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# FAO REGIONAL CONFERENCE FOR EUROPE

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### **Implications on world food security and agriculture, including global food prices, arising from the aggression of the Russian Federation against Ukraine**

#### Executive Summary

The ongoing war in Ukraine, which began on 24 February 2022, is causing extensive loss of life, destroying civilian and other critical infrastructure, upheaving millions of livelihoods, and sparking massive population displacement (more than 3.6 million people have abandoned their homes and fled across borders to safety, and upwards of 7 million people are internally displaced).

The war also has resulted in a massive – and further deteriorating – food security crisis in Ukraine and abroad. Food supply chains, both domestic and international, are being disrupted, and international food prices have soared to new heights, compounding the already heavy burden on global food security. Even before the war in Ukraine, international food prices had reached an all-time high, mostly due to market conditions but also due to the high prices of energy, fertilizers and other agricultural inputs and services caused by an increase in demand resulting from recovery plans. In March 2022, the FAO Food Price Index reached a new historical record in nominal and real terms. In nominal terms, it was 33.6 percent higher than its level a year earlier and 12.6 percent higher than its previous peak a month earlier.

The newfound growth in international food prices is because both the Russian Federation and Ukraine are prominent players in the supply of food and agricultural products to global markets. In 2021, wheat exports from the Russian Federation and Ukraine accounted for about 30 percent of the global market. From 2016/17 to 2020/21, Ukraine's share of global maize exports averaged 15 percent, making it the world's fourth-largest maize exporter. Combined sunflower oil exports from both countries represented 63 percent of world exports in 2021. The Russian Federation is also a key exporter of fertilizers; in 2020, it ranked as the top exporter of nitrogen fertilizers, the second-leading supplier of potassium, and the third-largest exporter of phosphorous fertilizer.

The two countries are also key suppliers of food and fertilizers for FAO Members in the Europe and Central Asia (ECA) region. Five ECA countries receive more than 40 percent of their overall food imports from the Russian Federation and Ukraine. Another five ECA countries receive more than 80 percent of their wheat imports from the two countries. These countries are therefore highly exposed to the impacts of the war.

Documents can be consulted at [www.fao.org](http://www.fao.org)

There is growing evidence that the war's impacts will spread beyond the confines of the region, increasingly presenting a challenge for global food security, in particular for vulnerable population groups and low-income countries dependent on food imports. These countries are in need of special assistance, which could be provided through a Food Import Financing Facility (FIFF) being proposed by FAO. In addition, FAO is proposing five other plans for coping with the current situation.

**Suggested action by the Regional Conference**

The ERC is invited to note the information and to provide guidance as deemed appropriate.

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## I. Background

1. The war in Ukraine has resulted in extensive loss of life and widespread destruction of urban and critical infrastructure. It has sparked massive population displacement while creating extraordinary human hardship for those who remain in the country. Key cities are being encircled and continue to experience heavy bombardment, leaving people isolated and facing severe shortages of food, water and energy supplies. Food and nutritional insecurity in many parts of Ukraine is rising to perilous levels.

2. The Russian Federation and Ukraine are traditionally among the most important producers of agricultural commodities in the world (Figure 1). Both countries are net exporters of agricultural products, and they both play leading supply roles in global markets of foodstuffs and fertilizers. Combined, the two countries, on average accounted for 19, 14 and 4 percent of the annual global output of barley, wheat and maize, respectively, from 2016/17 to 2020/21. In the oilseed complex, their contribution to global production was particularly important for sunflower oil, accounting for more than half of the world output, on average, during this period.

3. In 2021, either the Russian Federation or Ukraine (or both) ranked among the top three global exporters of wheat, maize, rapeseed, sunflower seed and sunflower oil, while the Russian Federation also stood as the world's top exporter of nitrogen fertilizers, the second-leading supplier of potassium fertilizers, and the third-largest exporter of phosphorous fertilizers.

4. Indeed, with Ukraine being a key supplier to international food markets, the stakes to world markets and hence global food security are much higher. The country's rural areas have not been spared from conflict, with access to inputs, productive assets, agricultural land and roads significantly impaired. The war has led to the closure of ports in Ukraine, the suspension of oilseed crushing operations, and the introduction of export licensing restrictions and export bans for some crops and edible products to safeguard domestic food security.

5. What is more, large shares of exportable supplies from the Russian Federation and Ukraine are often concentrated in a handful of countries. This concentration could expose these markets to increased vulnerability to shocks and volatility. The prospect of supply shortfalls is sending shockwaves that are reverberating in global food markets, with consumers already struggling with soaring prices as a result of continued supply chain disruptions owing to the COVID-19 pandemic.

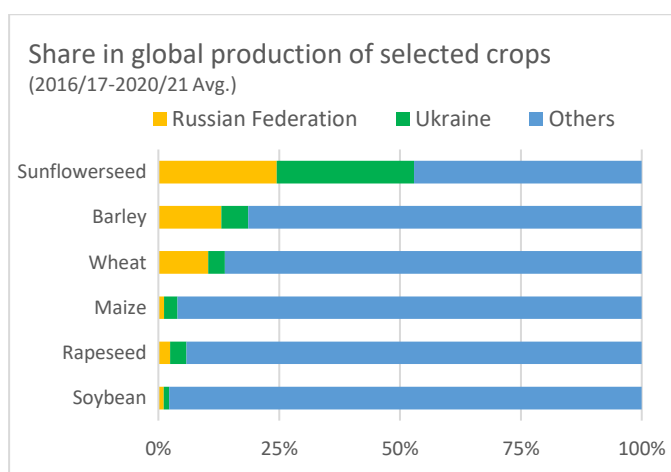


Figure 1: Share in global production of selected crops. Source: FAO XCBS system.

6. Indeed, many countries, including least developed countries and low-income and food-deficit countries, rely on Russian and Ukrainian supplies to meet their food needs. Even before the war, many of these countries had already been grappling with the negative effects of high international food and fertilizer prices.

## II. Food security challenges in Ukraine

7. The war in Ukraine has already caused extensive damage and loss of life in key population centres. Populations in active war zones are facing severe shortages of food, water and energy supplies. As insecurity escalates, with both local and national supply chains disrupted, people are falling deeper into hunger and malnutrition.
8. Key immediate areas of concern include:
  - disruption to crops – winter harvesting and spring planting;
  - agricultural labour availability, impacted by population displacement;
  - access to and availability of agricultural inputs, particularly fuel, seeds, fertilizers and pesticides;
  - disruption of logistics at all stages of food supply chains;
  - abandonment of farms and reduced access to agricultural land;
  - damage to crops due to military activity, especially during vegetative stages in spring;
  - destruction of agrifood system capital assets and infrastructure.
9. FAO has carried out an initial rapid assessment in 19 areas, with some key findings:
  - food shortages are expected immediately or in the next three months in over 40 percent of the areas assessed. Food supply and access are significant issues across all trading sectors;
  - fuel availability is a major challenge to both food production and supply chains. Just one-fifth of agribusinesses surveyed by the government indicated that they had sufficient fuel to plant this spring. The crop sector is dominated by medium- and large-scale holdings, necessitating the need for high mechanization;
  - there is limited availability of critical agricultural inputs, including seeds, fertilizers, pesticides and farming equipment.

### A. FAO's ongoing humanitarian response in Ukraine

10. FAO already had a significant presence in the country, focusing on both development work and recovery in eastern Ukraine.
11. FAO is maintaining its presence in Ukraine to stay and deliver and has reinforced its team by surging technical staff to support the scaling up of the response, paying specific attention to operations, cash programming, food security information and analysis, procurement, security, coordination, needs assessments and communications.
12. FAO's response programme in Ukraine focuses on three main outcomes (Image 1):
  - critical food production systems are maintained, including the immediate provision of inputs and cash for vegetable, crop and livestock production for the most vulnerable;
  - agrifood supply chains, value chains and markets are supported, with support foreseen for smallholder producers, private farms and associations through grants;
  - regular monitoring and reporting on the food security and agriculture situation continuing within Ukraine, including coordination of the Food Security and Livelihood Cluster.
13. Within the revised United Nations Flash Appeal, launched on 25 April 2022, FAO presented a revised rapid response plan requiring USD 115.4 million, increasing its initial request of USD 50 million, to assist 376 660 households (979 320 people) through December 2022. It is

anticipated that the rapid response plan will be followed by a continuing programme based on the evolution of the crisis. The subsequent programme will follow the recommendations of the fourth-quarter evaluation and the findings of consultations with partners from the government and civil society.

14. As of 26 April 2022, more than USD 10.6 million had been received, sufficient to assist the most vulnerable families with a mix of multipurpose cash transfers, and input packages for vegetable and potato production in time for the spring planting season which started in April. If additional resources are made available now, FAO can quickly expand to reach all those initially targeted. FAO is already procuring more than 744 tonnes of vegetable and potato seeds. Fuel shortages and access to farms are the main challenges to distributing seeds, and FAO is actively working with the government and its partners to identify solutions.

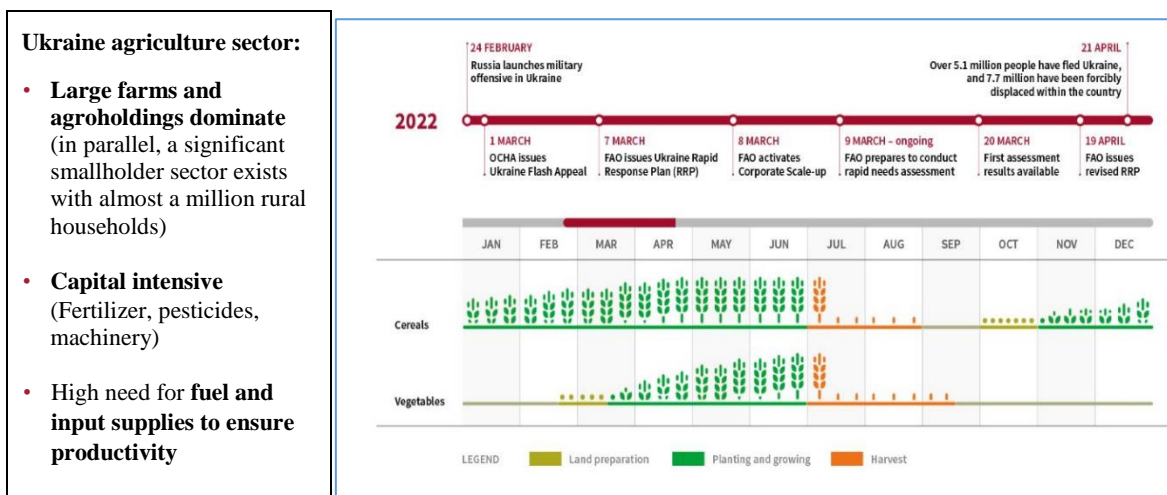


Image 1: Timeline of Ukraine response against the local crop calendar

15. Globally, through the Director-General's participation, FAO is playing an active role in the Inter-Agency Standing Committee (IASC) Principals coordination meetings on Ukraine. This is being supported by constant engagement in the IASC Emergency Directors' Group and other related fora. Inside Ukraine, United Nations and partner efforts are coordinated through the humanitarian country team. FAO together with the World Food Programme (WFP) co-leads the food security and livelihoods cluster and currently has key staff in place to support these efforts, including a senior cluster coordinator and information manager. At present, the cluster coordinates the work of 120 partners. FAO is leading agricultural livelihood assistance and is followed by two other organizations reporting to the cluster.

16. FAO has conducted a rapid needs assessment of the agricultural sector in Ukraine to aid in designing a timely response. Key results reveal that a main need among small and medium-sized producers is cash to assist in the sowing campaign, as many farmers across the country are facing increasing difficulties in accessing loans. The deficiency in financial liquidity is at least partly due to severe disruptions in markets – farmers are no longer able to sell their stocks of cereal and oilseeds and therefore, lack the funds needed to support the coming season's activities. The programme will be improved through real-time assessments and a mid-term evaluation in the fourth quarter of 2022.

## B. Supporting host communities and refugees in the Republic of Moldova

17. After a request from the Government of the Republic of Moldova, FAO has approved an emergency Technical Cooperation Programme (TCP) project supporting the government in responding to shortages of fertilizers, fuel and seeds, and the impacts of the refugee influx.

18. Following the above brief description of the humanitarian situation and the main actions to remedy current hardships, the following sections describe the importance of the Russian Federation and Ukraine to global and regional food and fertilizer markets and based on this, delineate some of the key risks associated with a disruption in supply for world food markets, with global food security in mind.

### **III. Global and regional food markets: the role of the Regional Conference for Europe countries in global and regional food trade**

#### *The importance of the Russian Federation and Ukraine for global and regional trade*

19. The Russian Federation and Ukraine play critical roles in global and regional trade. Both countries are significant net exporters of key agricultural products, and they both play leading roles in supplying foodstuffs to markets, both globally and in the ECA region.

20. Taking an overall food perspective, five ECA countries – Armenia, Azerbaijan, Georgia, Kazakhstan and Kyrgyzstan – receive more than 40 percent of their total food imports from the Russian Federation and Ukraine (Figure 2). They are followed by another three Central Asian economies with food import shares still in excess of 30 percent. These high import dependencies expose these countries to the impacts of the war in Ukraine and could result in serious food supply disruptions. At the same time, the largest part of these imports originates from the Russian Federation, with tight trade links, efficient infrastructure connections, and/or common membership in the Eurasian Economic Union. These factors, in turn, should help mitigate the risk of the high prima facie trade exposure.

21. Turning to individual food products, the Russian Federation stands out as the top global wheat exporter, shipping a total of 32.9 million tonnes of wheat and meslin (in product weight), which is 18 percent of the global shipments of these products in 2021. Ukraine stood as the sixth-largest wheat exporter in 2021, exporting 20 million tonnes of wheat and meslin, with a 10 percent global market share. The prominence of these two countries in the world trade arena is similarly noteworthy in the global markets of maize, barley and rapeseed – and even more so in the sunflower oil sector, where their substantial production bases endowed them with a combined world export market share of close to 63 percent in 2021.

22. The Russian Federation and Ukraine are also key suppliers to many countries in the ECA region. As illustrated in Figure 3, Armenia, Azerbaijan and Georgia sourced more than 90 percent of their 2021 wheat imports from the Russian Federation and Ukraine. Similarly, Turkey, the third-largest wheat importer globally, obtained 85 percent of its 2021 wheat imports from these two countries. Overall, more than seven net importers of wheat in the ECA region are dependent on both countries for over 50 percent of their wheat import needs (Figure 3).

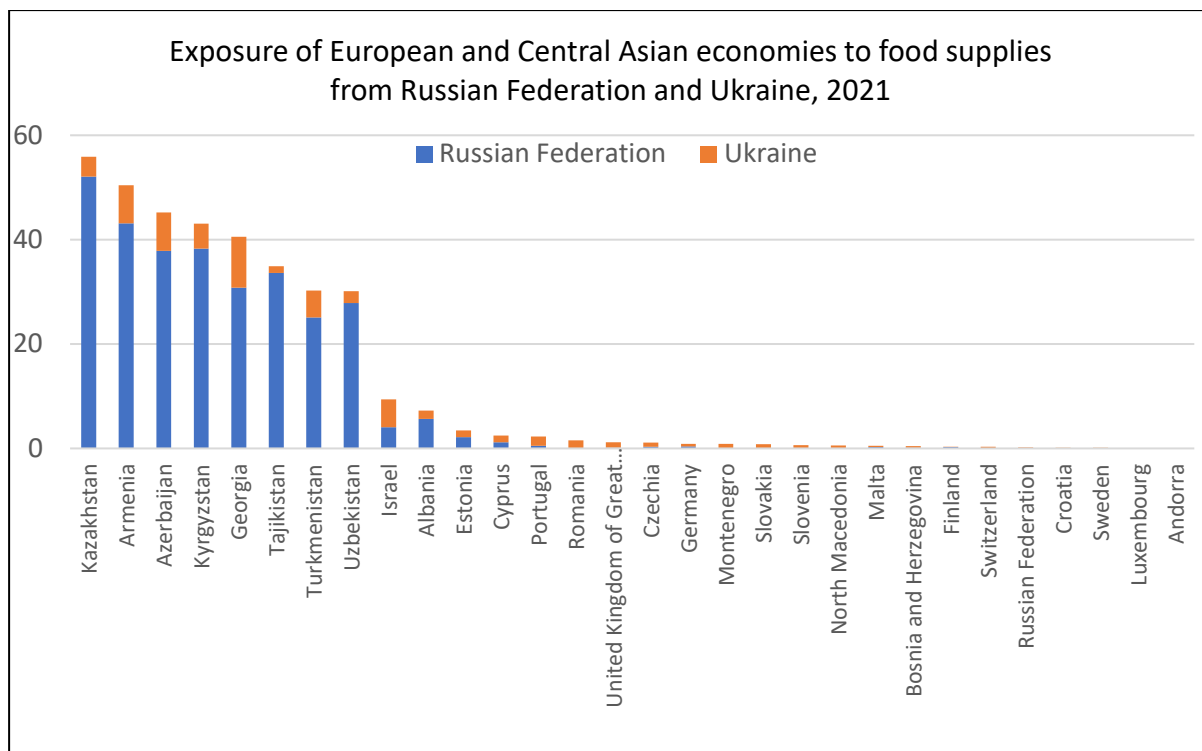


Figure 2: Food import dependency, ECA net importers only, 2021 (%).

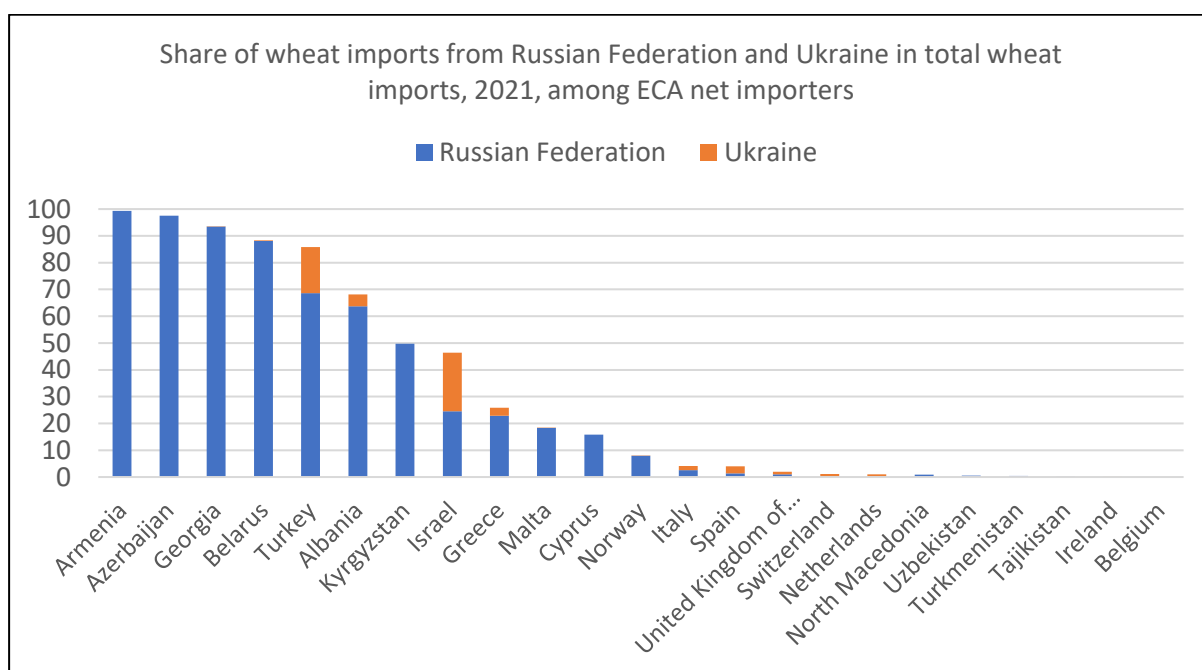


Figure 3: Share of wheat imports from the Russian Federation and Ukraine in total wheat imports, 2021 (%). Only ECA net importers are shown.

23. The high export concentration in food markets is also mirrored by the fertilizer sector, where the Russian Federation plays a leading supplier role.

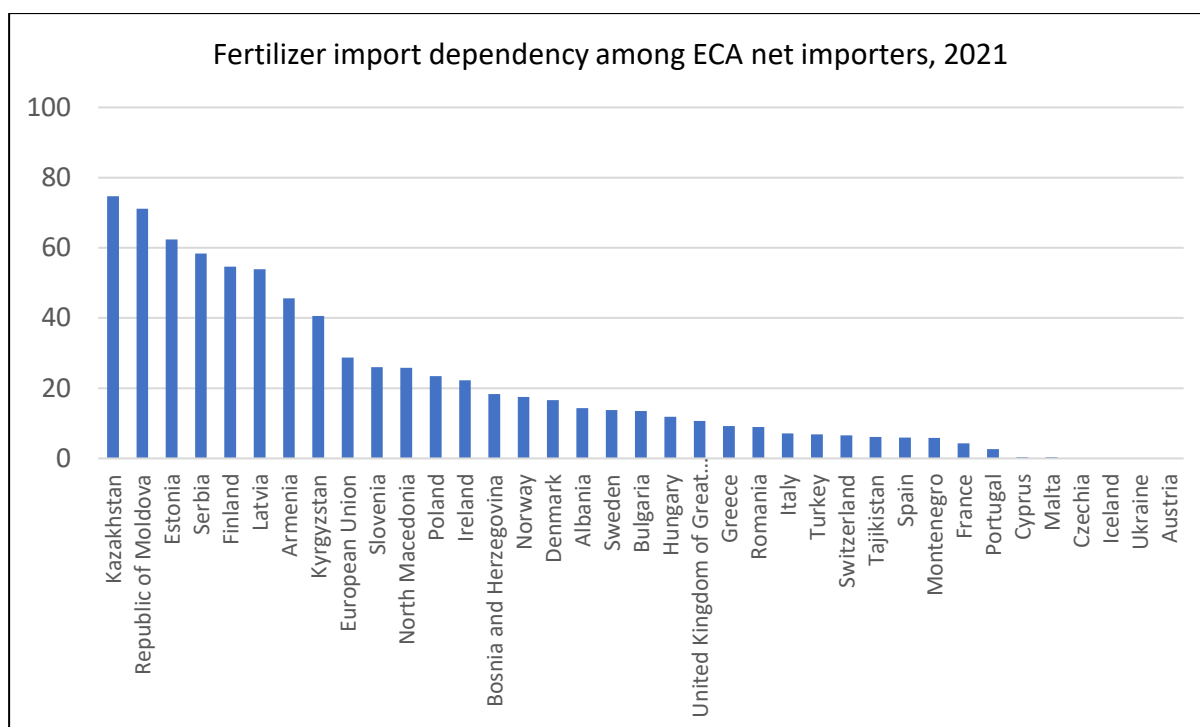


Figure 4: Share of fertilizer imports from the Russian Federation in total imports, 2021 (%).

24. Not only is the Russian Federation the most important fertilizer exporter globally, but it also plays an important role related to fertilizer supplies in the ECA region. In 2021, six ECA countries received more than 50 percent of their fertilizer imports from the Russian Federation. The most exposed are countries in the immediate vicinity of the Russian Federation – notably Kazakhstan, the Republic of Moldova and Estonia – and even the European Union (EU-27) sourced nearly 30 percent of its overall fertilizer imports from the Russian Federation in 2021 (Figure 4).

25. The likely impacts on agricultural production of higher fertilizer prices and lower availability, requires an analysis of fertilizer export availabilities and import dependencies relative to the amount of agricultural land (Figure 5).<sup>1</sup> Figure 55 suggests that the majority of ECA countries are net importers of fertilizers, with import dependencies on a per-hectare basis, that is particularly pronounced in Cyprus, Ireland, Luxembourg and Slovenia. These countries obtain most or all of their fertilizer needs from imports. The high net import positions for fertilizer in the majority of the ECA region expose countries to significant risks, as fertilizer prices continue to rise and availabilities continue to shrink.

26. At the other end of the net trade spectrum are Belgium and the Netherlands, who use their natural gas supplies to produce and export nitrogen fertilizers. These countries also benefit from high animal stocking densities, providing them with large quantities of manure and allowing them to export fertilizers, mainly to European Union Members. Overall, this makes the EU-27 a minor net importer for all three key nutrients: nitrogen, phosphorous and potassium (Figure 5).

27. As a result of the significant impact of both the Russian Federation and Ukraine on food exports to the world, FAO has identified a series of risks that fall into three categories: (i) risks associated with the food and agriculture market; (ii) macroeconomic risks; and (iii) humanitarian risks. The humanitarian risks have already been discussed; the following sections will therefore focus on the key risks in agricultural markets as well as the main macroeconomic risks.

<sup>1</sup> Annex 2 of this document also presents fertilizer net trade positions for arable land only, trying to capture higher fertilizer intensities for crops compared to most pastureland and meadowland.



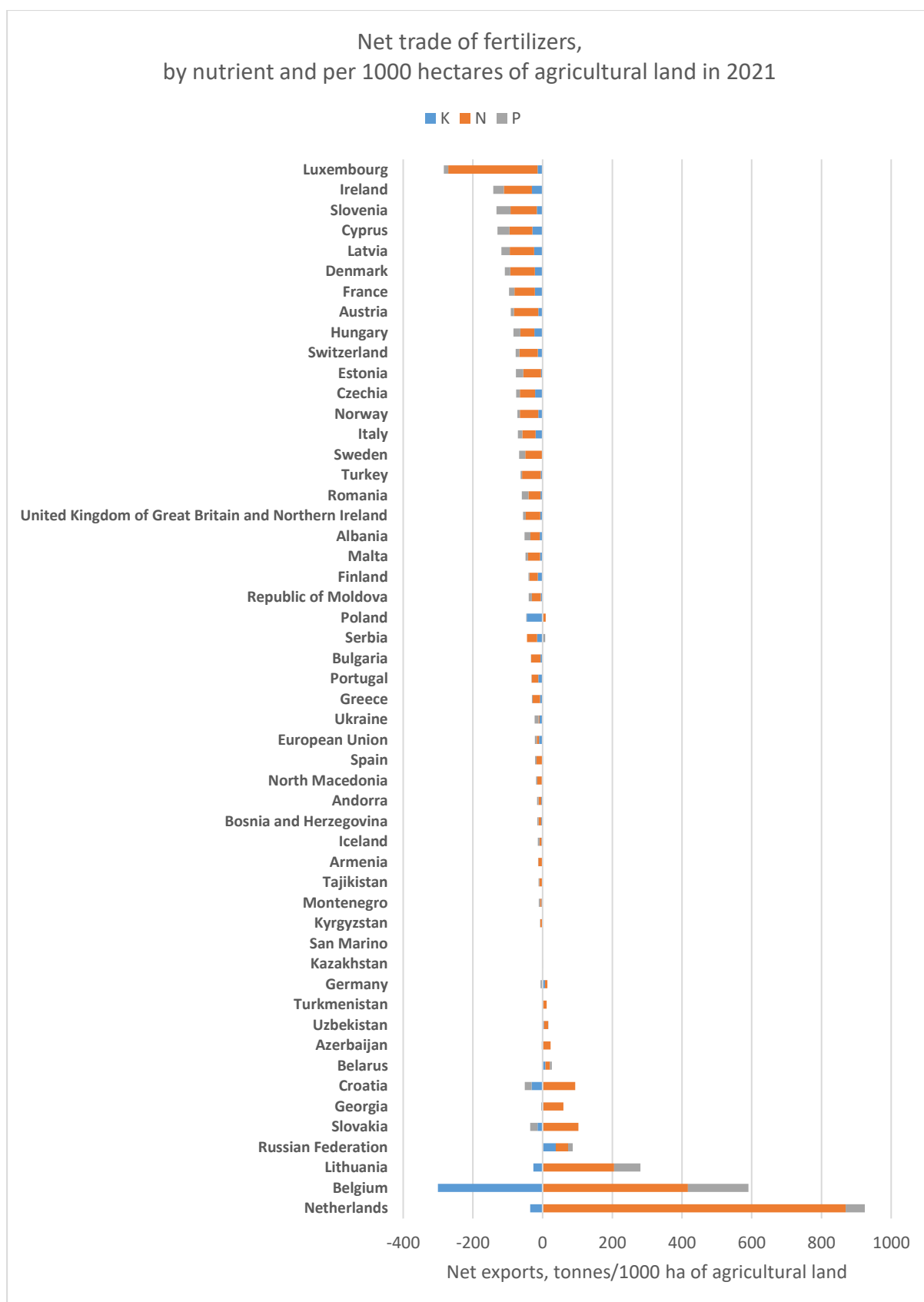


Figure 5: Net trade of fertilizer by nutrient, all ECA countries, 2021.

## A. Trade-associated risks

28. War-induced disruptions to food exports by the Russian Federation and Ukraine expose global food markets to heightened risks of tighter availabilities, unmet import demand and higher international food prices.

29. Based on FAO's forecasts for the ongoing 2021/22 season (July-June) issued before the onset of the war, and on the pace of exports registered to date, Ukraine was expected to export approximately 6 million tonnes of wheat between March and June 2022, while the Russian Federation was anticipated to ship another 8 million tonnes during this period (Figure 6).

30. Ukraine's export capacity is also seriously circumscribed by the blockade of its Black Sea ports. Alternative options of exporting by truck or rail are curbed by limited capacities and the ongoing destruction of the country's transportation infrastructure. This means that Ukraine could face a serious storage capacity problem for grains and oilseeds as the new crop arrives during the third quarter of 2022.

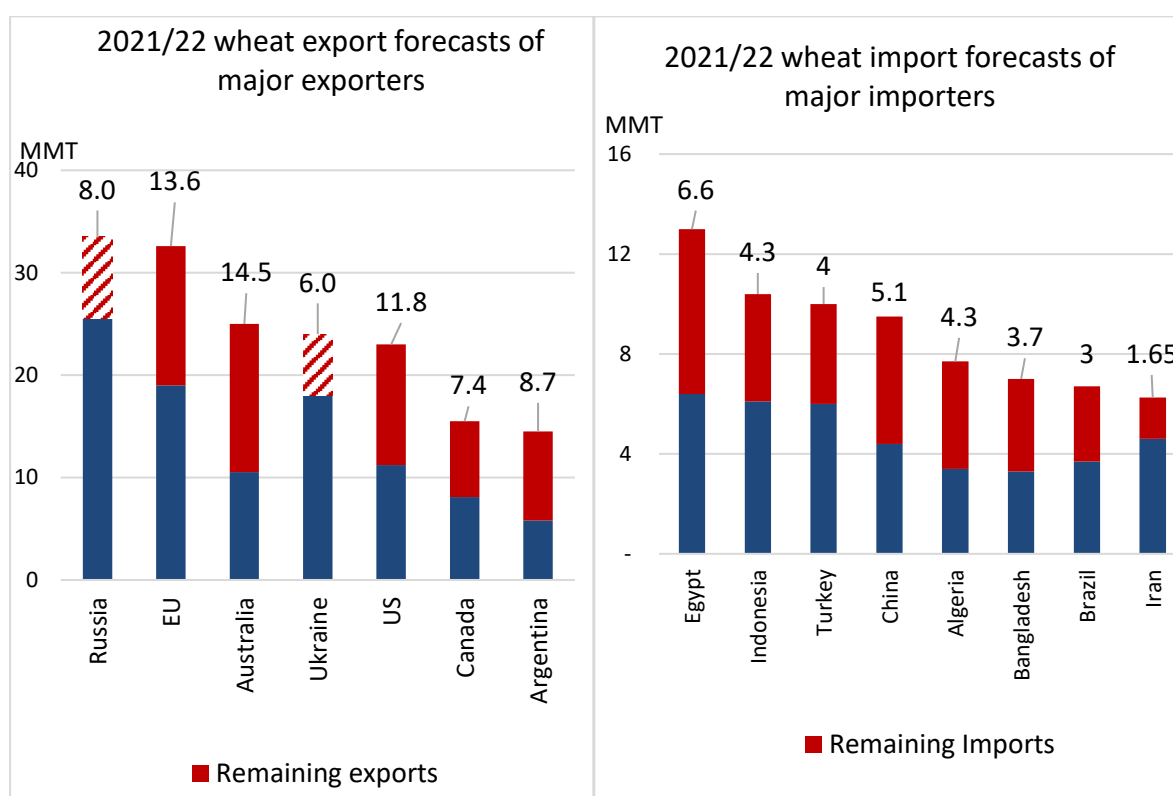


Figure 6: Wheat export and import forecasts through June 2022.

31. A sudden and steep reduction in shipments by the Russian Federation and Ukraine could trigger exports from alternate origins, both from within the ECA region and from elsewhere. Australia and the United States of America have the potential to make up for some of the shortfall in shipments by the Russian Federation and Ukraine. Preliminary estimates suggest that the European Union has unrealized exports to the tune of 13.6 million tonnes for the period from March to June 2022. For suppliers outside the ECA region, the remaining exports of the United States of America and Australia have been pegged at 11.8 and 14.5 million tonnes, respectively. Overall, and at the global level, the remaining export availabilities for wheat should suffice to cover the outstanding import needs.

32. While official trade data is not yet available, there is growing evidence that the Russian Federation continued to export wheat to several countries in the ECA region in March and April 2022. There are reports of "grey" exports to members of the Eurasian Economic Union

(Armenia, Belarus, Kazakhstan, Kyrgyzstan, the Russian Federation) as well as official exports to Turkey. As these countries continue to import wheat from the Russian Federation, they are not turning to world markets for their needs, potentially lowering the otherwise very notable upward pressure on international wheat quotations in recent weeks. That said, these intra-Eurasian Economic Union exports are dependent on rail transportation, the limited capacity of which will significantly confine the growth potential of these shipments.

33. As for maize, based on FAO's forecasts drawn before the war and on available export data to date, for the remainder of the 2021/22 season, Ukraine and the Russian Federation were expected to export approximately 14 million tonnes and 2.5 million tonnes of maize, respectively. As in the case of wheat flows, it is unlikely that these exports or at least the large majority of it, will transpire. While maize exports from the Russian Federation do not make up a significant portion of the global maize trade, Ukraine's maize exports in 2021/22 were forecast to make up 18 percent of the 2021/22 global trade in the grain, which would have made the country the world's third-largest maize exporter.

34. Maize supply gaps for importers could be especially relevant for China and the European Union (Ukraine's primary maize export destinations so far this season), but also for Egypt and Turkey, which on average (2016/17 to 2020/21) source approximately one-third of their maize imports from Ukraine. FAO estimates that China, the European Union, Egypt and Turkey have approximately 11.5, 3.7, 4.6 and 1.6 million tonnes, respectively, of outstanding imports for the second half of 2021/22.

## **B. Price-associated risks**

35. As measured by the FAO Food Price Index (FFPI), international export quotations of basic foodstuffs have seen near-uninterrupted increases since the second half of 2020 and, in both nominal and real terms,<sup>2</sup> stood at an all-time high in March 2022. Although prices of all the commodity groups encompassed by the FFPI<sup>3</sup> began registering gains in the latter part of 2020, the global cereal and vegetable oil markets, in which both the Russian Federation and Ukraine play significant roles as suppliers, have been among those most subject to price increases. Over the course of 2021, international prices of wheat and barley rose 31 percent over their corresponding levels in 2020, buoyed by strong global demand and tight exportable availabilities resulting from weather-induced production contractions in various major wheat and barley exporting countries. In the case of wheat, additional support stemmed from uncertainty regarding export measures put in place by selected suppliers in a bid to contain domestic inflationary pressures. In the rapeseed oil and sunflower seed oil sectors, annual price increases registered in 2021 were in the order of 65 and 63 percent, respectively. These increases were spurred by protracted global supply tightness and robust demand, with the latter stemming also from the biodiesel sector, especially in the case of rapeseed oil.

36. International benchmark prices of fertilizers rose similarly throughout 2021, with many quotations reaching all-time highs. The most notable increases were registered for nitrogen fertilizer. Prices of urea, a key nitrogen fertilizer, have risen by nearly three times over the past 12 months, with prices of phosphorous fertilizer rising in tandem over the same period.

37. As in other commodity markets, these fertilizer price dynamics were determined by the interplay of supply and demand. On the demand side, higher output (crop) prices registered in 2021 boosted the affordability of fertilizers and hence their demand, thereby pushing fertilizer prices upwards. On the supply side, high and volatile energy prices were also observed, especially for natural gas, which plays a pivotal role in the production of nitrogen fertilizer and the prices of which underwent a sharp increase in 2021 due to a host of reasons, including weather-induced disruptions to renewable energy and coal production. Additional upward pressure on fertilizer prices stemmed from

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<sup>2</sup> When deflated by the Manufactures Unit Value (MUV).

<sup>3</sup> The commodity groups covered by the FFPI are cereals, vegetable oils, meat, dairy products, and sugar.

supply disruptions and high transportation costs, following the imposition of export restrictions and due to sharp increases in bulk and container freight rates caused by the COVID-19 pandemic.

38. The second week of March 2022 saw a notable relaxation in the European gas market, with key quotations for natural gas declining by more than 50 percent from their heights in just ten days. This allowed prices for urea to stabilize. It is likely to re-establish positive upgrading margins for fertilizer producers going forward, allowing fertilizer plants to resume production. Milder spring weather in Europe and rising liquefied natural gas imports by the European Union are viewed as drivers for the normalization of natural gas prices.

39. Higher liquefied natural gas imports by the European Union are mirrored by higher liquefied natural gas exports from the United States of America, lowering gas prices in Europe but lifting them in the United States of America. By mid-April 2022, prices for the United States of America natural gas reached a level of USD 8 per million British thermal units, the highest in more than a decade. With gas prices remaining at very high levels in Europe and the United States of America, the space for lower fertilizer prices in 2022 is likely to remain limited.

40. While there appears to be a short-term relaxation in the markets of natural gas and nitrogen fertilizers, the supply situation could deteriorate in 2023, notably in European Union Members of Europe and Central Asia. Facing a general lack of natural gas and higher prices, European Union companies producing nitrogen fertilizer may have to further reduce output in 2022. With natural gas being the main feedstock for nitrogen fertilizer production, and with the need to wean themselves off imported gas (especially from the Russian Federation), European Union countries and companies could be inclined to shift from using natural gas for fertilizer production to using it for other outputs with higher-marginal-value products. The savings potential from lower fertilizer production is substantial. Preliminary estimates suggest that savings in the ammonia sector<sup>4</sup> could account for up to 10 percent of total gas imports by the EU-27. The savings potential for imports from the Russian Federation would be proportionately higher.

41. The competition between the use of gas as feedstock for fertilizer production and other purposes is reinforced by the ease of shipping fertilizers compared to shipping natural gas. While fertilizer can rather easily and inexpensively be transported, natural gas can be shipped only through pipelines or via liquefied natural gas vessels, for which there is limited discharge capacity. Liquefied natural gas also requires specialized discharge terminals and is expensive to import and distribute. This means that there may be lower domestic nitrogen fertilizer production in European Union countries in 2023, forcing them to move further abroad to secure supplies.

### C. Logistical risks

42. In Ukraine, the conflict has resulted in damage to inland transport infrastructure and seaports, as well as to storage and processing infrastructure. This is even more so, given the limited capacity of alternatives such as rail transport for seaports or smaller processing facilities for modern oilseed crushing facilities, to compensate for their lack of operation.

43. More generally, concerns also exist regarding rising insurance premiums for vessels destined to berth in the Black Sea region, as these could exacerbate the already elevated costs of maritime transportation, further compounding the effects on the final costs of internationally sourced food paid for by importers.

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<sup>4</sup> The ammonia market is the base market for numerous derivatives, including nitrogen fertilizers, which account for approximately 70 percent of the ammonia market in Europe.

## D. Production risks

44. Although early production prospects for 2022/23 winter crops in both countries were favourable, the escalation of war casts uncertainty over the winter cereal harvest in Ukraine (which will start in July 2022). In particular, the war is triggering population displacements, causing damage to civil infrastructure and restricting the movement of people and goods, preventing farmers from attending to their fields and harvesting and marketing their crops. This is in addition to disruptions to essential public services such as the provision of water, energy, transport, markets and banking.

45. The broad mobilization of military reserves could also decrease the number of agricultural labourers and workers along the supply chains, although Ukraine has taken steps to ensure that agricultural operations are sufficiently staffed. To these effects, as of early March 2022, the Government of Ukraine introduced policies granting a deferment from conscription during mobilization, based on submission of a list of critical employees, in order to enable them to carry out spring and summer fieldwork in a timely manner.

46. Despite high fertilizer prices, it is likely that large and industrial farmers secured fertilizer supplies necessary for the upcoming months ahead of time. However, fuel shortages and a lack of safe access to fields could still prevent producers from using the fertilizers. As far as pesticides, crop protection materials and other inputs are concerned, farmers may not have full access to supplies in the current crop season and possibly even the next.

47. In Ukraine, the regions of Vinnytsya, Donetsk, Zaporizhzhya, Kirovohrad, Mykolaiv, Kherson and Khrakiv accounted for half of total wheat production in 2020. Vinnytsya, Zhytomyr, Kyiv, Poltava, Sumy, Khmelnytskyi, Cherkasy and Chernihiv accounted for 70 percent of national maize harvest in the same year, and 60 percent of sunflower seeds were produced in the regions of Chernihiv, Kharkiv, Sumy, Poltava, Mykolaiv, Luhansk, Kirovohrad, Zaporizhzhya, Dnipro and Vinnytsya (State Statistics Service of Ukraine, 2022).

48. In early March 2022, overlapping the most productive agricultural areas of Ukraine with possible scenarios of the territorial spread of the war, FAO anticipated that 20 percent of winter planted areas may not be harvested as a result of direct destruction, constrained access or lack of economic resources. More recent assessments by local sources put these area losses at 28 percent, anticipating that out of 7.6 million ha planted with winter wheat, rye and barley, only 5.5 million ha could be available for harvesting (APK Inform, 2022a).

49. FAO's expectations regarding yield outcomes for winter cereals are also negative, pointing to national yields falling 10 percent below average levels due to delayed or missed application of fertilizers, and an inability to control pests and diseases. The lower yields would be in addition to potential harvest delays and greater postharvest losses that could occur due to labour force shortages or from a lack of storage infrastructure.

50. As for upcoming agricultural activities, sunflower and spring cereals, including maize, will be planted from April onwards, while the 2022/23 rapeseed sowing season will not open until September 2022.

51. The available information on input availability for these crops in Ukraine points to a mixed picture. According to estimates issued by the Ministry of Agrarian Policy and Food of Ukraine, 80 percent of Ukrainian farms have sufficient fertilizer stocks for the spring planting campaign, considering expected decreases in plantings. As for seeds, the volumes available (comprising both local and imported seeds) will be sufficient to plant 70 percent of the anticipated spring area, but their safe delivery to farmers is perceived as a major challenge (Centre for Strategic and International Studies, 2022).

52. Livestock and poultry rearing and the production of high-value crops, such as fruits and vegetables, could also be constrained in Ukraine. For both maize and sunflower seed, early March forecasts issued by FAO indicated that, compared to 2021, 30 percent less land could be planted in spring 2022, with yields likely declining 20 percent below average levels. Expected cuts in sunflower

seed plantings were also linked to infrastructural factors. Instead of producing crops to be exported as vegetable oil, and given the risk of deteriorating export infrastructure and crushing plants, farmers – particularly those cultivating at a smaller scale – could choose to plant crops that are more directly relevant to local food security, such as potatoes or spring wheat. Nevertheless, much like winter wheat expectations, local sources in Ukraine forecast even greater area cuts for these crops, putting them down 40 percent for spring grains and down 35 percent for sunflower seed (APK Inform, 2022a, 2022b). Meanwhile, forecasts by the Ministry of Agrarian Policy and Food of Ukraine indicate that Ukrainian farmers are strongly likely to plant 50 percent of the planned spring area. About 20 percent of the planned area remains questionable, and the remaining 30 percent is considered strongly unlikely (APK Inform, 2022c).

## **E. Energy risks**

53. The Russian Federation is a key player in the global energy market. As a highly energy-intensive industry, especially in developed regions, agriculture will inevitably be affected by the sharp increase in energy prices that has accompanied the conflict.

54. Agriculture absorbs high amounts of energy directly through the use of fuel, gas and electricity, and indirectly through the use of agrichemicals such as fertilizers, pesticides and lubricants.

55. With prices of fertilizers and other energy-intensive products rising as a consequence of the conflict, overall input prices are expected to experience a considerable boost. The higher prices of these inputs will first translate into higher production costs and eventually into higher food prices. They could also lead to lower input use levels, decreasing yields and quality (e.g. protein levels for milling wheat) in the 2022/23 season, thus giving further upside risk to international food prices, and global food and nutrition security in 2023 and beyond.

56. Higher energy prices also make agricultural feedstocks (especially maize, sugar and oilseeds/vegetable oils) competitive for the production of bioenergy, and given the large size of the energy market relative to the food market, this could pull food prices up to their energy parity equivalents.

## **F. Exchange rate, debt and growth risks**

57. The Ukrainian hryvnia reached a record low against the United States dollar in early March 2022, with likely repercussions for Ukrainian agriculture, including a boost to its export competitiveness and curbs on its ability to import.

58. Although their extent remains unclear at this stage, conflict-induced damages to Ukraine's productive capacity and infrastructure are expected to entail very high recovery and reconstruction costs.

59. The economic sanctions imposed on the Russian Federation also led to a significant depreciation of the Russian rouble (though it recovered in late March 2022). While this should make Russian exports of agricultural commodities more affordable, a lasting rouble depreciation would negatively affect investment and productivity growth prospects in the country.

60. Weakening economic activity and a further depreciated rouble are also expected to have serious effects on countries in Central Asia through the reduction of remittance flows, as for many of these countries' remittances constitute a significant part of the gross domestic product.

61. The current conflict may also have global spillovers. While its impact on the global economy remains uncertain at this stage and will depend on several factors, the most vulnerable countries and populations are expected to be hit hard by slower economic growth and increased inflation (stagflation), at a time when the world is still attempting to recover from the recession triggered by the COVID-19 pandemic.

62. Most ECA countries are largely self-sufficient in food, neither significant net food exporters nor important food importers (Figure 7). Notable exceptions on the import side are small, food-import-dependent countries such as Andorra, Luxembourg, Malta and Montenegro, with per capita yearly net imports reaching USD 3 500 in Andorra. The list of major net food exporters in the ECA region includes Iceland, Ireland, Norway and the Netherlands, with per capita exports approaching nearly USD 6 000 in Iceland. These high levels of net exports are largely explained by the significant volumes of high-value products exported by these countries, notably meat and dairy products in the case of Ireland and fish and seafood in the case of Iceland and Norway.

63. Soaring food prices over the past 18 months have further pronounced the net trade positions of both major importers and exporters. In general, net exporters have benefited from higher prices on international markets, experiencing often steep increases in revenues from food and agricultural exports. The levels of, and recent changes in, ECA export revenues for food are summarized in *Annex 4* of this document. The net food importers, by contrast, have often seen significant increases in their food import bills, without necessarily importing larger quantities of food. Whether world prices will return to more normal levels will crucially depend on the availability and affordability of critical food production inputs, notably feeds and fertilizers. Their importance and the potential impacts of the war on international trade are discussed in detail below.

#### ***Effects on food import bills of ECA countries***

64. For ECA countries overall, and independent of the war, their food import bill rose by 12 percent in 2021 relative to 2020, equivalent to more than USD 70 billion (Table 1). Decomposing the recent increase in the ECA import bill into price and volume effects shows that the higher import bill in 2021 was mainly on account of higher unit costs (prices and freights) rather than higher volumes (quantities). Overall, 81 percent of the 2021 increase in the region's food import bill was due to elevated quotations and freights, whereas only 19 percent reflected higher volumes (Annex 3). From a food group perspective, the most pronounced increase in import expenditures was registered for fats, oils and oilseeds.



Figure 7: Net food exports in USD per person, 2021



**Food import bills by food group, total, US\$ billions and percentage changes**

	2019	2020	2021	2021/2019	2021/2020
Animal and vegetable oils fats	31.7	36.1	48.3	52%	34%
Beverages	50.6	49.7	57.8	14%	16%
Cereals and cereal preparations	63.1	64.8	73.3	16%	13%
Coffee tea cocoa spices and products	59.4	61.9	67.2	13%	9%
Dairy products and eggs	51.4	51.6	57.1	11%	11%
Fish crustaceans and molluscs	62.4	59.4	67.3	8%	13%
Meat and meat preparations	62.0	57.9	62.5	1%	8%
Miscellaneous food	36.8	38.3	42.7	16%	12%
Oilseeds and oleaginous fruits	22.9	25.9	30.8	34%	19%
Sugar honey and preparations	15.0	15.3	17.4	16%	14%
Vegetables and fruits	134.0	140.4	148.1	11%	5%
<b>Total</b>	<b>589.3</b>	<b>601.0</b>	<b>672.4</b>	<b>14%</b>	<b>12%</b>

Table 1: Food import bill, ECA region, by food group

**IV. Policy recommendations**

65. The conflict in Ukraine is raising significant concerns over its potentially negative impact on food and nutrition security, both domestically and internationally. Domestically, the escalation could directly constrain Ukraine's agricultural production and productivity, which, coupled with limited economic activity and increasing prices, could undercut the purchasing power of local populations. Globally, were it to result in a sudden and prolonged reduction in food exports by either country, the war could exert additional upward pressure on international food commodity prices to the detriment of low-income and food-deficit countries in particular. To obviate this set of circumstances, it would be advisable to:

- a. **Keep trade in food and fertilizers open** by preventing the war from negatively affecting productive and marketing activities in both countries in order to enable them to meet domestic production and consumption needs while also satisfying global demands. To ensure that supply chains continue to function properly or are in a position to resume operations swiftly, efforts should include steps to protect productive assets, including standing crops, livestock, inputs and machinery, from damage or any war-induced disruption. This must also extend to food processing infrastructure, such as grain mills and oilseed crushing facilities, as well as ancillary storage, transportation and distribution systems.
- b. **Find new and more diverse food supplies.** Countries that directly rely on food imports from the Russian Federation and Ukraine will have to absorb the shocks and remain resilient. This can be attained by exploring other international trade sources, since countries that import foodstuffs from many different trade partners are less vulnerable to place-specific shocks. It can also be achieved by relying on existing food stocks and by enhancing the diversity of domestic production to ensure that the supply of food meets the necessity for healthy diets.
- c. **Support vulnerable groups, including internally displaced people.** In line with FAO's Ukraine Rapid Response Plan, March-May 2022 (FAO, 2022), such efforts should include:
  - i. *Support for internally displaced people, refugees and those directly affected by the war.* Until the start of the war, Ukraine's social protection system reached 30 percent of the population and 77 percent of the poorest quintile (World Bank, 2022). The Government of Ukraine has stated that, despite the disruptions caused by the ongoing

hostilities, it will continue to provide social protection support (cash benefits and subsidies) to its population, in accordance with information contained in the Unified Social Information System. Payments will be made electronically to beneficiaries' bank accounts (Ministry of Social Policy of Ukraine, 2022). In addition, the Federation of Trade Unions of Ukraine and the Confederation of Free Trade Unions of Ukraine have combined efforts to provide food and shelter for those at the epicentre of the war or most in need. The population in need of social protection support is larger than that reached by the national system, and reaching them is difficult due to security risks and mobility within and beyond national borders. The social protection response can come through the national system, and for those who have crossed international borders, through the social protection systems of host countries.

ii. *Support for vulnerable groups.* More specifically, steps should be taken to monitor prices and food security outcomes of groups already vulnerable before the war escalation, and groups pushed into hunger and poverty, in both urban and rural areas, by deteriorating economic conditions resulting from the war and the respective increase in the prices of essential goods and services. Timely and well-targeted social protection interventions should be provided to alleviate the hardship caused by the war on affected local populations and to foster recovery. In doing so, due consideration should be given to the fact that the high prices of food and energy are regressive on poor consumers (since a larger share of their disposable income is spent on these necessities), as they may entail a reduction in quantities and/or qualities of food consumed, thereby leading to more hunger and malnutrition, or less money for other necessities such as health and education. Curtailing such important expenditures could send communities into a vicious cycle of deepening and entrenching food insecurity and poverty, with potentially irreversible effects.

- d. **Avoid ad hoc policy responses.** Measures put in place by countries affected by potential disruptions emanating from the war must be carefully weighed against their potentially detrimental effects on international markets now and in the future. For example, while reductions in import tariffs and/or the use of export restrictions could help improve availability in domestic markets in the short term, they would inevitably add to upward price pressure (increased demand *vis-à-vis* lower supplies) on international markets and exacerbate the situation globally. Ad hoc policy measures must always be avoided.
- e. **Contain the spread of African swine fever** by: (i) improving biosecurity and good husbandry practices; (ii) ensuring measures are taken to facilitate early detection, timely reporting and rapid containment of the disease, as delays can lead to rapid spread; (iii) implementing surveillance schemes that support the detection of African swine fever in both pigs and wild boars; and (iv) implementing targeted sampling of animals rendering a higher likelihood of detecting the virus.
- f. **Strengthen market transparency and dialogue.** Global market transparency plays a key role when agricultural commodity markets are shrouded in uncertainty and need to adjust to shocks affecting supply and demand. Initiatives like the G20's Agricultural Market Information System (AMIS) strive to increase transparency through the provision of objective, timely and up-to-date market assessments that enable informed policy decisions. Through its Rapid Response Forum, AMIS also provides a unique platform for policy dialogue and coordination among Members, including both the Russian Federation and Ukraine. Policy dialogue and coordination are necessary to safeguard food security and minimize supply disruptions, ensuring that international markets continue to function properly and that trade flows efficiently to meet global demand.

- g. **Establish a Food Import Financing Facility (FIFF).** FAO has presented a proposal<sup>5</sup> for a facility to help poor net food importers access international food markets. The facility would be limited to net food importers in the low-income and lower-middle-income groups of the World Bank classification, providing them with credit to purchase food on global markets. Those potential beneficiaries would commit themselves to investing in sustainable agricultural productivity, thereby reducing their future food import needs (an automatic stabilizer). The facility has already been stress tested. The endogenous – or distortionary – world market price effects would not exceed a maximum of 15-20 percent, even at its maximum use level of USD 25.3 billion. However, the FIFF would guarantee food security for up to 15 million people,<sup>6</sup> thereby negating any need for households to curtail expenditures on other essential goods and services, such as health and education.

Vulnerable food-import-dependent countries could mitigate long-lasting adverse impacts on their agrifood systems, improve resilience to external shocks and reduce future food import bills. Within the ECA region, three countries – Kyrgyzstan, Tajikistan and Uzbekistan – would be eligible to access the facility, as they meet both the income and the net food import criteria. Details of their FIFF eligibility are available from the country profiles presented in *Annex 1* of this document.

Moving from countries to households as the unit of analysis, the steep increases in prices for food and energy have translated into a significantly higher and continually rising burden on household incomes. In 11 countries of the ECA region, consumers spent more than 60 percent of their overall income on food, energy, housing and water (Figure 8) in 2021. In most cases, food accounts for the lion's share of household expenditures. How strong the rising burden of higher food and fuel costs is can be judged from the fact that only four years ago, in 2017, merely one ECA country (Armenia) fell into this category (with consumers having to spend 60 percent or more of their incomes to meet these basic needs).

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<sup>5</sup> For further information about the FIFF, see the short note for decision-makers at <https://www.fao.org/3/cb9444en/cb9444en.pdf> and the technical background paper at <https://www.fao.org/3/cb9445en/cb9445en.pdf>.

<sup>6</sup> This estimate is derived from the initial estimates of price and undernourishment effects caused by a supply shock to the tune of USD 25 billion.

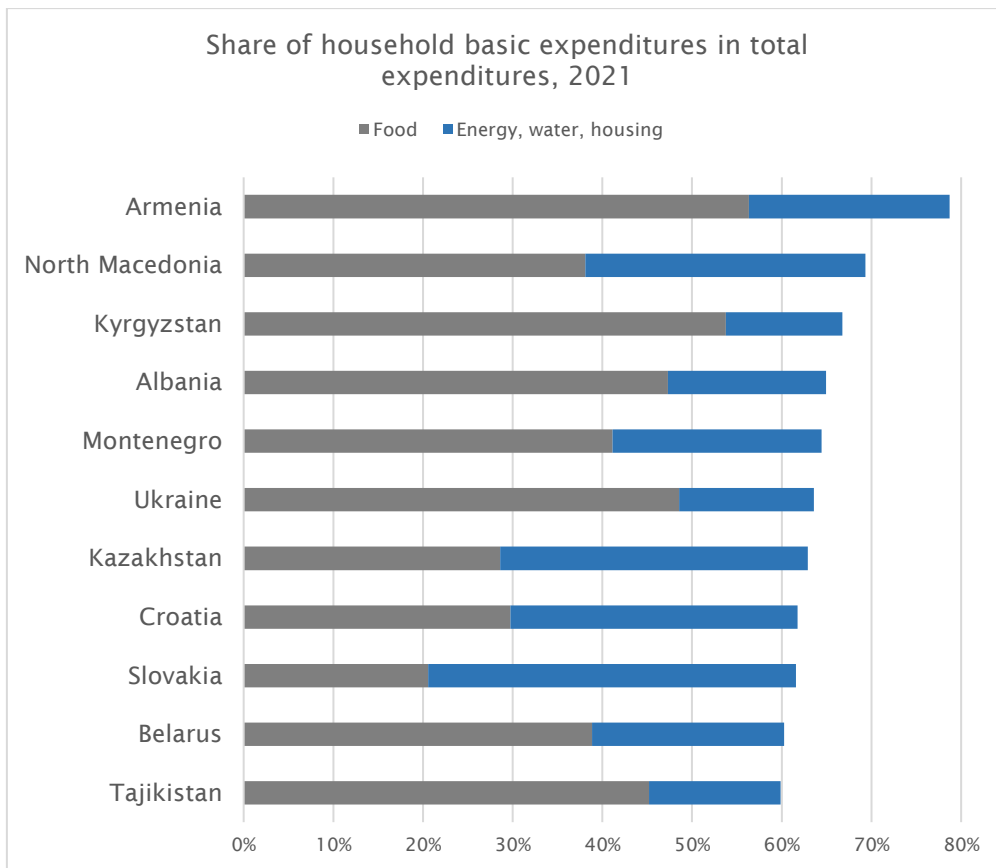


Figure 8: Household expenditure shares for basic necessities, 2021.

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### Annex 1: ECA countries eligible for the FIFF

Tajikistan		
<b>Total Population, 1000</b>	<b>GDP per person, USD</b>	<b>Final FIFF Eligibility</b>
9538	844	Y
<b>Income group</b>	<b>IDA Eligibility</b>	<b>Net Importer</b>
Low Income	Y	Y
Food import bills, gross		
	<b>2021</b>	<b>Change from 2020</b>
<b>Per person, USD</b>	72	9
<b>Food total, USD million</b>	687	81
Requisite compensatory funding for higher Food Import Bills, USD million		
<b>100% Compensation</b>	<b>50% Compensation</b>	<b>25% Compensation</b>
81	41	20
<b>10% Compensation</b>	<b>Compensation above USD50/pc</b>	<b>Compensation above USD100/pc</b>
8	81	0

Kyrgyzstan		
<b>Total Population, 1000</b>	<b>GDP per person, USD</b>	<b>Final FIFF Eligibility</b>
6524	1189	Y
<b>Income group</b>	<b>IDA Eligibility</b>	<b>Net Importer</b>
Lower Middle Income	Y	Y
Food import bills, gross		
	<b>2021</b>	<b>Change from 2020</b>
<b>Per person, USD</b>	124	28
<b>Food total, USD million</b>	806	183
Requisite compensatory funding for higher Food Import Bills, USD million		
<b>100% Compensation</b>	<b>50% Compensation</b>	<b>25% Compensation</b>
183	91	46
<b>10% Compensation</b>	<b>Compensation above USD50/pc</b>	<b>Compensation above USD100/pc</b>
18	183	183

Uzbekistan		
<b>Total Population, 1000</b>	<b>GDP per person, USD</b>	<b>Final FIFF Eligibility</b>
33469	1767	Y
<b>Income group</b>	<b>IDA Eligibility</b>	<b>Net Importer</b>
Lower Middle Income	Y	Y
Food import bills, gross		
	<b>2021</b>	<b>Change from 2020</b>
<b>Per person, USD</b>	84	24
<b>Food total, USD million</b>	2 810	795
Requisite compensatory funding for higher Food Import Bills, USD million		
<b>100% Compensation</b>	<b>50% Compensation</b>	<b>25% Compensation</b>
795	397	199
<b>10% Compensation</b>	<b>Compensation above USD50/pc</b>	<b>Compensation above USD100/pc</b>
79	795	0

### Annex 2: Fertilizer net trade per hectare of arable land



### Annex 3: Decomposing changes in the ECA food import bill into price and volume effects

#### Decomposition of changes in FIBs, US\$ billions, 2021 over 2019

	Price factor	Volume factor	Mixed factor	Total change
Animal and vegetable oils fats	17.0	-0.2	-0.1	16.6
Beverages	11.6	-3.5	-0.8	7.2
Cereals and cereal preparations	5.1	4.7	0.4	10.3
Coffee tea cocoa spices and products	6.5	1.1	0.1	7.8
Dairy products and eggs	3.0	2.6	0.1	5.7
Fish crustaceans and molluscs	1.5	3.2	0.1	4.9
Meat and meat preparations	3.7	-3.1	-0.2	0.4
Miscellaneous food	4.1	1.7	0.2	5.9
Oilseeds and oleaginous fruits	8.4	-0.4	-0.1	7.9
Sugar honey and preparations	0.9	1.5	0.1	2.4
Vegetables and fruits	5.8	8.0	0.3	14.1
<b>Total</b>	<b>67.5</b>	<b>15.5</b>	<b>0.1</b>	<b>83.1</b>



## Annex 4: Food export revenues and changes

### Food export revenues by food group, total, US\$ billions and percentage changes

	2019	2020	2021	2021/2019	2021/2020
Animal and vegetable oils fats	31.2	35.7	46.6	49%	31%
Beverages	78.0	73.7	88.7	14%	20%
Cereals and cereal preparations	85.0	91.5	103.6	22%	13%
Coffee tea cocoa spices and products	47.8	49.3	55.6	16%	13%
Dairy products and eggs	64.2	64.7	72.8	13%	13%
Fish crustaceans and molluscs	54.9	52.7	61.5	12%	17%
Meat and meat preparations	72.0	72.8	79.3	10%	9%
Miscellaneous food	48.6	51.2	56.7	17%	11%
Oilseeds and oleaginous fruits	13.1	13.8	16.2	24%	18%
Sugar honey and preparations	14.1	14.6	17.2	22%	18%
Vegetables and fruits	108.6	112.9	122.6	13%	9%
<b>Total</b>	<b>617.4</b>	<b>632.7</b>	<b>720.7</b>	<b>17%</b>	<b>14%</b>

## Annex 5: Wheat import dependencies

