

Ukraine & Russian Federation Conflict:

Grain Market Impacts

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Key Questions to Address Today

- 1) How “tight” were global grain markets prior to the Ukraine/Russia conflict?
- 2) What specific disruptions have occurred in the Ukraine agricultural economy – including in crop production calendars?
- 3) How may US farmers respond to the current grain market situation?
- 4) How do you see agricultural trade between China & Brazil responding?
- 5) How will the Ukraine/Russia conflict affect Global fertilizer markets?
- 6) Will China & U.S. see food shortages, particularly of wheat flour &/or rice?
- 7) Will disruption of Ukraine sunflower supply impact vegetable oil markets?

1) How “tight” were global grains prior to the Ukraine/Russia conflict?

World & U.S. Corn Supply-Demand Fundamentals

Mktg Yr	World S/U	Wld-China S/U	U.S. % S/U	U.S. \$/bu
2017/18	31.2% S/U	14.3% S/U	14.5% S/U	\$3.36 /bu
2018/19	28.1% S/U	12.7% S/U	15.5% S/U	\$3.61 /bu
2019/20	27.0% S/U	12.3% S/U	13.7% S/U	\$3.56 /bu
2020/21^{USDA}	25.6% S/U	10.1% S/U	8.3% S/U	\$4.53 /bu
2021/22^{USDA}	25.2% S/U	10.1% S/U	9.6% S/U	\$5.65 /bu
2022/23^{USDA}	na	na	12.8% S/U	\$5.00 /bu

How “tight” were global grains prior to the Ukraine/Russia conflict?

World Coarse Grain & U.S. Sorghum Supply-Demand

Mktg Yr	World S/U	Wld-China S/U	U.S. % S/U	U.S. \$/bu
2019/20	23.5% S/U	12.0% S/U	8.0% S/U	\$3.34 /bu
2020/21	22.1% S/U	10.0% S/U	5.2% S/U	\$5.04 /bu
2021/22^{USDA}	24.2% S/U	9.8% S/U	7.6% S/U	\$5.80 /bu
2022/23^{USDA}	na	na	7.2% S/U	\$4.90 /bu

How “tight” were global grains prior to the Ukraine/Russia conflict?

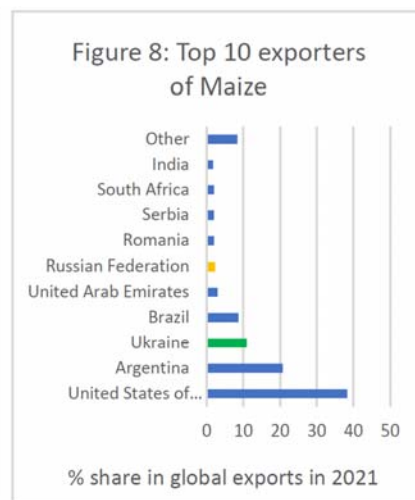
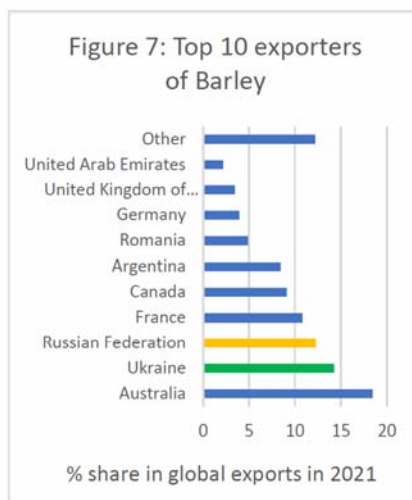
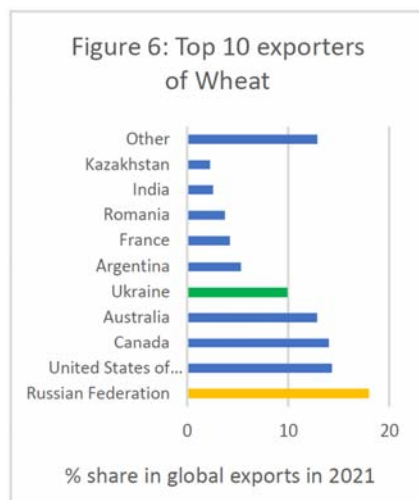
World & U.S. Wheat S/D Fundamentals

Mktg Yr	World % S/U	Wld-China S/U	U.S. % S/U	U.S. \$/bu
2013/14	29.2% S/U	23.4% S/U	24.2% S/U	\$6.87 /bu
2014/15	32.3% S/U	25.3% S/U	37.3% S/U	\$5.99 /bu
2015/16	34.8% S/U	25.4% S/U	50.0% S/U	\$4.89 /bu
2016/17	36.4% S/U	24.7% S/U	53.1% S/U	\$3.89 /bu
2017/18	38.7% S/U	25.1% S/U	55.5% S/U	\$4.72 /bu
2018/19	38.6% S/U	23.6% S/U	53.0% S/U	\$5.16 /bu
2019/20	39.7% S/U	23.7% S/U	49.2% S/U	\$4.58 /bu
2020/21	37.1% S/U	23.1% S/U	40.0% S/U	\$5.05 /bu
2021/22^{USDA}	35.8% S/U	21.8% S/U	33.8% S/U	\$7.50 /bu
2022/23^{USDA}	na	na	37.2% S/U	\$6.80 /bu

How “tight” were global grains prior to the Ukraine/Russia conflict?

World & U.S. Soybean Supply-Demand Fundamentals

Mktg Yr	World % S/U	Wrld-China S/U	U.S. % S/U	U.S. \$/bu
2013/14	22.8% S/U	25.1% S/U	2.7% S/U	\$13.00 /bu
2014/15	25.7% S/U	28.3% S/U	4.9% S/U	\$10.10 /bu
2015/16	24.8% S/U	28.0% S/U	5.0% S/U	\$8.95 /bu
2016/17	28.4% S/U	32.5% S/U	7.2% S/U	\$9.47 /bu
2017/18	29.2% S/U	32.7% S/U	10.2% S/U	\$9.33 /bu
2018/19	33.0% S/U	38.9% S/U	22.9% S/U	\$8.48 /bu
2019/20	27.1% S/U	28.2% S/U	13.3% S/U	\$8.57 /bu
2020/21^{USDA}	28.1% S/U	26.9% S/U	5.7% S/U	\$10.80 /bu
2021/22^{USDA}	24.7% S/U	22.6% S/U	6.5% S/U	\$13.25 /bu
2022/23^{USDA}	na	na	5.9% S/U	\$12.75 /bu



Source: Trade Data Monitor (TDM), FAO calculations

2) What specific disruptions have occurred in the Ukraine ag economy?

❑ Logistics Risks FAO Report, March 2022

- In Ukraine, there are also concerns that the conflict may result in damages to inland transport infrastructure & seaports, as well as storage and processing infrastructure.
 - This is all the more so given the limited capacity of alternatives, such as rail transport for seaports or smaller processing facilities for modern oilseeds crushing facilities, to compensate for their lack of operation.
-Apprehensions also exist regarding increasing insurance premia for vessels destined to berth in the Black Sea region, as these could exacerbate the already elevated costs of maritime transportation, compounding further on the final costs of internationally sourced food paid by importers.

Grain Market Article *Available March 11, 2022*

- **Reality of Ukrainian soybean market under conditions of war** - “According to **APK-Inform**, new reality brought by Russian invasion to Ukraine, is forcing soybean crushers to choose between shutdown and adaptation to lack of transport and drivers, disruption of traditional trade flows, procurement problems, etc. Under such conditions, soybeans are processed mainly for domestic consumption.”
- “Our enterprise keeps on functioning. We are processing soybean for domestic consumption. However, there are problems with feedstock procurement. Prices of soybeans are virtually absent. We are trying to buy through intermediaries. We had a signed contract for soybean oil delivery and we were paid, but we cannot deliver the oil. Buyer is ready to come to calm region to get his oil, however, we still cannot find reliable transport. So, we are aiming on creating a strategy for further work under new conditions”,
- “...there is some activity on the market in the western region, farmers raised soybean sales. However, the logistical factor prevents the normal functioning of the market. Many drivers have joined the army.”
- “Livestock sector is facing problems in many regions, as oil extraction plants partially suspended their activity rising the shortage of protein feed.” (APK)

Ukraine – Crop Calendar

Winter barley is not on this list but follows the same calendar as wheat.



3) How may US farmers respond to the current grain market situation?

➤ World Corn Market Situation “Current” MY 2021/22 vs year ago

- **Production** (1,206 mmt, ↑7.4%) ⇒ Ukraine’s 41.9 mmt @risk Years 2022 & 2023
- **Feed Use** (185.6 mmt, ≈ same) ⇒ Likely *price rationing of feed use* Years 2022 & 2023
- **Exports** (200 mmt, ↑10%) ⇒ Ukraine’s 27-33 mmt exports declines Years 2022 & 2023
- **Ending Stocks** (301 mmt, ↑3.3%) ⇒ Tighter World Stocks w/o Ukraine Years 2022 & 2023

➤ Ukraine-Russia Impacts *On the World Corn Market*

- ↑ **U.S. & Global Corn Planted** 2022-2023, but Ukraine in question
- ↑ **Exports** *Select Countries*: U.S., Brazil, Argentina; other???
- ↑ **Price\$***** (systemic feedgrain price inflation on World market)

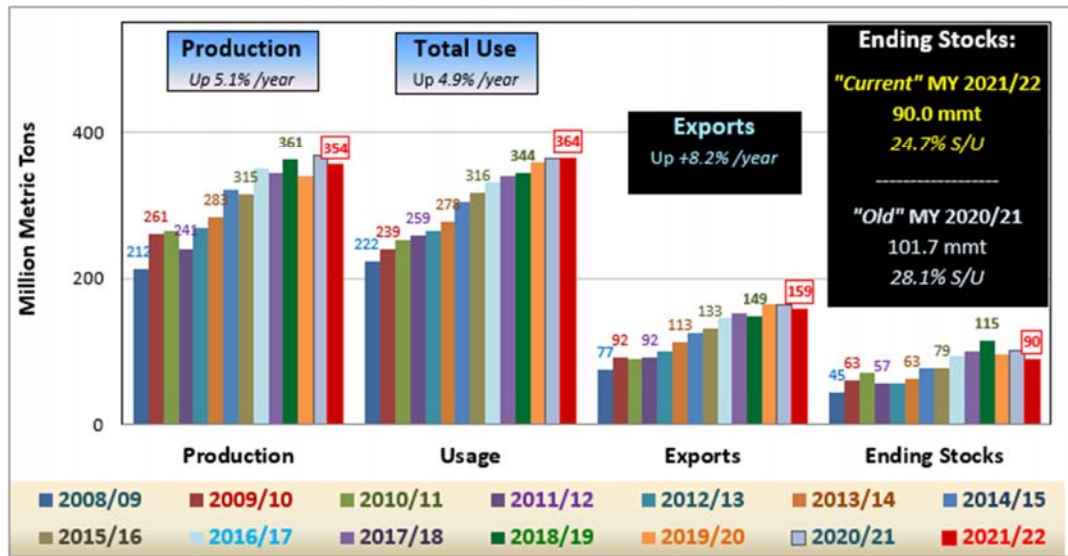
4) How do you see agricultural trade between China & Brazil responding?

- Likely to remain strong – especially with exchange rate advantage of Brazil over U.S. & lack of alternative sources of supply
 - **BUT** – crop availability will be the primary issue in years 2022 & 2023

Soybean Importer Purchases

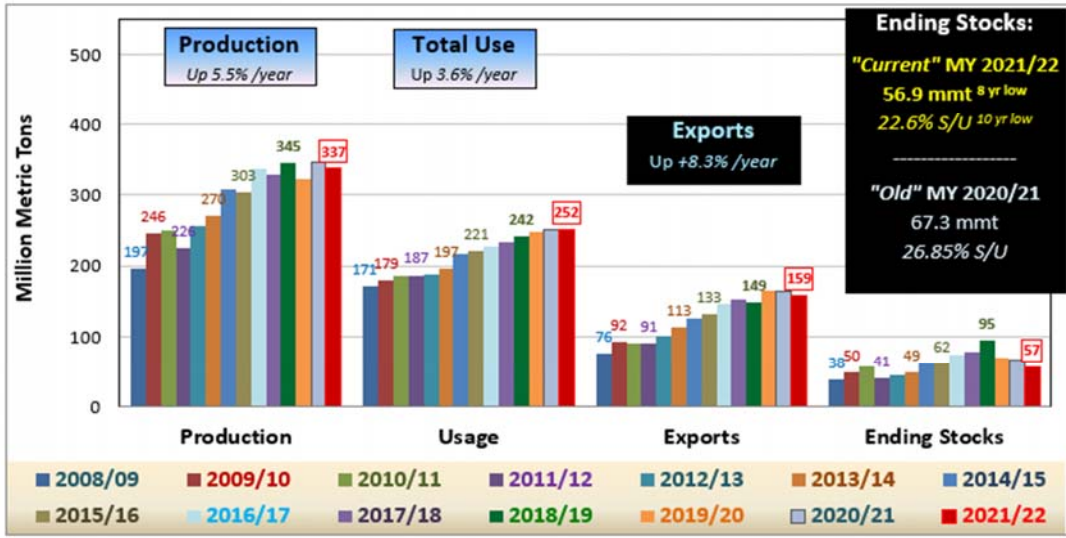


World Soybean Usage & Ending Stocks: MY 2008/09 through "New Crop" MY 2021/22 as of the March 9, 2022 WASDE Report



"World Less-China" Soybean Usage & Ending Stocks:

MY 2008/09 through "New Crop" MY 2021/22 as of the March 9, 2022 WASDE Report



China Soybean Supply-Demand Trends: MY 2007/08 – "New Crop" MY

2021/22 as of the March 9, 2022 USDA WASDE Report



4) How do you see agricultural trade between China & Brazil responding?

- Likely to remain strong – especially with exchange rate advantage of Brazil over U.S. & lack of alternative sources of supply
 - **BUT** – crop availability will be the primary issue in years 2022 & 2023



5) How will the Ukraine/Russia conflict affect Global fertilizer markets?

Figure 12: Top 10 exporters of N-Fertilizer

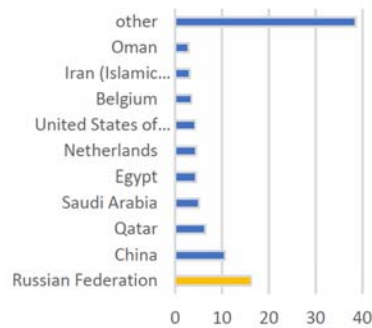


Figure 13: Top 10 exporters of P-Fertilizer

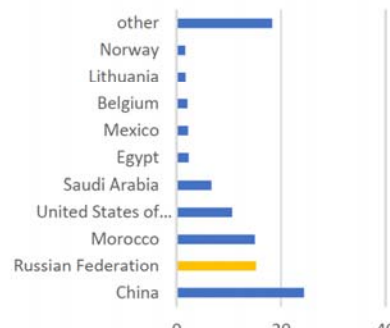


Figure 14: Top 10 exporters of K-Fertilizer



Source: Trade Data Monitor (TDM), FAO calculations



5) How will the Ukraine/Russia conflict affect Global fertilizer markets?

- The **Russian Federation** is the world's **#1 exporter of nitrogen fertilizers** and the **#2 supplier of both potassic & phosphorous fertilizers** FAO March 2022
- **U.S. Dependence on Imported Fertilizers** Univ. of Illinois

	Nitrogen (N)		Phosphate (P)		Potash (K)	
	USA	Brazil*	USA	Brazil*	USA	Brazil*
Imports of consumption	12.5%	95%	9%	75%	93%	91%
Main Origins	65% Trinidad & Tobago 30% Canada 3% Venezuela 2% Other	21% Russia 20% China 17% Qatar 15% Algeria 5% Iran 22% Other	85% Peru 15% Morocco	38% Morocco 15% Russia 11% Saudi Arabia 8% United States 7% China 21% Other	83% Canada 6% Russia 6% Belarus 5% Other	32% Canada 26% Russia 18% Belarus 11% Israel 13% Other



6) Will China & U.S. see food shortages, particularly of wheat flour &/or rice?

➤ World Wheat Market Situation "Current" MY 2021/22 vs year ago

- **Production** (778.5 mmt, ≈ same) ⇒ Ukraine's 33 mmt *@risk* Years 2022 & 2023
- **Food Use** (625.1 mmt, ≈ same) ⇒ Likely *rationing of wheat food use* Years 2022 & 2023
- **Exports** (203 mmt, ↑0.6%) ⇒ Ukraine's 20-24 mmt *exports declines* Years 2022 & 2023
- **Ending Stocks** (281.5 mmt, ↓3.0%) ⇒ *Tighter World Stocks w/o Ukraine* Years 2022 & 2023

➤ Ukraine-Russia Impacts *On the World Wheat Market*

- ↑ **Wheat seedings** 2022-2023, U.S. & Global, but is questionable in Ukraine
- ↑ **Exports** *Select Countries*: India, Argentina, Australia, U.S.; other
- ↑ **Price\$***** (systemic wheat price inflation on World market)

Figure 6: Top 10 exporters of Wheat

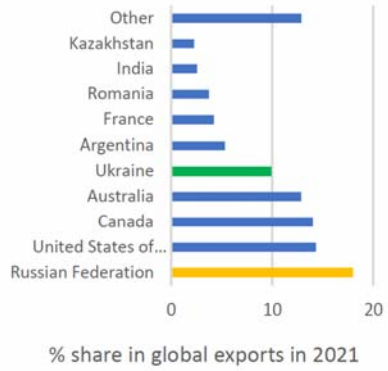


Figure 7: Top 10 exporters of Barley

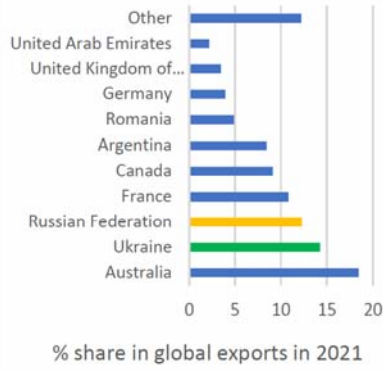
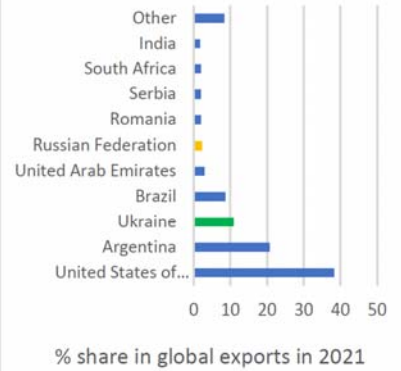


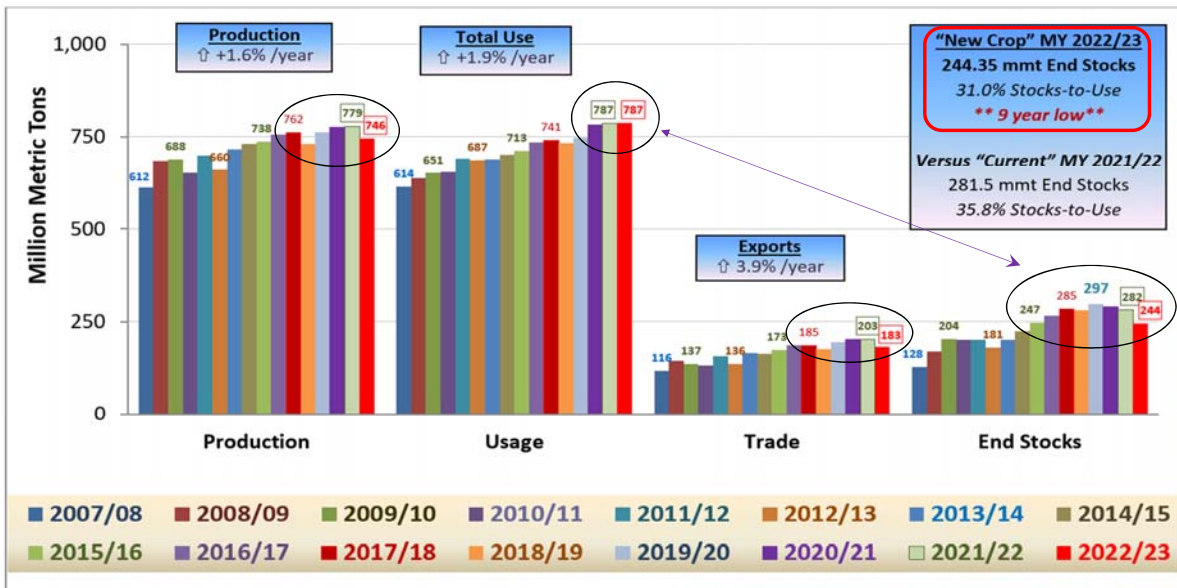
Figure 8: Top 10 exporters of Maize



Source: Trade Data Monitor (TDM), FAO calculations

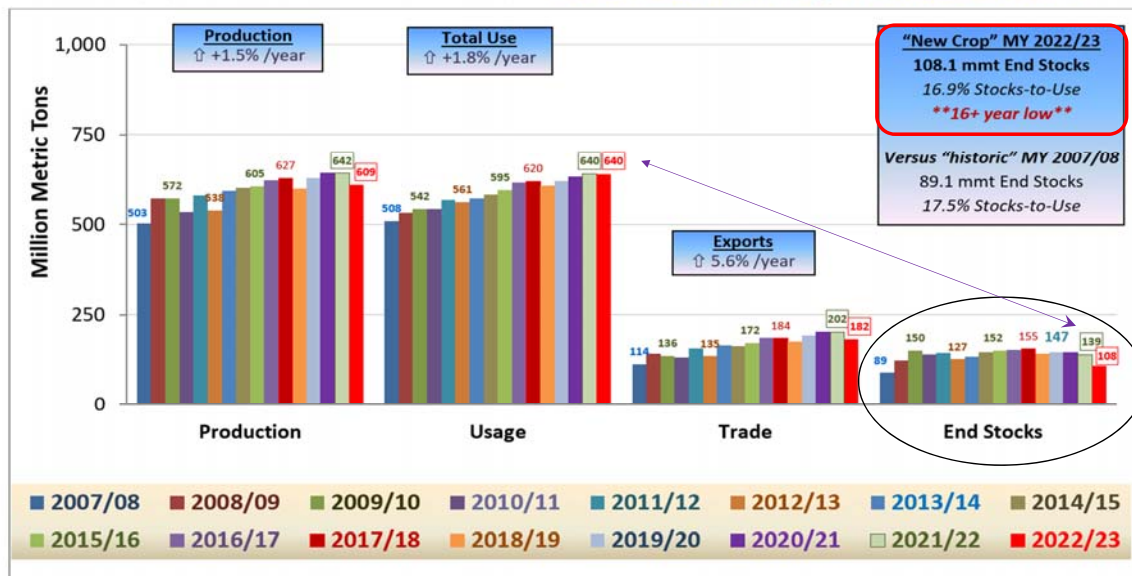
“World Less-Ukraine in 2022/23” Wheat Usage & Ending Stocks: MY 2007/08 - “Current Crop” MY 2021/22,

as of the March 9, 2022 USDA WASDE Report + KSU Estimates for “New Crop” MY 2022/23 Less Ukraine



“World Less-China & Less Ukraine in 2022/23” Wheat Usage & Ending Stocks: MY 2007/08 - “New Crop” MY

2021/22, as of the March 9, 2022 USDA WASDE Report + KSU Estimates for “New Crop” MY 2022/23 Less Ukraine



Risk analysis: Assessing the risks emanating from the conflict ^{FAO}

☐ Price Risk

- FAO’s simulations gauging the potential impacts of a sudden and steep reduction in grain and sunflower seed exports by the two countries indicate that these shortfalls could only be partially compensated by alternative origins during the 2022/23 marketing season.
 - The capacity of many of these origins to boost output and shipments may be limited by high production input costs.
-, the resulting global supply gap could **push up international food & feed prices by 8% to 22% above their already elevated levels.**

Figure 23. World price responses to scenarios: Crops

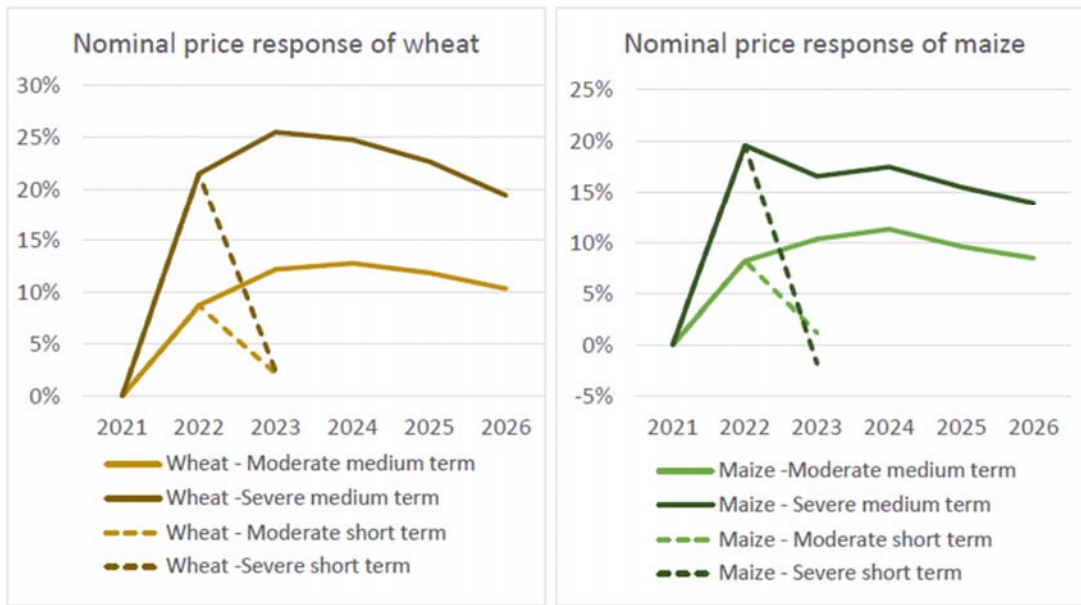


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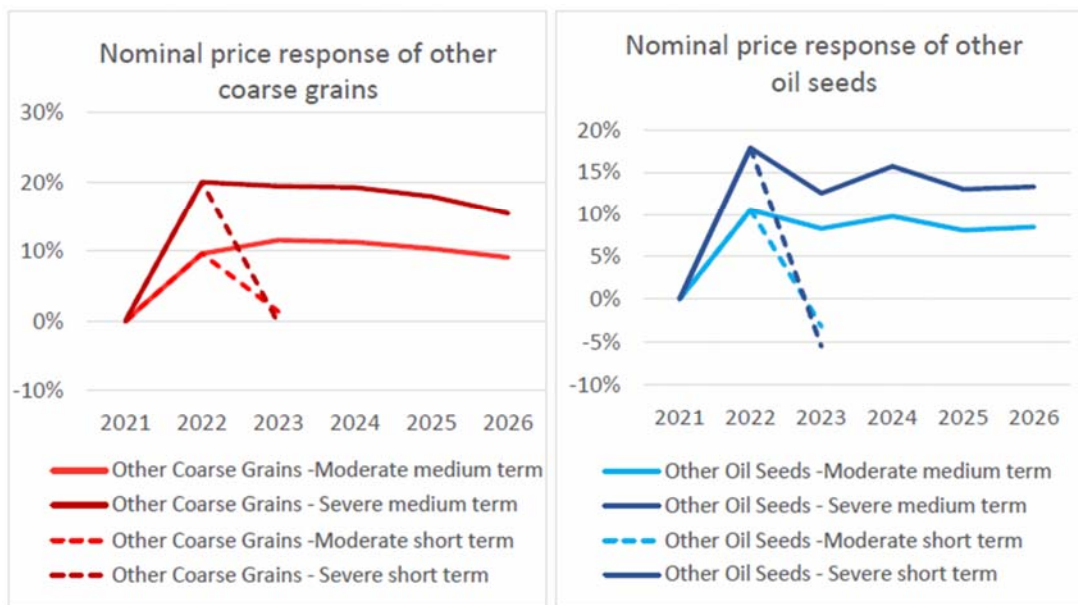
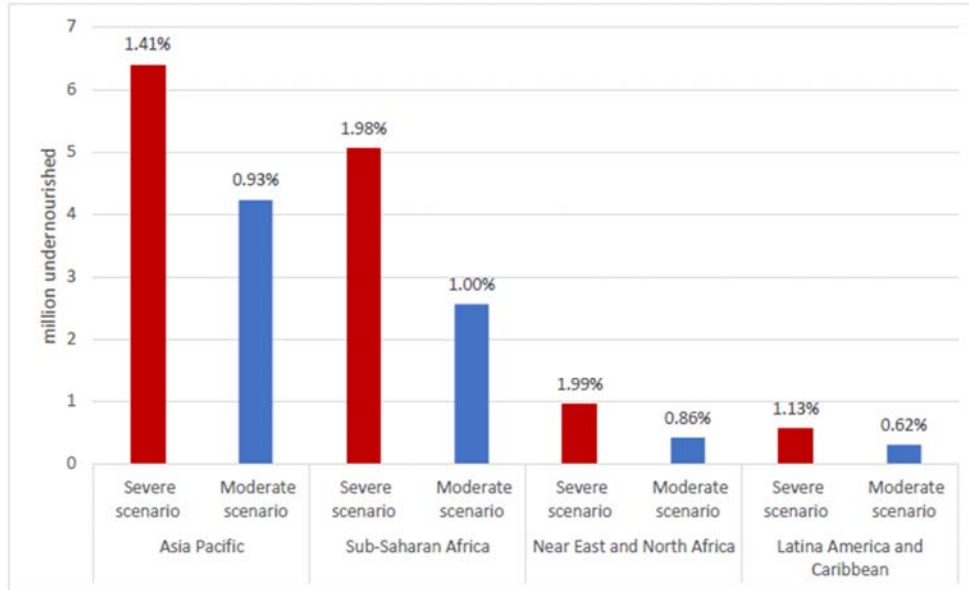
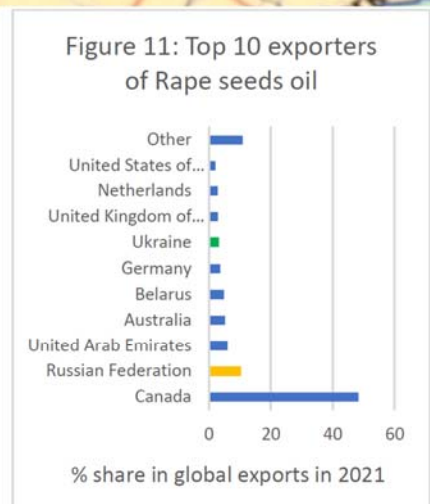
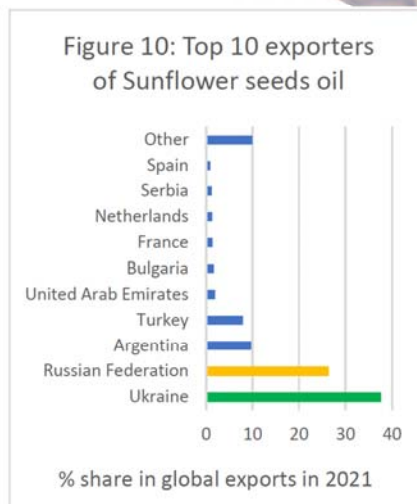
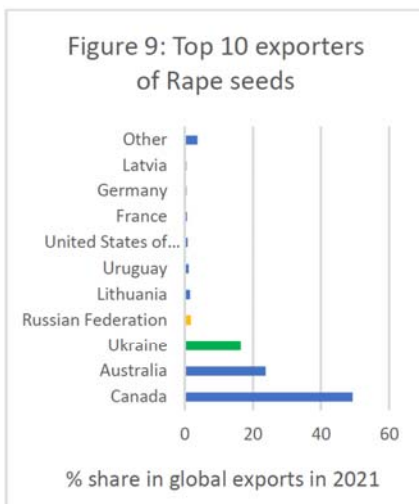


Figure 26 a, b, c, d: Regional increase in the Number of Undernourished in 2022/23



7) Will disruption of Ukraine sunflower supply impact vegetable oil markets?



Source: Trade Data Monitor (TDM), FAO calculations

7) Will disruption of Ukraine sunflower supply impact vegetable oil markets?

- In 2021, either the Russia Federation or Ukraine (or both) ranked amongst the top three global exporters of wheat, maize, **rapeseed, sunflower seeds & sunflower oil** FAO March 2022
 - Combined with “tight” **Palm Oil supplies & strong soybean oil demand**, the reduction in Sunflower & Sunflower Oil from the Ukraine **IS** having at least an indirect impact on Global oilseed markets KSU Commentary



U.S. Soybean Oil Supply and Demand



Item	2020/2021 estimate	2021/2022 forecast	Change from February 9	Change from 2020/2021
----- Million pounds -----				
Beginning stocks	1,853	2,131	--	279
Production	25,023	26,205	--	1,182
Imports	302	450	--	148
Total supply	27,177	28,786	--	1,609
Domestic disappearance	23,323	25,085	-200	1,762
Biofuel	8,850	10,700	-300	1,850
Food, feed, other	14,473	14,385	100	-88
Exports	1,723	1,625	200	-98
Total use	25,046	26,710	--	1,664
Ending stocks	2,131	2,076	--	-55
----- Cents per pound -----				
Average market price	56.87	68.00	2.00	11.13

-- No change.



March 9, 2022





Questions?

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