil). In terms of stocks, USDA data (USDA, 2022b) suggest that SEMED countries have small stocks of vegetable oils (soybean, rapeseed, sunflower) relative to domestic consumption, ranging from 3 percent of domestic consumption in Jordan, to 4 percent in Morocco, 5 percent in Egypt, 7 percent in Tunisia and 10 percent in Lebanon.

52. Recent trade data show that Morocco significantly increased its imports of wheat and wheat flour in the two months prior to the outbreak of the war in anticipation of a drought (January and February 2022). Over January and February 2022 Morocco's imports of wheat and flour were almost double the country's imports in the same months of 2021 in value terms and about 62 percent higher in weight terms. Import volumes for January and February 2022 were also considerably above previous years' imports (Figure 14). These data match government statements concerning international purchases to prepare the country for a severe drought (see above).

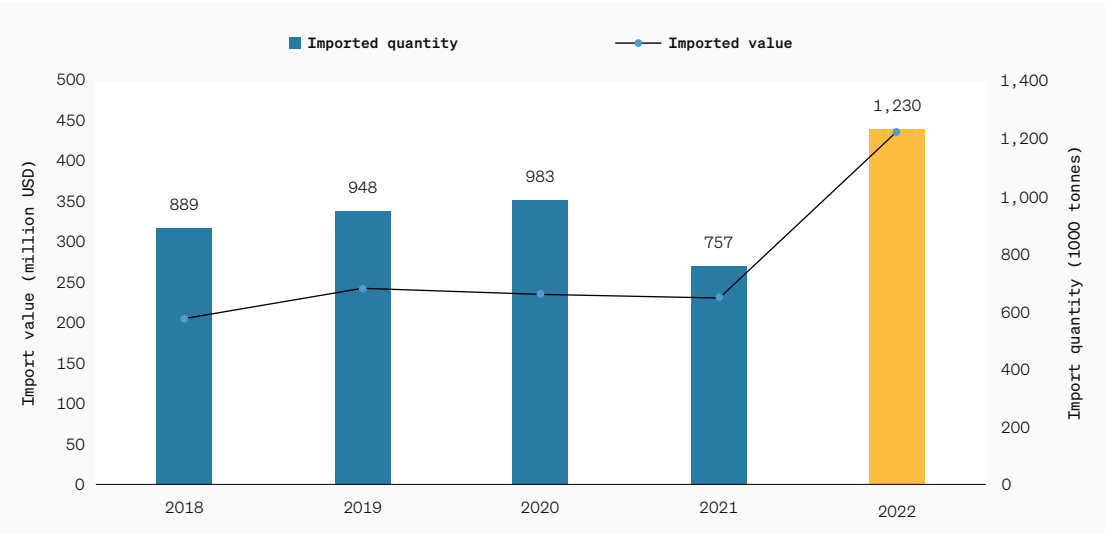

Figure 14
Morrocco's year on year imports of wheat, January and February

NOTES: Included are wheat (HS1001) and wheat flour (HS1101). Values reflect cumulative imports during January and February (latest available).

SOURCE: Trade Data Monitor. 2022. https://tradedatamonitor.com/.

53. Lebanon appears to have imported 11 000 tonnes of wheat from Ukraine in January and February 2022. While no official trade data for these months are available, news reports citing the government national news agency state that in early March a ship holding 11 000 tonnes of wheat reached the port of Tripoli in north Lebanon (Reuters, 2022d). Putting this figure into perspective, FAO's forecast import requirement for Lebanon in the 2021/22 marketing year is 800 000 tonnes (FAO, 2022i).[35] Similarly, most recent export reports by key exporters (excluding the Russian Federation and Ukraine) for March 2022 amounted to just above 31 000 tonnes (TDM, 2022).

54. Similarly, data on Egyptian wheat imports show a considerable year on year increase during the first three months of 2022, with a significantly reduced role of Ukraine as a supplier. According to available reports, Egypt imported about 3 173 000 tonnes of wheat over January, February and March 2022 combined, up from 2 268 000 tonnes during the same months in 2021. Following the beginning of the war in Ukraine, Egypt imported 966 000 tonnes of wheat during March 2022, compared to 692 000 tonnes during the same month in 2021. Notably, while in March 2021 Ukraine accounted for about a third of Egyptian wheat imports, by March 2022 the country's share in Egypt's international purchases of wheat had dropped to below 13 percent (El Gammal, 2022).[36] There were no recorded Ukrainian shipments reaching Egypt's ports in the first half of April 2022, and overall Egypt imported 477 000 tonnes of wheat in the first two weeks of April (El Gammal, 2022).

35 Obtained from FAO-GIEWS via correspondence and employing FAO's internal Country Cereal Balance System (CCBS).
36 March 2022 data are reflective of shipments reaching Egyptian ports during March 2022 and do not reflect shipment or tender dates.

55. Mirroring surging international prices and rising transport costs, the price Egypt's General Authority for Supply of Commodities (GASC) paid for imported wheat reached almost USD 500 per tonne in the last tender from 13 April 2022. In the last tender for which data are available, GASC purchased most of its wheat from France (240 000 of 350 000 tonnes) at a cost of USD 494.25 per tonne (including freight costs). For comparison, during the first tender of 2022 (issued on 28 January), the price GASC paid for imported wheat was around USD 360 per tonne, including freight (El Gammal, 2022).

5.3 GOVERNMENT POLICY: RESPONSES TO FOOD INSECURITY THREATS AND RISING PRICES TO DATE

Egypt

56. The Minister of Supply and Internal Trade stated that he expects Egyptian farmers to increase their wheat supply to the government during the season (mid-April to mid-July) to a total of 5.5 million tonnes, an increase by 2 million tonnes compared to the previous year's season (1 March 2022) (Ahram Online, 2022b). According to news reports, Prime Minister Mostafa Madbouly also issued instructions to increase the number of wheat collection points and ease procedures for small-scale farmers to deliver wheat to government buyers. The Minister of Agriculture and Land Reclamation is expecting that local farmers will be able supply 6 million tonnes during the 2022 harvest to the Ministry of Supply and Internal Trade (Almal News, 2022).

57. The Minister of Finance stated that wheat reserves would cover eight months of domestic market needs once the harvest is delivered and that the government will import wheat from global suppliers other than the Russian Federation and Ukraine due to the current situation (8 March 2022) (Ahram Online, 2022b). At the time of the outbreak of the war in Ukraine on 24 February 2022, the government stated it had four million tonnes of wheat stored in its warehouses (Middle East Eye, 2022).

58. The Ministry of Trade and Industry issued a three-month export ban on a number of food items including wheat and flour of all kinds, lentils, cooking oils, maize/corn, fava beans, and pasta (10 March 2022) (The National News, 2022). Egypt imports wheat grain from the Russian Federation and Ukraine, mills it into wheat flour and exports it further to other countries in the region as well as sub-Saharan Africa.

59. In line with plans to source increased quantities of wheat domestically for the state-run food programme, the Minister of Supply and Internal Trade issued a decree that regulates the sale of wheat by local farmers to government owned entities instead of the private sector (16 March 2022). Farmers are required to sell part of their 2022 harvest to specific government-owned entities, with non-compliers facing legal consequences. The government also announced incentives such as subsidized fertilizers (Middle East Eye, 2022).

60. To counter surging bread prices, the government set fixed prices for unsubsidized bread (21 March 2022) (Reuters, 2022e). Prices for unsubsidized bread were fixed at EGP 0.5 per 45-gram loaf, EGP 0.75 per 65-gram loaf, and EGP 1 per 90-gram loaf, with packaged bread sold in supermarkets and grocery stores set at EGP 11.5 per kg. Prior to this measure, the price of bread jumped in the first three weeks of the war by about 25 percent, with an unsubsidized loaf costing EGP 1.25 (Xinhua, 2022).

61. On 21 March, the Central Bank of Egypt allowed the exchange rate to depreciate overnight by 16 percent with the goal of reducing the trade deficit (World Bank, 2022a).

62. There was a partial roll-out of a 10 percent reduction in public wheat flour supply to bakeries producing subsidized bread during Ramadan (4 April 2022). The government reduced its supply to bakeries producing subsidized bread by 10 percent relative to the normal amount considering lower demand during Ramadan. The decision was made public following the cabinet's announcement that the country's public stocks of wheat would only hold enough for 2.5 months of consumption. Reports suggest that roll-out of the policy was only partial and withdrawn in some governorates (El Gammal, 2022; Madamasr, 2022).

63. In the pursuit of diversifying origin countries, the government cleared India as a new supplier of wheat, with a view to mitigate the impact of the crisis on the country's grain stockpile (15 April 2022). Prior to its ban on wheat exports on 13 May 2022, India was seeking to utilize its considerable public stocks in an environment of global food price surges to generate export earnings (Hindustan Times, 2022). As of April 2022, Egypt is also holding talks with Mexico, Pakistan, Argentina and the United States of America to procure wheat (El Gammal, 2022). The government also issued a tender to source wheat from European origins (Reuters, 2022f). The Russian Federation remains a key source for imports, but difficulties in paying Russian suppliers appear to increasingly affect business relationships (El Gammal, 2022).

64. According to a news report from 17 May, about 300 000 tonnes of Ukrainian wheat bought by the GASC are currently stuck in Ukraine (Reuters, 2022g). The order has already been paid for and represents roughly 2.5 percent of Egypt's five-year average of annual wheat imports.

Morocco [37]

65. Increased food stocks prior to the outbreak of the crisis (24 February 2022). During a press briefing after the Council of Government, the Minister Delegate in charge of Relations with Parliament reportedly stated that "[t]his conflict will have no impact on the Moroccan market supply and the availability of necessary food", and that the government had already purchased vast amounts of wheat in January and February (Middle East Online, 2022a).[38]

66. To contain rising food prices ahead of Ramadan, the government restricted exports of tomatoes (15 March 2022) (Morocco World News, 2022). Among non-European Union exporters Morocco is the largest supplier of tomatoes to the European Union but tomatoes are also a staple food in Morocco, for example as an ingredient in harira, a soup eaten on most nights during Ramadan.

67. Prime Minister Aziz Akhannouch announced that the government expects to spend USD 3.2 billion (ca. USD 87 per capita) on subsidies for soft wheat, cooking gas, and sugar (18 April 2022) (Middle East Online, 2022b). Rising expenditures are expected to be covered by an increase in tax revenue. There are also reports of direct financial support to transport professionals, who see their business stalling due to rising fuel prices (Morocco World News, 2022).

Lebanon

68. Lebanon banned exports of several processed foodstuffs (11 March 2022). According to news reports, the list of restricted exports includes processed fruits and vegetables, milled grain products, bread, sugar, as well as animal feeds (Reuters 2022h).

69. Talks with alternative potential suppliers of wheat. According to news sources, the Lebanese Minister of Economy and Trade initiated talks with the ambassadors of Türkiye and India to discuss how these countries could contribute to food security in Lebanon during the crisis (Middle East Monitor, 2022). On 22 March, the Lebanese Minister of Economy and Trade stated that the government was planning to issue a tender to import 50 000 tonnes of wheat from India, but that timing would depend on the Central Bank to open the necessary credit line (Reuters, 2022i).

70. The Lebanese government has been negotiating a USD 150 million loan for food security with the World Bank, which was recently approved (9 May 2022). The World Bank – with a programme entitled the Lebanon Wheat Supply Emergency Response Project – approved a loan of USD 150 million with the objective of funding wheat imports and keeping bread prices stable for nine months (Reuters, 2022j).

37 As per the analysis in this report Morocco's exposure to the current crisis, both in terms of aggregate food import dependency as well as direct supplier relationships with Ukraine and the Russian Federation would otherwise be comparatively limited. However, in 2022, the country is facing a severe drought raising reliance on imported food.

38 These statements are in line with high import volumes in January and February 2022, as well as public tender information from late February. See: USDA. 2022. *Morocco: Durum Wheat Tender.* https://www.fas.usda.gov/data/morocco-durum-wheat-tender

Jordan

71. The Government of Jordan stated that the country's wheat stocks were sufficient for 15 months (1 March 2022). According to the same news report, local stocks of barley are also considered sufficient for 11 months (Arab News, 2022).[39]

72. The government repeatedly issued a tender for the purchase of 120 000 tonnes of wheat, which has not led to a purchase yet, since mid-February (Zawya, 2022; Nasdaq, 2022a; Nasdaq, 2022b; Hellenic Shipping News, 2022a; Hellenic Shipping News, 2022b). This is likely due to high prices for wheat leading Jordan to reject any offers made. This is similar to the situation in Egypt, where the GASC cancelled a tender issued on 28 February due to high international prices following the outbreak of the war in Ukraine (El Gammal, 2022).

73. Jordan's Ministry of Industry, Trade and Supply issued a decree announcing a ban on exports of all food items (8 April 2022) (Global Trade Alert, 2022b). Fruits and vegetables appear to be excluded, since the governance of these products is under the auspices of a different ministry.

74. According to news reports, the Ministry of Trade and Supply is continuing to monitor markets and counter high prices by ensuring commitment to ceilings set by the Ministry (11 April 2022) (The Jordan Times, 2022).

Tunisia

75. The Tunisian Government, in an attempt to counter suspected speculation with food to take advantage of prices, seized depots across the country (20 March 2022). Following this, on 30 March the government issued a decree to prevent speculation with food items, in an attempt to counter price surges for basic goods (La Presse, 2022; DCAF, 2022).

76. As of 23 March 2022, the Tunisian Government had entered negotiations with the IMF for a new loan programme (IMF, 2022b). The IMF conducted a mission from 23-25 March, following the beginning of talks about a new loan programme in mid-February (Al Jazeera, 2022). According to a news report from 5 May, the government is planning to cut public sector wages and replace the subsidy programme with direct support to those in need (Reuters, 2022k).

77. According to news reports, on 14 April the government banned exports of fresh fruits and vegetables (Libya Herald, 2022).

39 According to the same report, government officials stated there were no imports of wheat from the Russian Federation during 2021, which appears not to be in line with official trade data available from TDM (2022).


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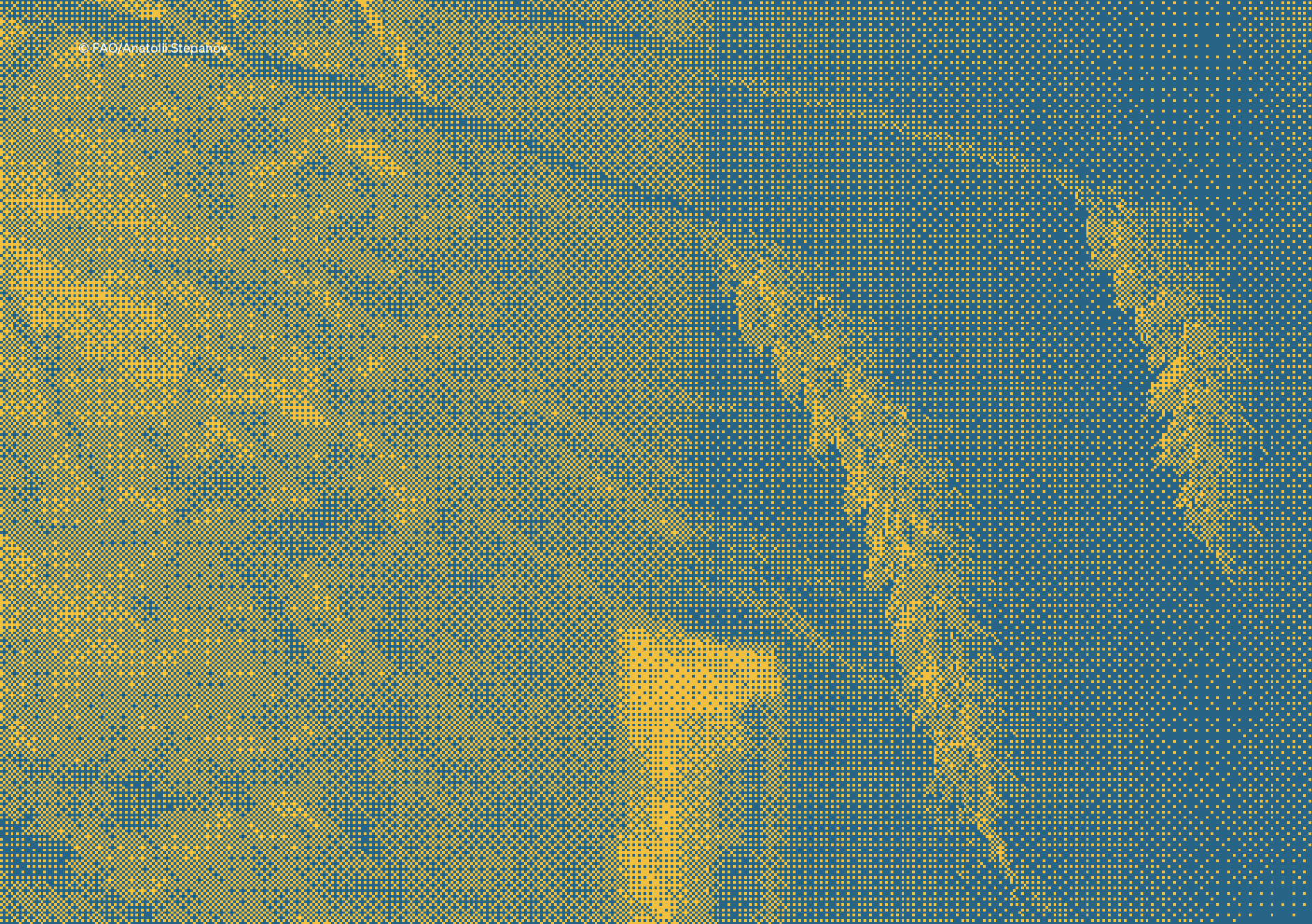
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Chapter 6
Possible impacts of the war in Ukraine on food prices and hunger

78. To explore the possible impacts of a significantly reduced participation of the Russian Federation and Ukraine in global agrifood markets, simulations were conducted using the FAO-OECD Aglink-Cosimo model.[40] Simulations for the potential impacts of reduced Ukrainian and Russian exports on the global prices of individual commodities, food overall, as well as undernourishment numbers in different countries were conducted for two scenarios

- ***Moderate shock scenario.*** Under this scenario it was assumed that wheat and maize exports from the Russian Federation and Ukraine would fall by 10 million metric tonnes each per year, while their exports of barley, oats, rye, and sorghum would be reduced by 2.5 million tonnes, and oilseed exports by 1.5 million tonnes per year.
- ***Severe shock scenario.*** Under this scenario it was assumed that combined Russian and Ukrainian exports of wheat and maize would be reduced by 25 million tonnes per year, exports of other grains would fall by 5 million tonnes annually and oilseed exports would be reduced by 3 million tonnes.

40 Note that the scenarios of these simulations were based on information available in late February 2022. For more details on the FAO-OECD *Aglink-Cosimo* model see: OECD-FAO, 2015. *Aglink-Cosimo Model Documentation. OECD-FAO.* https://www.agri-outlook.org/documents/Aglink-Cosimo-model-documentation-2015.pdf. This chapter is based on work first presented in FAO. 2022b. *Information note: the importance of Ukraine and the Russian Federation for global agricultural markets and the risks associated with the current conflict.* FAO, Rome. 25 March 2022. www.fao.org/3/cb9236en/cb9236en.pdf.

79. In the baseline scenario against which the effects of these two shocks were assessed, it was assumed that the reference price for crude oil would increase from USD 75 to USD 100 per barrel in 2022/23 and continue an upwards trajectory to reach USD 108 per barrel in 2026/27. In this environment of rising global energy prices, new global market equilibriums were computed for the baseline scenario and the two shock scenarios detailed above, along with the prices, production, trade and consumption volumes for cereals, oilseeds, meat, dairy products, sugar, cotton, and biofuels corresponding to the new market equilibriums (FAO, 2022b).[41]

80. At the global level, simulation results suggest that the international supply gap in grains and sunflower seeds could result in an increase in aggregate global food and feed prices by 8 to 22 percent and an increase in the global reference price of fertilizers by 13 percent in the 2022/23 marketing year. These figures are to be interpreted relative to the already elevated food prices implicit in the simulated baseline scenario of surging energy prices, with food prices close to high 2021 levels. In the case of a prolonged reduction lasting for five years – as considered in the scenarios described below – the same two shock scenarios would result in an increase in wheat prices of between 10 and 19 percent compared to the baseline scenario in 2026/27, as well as an increase in fertilizer prices of 25 percent relative to baseline values in 2026/27 (FAO, 2022b).

81. For the group of SEMED countries, simulations concerning the impact of the crisis on prices of key commodities were conducted for Egypt, as well two regional aggregates. Results regarding food and commodity prices presented in this report include Egypt as well as two regional aggregates: "Other Near East" includes the SEMED countries Jordan and Lebanon,[42] while "Other North Africa" includes Morocco and Tunisia (as well as Libya and Algeria). Figure 15 illustrates the outcomes of the two scenarios for producer prices for wheat as well as consumer prices for food in the SEMED group of countries.[43]

41 Also in the baseline scenario global food prices would remain comparable to 2021 high levels, except for oilseeds.

42 As well as Bahrain, Iraq, Kuwait, Oman, Palestine, Qatar, the Syrian Arab Republic, the United Arab Emirates and Yemen.

43 Wheat was chosen due to its significance in national diets across SEMED countries. The focus is on producer prices since consumers buy and consume derivates of wheat, but not wheat directly.

Figure 15
Simulated impact of moderate and severe shocks on wheat and food prices in SEMED

SOURCE: Simulations using the FAO-OECD *Aglink-Cosimo* Model. See the following document for more details: FAO. 2022b.

82. Across the SEMED countries, even the moderate supply side shock to the global availability of wheat and other grains as well as oilseeds would lead to a considerable increase in domestic food prices. Compared to the baseline, even in the moderate shock scenario (left panel), producer prices for wheat would rise by around 8 percent in 2022, 12 percent in 2023, and roughly 10 percent in 2026. Consumer prices for food could rise by between 1.6 percent to 2.6 percent during the period 2022-26, relative to the baseline.

83. A severe shock would lead to stronger price increases. Considering instead a prolonged scenario of severe export reductions in critical foodstuffs from Ukraine and the Russian Federation (right panel in Figure 15) would imply considerably greater price increases relative to the baseline scenario. Across the SEMED countries, producer prices for wheat could increase by 20 percent or more in 2022 (25 percent in 2023), following an easing of price increases relative to the baseline scenario in subsequent years that would still be sizeable. In this scenario, food prices for consumers in SEMED would increase by almost 4 percent in 2023, relative to the baseline (and about 3 percent in 2026).

84. The simulated reduction in global food supply and resulting food price increases would raise the number of undernourished people in the SEMED countries considerably. Simulations for the supply side shocks from the war in Ukraine suggest that in the case of a moderate shock as defined above, the number of undernourished persons across all SEMED countries combined would increase by about 119 500 in 2022 (170 100 by 2023), relative to the baseline that considers the impact of projected, rising energy prices. In the case of a severe shock, the aggregate number of undernourished persons in SEMED would increase by 288 400 people in 2022 and 360 600 by 2023, again relative to the baseline without any supply side shock from the war. These figures imply an increase in the number of undernourished persons by a considerable 1.42 percent in 2022 for the moderate scenario and by a staggering 3.42 percent for the severe scenario.

85. Given its sizable population, Egypt accounts for the largest number of additional persons forecast to become undernourished in 2022 when considering simulated supply side shocks. Figure 16 shows the number of additional people that would become undernourished due to the moderate and the severe shocks defined above, relative to a baseline scenario without supply side interruptions. In numbers alone, populous Egypt accounts for about 71 300 of the 119 000 additional people expected to become undernourished in the case of a moderate shock in 2022 and for 175 600 out of 288 400 additional people to become undernourished in the case of a severe shock.

86. Across SEMED countries, undernourishment figures would stay considerably above the baseline in both shock scenarios. As indicated by distinctively higher numbers under the two shock scenarios in each of the five countries, the simulated, prolonged reduction in the worldwide supply of grains and oilseeds would lead to higher numbers of undernourished people in the SEMED countries in the long run. However, for all SEMED countries differences between the baseline and the two shock scenarios would become smaller with time as countries adjust to reduced exports from the Russian Federation and Ukraine.

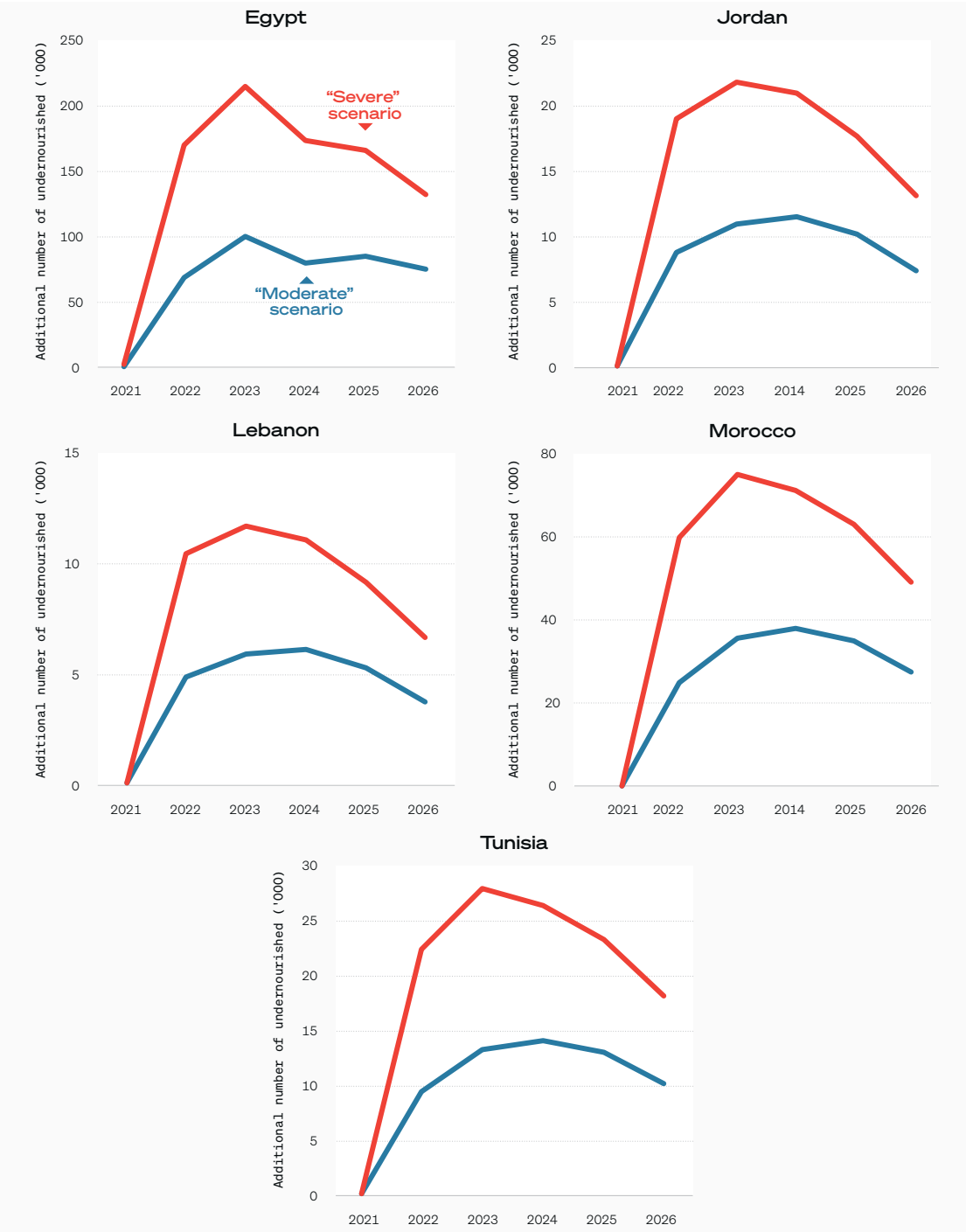
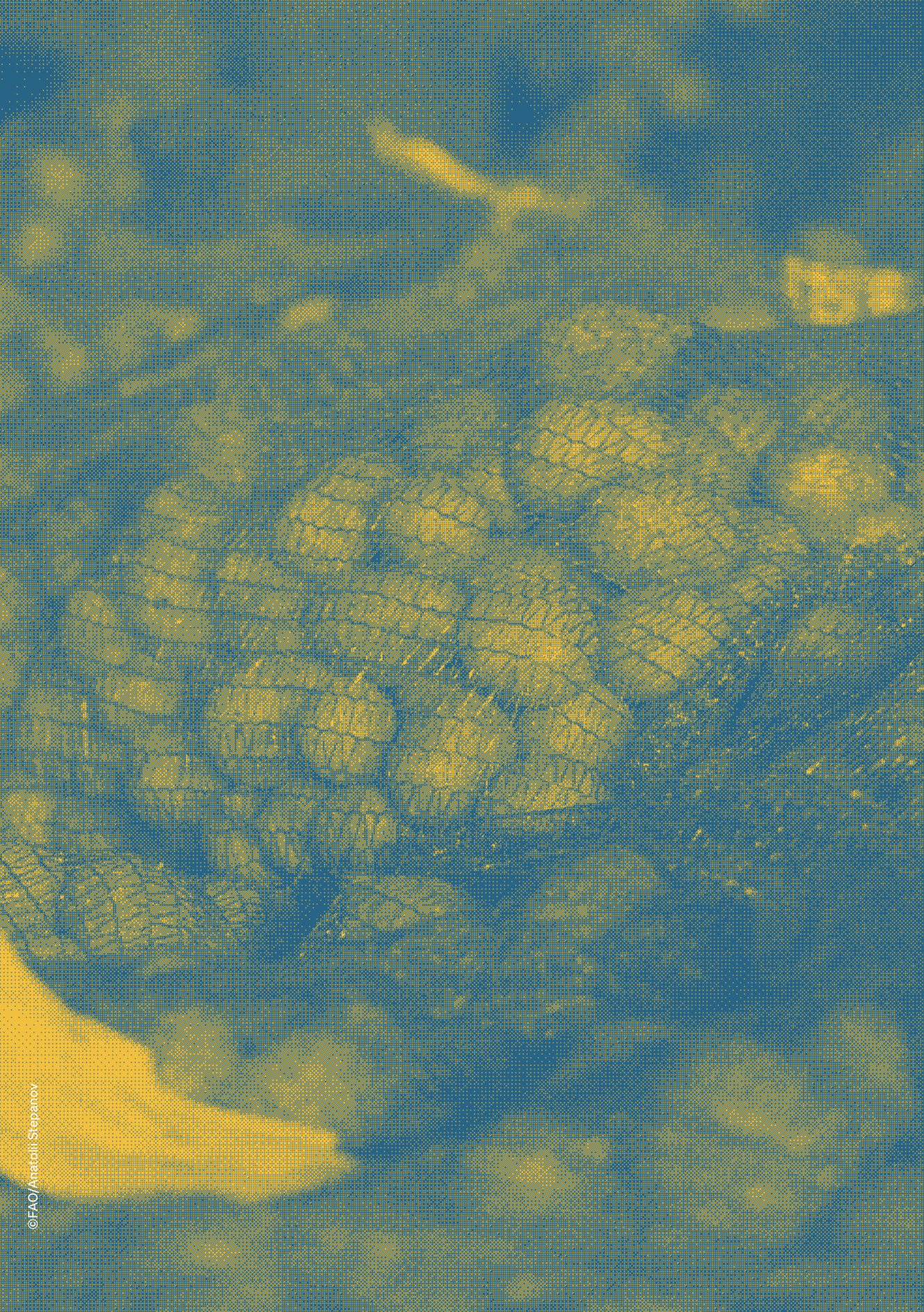


Figure 16

Simulated impact of moderate and severe shocks on the additional number of undernourished in SEMED countries, relative to the baseline scenario

NOTES: Depicted are the additional number of undernourished relative to a baseline scenario without such a supply side shock. See above for definitions of the moderate (blue) and severe (red) scenarios.

SOURCE: Simulations were done using the FAO-OECD Aglink-Cosimo Model. See the following document for more details: FAO. 2022b.



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Chapter 7
Policy recommendations

87. The current crisis started when global prices for food, but also fertilizer and fuel, had reached record highs. Generally, when formulating policy responses to the unfolding situation, SEMED and other governments should strive to adhere to a set of overarching principles:

- keep trade in fuel, food, and fertilizer open;
- avoid ad hoc policy changes such as introducing export bans or import subsidies; and
- develop and commit to long-term and comprehensive national food security strategies.

On a global level greater market transparency, dialogue and information sharing are important, including through initiatives like the G-20 Agricultural Market Information System (AMIS), to coordinate policy actions. Against the background of a strong dependence of SEMED countries on imported food – and especially on commodities for which global prices have been at record highs since March 2022 – the following short- and long-term policy recommendations are made.

Short-term policy recommendations

88. Mobilize funding for rising food import bills, for example by engaging the international community on establishing a Food Import Financing Facility. All SEMED countries are net food importers and SEMED food import bills are tilted towards product groups whose prices have recently hit record highs.[44] These bills are also high as a share of merchandise export earnings and factoring in imports of other essential non-food items, all SEMED countries run trade deficits. This makes it a challenge to finance future food import bills from a balance of payments perspective. A Food Import Financing Facility as proposed

44 Morocco, generally the least import dependent country in the SEMED group, is facing a severe drought, increasing the country's import requirements. Highly food import-dependent Lebanon is already experiencing a full economic crisis along with a severely depreciated exchange rate limiting the country's ability to import food. Some countries (Lebanon, Tunisia) are already negotiating with the World Bank or the IMF for aid programmes, which in the case of Lebanon was recently concluded and is focused on food security.

by FAO would allow vulnerable net food importing SEMED countries to tap into funding to help sustain the growing cost of food imports (for details see FAO, 2022j). Through such a facility, eligible SEMED countries could mitigate the long-lasting impacts of rising food import bills on their agrifood systems and reduce future needs for emergency assistance that may not be readily available. Setting up such a facility will require cross-institutional collaboration and take time to become fully operational. In the meantime mobilizing funding for food imports from other financial institutions remains an urgent necessity and has materialized in the case of the World Bank's loan to Lebanon.

89. Work towards diversifying food import sources and reducing the cost of imported food through appropriate policy adjustments in the near term. Against the background of a strong dependence of SEMED countries on imported food – and especially on commodities for which global prices have been at record highs since March 2022 – the following short- and long-term policy recommendations are made. To foster diversification of import sources and simultaneously reduce the cost of imported food in the short-term, SEMED governments could actively work towards a reduction of import costs and a diversification of import sources through the following measures:

a. For government imports of cereals (most notably in Egypt, Jordan, and Tunisia), it would be advisable to review and adjust quality requirements, payment and shipping terms and other conditions to be met by foreign bidders for public tenders. To illustrate, in Egypt, applicants for public tenders usually have to give preference to the National Navigation Company of Egypt as the shipper, adhere to stringent quality requirements (e.g. specified moisture or protein content of grains) and previously had to accept a 180 day payment delay by GASC, a condition only recently lifted due to the current situation. Beyond likely limiting the pool of suitable providers from a range of countries, such restrictions have also been found to drive up the price of imported grains.
b. Similarly, governments in some SEMED countries have to clear possible countries of origin before exporters from these countries can supply their markets. Considering the current situation, SEMED countries should simplify and fast-track such clearance processes to gain access to grains from alternative markets. For example, on 15 April 2022, Egypt cleared India as a possible supplier following a mission by government officials to India.
c. In SEMED countries where private sector engagement in (some) cereal imports is currently permitted, governments could simplify import procedures to drive down the cost of trading (e.g. extension of grace periods at ports, temporary fee suspension or easing inspection requirements).

90. Support vulnerable groups and provide humanitarian assistance and income support where needed. SEMED governments should closely monitor domestic food prices, especially in both rural and urban areas that are known to be home to vulnerable groups. Rising food and energy prices generally affect poor households that spend a large share of their disposable incomes on such items disproportionally (see Artuc *et al.* 2019 for an illustration). Governments in the SEMED countries should expand or even roll out new programmes to provide social protection to those most in need, while simultaneously exploring ways to improve the targeting of existing, and sizable public food subsidy programmes (e.g. shift to more targeted measures).

Medium- to long-term policy recommendations

91. Reduce the cost of imported food through comprehensive reform of import regimes. Permitting or fostering private sector engagement in food import activities in an environment of high prices could be a way to attract private sector engagement into food importing activities. This in turn could foster the availability of food domestically, especially in those countries that currently apply a strict state monopoly on the importation of some cereals (Jordan and Tunisia).

92. Consider new technologies for agricultural production with a view to produce sustainably increased quantities domestically, thereby reducing overall reliance on imports. Governments and private sector actors in SEMED countries should consider the adoption of new technologies for domestic agricultural production that could increase domestically produced quantities in a sustainable manner. Crucially, decision-makers should be aware of potential trade-offs between increased food self-sufficiency and sustainability goals. Water scarcity in SEMED and the environmental impact of intensified agricultural production domestically may well justify continuing to source the bulk of available food from foreign suppliers that may be better endowed with natural resources and able to produce more efficiently in terms of resource use. Taking into account the sustainability dimension also puts a premium on exploring new agricultural technologies such as more water-efficient irrigation schemes (e.g. drip versus surface or flood irrigation) or technologies falling under the umbrella term of Controlled Environment Agriculture (CEA) that subsume techniques like indoor farming, or methods of growing plants in a soilless environment.

93. Consider a comprehensive review of national food subsidy programmes, with a focus on improving cost efficiency and the targeting of beneficiaries. Some SEMED governments entertain large and costly public food subsidy programmes in the pursuit of food security objectives.[45] Against the background of possible future disruptions (e.g. due to climate change related shocks) and possible price spikes, governments should commence (or further develop) a comprehensive review of existing food subsidy programmes with focus on improving the targeting of vulnerable groups and raising the cost-efficiency of these programs. This would also be an opportunity to address objectives like dietary diversity and access to healthy diets, rather than the mere provision of calories through mostly wheat-based products, which has been shown to lead to overconsumption.[46] All SEMED countries – some to a greater extent than others – are exporters of fruits and vegetables which are an essential component of a healthy diet.

94. Invest in initiatives to reduce food waste as well as losses along supply chains. For some of the SEMED countries, mere availability of dietary energy/food is less problematic, but food waste and loss at different stages of value chains is often rampant, including in public food subsidy, procurement, and distribution programmes. Reducing food waste and loss – through improving and expanding storage facilities, establishing additional collection points for the produce of domestic farmers and providing capital for innovative private sector initiatives – could be a way to reduce food import bills and increase the amount of food that can be used for human consumption. Educational campaigns to reduce food waste at the household level and in retail could also result in savings.

95. As a crisis prevention measure, keep public food security stocks and/or encourage "supersized" food processing industries with large pipeline stocks that serve as an insurance against supply side disruptions. To hedge against future food shortages, countries typically maintain a certain level of food stocks equivalent to some months' worth of national consumption to ensure continuous access to food. Besides public stockholding of food, a domestic processing industry with large pipeline stocks for production can fulfill the function of providing adequate supplies in times of global shortages or reductions in domestic production. In some SEMED countries, available public storage facilities are below stated government ambitions for stockholding (e.g. in Egypt), while in Lebanon main grain silos were destroyed by the explosion in Beirut in August 2020 and recently cleared for demolition. Improving storage capacity – both in privately owned food processing industries and government owned facilities – could potentially constitute a viable opportunity to improve food security through targeted investments.

45 As shown in this note, the cost of Egypt's bread subsidy programme can be estimated at roughly 0.8 percent of the country's GDP.

46 To illustrate current imbalances of diets with an example, in 2019, roughly 35 percent of Egypt's food supply in calories was derived from "wheat and products" alone, compared to 19 percent in Germany, 20 percent in Spain, or 24 percent in Greece (FAOStat, 2022a).

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The Russian Federation and Ukraine are major global suppliers of cereals and sunflower oil, while the Russian Federation is also a leading exporter of fertilizers and energy. Due to the devastating war in Ukraine global prices for these commodities have reached record highs. FAO Markets and Trade Division, with the FAO Investment Centre and the European Bank for Reconstruction and Development, have published this study on the potential impact of the war in Ukraine on food security and agrifood trade in Egypt, Jordan, Lebanon, Morocco and Tunisia. In addition to a detailed analysis of how the war in Ukraine affects these countries, the report also contains a set of key policy recommendations to help governments cope with the unfolding situation and improve food security in the medium and long term. This publication is part of the Directions in Investment series under the FAO Investment Centre's Knowledge for Investment (K4I) programme.

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