

- *Join our mission*
- *Receive exclusive benefits and*  
**Become a Friend of**  
*curated content*
- **Farm Foundation!**  
*Help us continue to provide*  
*valuable content like*  
*today's Forum*



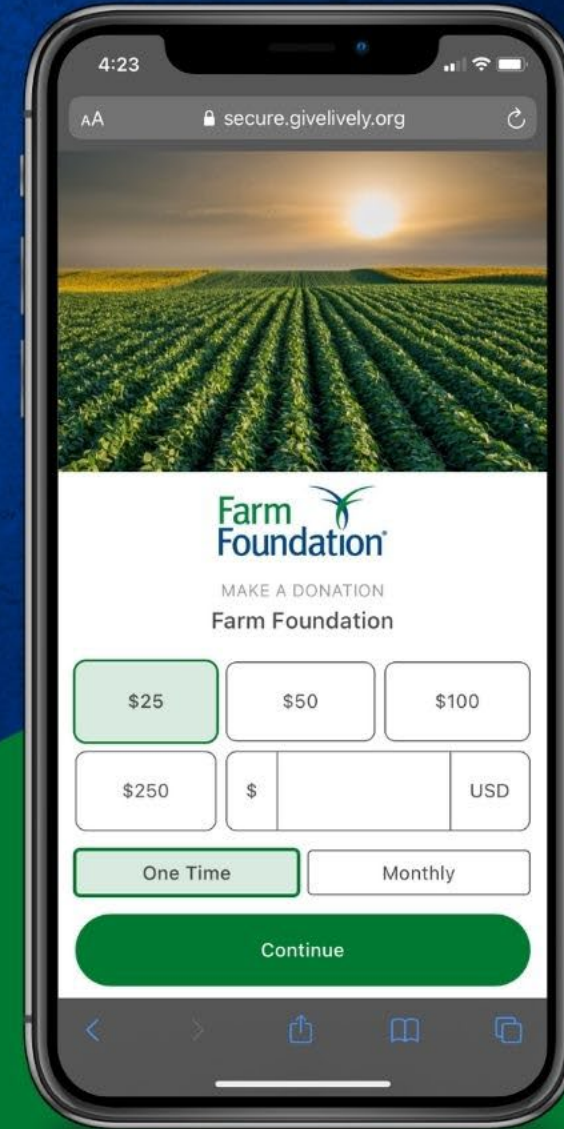


- *Join our mission*
- *Receive exclusive benefits and*  
**Become a Friend of**  
*curated content*
- **Farm Foundation!**  
*Help us continue to provide*  
*valuable content like*  
*today's Forum*





- *Join our mission*
- *Receive exclusive benefits and*  
**Become a Friend of**  
*curated content*
- **Farm Foundation!**  
*Help us continue to provide*  
*valuable content like*  
*today's Forum*







# FARM FOUNDATION® FORUM

GEOPOLITICAL DISRUPTIONS: IMPLICATIONS FOR  
U.S. AGRICULTURE AND TRADE

MARCH 22, 2022



Today's webinar is made possible by a grant from  
Farm Credit

**#FarmFoundationForum**







MARTHA KING

Vice President, Programs and Projects  
Farm Foundation



# MEET FARM FOUNDATION

A 501(C)(3) NON-PROFIT AT THE INTERSECTION OF AGRICULTURE AND SOCIETY





Farm Foundation is an  
**ACCELERATOR**  
of practical solutions for agriculture.

We accelerate  
**PEOPLE AND IDEAS**  
into  
**ACTION.**





## OUR MISSION AND VISION GUIDE OUR WORK

### **MISSION:**

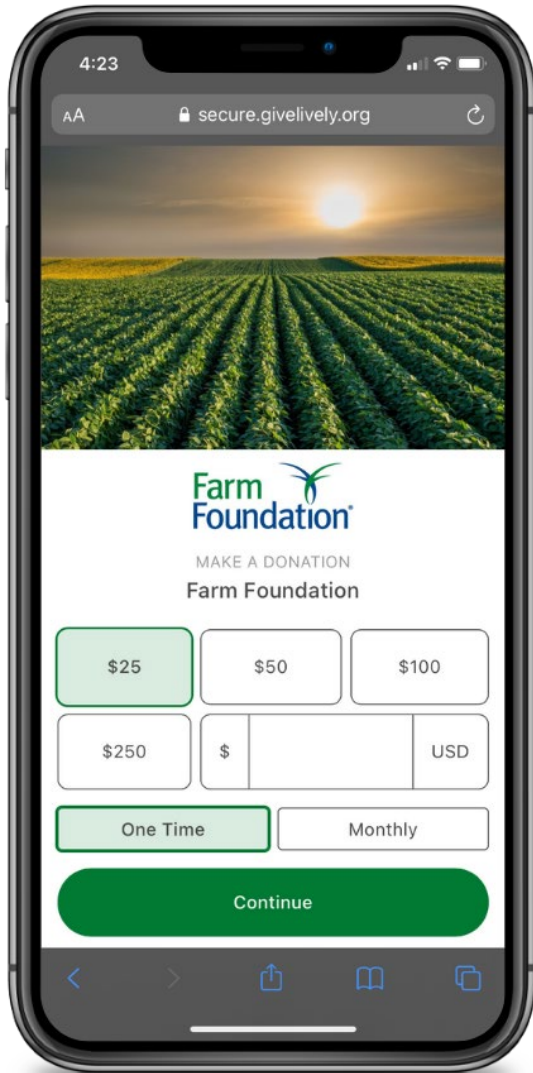
To **build** trust and understanding at the intersections of agriculture and society.

### **VISION:**

To **build** a future for farmers, our communities, and our world.



# BECOME A FRIEND OF FARM FOUNDATION

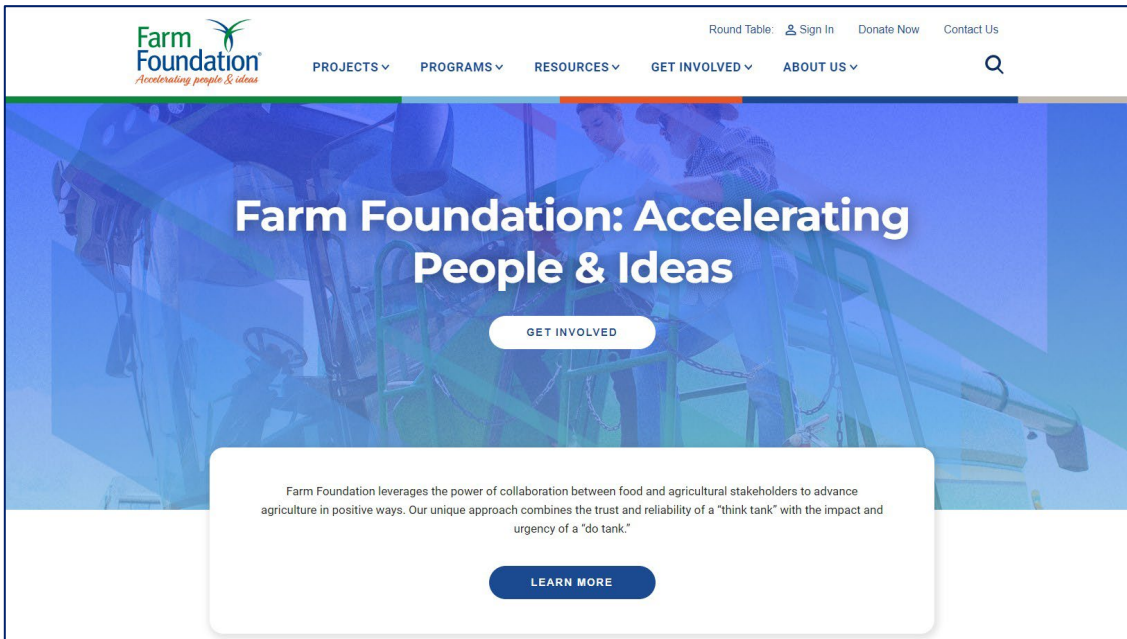


## See link in chat function

- Donate to Farm Foundation to support our mission
- Receive exclusive benefits and curated content
- Help us continue to provide valuable content like today's Forum



# CONNECT & COLLABORATE WITH US!



**[farmfoundation.org](https://farmfoundation.org)**

**#FarmFoundationForum**

## Connect with us on social media:



@farmfoundation



@thefarmfoundation



Farm Foundation



@thefarmfoundation





# IMPORTANT NOTES

- Submit questions by clicking on the **Q&A Button** at the bottom of your screen.
- Please **include your name and company** so questions may be contextually understood.
- Due to **time limits**, we may not be able to ask all questions submitted.
- This Forum is being recorded and will be posted on our website at **farmfoundation.org** as well as the Farm Foundation **YouTube** channel.
- Please take the **short survey** at the conclusion of the Forum.





# FARM FOUNDATION® FORUM

GEOPOLITICAL DISRUPTIONS: IMPLICATIONS FOR  
U.S. AGRICULTURE AND TRADE

MARCH 22, 2022



Today's webinar is made possible by a grant from  
Farm Credit

**#FarmFoundationForum**







DR. AMANDA COUNTRYMAN

Moderator

Associate Professor of Agricultural Economics  
Colorado State University









DR. WILLIAM LIEFERT

Private Consultant

Retired from Economic Research Service, USDA



---

# **Russia's Invasion of Ukraine: Disruption of Black Sea Grain Exports**

**William Liefert**

**Private consultant, retired from Economic Research Service of USDA**

**202-209-7686**

**wmliefert@gmail.com**

**Geopolitical Disruptions:  
Implications for U.S. Agriculture and Trade  
Farm Foundation Forum  
March 22, 2022**



# Outline

- Background information
  - ~ Ukrainian & Russian macroeconomies
  - ~ Ukrainian & Russian grain exports
  - ~ Ukrainian geography
- How troubles are disrupting grain exports by
  - ~ Ukraine
  - ~ Russia



# Macro Information about Ukraine and Russia in 2021

Indicator	Ukraine	Russia
Population (million)	41	146
GDP (U.S. dollar)	\$181 billion	\$1.65 trillion
GDP growth	3.5%	4.7%
Inflation	9.5%	5.9%
Exchange rate (hryvnia & ruble per \$)	27.3/\$	74/\$

Source: IMF.



# Ukrainian and Russian Grain Production and Exports

(2019-21 average annual: million metric tons)

<u>Production</u>	<u>Ukraine</u>	<u>Russia</u>	<u>Exports</u>	<u>Ukraine</u>	<u>Russia</u>
Wheat	29.2	78.0	Wheat	19.3	35.2
Corn	36.0	14.5	Corn	26.8	4.2
Barley	9.1	19.4	Barley	5.0	5.1
Sunflowerseed	16.0	14.7	Sunflowerseed oil	5.9	3.6

Source: USDA Production, Supply, and Distribution Database.



# Ukrainian and Russian Shares of World Grain Exports

(2019-21 average annual; percent)

Commodity	Ukraine	Russia	Combined
Wheat	9	19	28
Corn	15	2	18
Barley	14	17	31
Sunflowerseed oil	50	27	77

Source: USDA Production, Supply, and Distribution Database.

Note: Combined numbers might not equal sums due to rounding.



# Main Foreign Markets for Ukrainian Grain

(2020/21; million metric tons exported to)

## Corn

<u>Country</u>	<u>Volume</u>	<u>% of Exports</u>
China	8.5	36
European Union	7.4	31
Egypt	2.4	10
Iran	1.3	6

## Wheat

<u>Country</u>	<u>Volume</u>	<u>% of Exports</u>
Indonesia	2.6	16
Egypt	2.5	15
Pakistan	1.3	8
Bangladesh	1.1	7
Morocco	1.1	7

Source: Trade Data Monitor.



# Main Foreign Markets for Russian Wheat

(2020/21; million metric tons exported to)

<u>Country</u>	<u>Volume</u>	<u>% of Exports</u>
Egypt	8.1	21
Turkey	6.9	18
Bangladesh	1.8	5
Pakistan	1.6	4
Azerbaijan	1.4	4

Source: Trade Data Monitor.





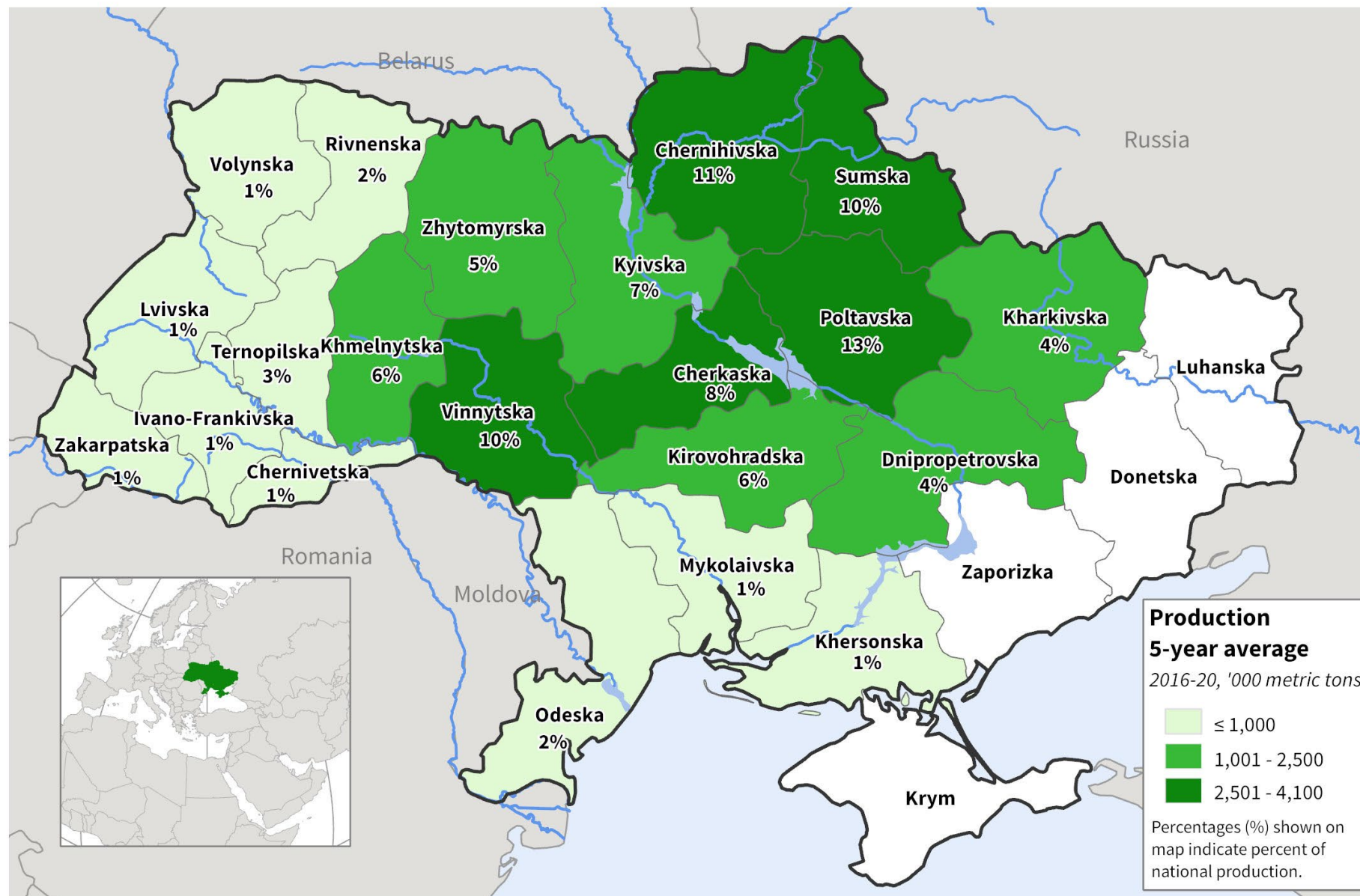


# Ukraine: Wheat Production





# Ukraine: Corn Production





# Ukraine: Sunflower Seed Production





---

## Key Questions Concerning the Invasion and Ukraine's Grain Exports

- Will Ukraine be able to export the remaining supplies from last autumn's grain harvest?
- How will the invasion disrupt the new grain crop season?



# Price Shocks and Ukrainian Grain Exports

- Ukraine's incentive to export grain has increased substantially
  - ~ Surge in world grain prices
    - \*\* World wheat prices up by about a third
    - \*\* World corn prices up by about a quarter
  - ~ Since the trouble with Russia began, Ukraine's currency *hryvnia* has depreciated against the dollar by 12%, as well as against other major currencies, enhancing the export price competitiveness of Ukrainian grain
- However, agricultural input prices are also rising
  - ~ World oil prices spiked after the invasion and then fell substantially, but will probably be higher during the year by a nontrivial amount than before the attack
  - ~ Fertilizer prices are increasing
  - ~ The depreciating hryvnia further raises the prices of imported inputs to domestic grain producers



# USDA Projections for Ukrainian Grain Exports in 2021/22

(million metric tons)

	<u>Feb. 1922</u>	<u>March 1922</u>	<u>Export change</u>
Wheat	24.0	20.0	— 4.0
Corn	33.5	27.5	— 6.0
Barley	6.0	5.8	— 0.2
Sunflowerseed oil	6.65	5.75	— 0.9

Source: USDA Production, Supply, and Distribution Database.

Note: Trade year for wheat and barley is July-June, and for corn October-September.



# Shocks to Russian Economy

- U.S. and other Western countries have imposed severe economic sanctions, which are cutting Russia off from international financial system and world trade
- Currency (**ruble**) has depreciated by 18% since invasion began
- Stock market has crashed and been closed for 3 weeks
- Major capital flight, Western business flight, and some human capital flight
- Expected consequences
  - ~ Deep recession: survey of economists conducted by the Russian Central Bank predicts Russian GDP could fall by as much as 8% in 2022, compared to 4.7% growth in 2021
  - ~ High inflation
    - \*\* Resulting from the depreciating ruble and all other disruptions to economy
    - \*\* The same survey predicts 2022 inflation of 20%, compared to 5.9% in 2021



## Price Shocks and Russian Grain Exports

- Like Ukraine, Russia's incentive to export grain has also increased substantially
  - ~ Surge in world grain prices
  - ~ Ruble depreciation has increased price competitiveness in world grain markets
- However also as in Ukraine, input prices (especially for fuel and fertilizer) are expected to rise



# Possible Russian Policy Interference with Grain Exports

- Export restrictions to counter food price inflation and help domestic livestock sector
- Export embargoes as an economic weapon
  - ~ Less likely for its own wheat exports, which go mainly to Middle Eastern, North African, and Asian countries
  - ~ If Russia controls Ukraine or its Black Sea ports, might it embargo corn exports to Western Europe?
- Western policy response: Might exclusion of Russian banks from SWIFT impede payment to Russian exporters by foreign grain purchasers?



# USDA Projections for Russian Grain Exports in 2021/22

(million metric tons)

	<u>Feb. 1922</u>	<u>March 1922</u>	<u>Export change</u>
Wheat	35.0	32.0	— 3.0
Corn	4.5	4.5	0
Barley	4.5	4.5	0
Sunflowerseed oil	3.8	3.65	— 0.15

Source: USDA Production, Supply, and Distribution Database.

Note: Trade year for wheat and barley is July-June, and for corn October-September.



# Concluding Thoughts/Questions

- Geopolitics and policy
  - ~ How long will the fighting continue?
  - ~ Ukraine
    - \*\* How much of Ukrainian territory will Ukraine and Russia each control?
    - \*\* In particular, what will be the consequences for Ukraine's grain exports if Russia holds its Black Sea coast?
  - ~ Russia—might the country restrict grain exports?
    - \*\* To counter domestic food price inflation and protect its livestock sector
    - \*\* As part of economic warfare with the West—such as preventing Ukrainian corn exports to the EU (if Russia controls Ukraine)
  - ~ Might Western sanctions hinder Russian grain exports because of payment difficulties?



## Conclusion (continued)

- What are the impediments to grain production and exports even if policy does not hinder or prevent trade?
  - ~ Ukraine: invasion has harmed the ag sector's physical and commercial infrastructure
  - ~ Russia: ag sector is being hurt by Western economic sanctions
  - ~ Both countries' grain economies will be facing shocks to input prices and supply availability and extreme uncertainty about the geopolitical and commercial future









DAN BASSE

President

AgResource Company





**AgResource**  
COMPANY



Daniel W Basse  
President AgResource Company  
March 22, 2022  
[basse@agresource.com](mailto:basse@agresource.com)

## Market Impact on Russian War on Ukraine; Largest Supply S



# Black Sea War - Market Implications

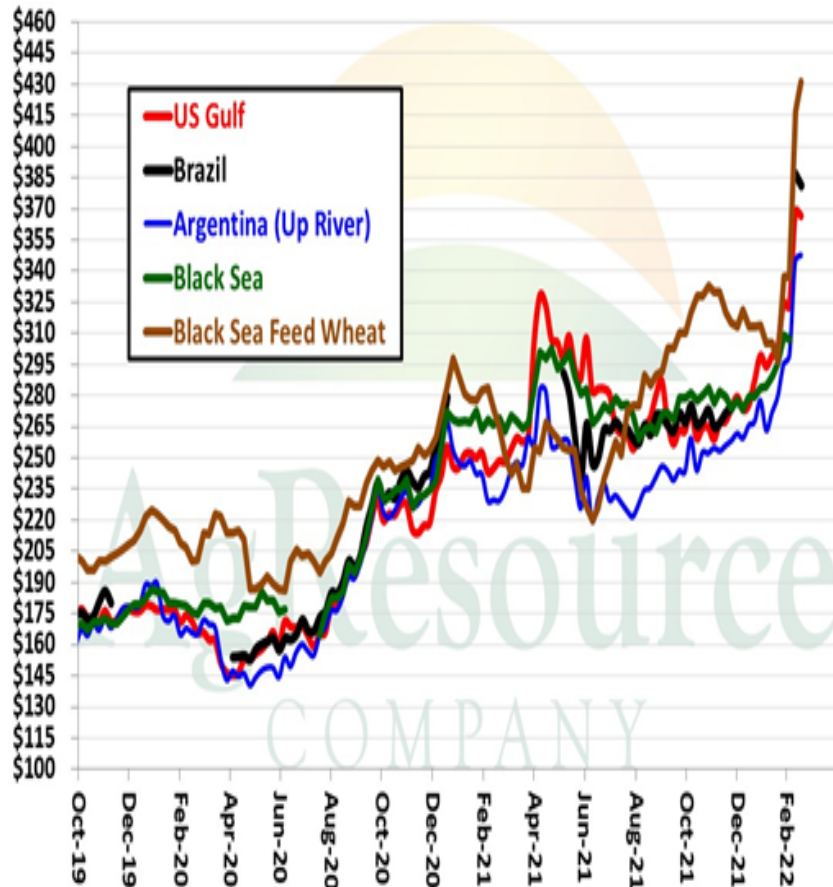
- **Biggest Global Grain Supply Shock since 1914 – World War 1 – 108 Years ago.** On a caloric basis, the Black Sea accounts for 11% of the world's annual use. Ukraine ag trade is halted due to war and a self-imposed export ban to assure domestic food supplies. NATO members have placed biting economic sanctions on Russia including a ban on the SWIFT banking system. Russian grain is leaking into the world marketplace, but the Azov Sea is closed via the war. AgResource estimates that Russian 2022 grain exports will be cut by 66% due to acute finance, insurance and freight difficulties.
- **Annually, the Black Sea accounts for 29% of world wheat/barley production, and 80% of the world's sunoil trade.** It's the duration of the war that determines the bullishness for world grain/food prices. A war that extends into June would be catastrophic to world corn/vegoil supplies. Thankfully, Ukraine/Russia had already planted their winter wheat crops which are on good condition. Its corn and sunflowers that are at risk as the Ukraine spring planting window closes in June. Missing a spring Ukraine planting season would cause the world to suffer another year with critically low grain stocks/record high prices. Ukraine Farm laborers/diesel and ag chemicals are in dire shortage.
- **South America has endured its worst drought in decades** with a record loss of crop production estimated at 38-40 MMTs of soybeans (1.4 Bil Bu) and 18-22 MMTs of corn (786 Mil Bu). It is the wrath of Mother Nature in South America that catches a world that is extremely short of corn/soybeans. World vegoil stocks are record low on a combined basis with the media wanting to return to the fuel vs food debate of the 2009-2013 period.
- **The War is Rerouting World Ag Trade;** India/EU/Brazil will export record tonnages of wheat, while the EU may have to accept US GMO corn amid its acute stocks tightness and record feed costs. ARC forecasts record large 2022/23 US corn/soybean exports, and a recovery for US wheat. The role of the US farmer to feed the world has grown exponentially, lets hope Mother Nature agrees and is kind!



# World FOB Export Prices of Grain Explode Following the Invasion of Ukraine by Russia

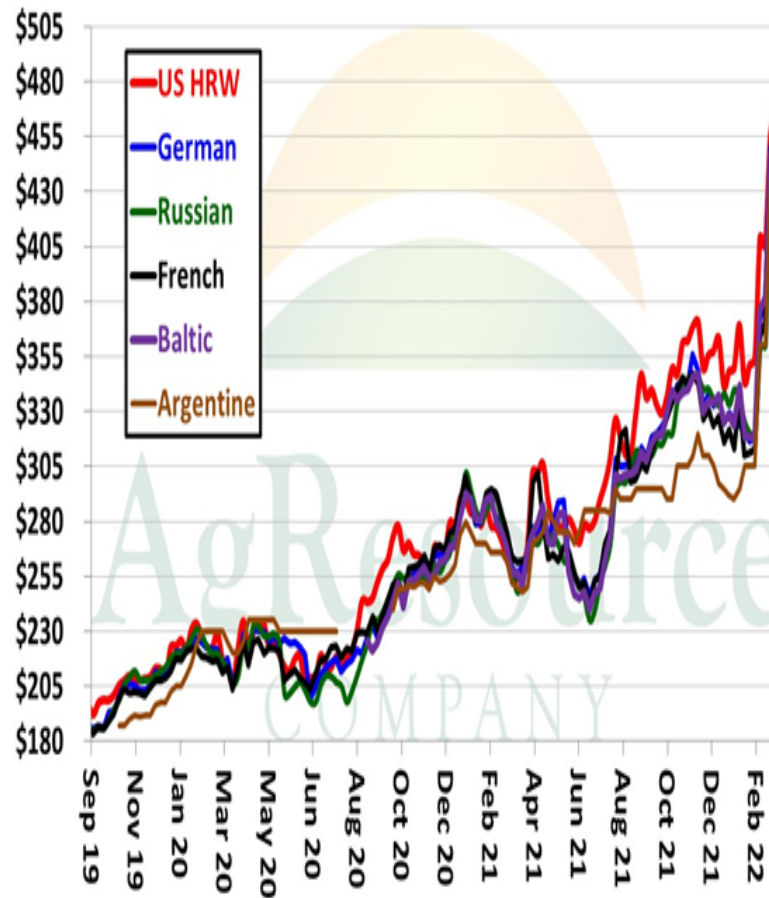
\$/MT

World Corn Fob Prices



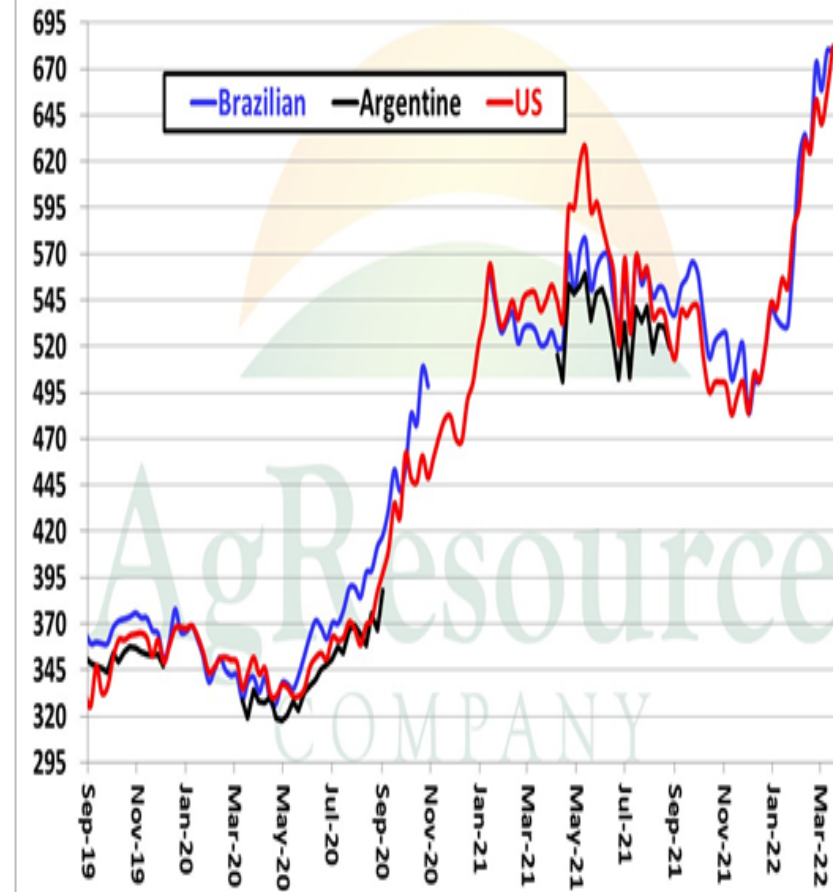
\$/MT

World Wheat Fob Prices



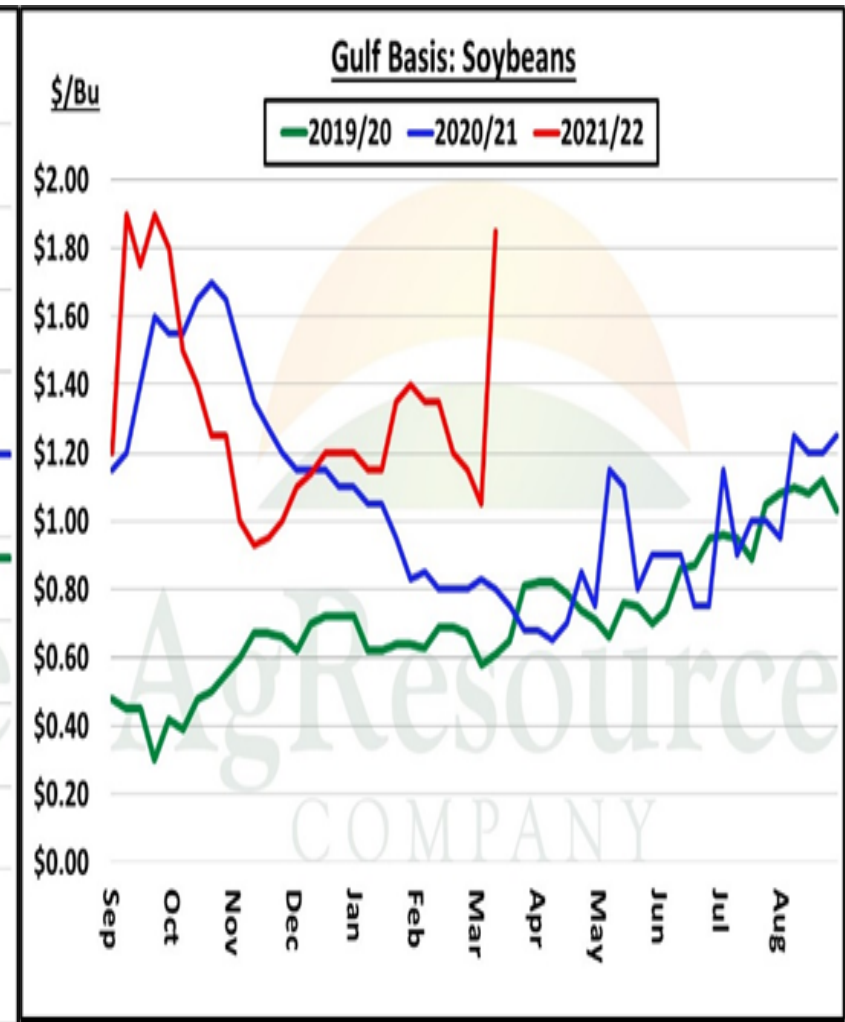
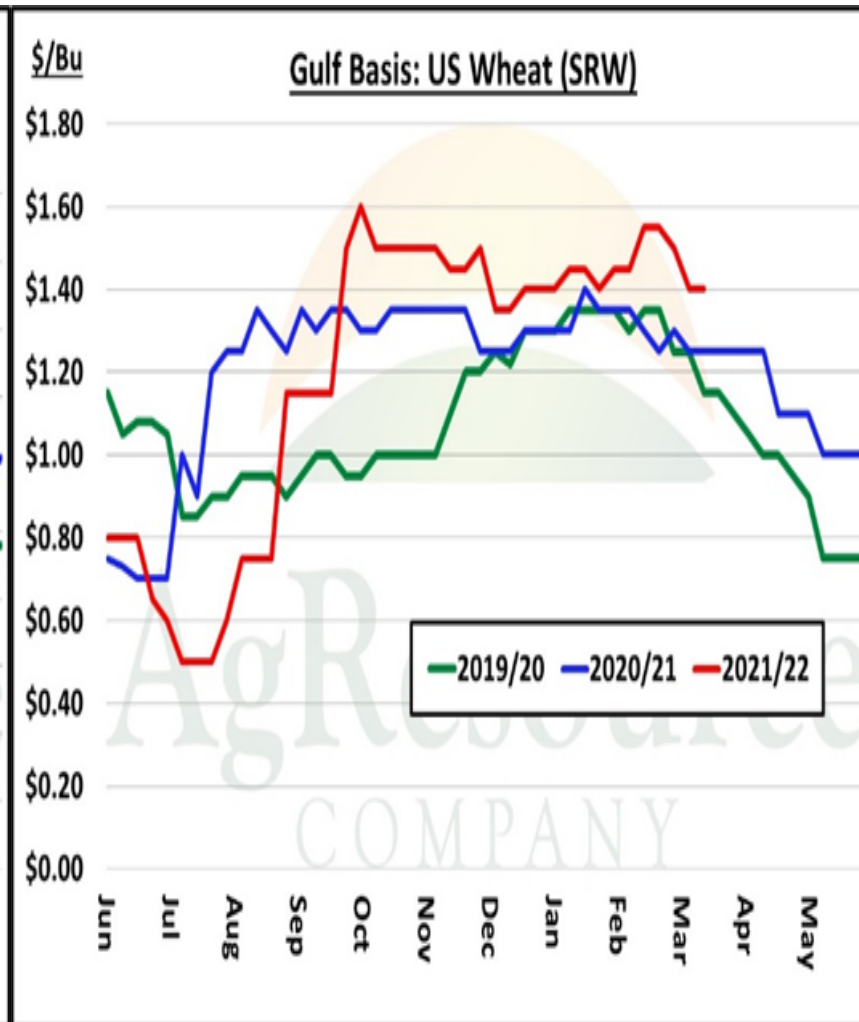
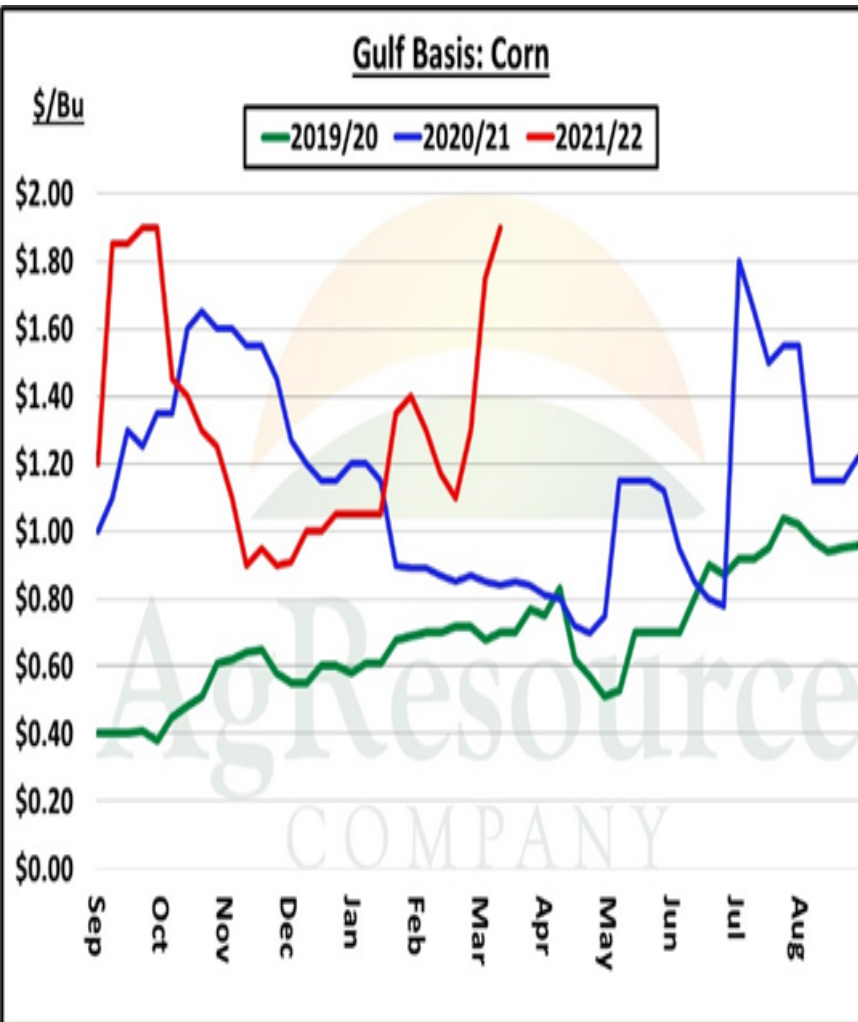
\$/MT

World Soybean Fob Prices





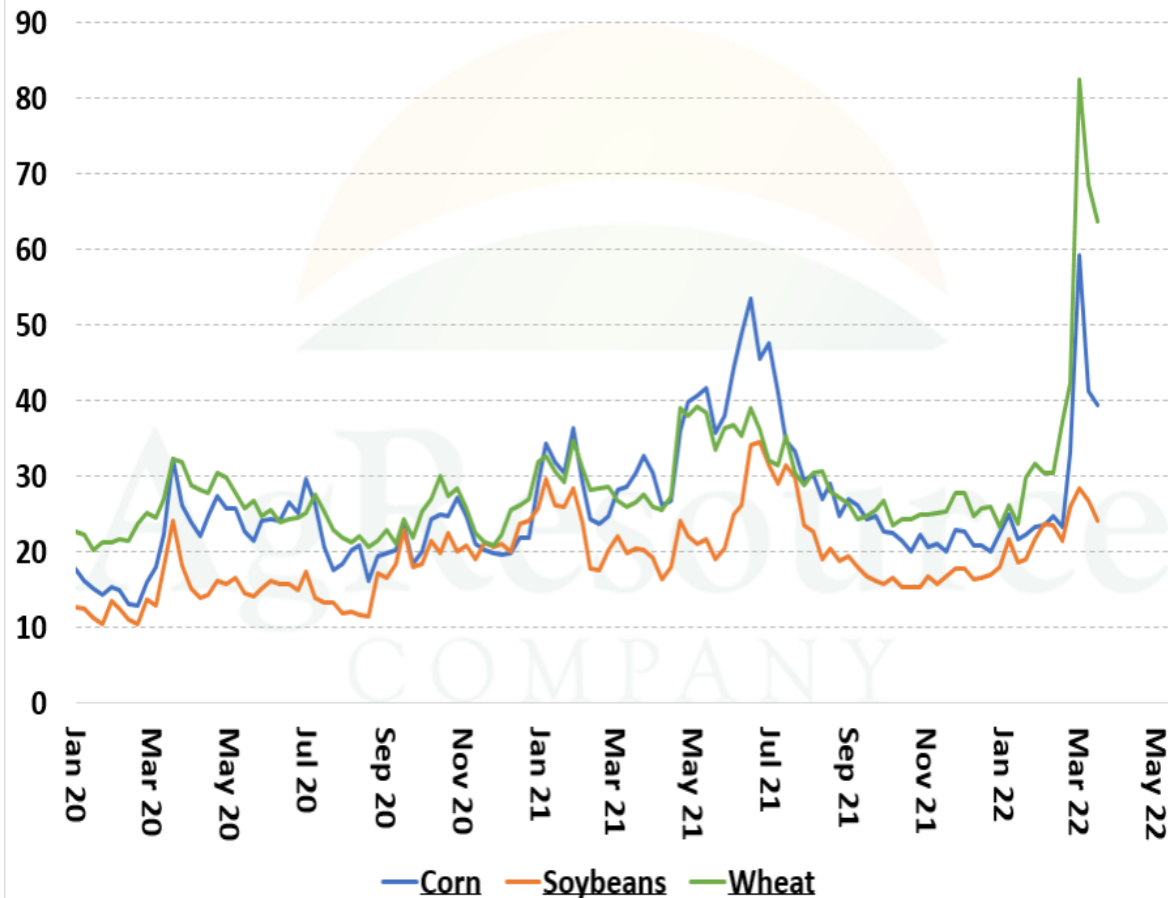
# It's Not on CBOT Futures, Export Demand Pushes Cash Corn/Soybean Bids Ex Gulf Near Records



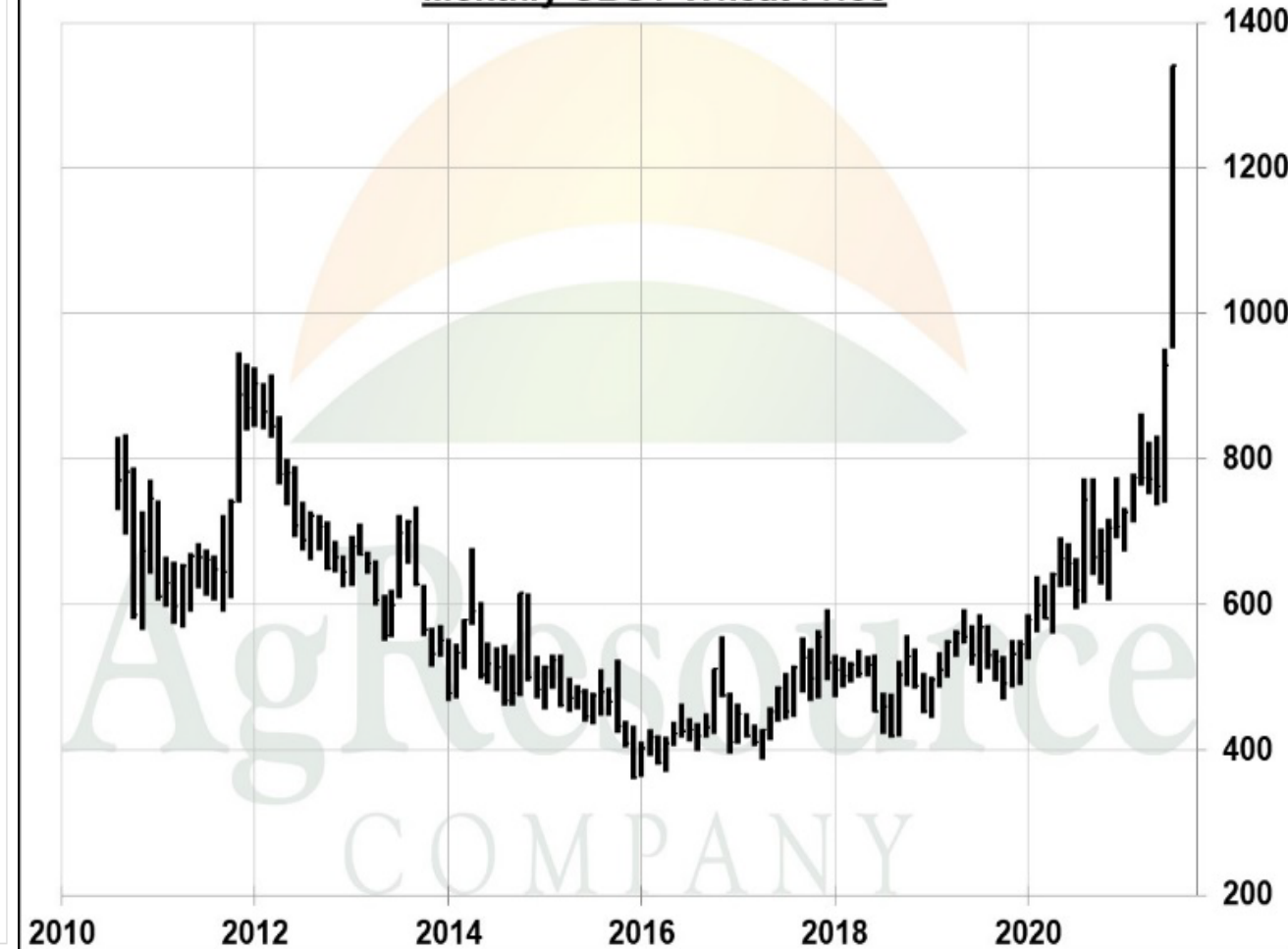


# CBOT Option Volatility Explodes on Russian Invasion amid Elevated Daily Price Ranges

30-Day ATM Call Option Volatility

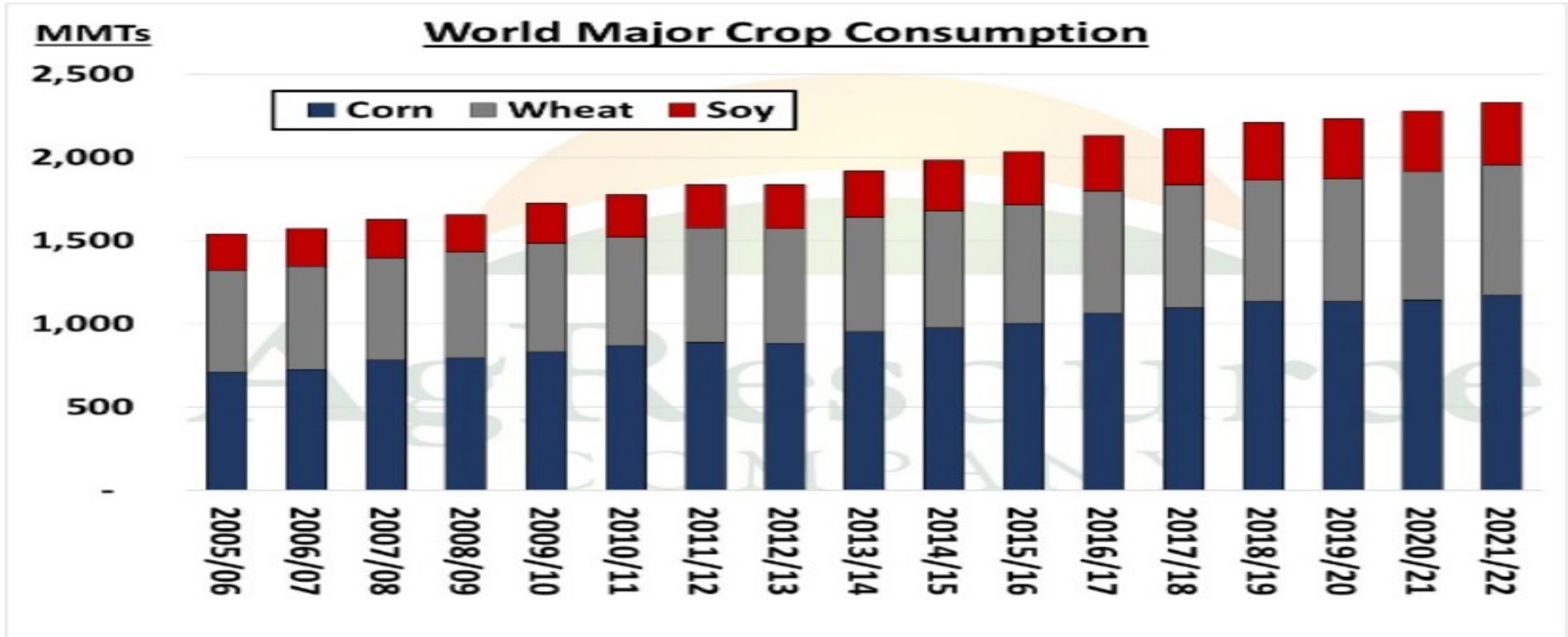


Monthly CBOT Wheat Price



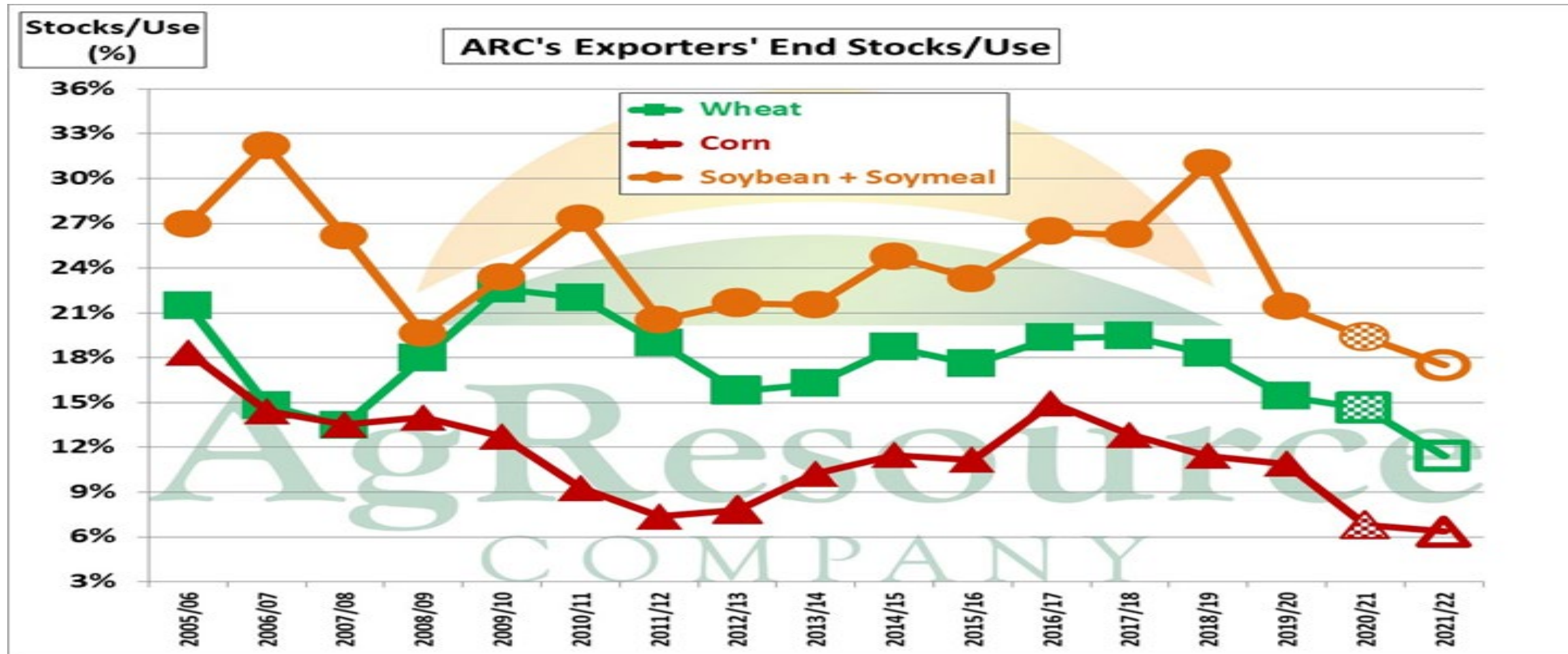


# World Major Crop Consumption Record Large and Growing 1.8% Annually



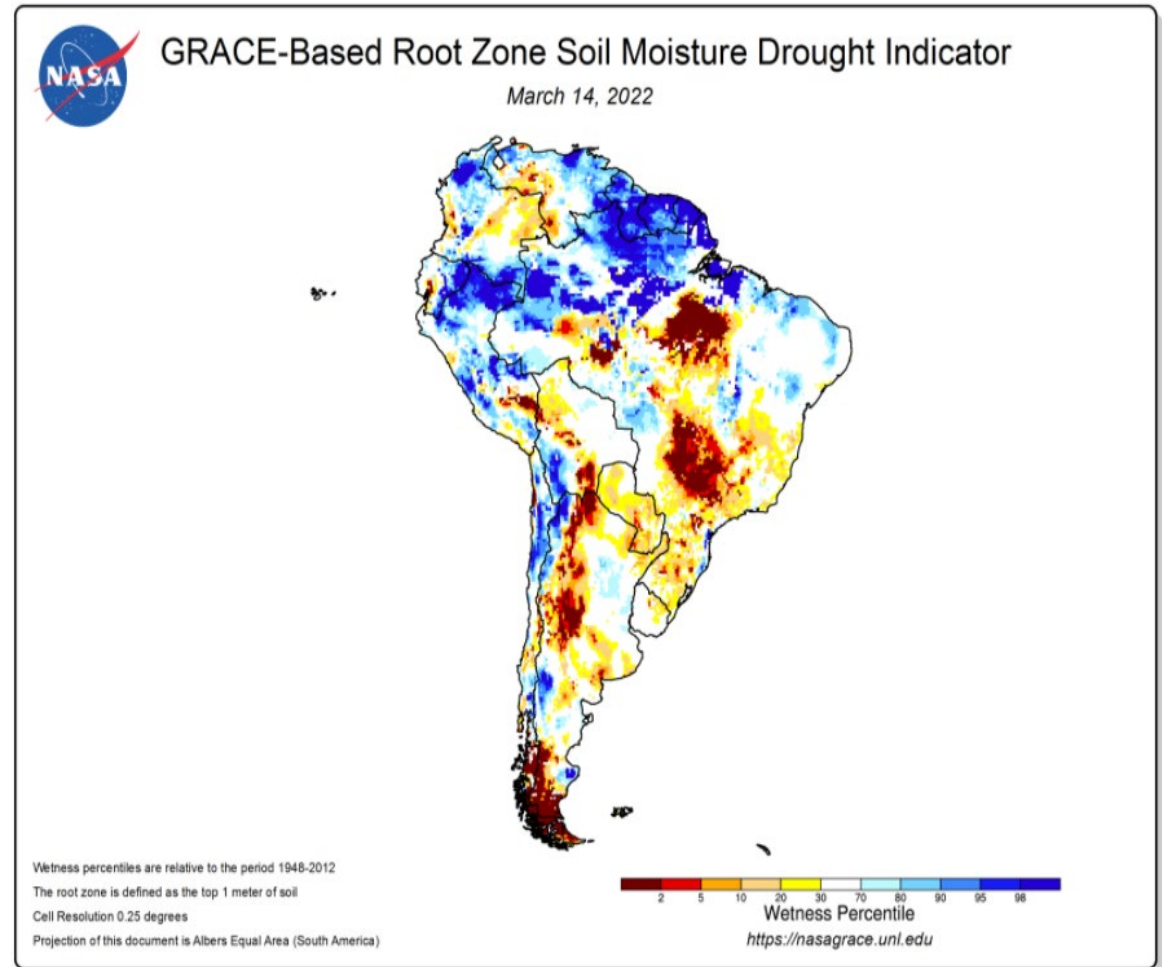
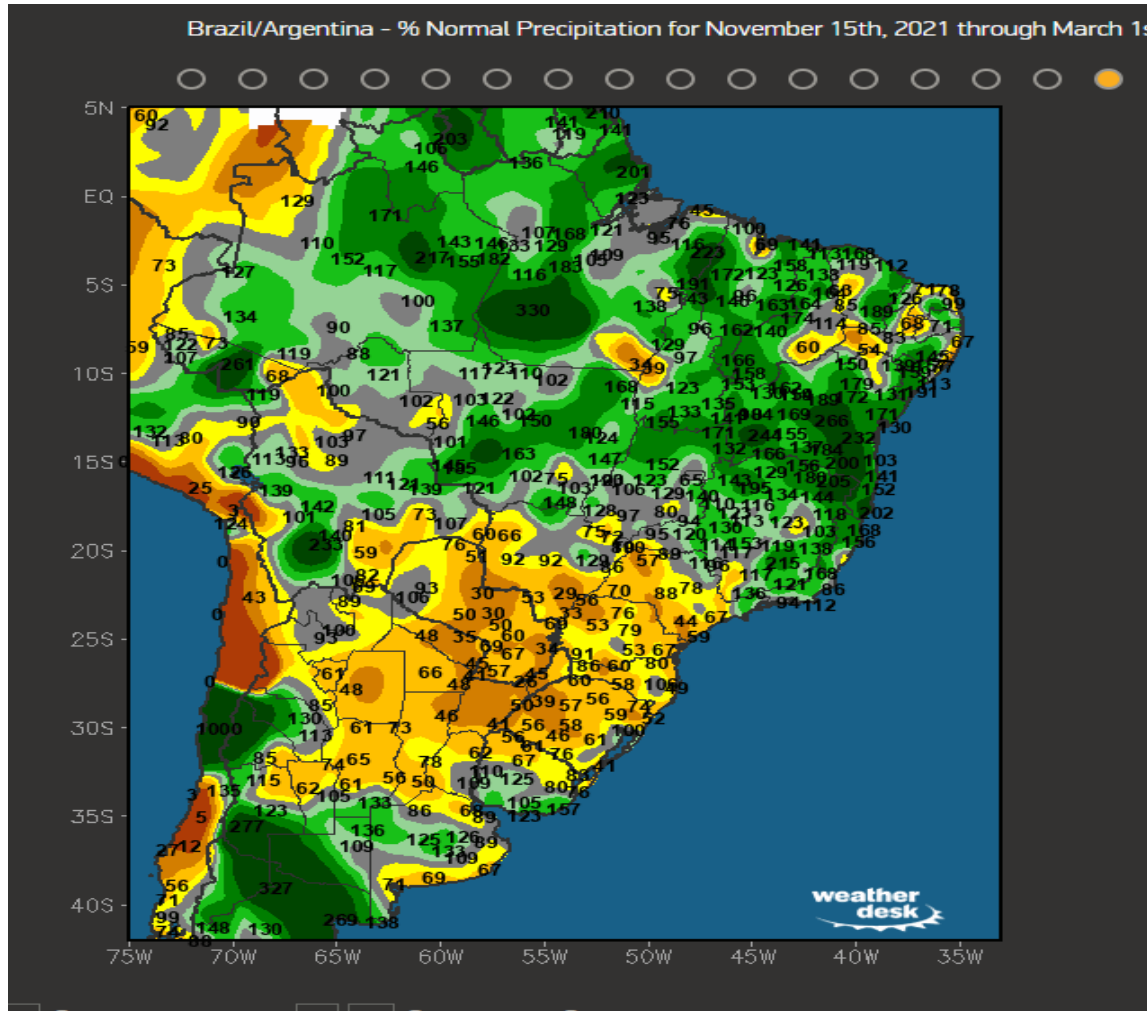


# World Exporter Stock/Use Ratio in Corn/Soy and Wheat; Combined a Record Low!





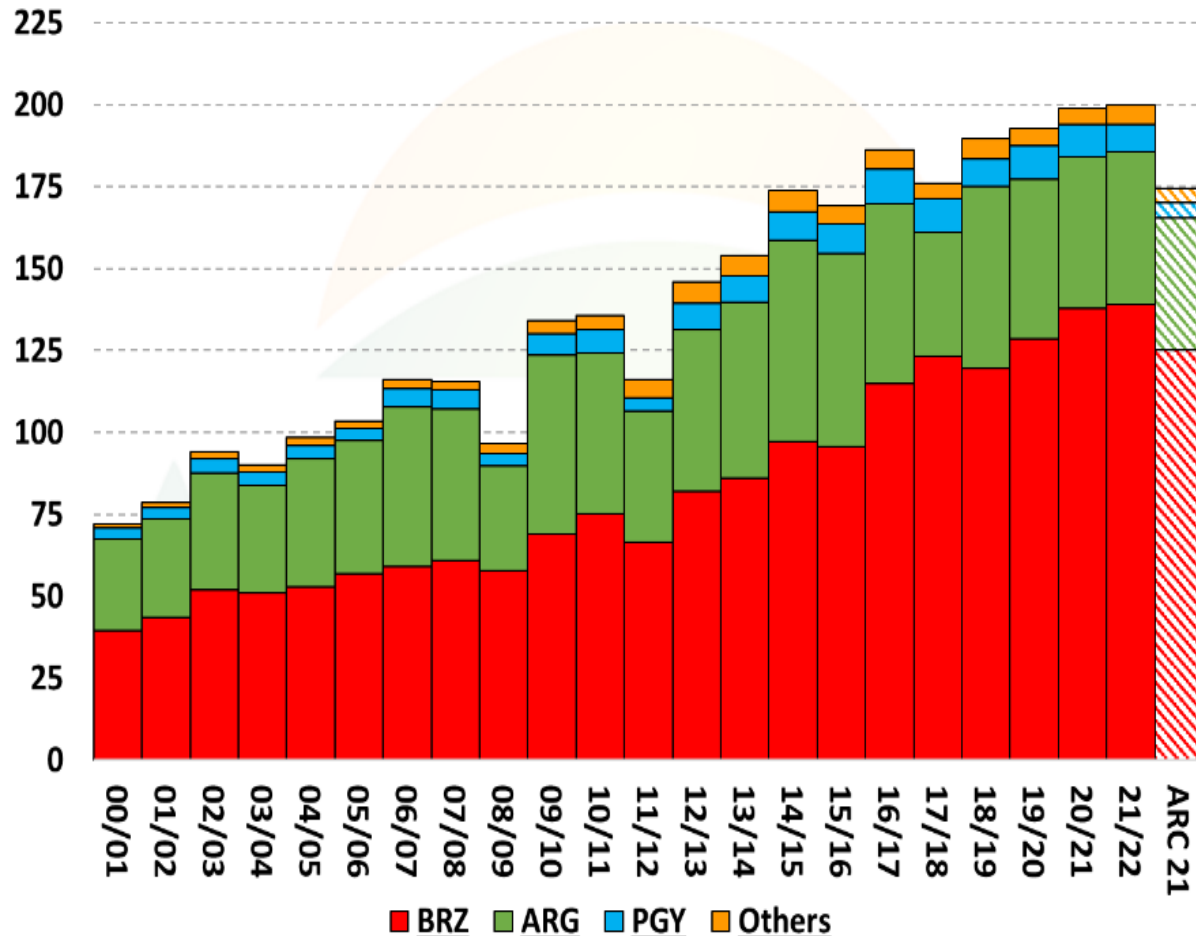
# Worst South American Drought in 2 Decades; Followed Drought that hit BZ Winter Corn in '21



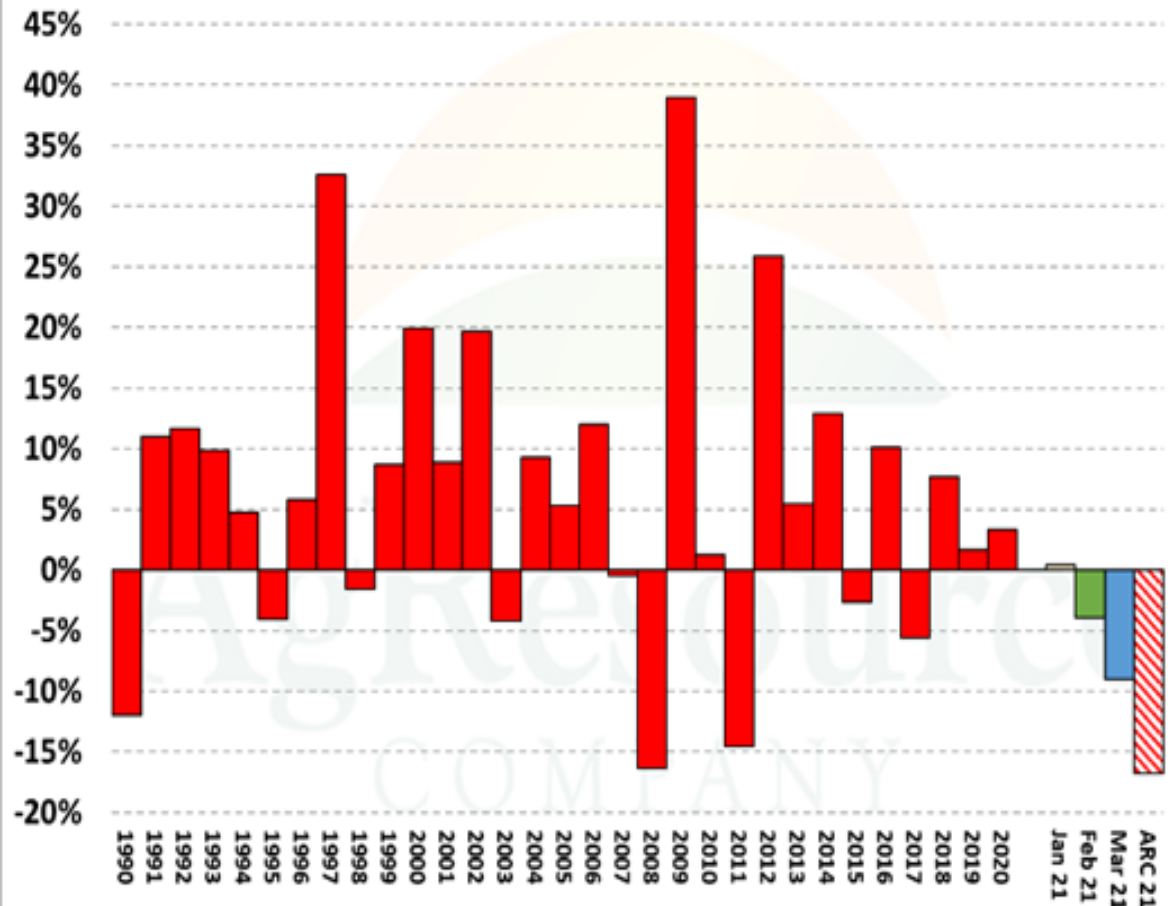


# Record Large South Crop Loss on Drought Causes 4.0 MMTs fall in Soyoil Supply

S American Soybean Production (Mil Metric Tons)

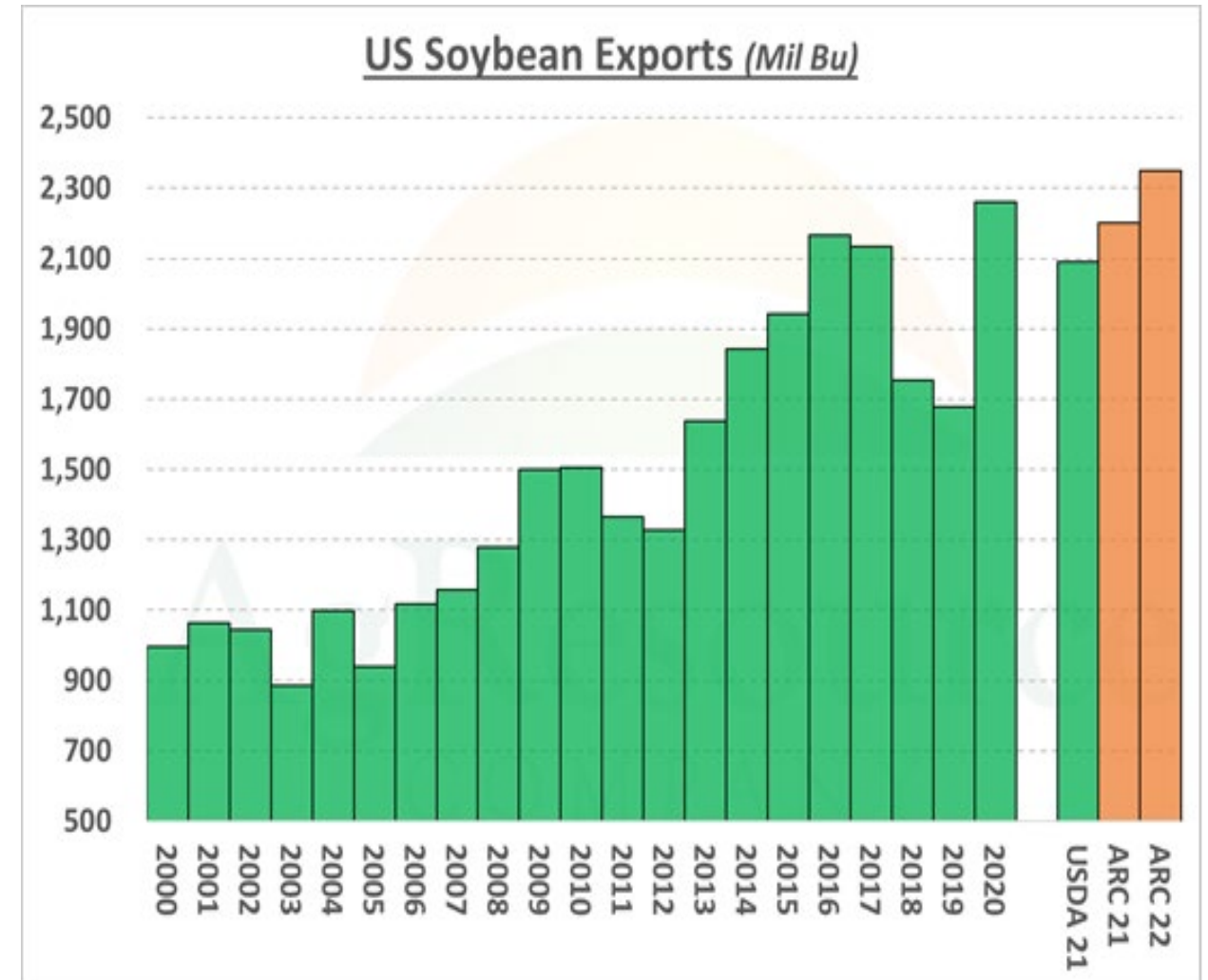
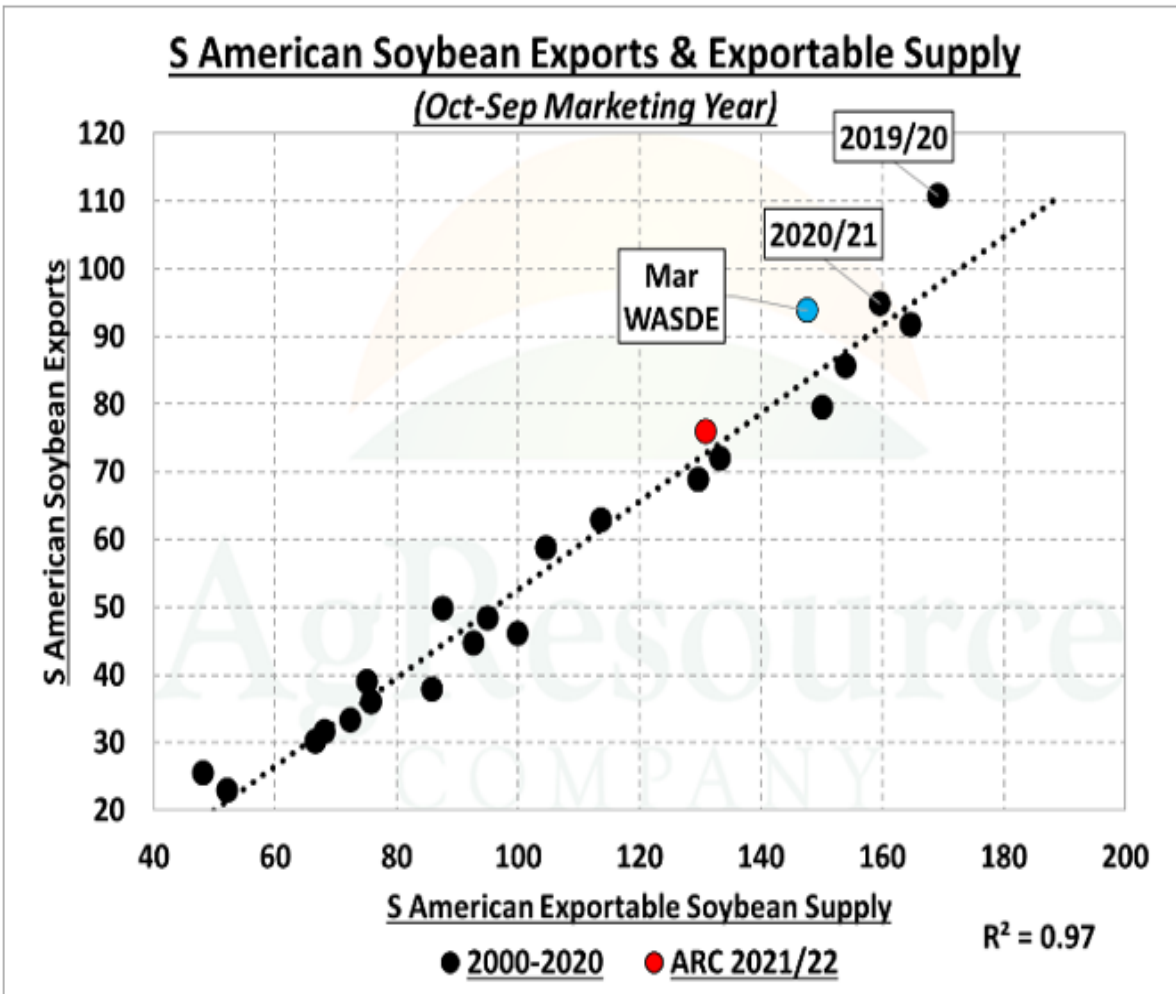


Changes in S American Soybean Production



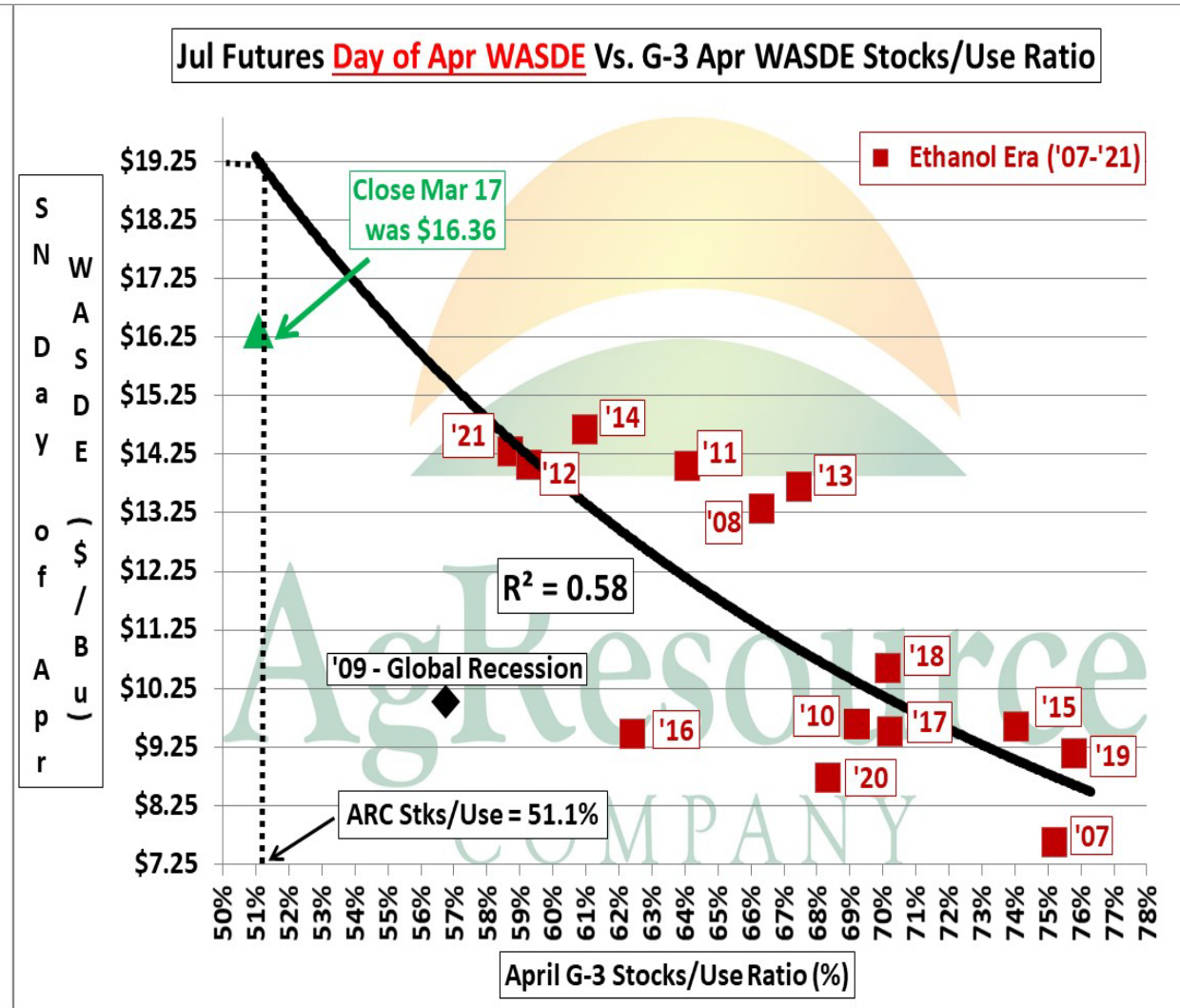
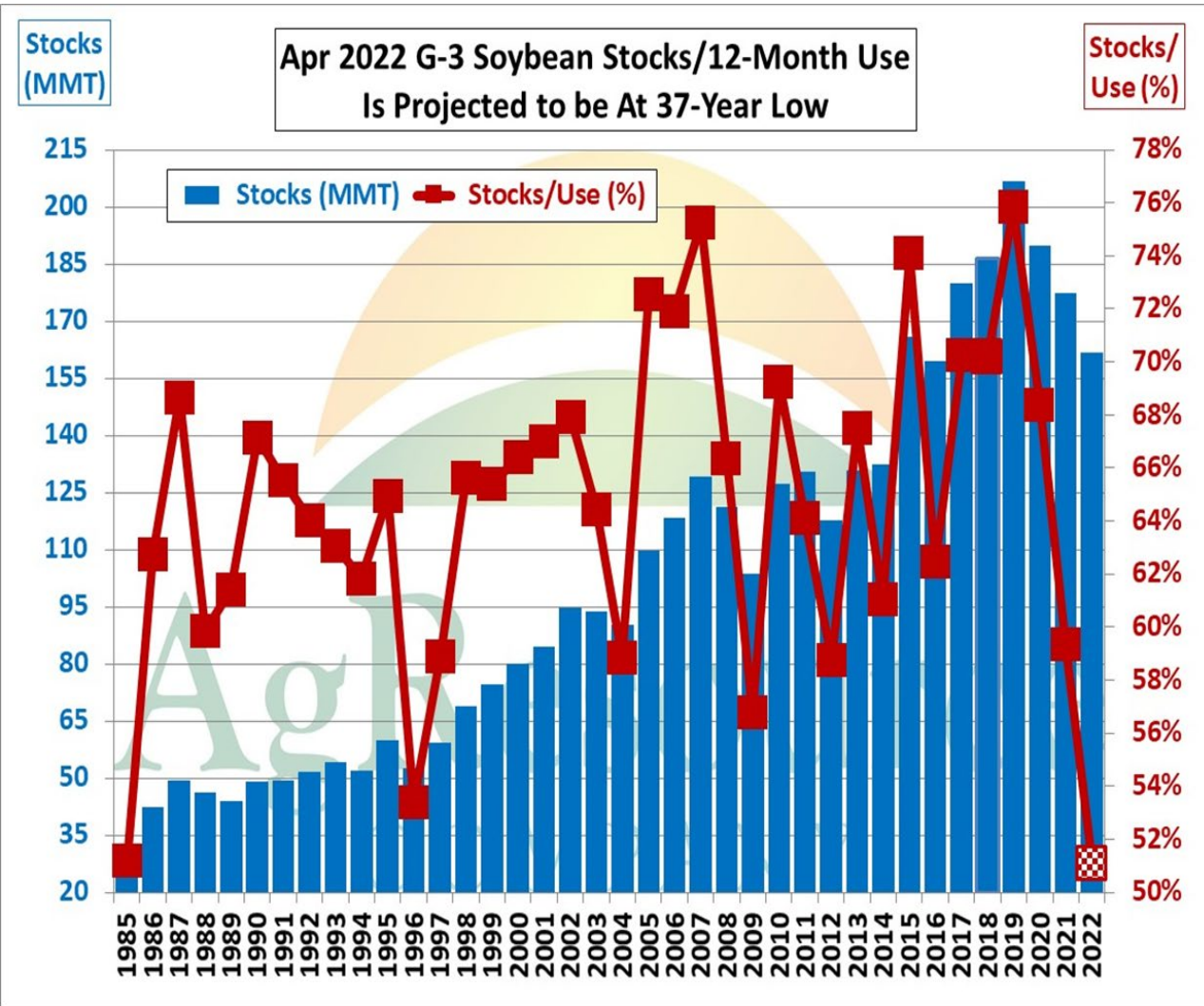


# US Soybean Exports are Understated for 2021/22 and 2022/23 by Combined 150 Mil Bu



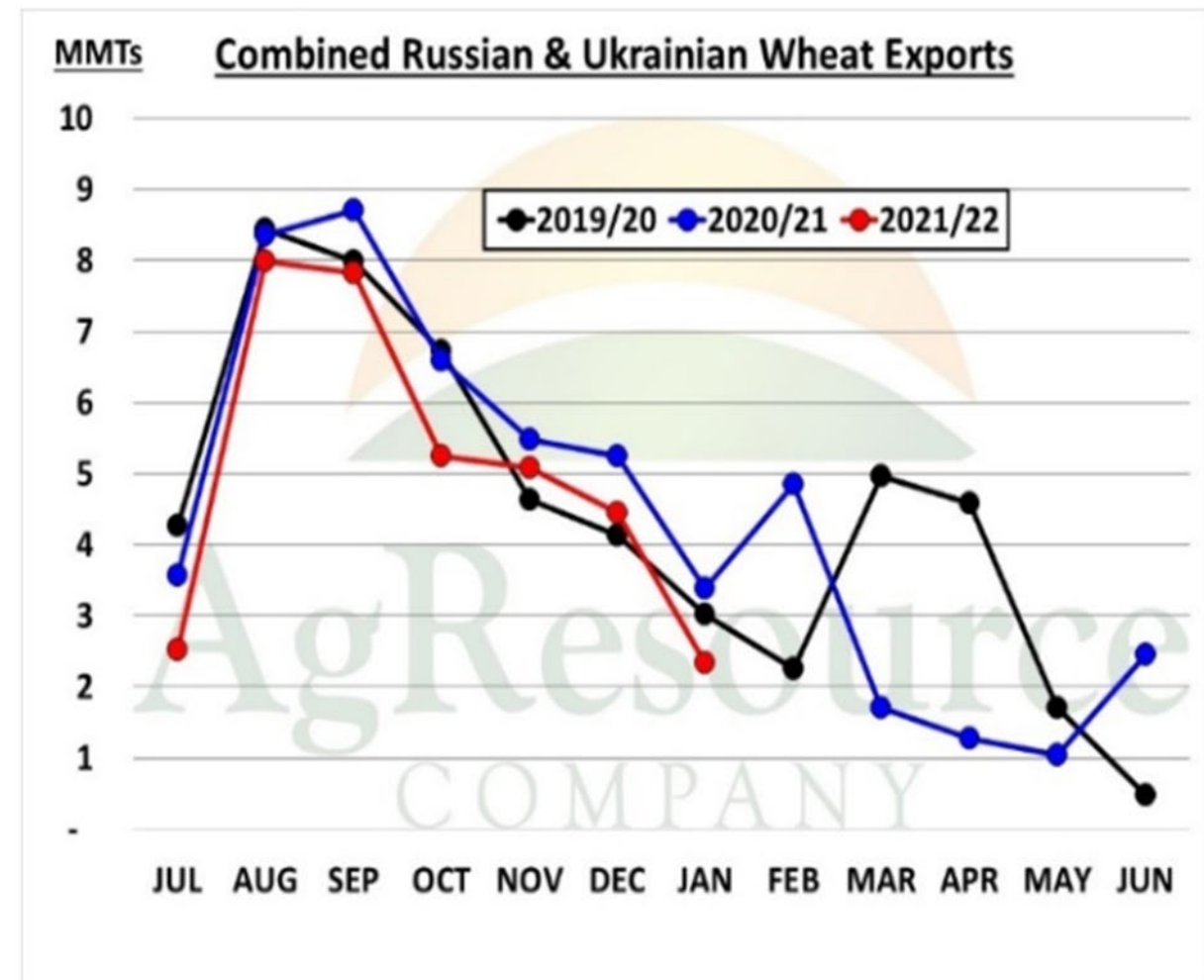


# G3 Soybean Stocks Reach 37 Year Low on April 1<sup>st</sup> with CBOT Spot Forecast at Record High \$18-19.00



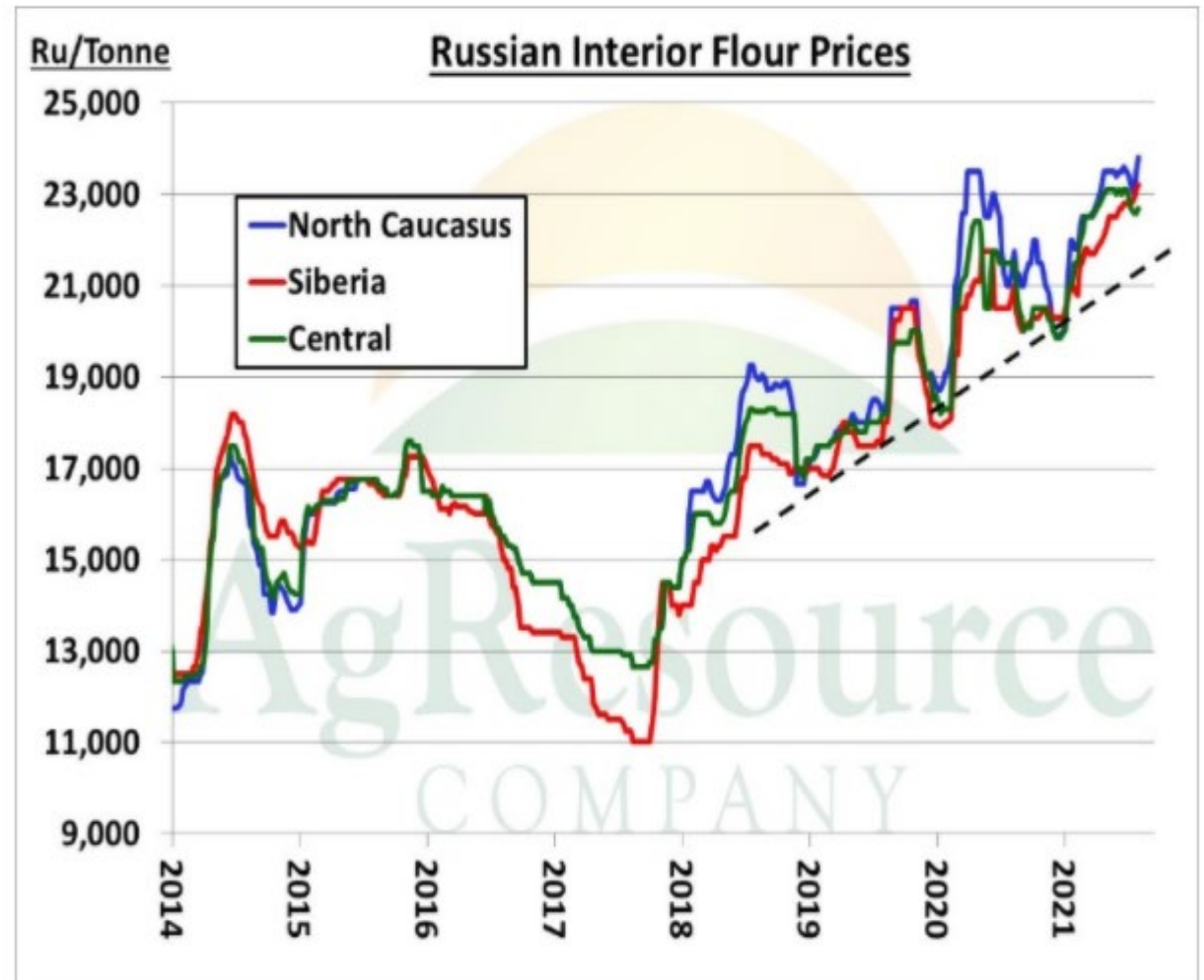


# From April into June; Black Sea Exports Seasonally Decline – Is the War Over by June?



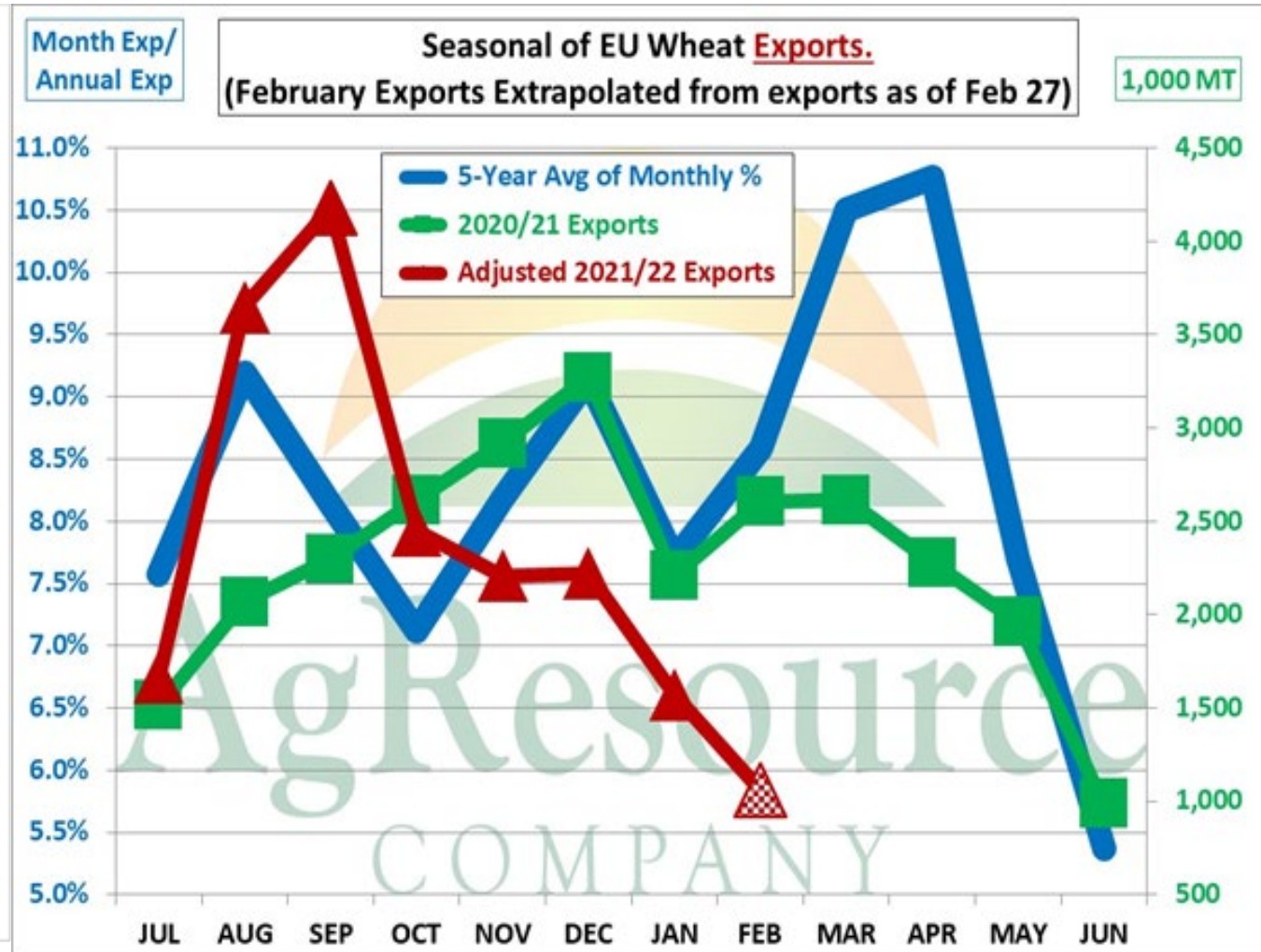
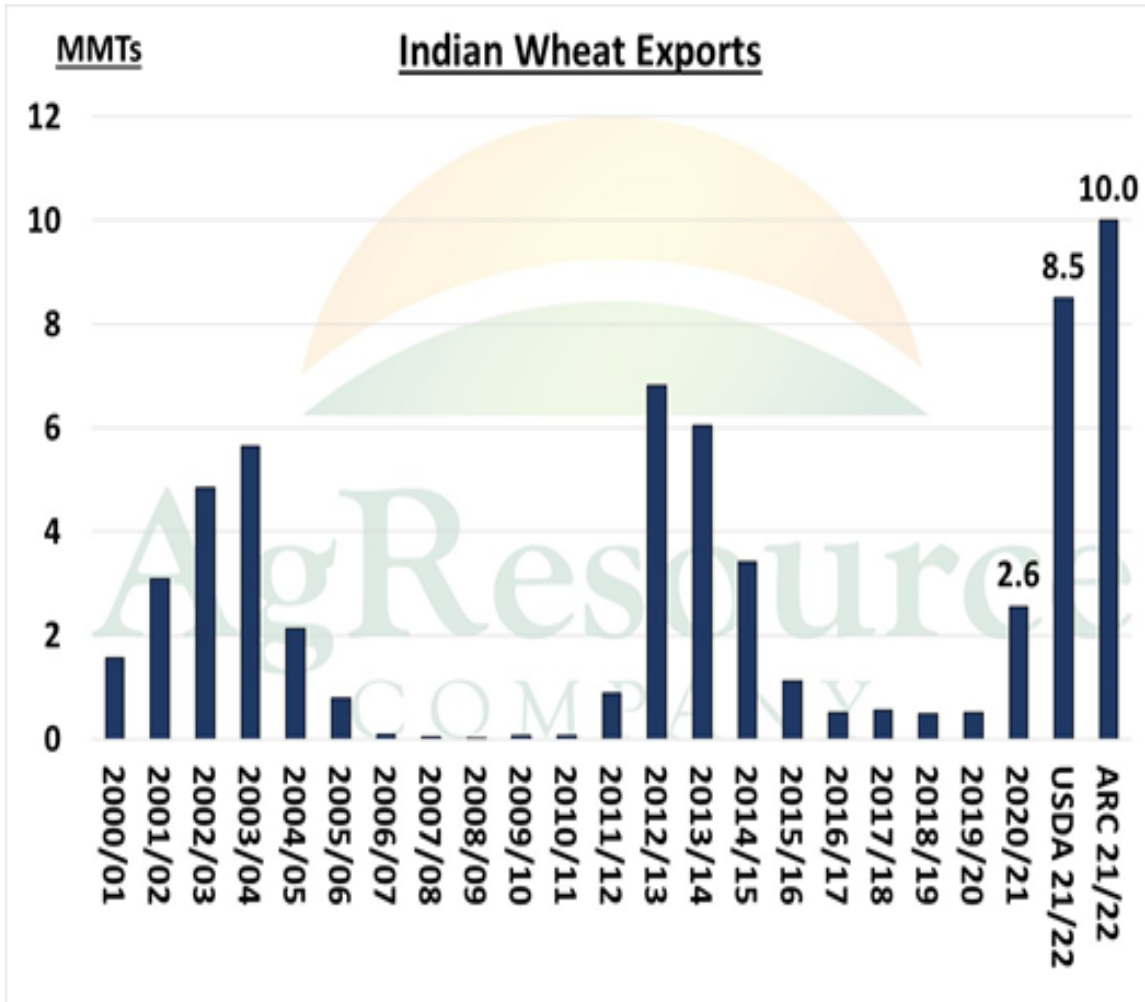


# Russian/Ukraine Wheat Exports Decline to 21 MMTs in 2022/23, Down 32 MMTs (61%)



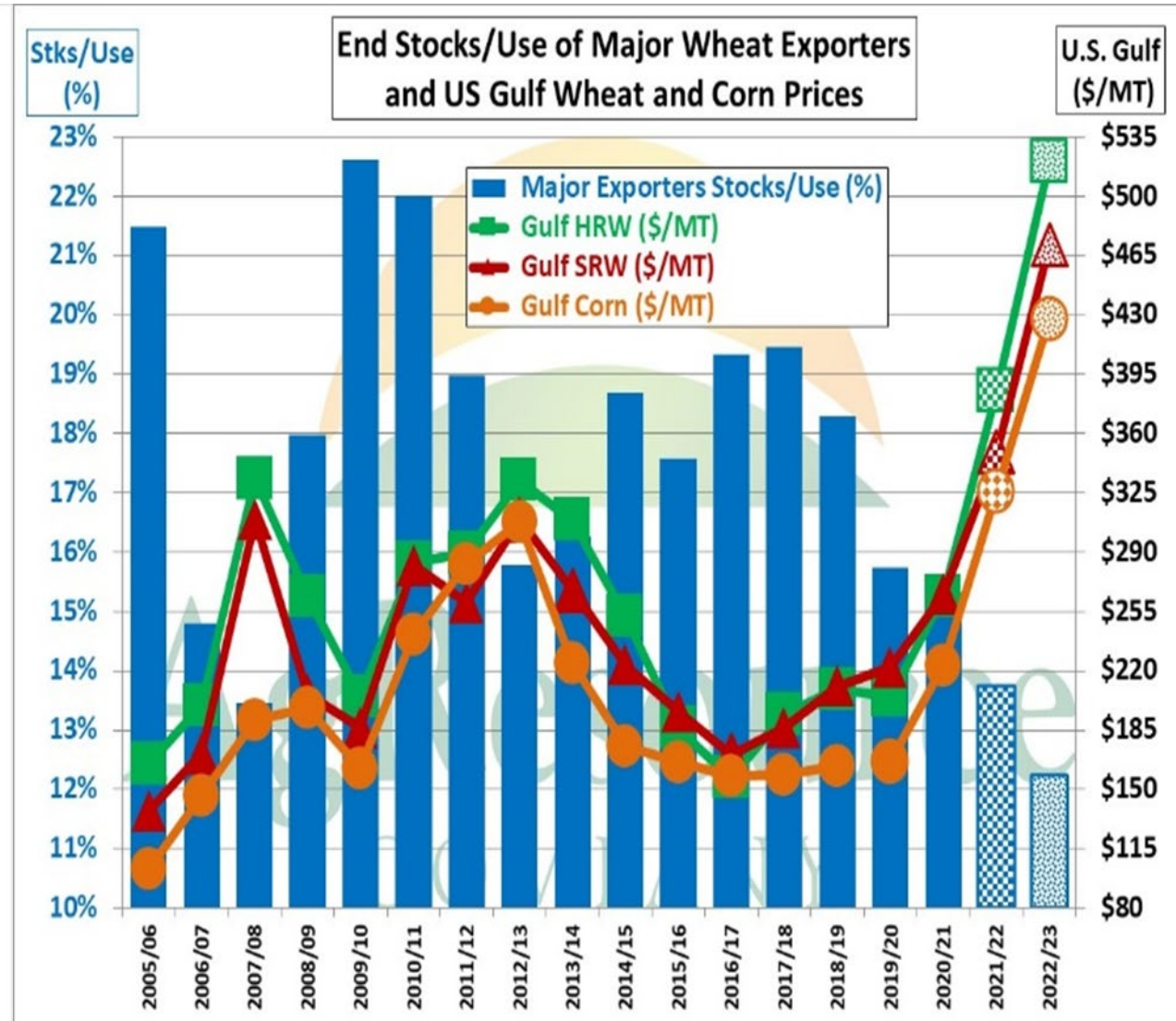
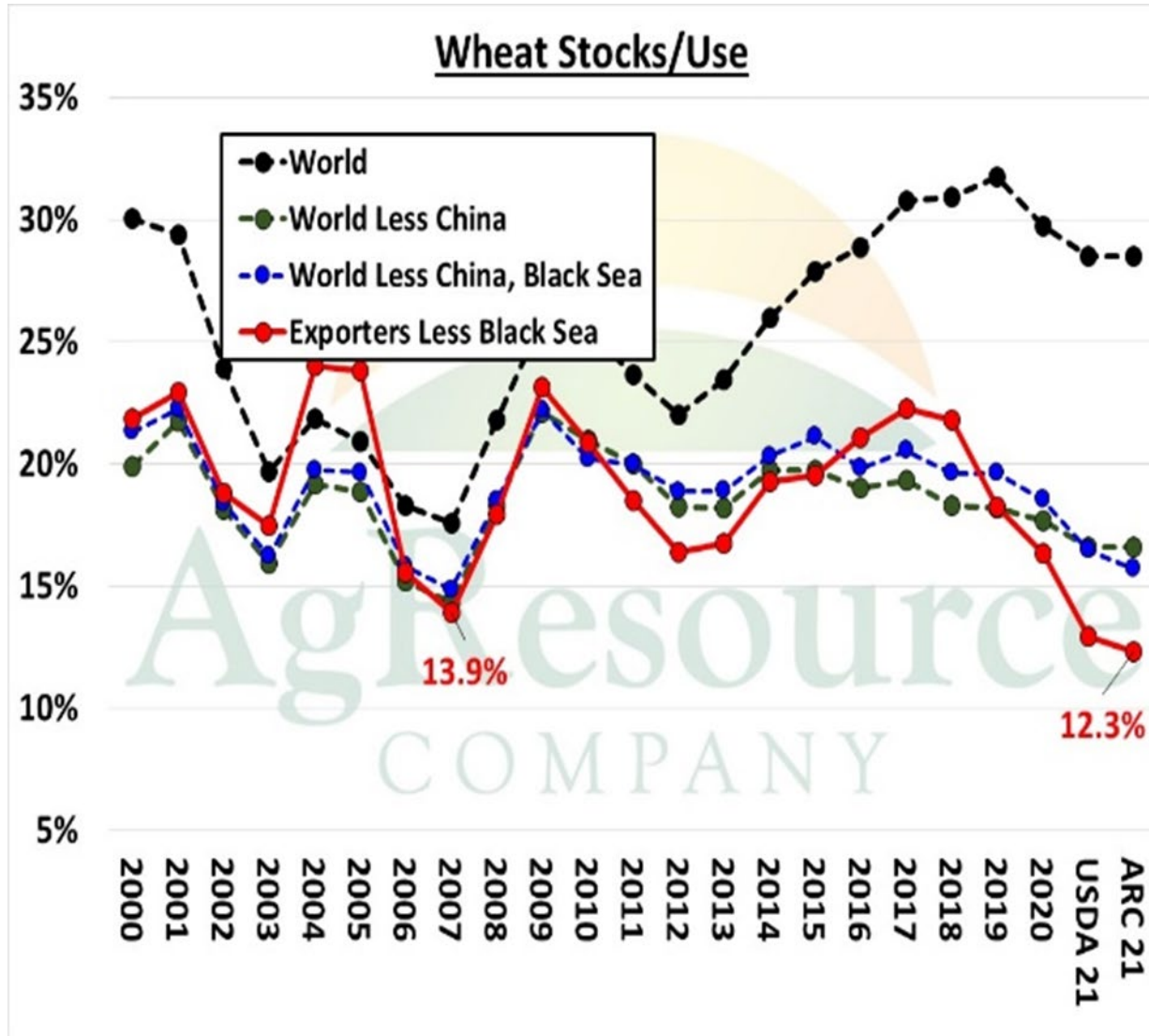


# India/EU to Plug Black Sea Wheat Shortfall into May; US Wheat Exports Rise June Forward



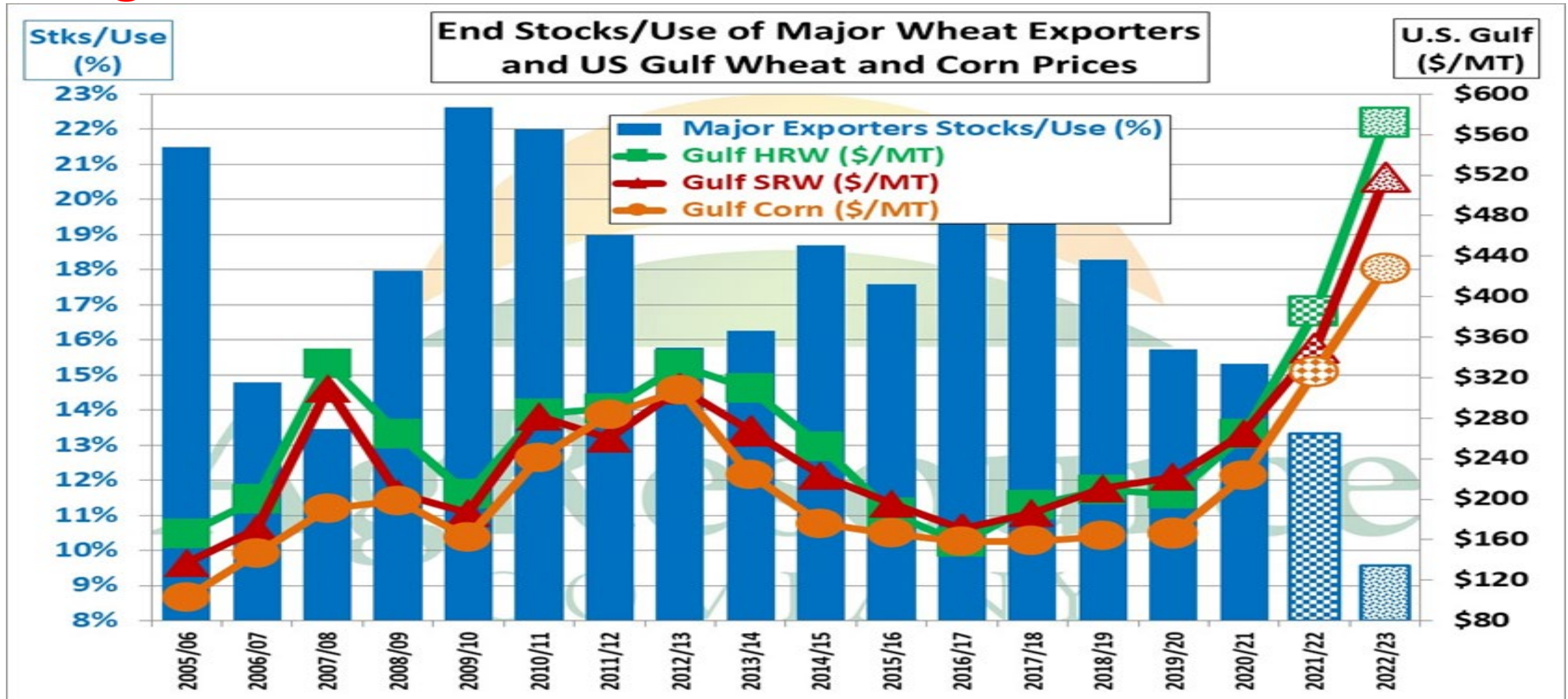


# World Wheat Exporters Stocks/Use at Record Low at the End of the 2021/22 Crop Year (War Ends by June)



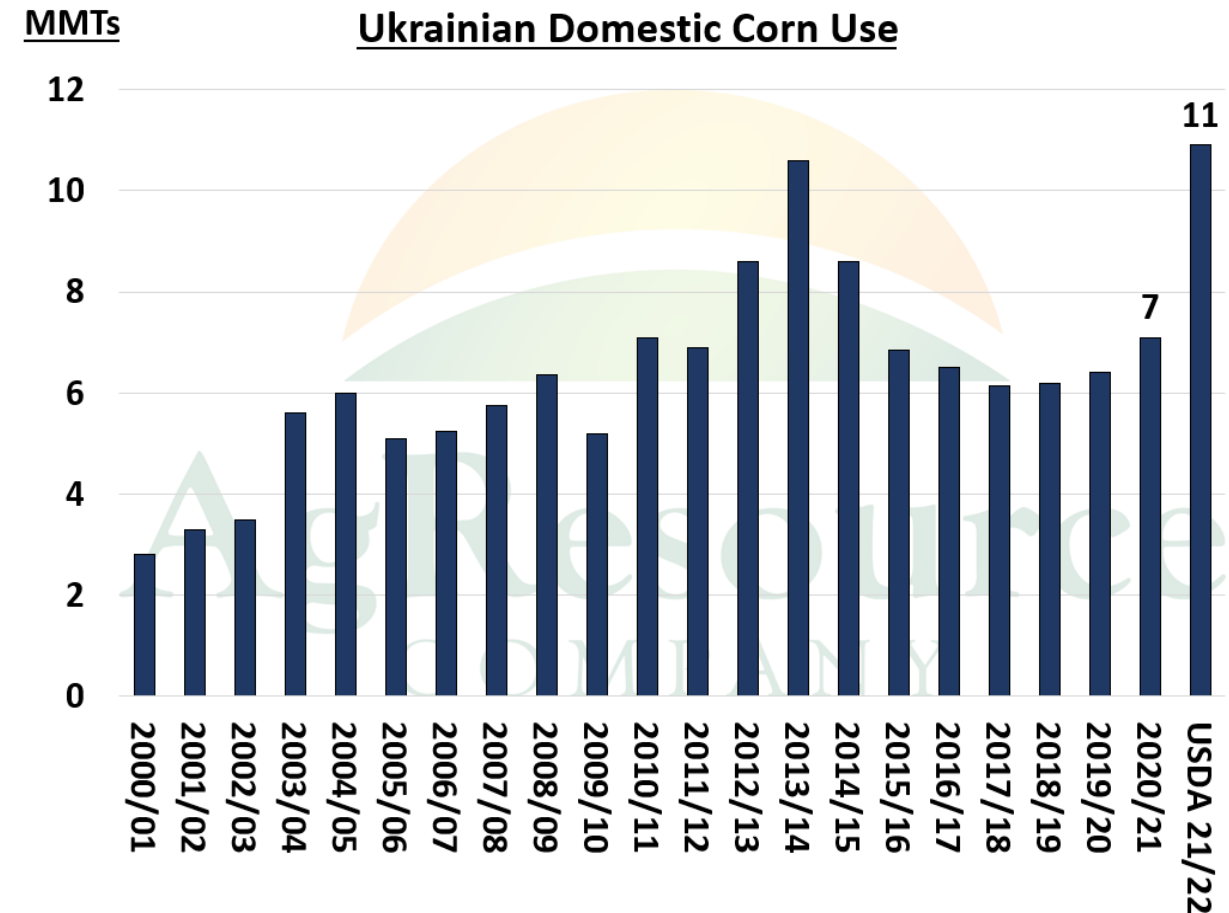
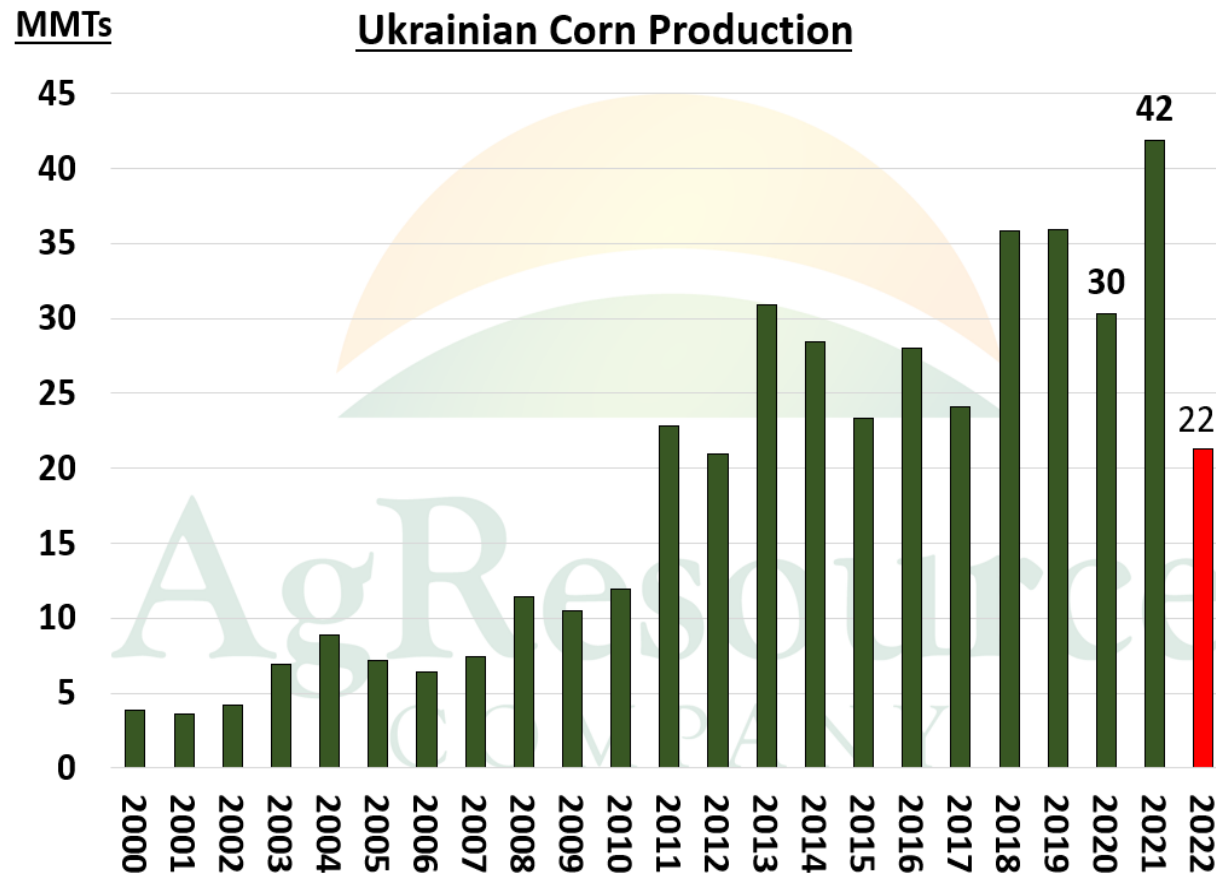


# 22/23 Wheat Outlook More Bullish if Russian War Rages Thru Year End! \$16-18.00 KC HRW Wheat



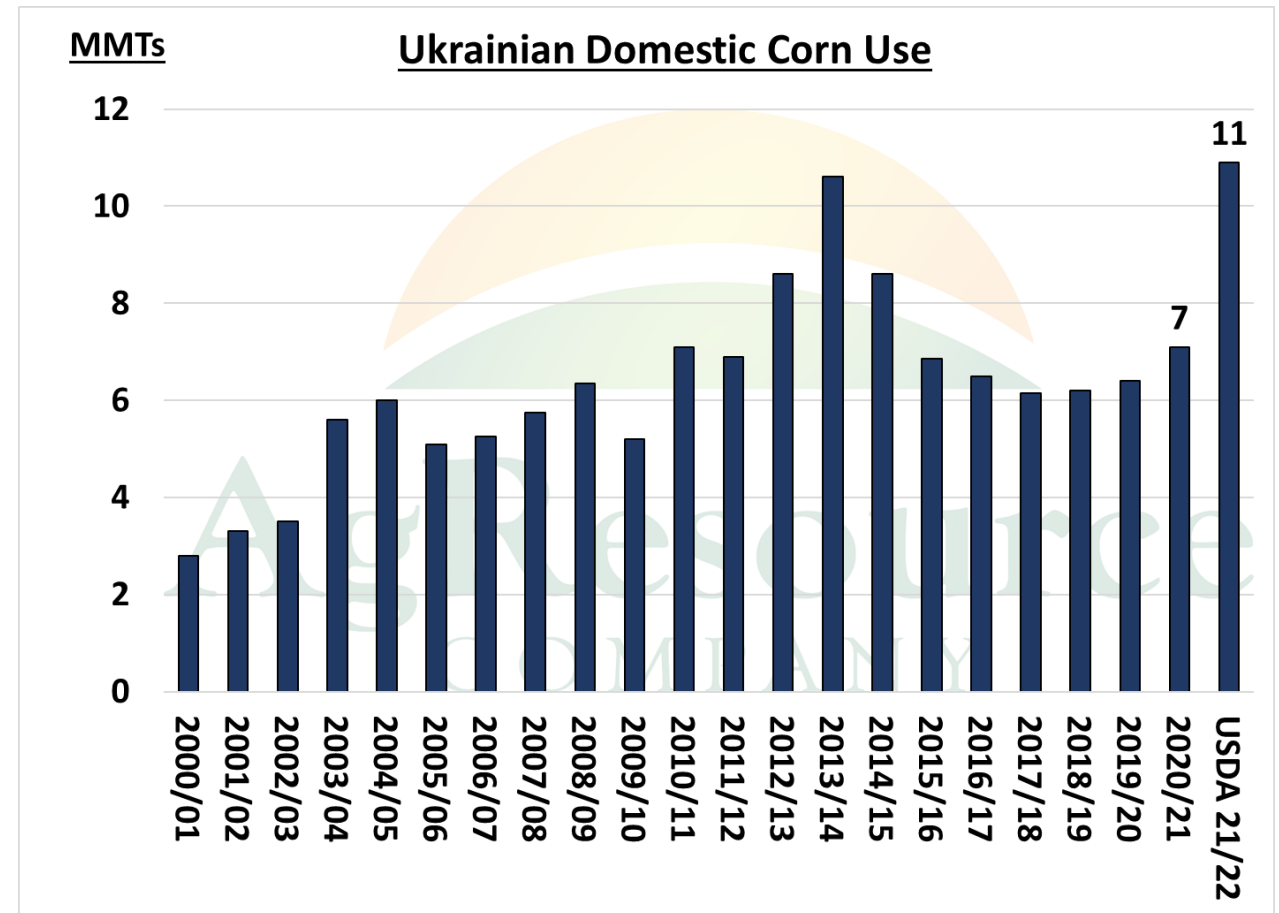
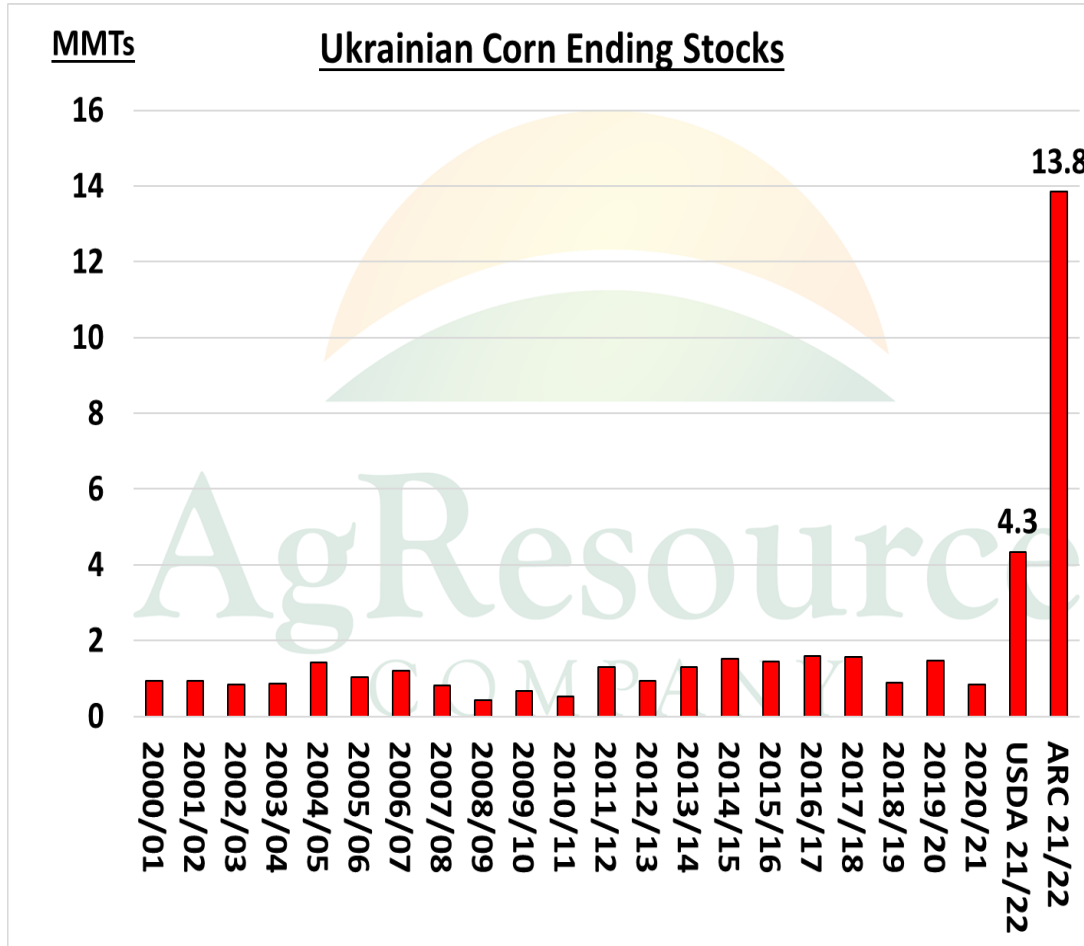


# Ukraine 2022 Corn Production Forecast at 22 MMTs (down 48% on '21), Domestic Use Up 42%



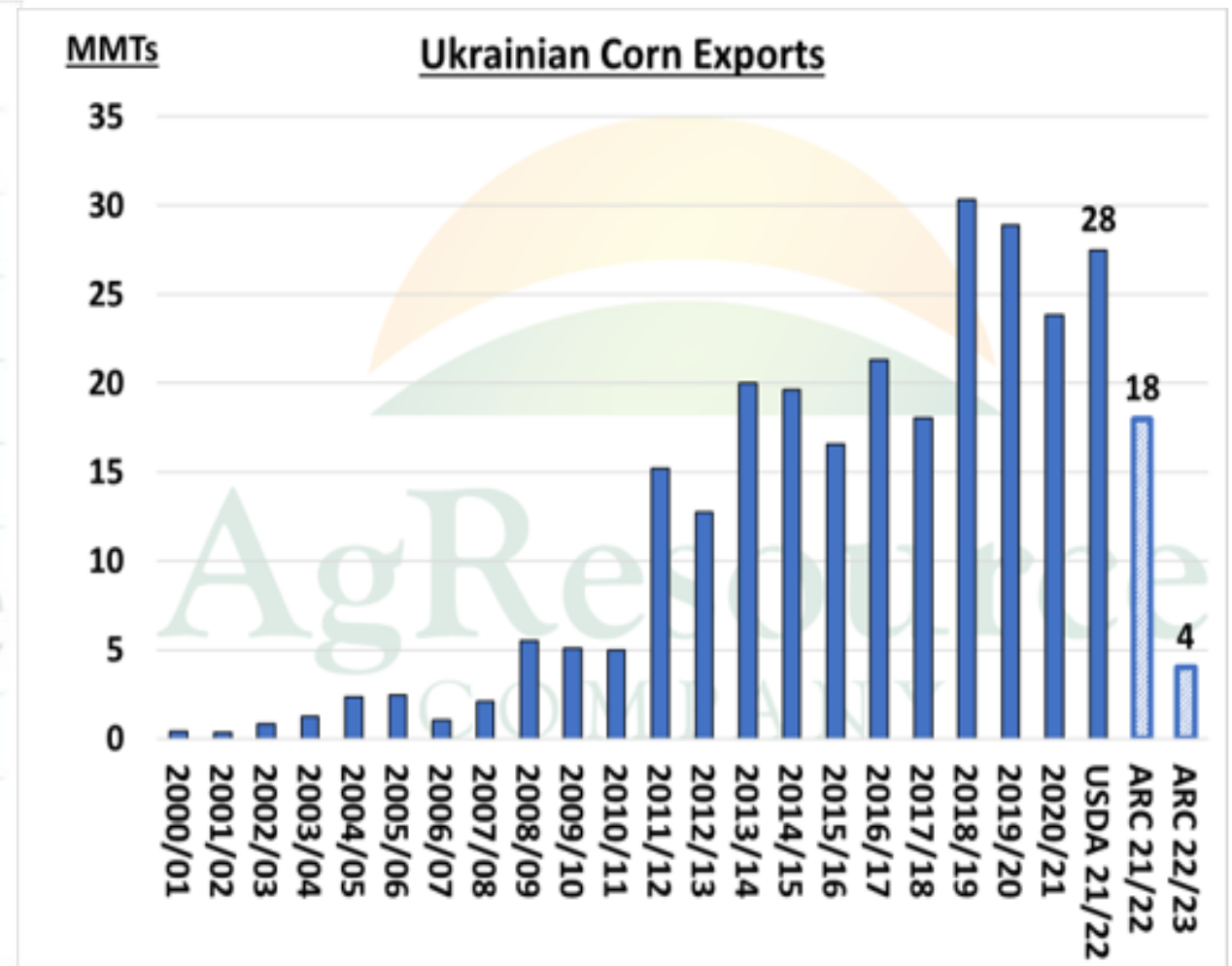
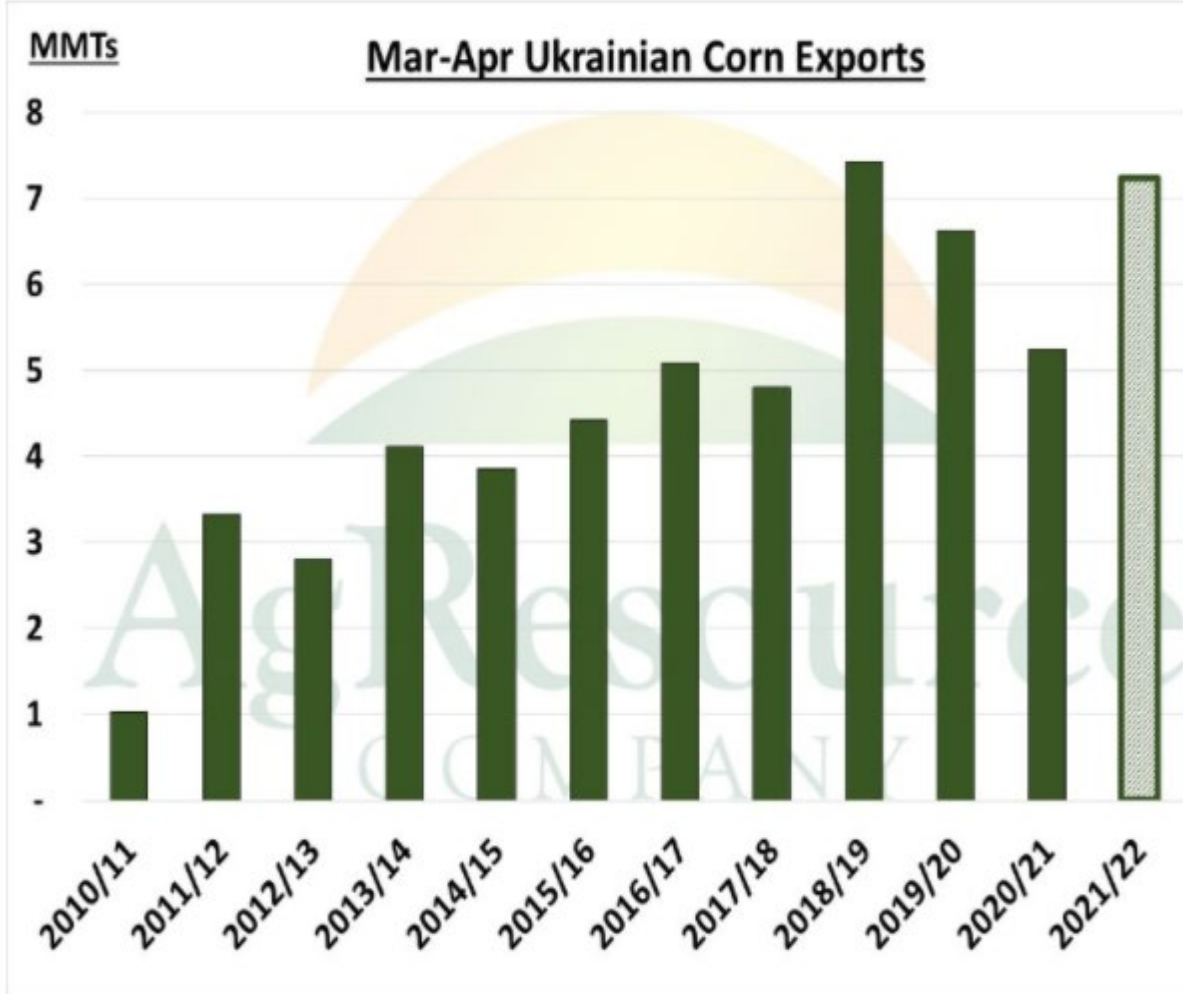


# Ukraine Does Not Need To Produce a Corn Crop in 2022 To Meet 22/23 Domestic Demand



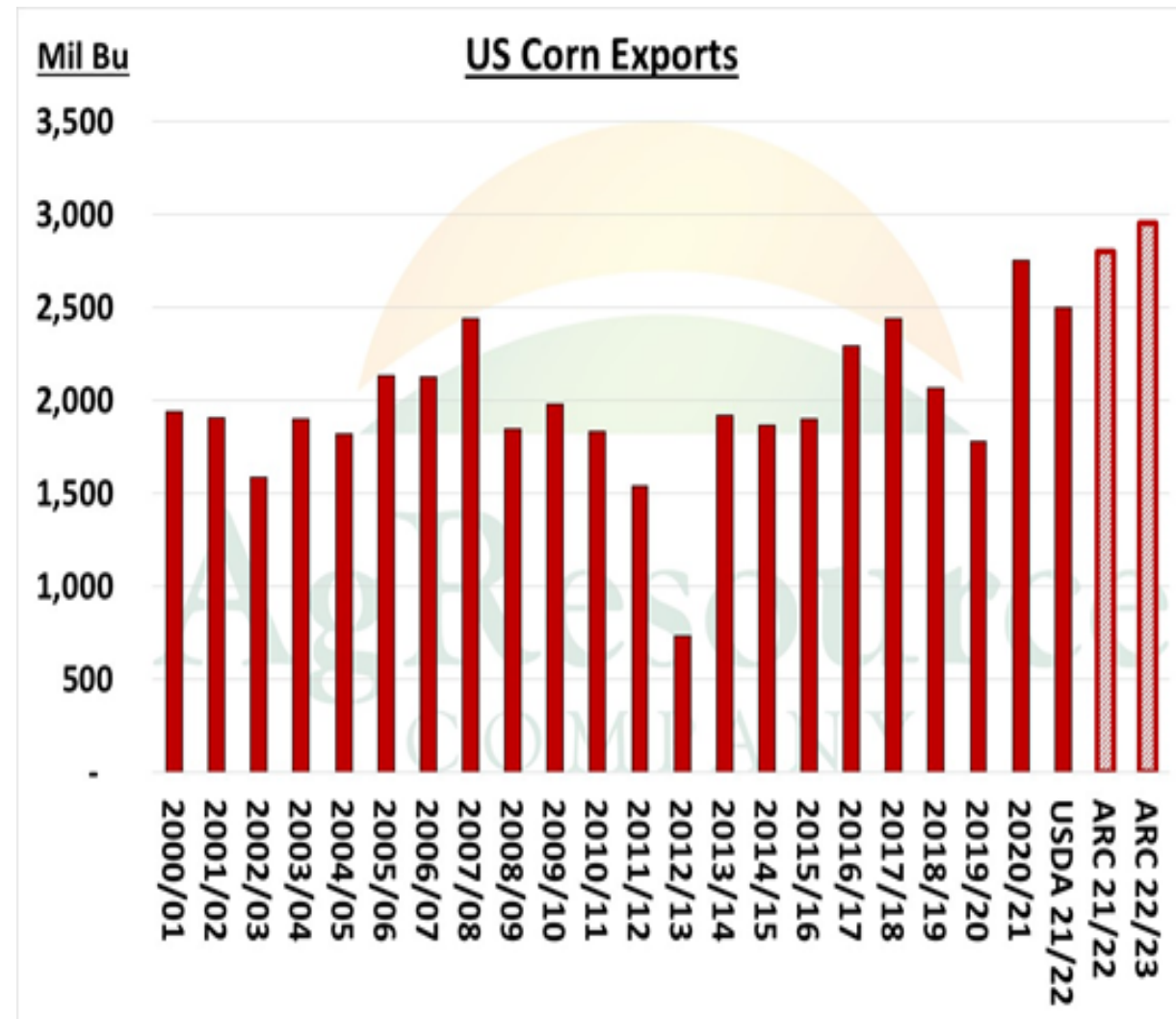
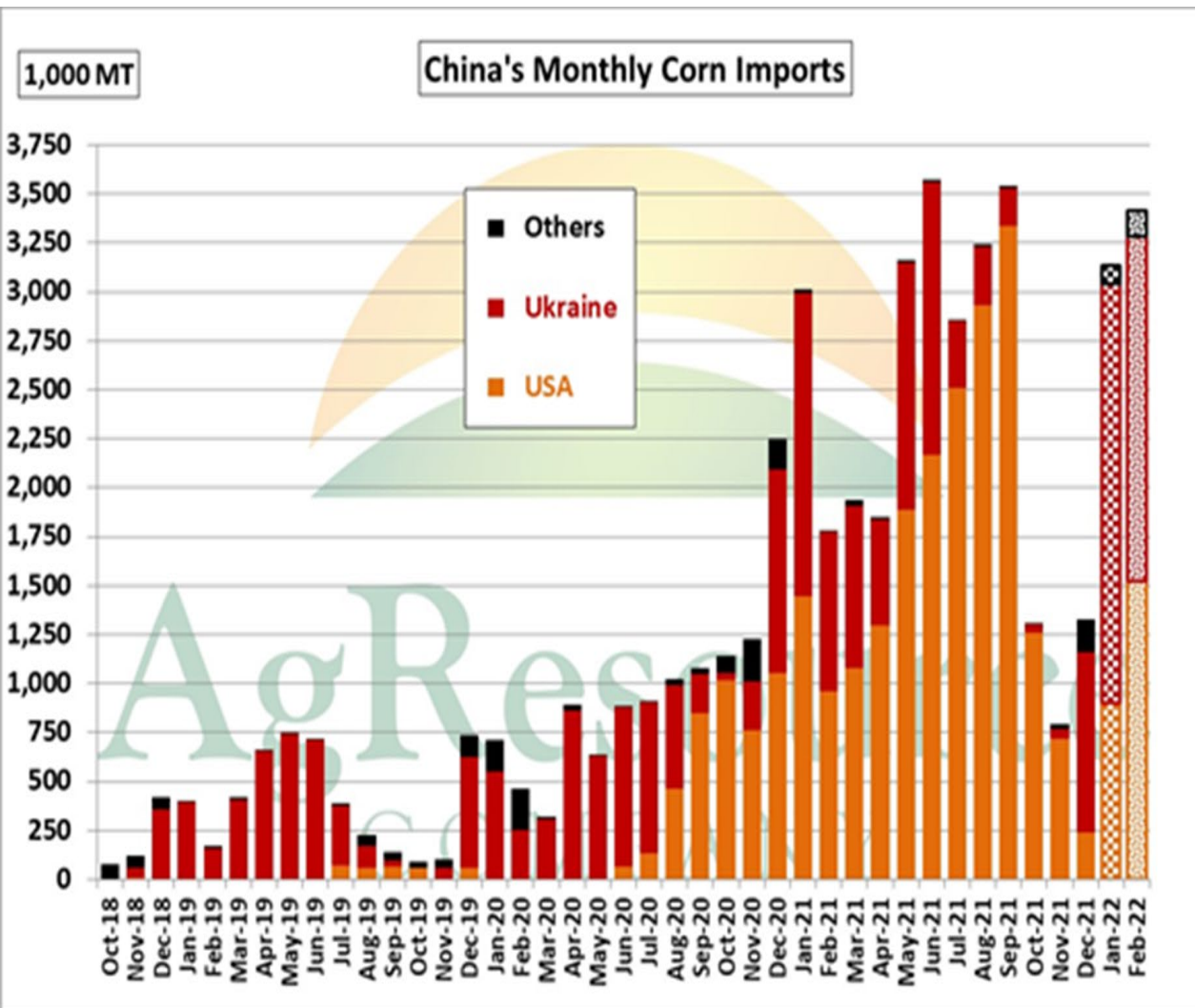


# Some Ukraine Corn will Slip Out to the East via Truck/Rail; Ukraine Port Reopening Uncertain?



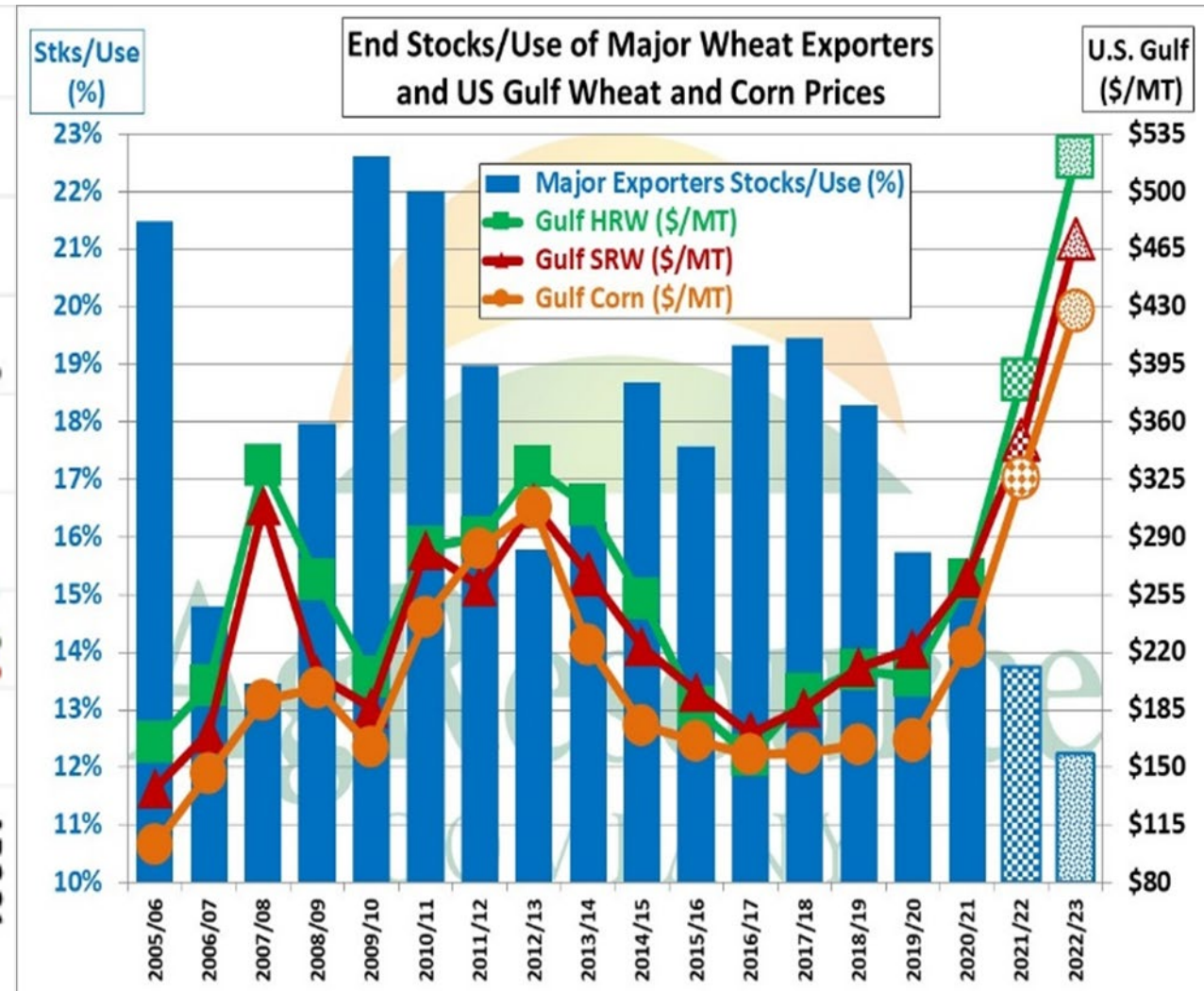
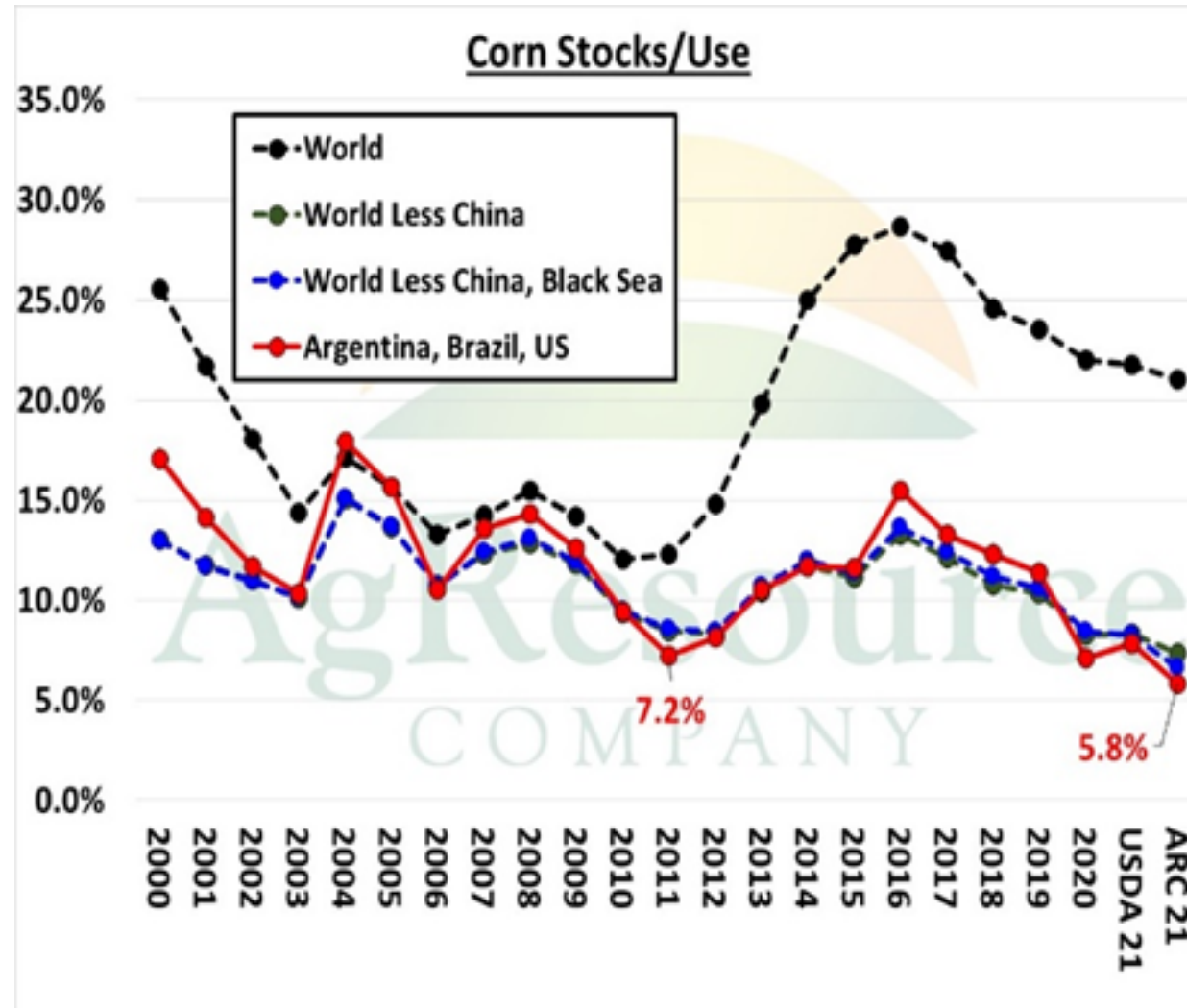


# China had 6 MMTs Ukraine Corn Purchased, but Unshipped, US Corn Exports Soar to Records



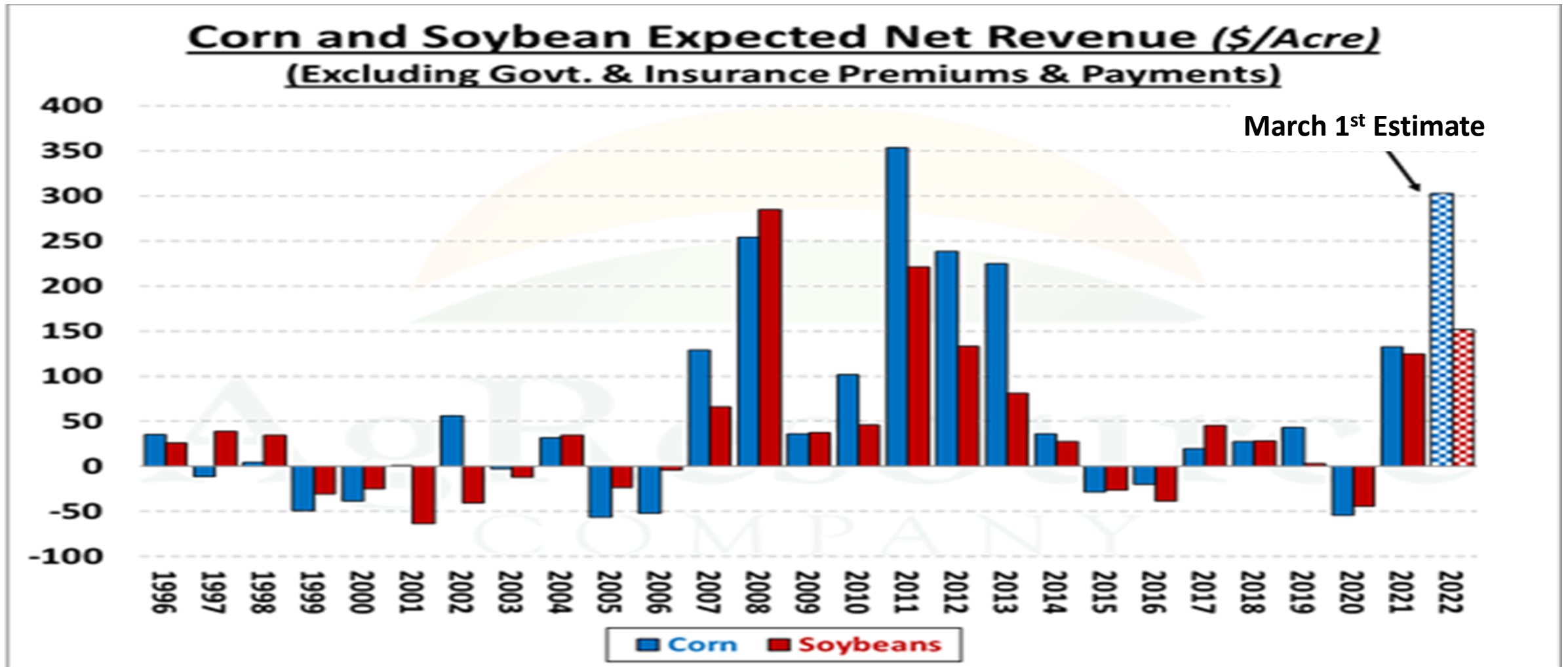


# Corn More Bullish than Wheat with Gulf Price Forecast of \$430/MT or \$10.90/Bu



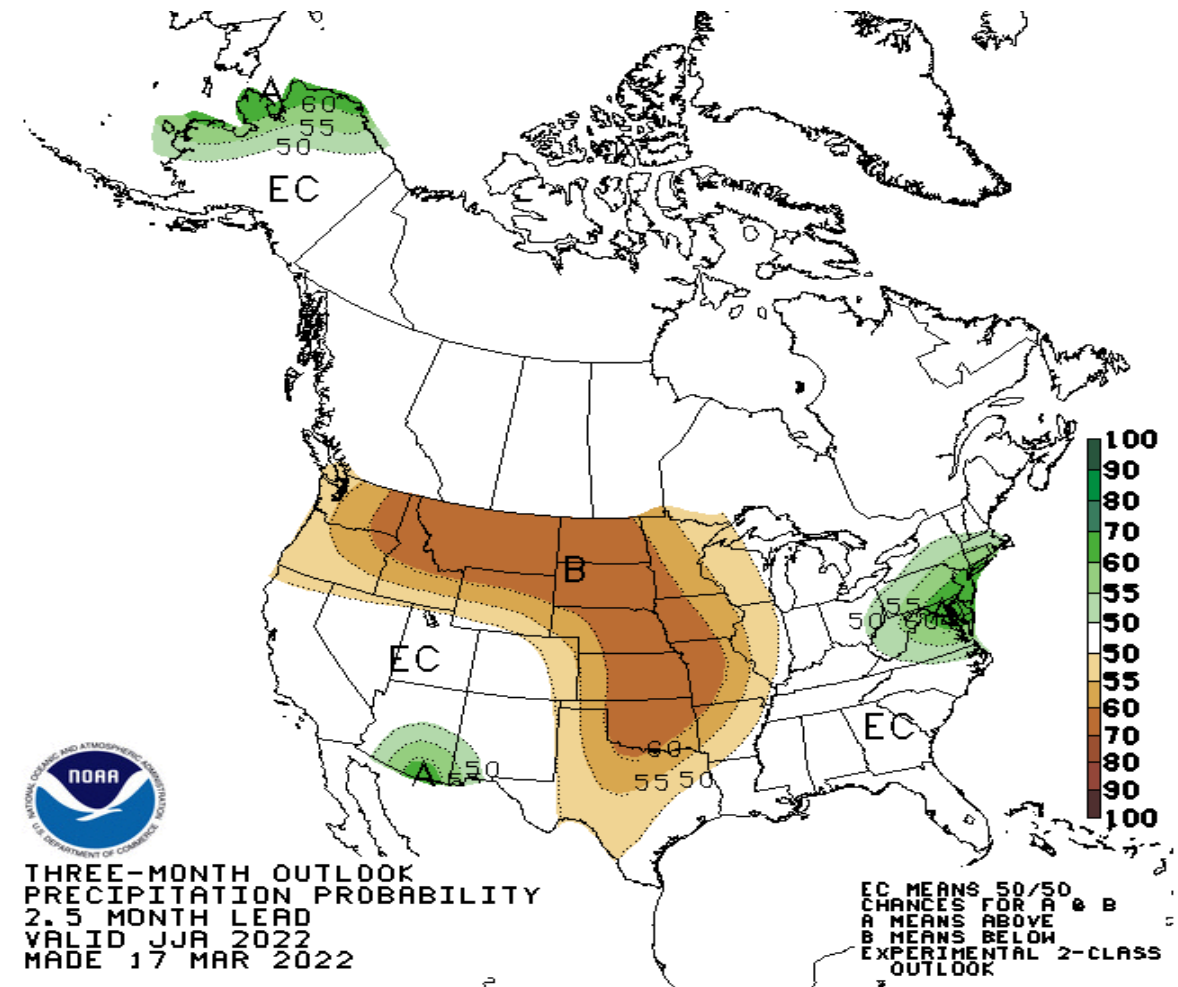
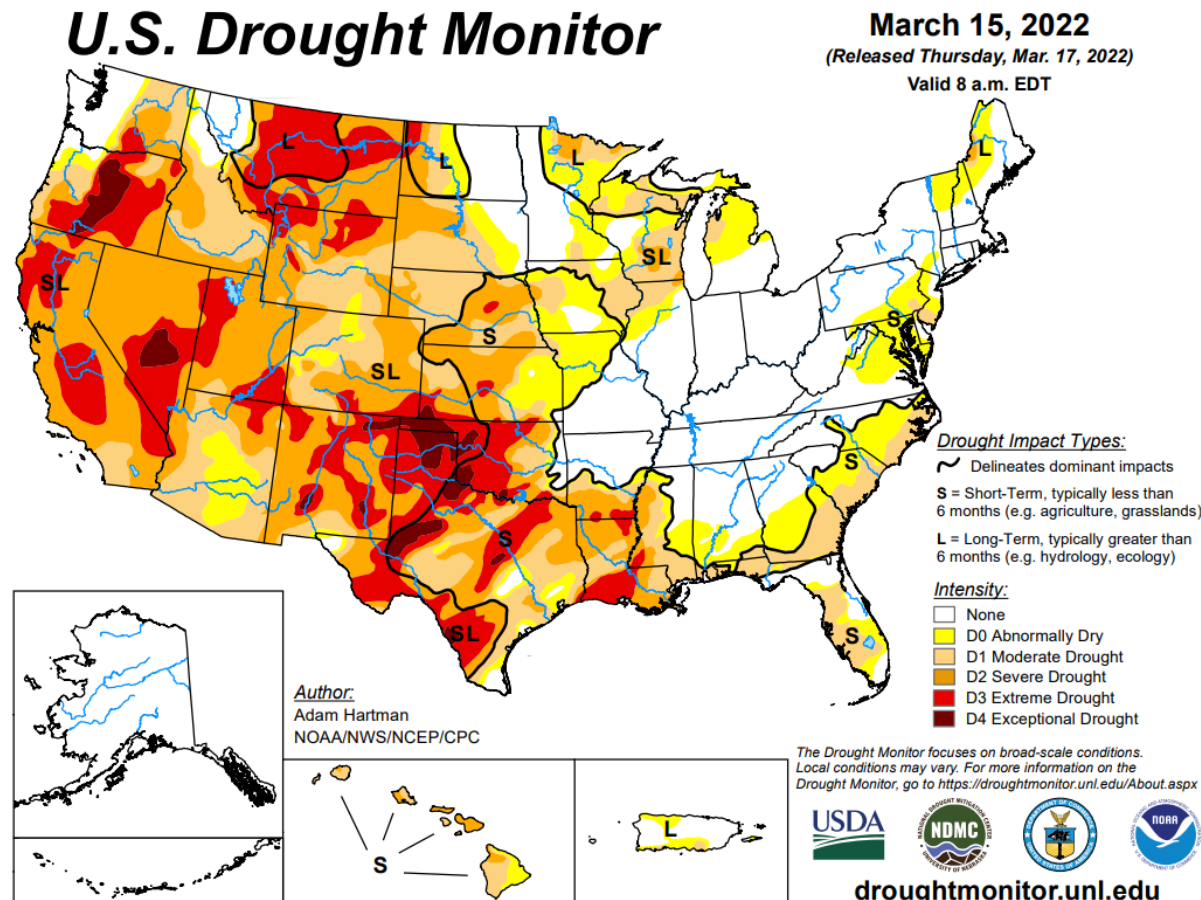


# US Farmers Enjoy 2<sup>nd</sup> Highest Corn/Soy Profit Margins on Record – Even with High Input Costs





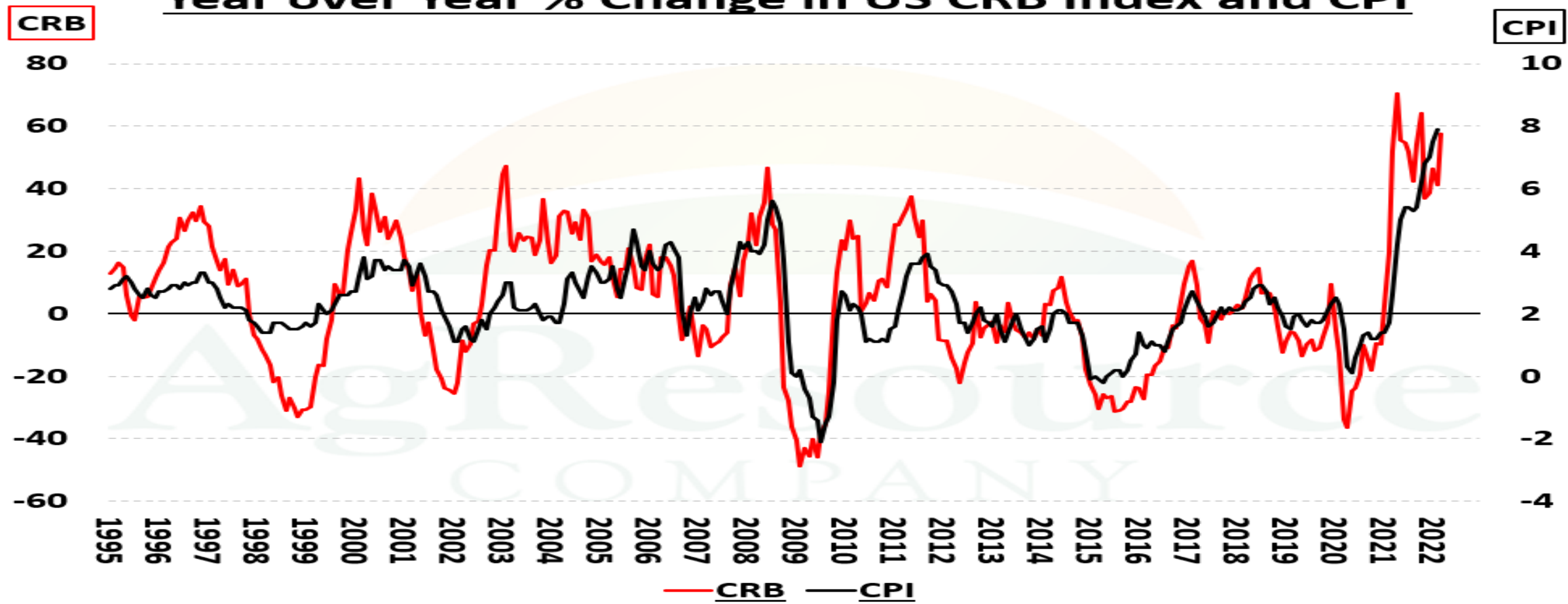
# Please Take an Umbrella to Church on Sunday; Weather Risks are High!





# US Monthly Inflation Soars to the Highest Rate in Nearly 40 Years; Food Prices to Rise into July

Year over Year % Change in US CRB Index and CPI





It's not enough to know the news.  
You need to trust the analysis.

# Thank You









# DR. JOSEPH GLAUBER

Senior Research Fellow

Markets, Trade, and Institutions Division

International Food Policy Research Institute





# Implications of the Ukraine-Russia Conflict for Global Food Security

Please visit:

\*\*\*\*\*[.ifpri.org/landing/war-ukraine-blog-landing-page](https://www.ifpri.org/landing/war-ukraine-blog-landing-page)

and

\*\*\*\*\*[.slideshare.net/DLabordeD/briefing-ukrainerussia-conflict-global-food-security-focus-looking-for-wheat](https://www.slideshare.net/DLabordeD/briefing-ukrainerussia-conflict-global-food-security-focus-looking-for-wheat)

Joe Glauber (with David Laborde)  
International Food Policy Research Institute

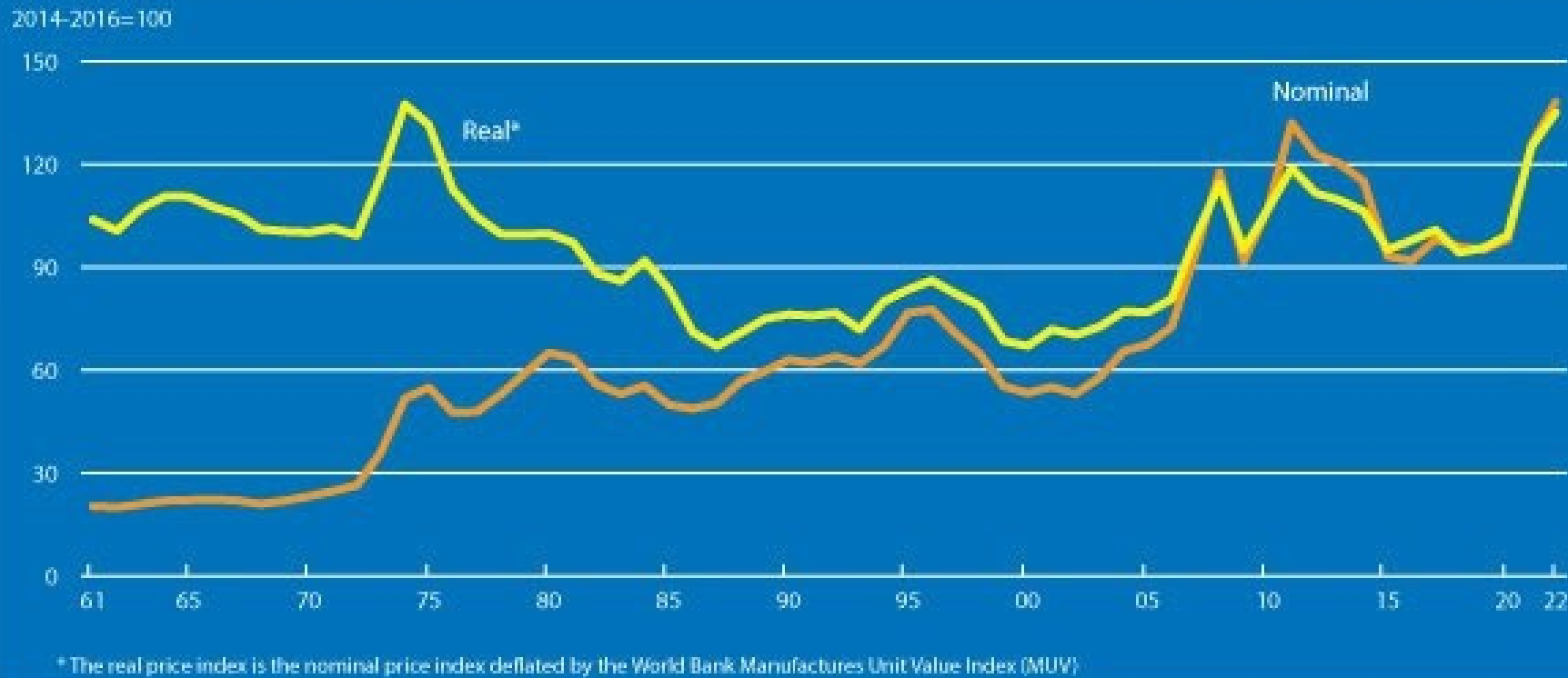
Webinar Farm Foundation | 3/22/2022



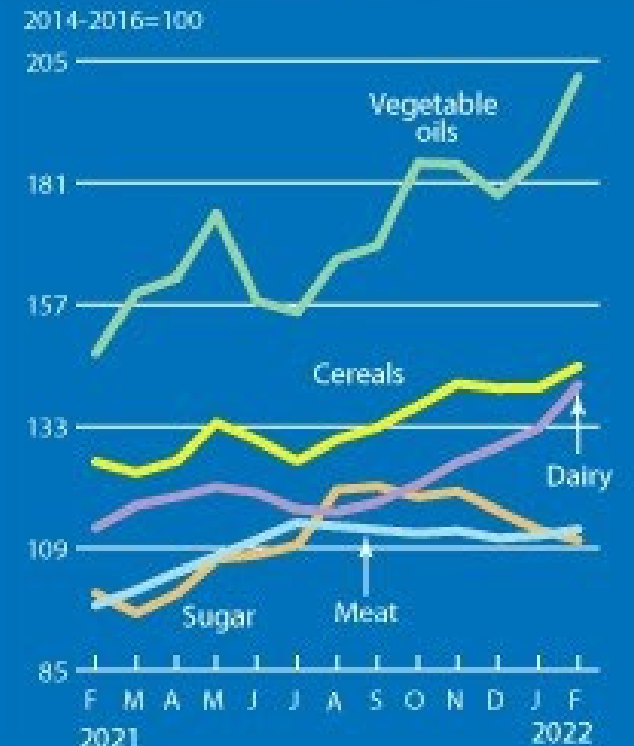


# Food prices were high before the beginning of the conflict

FAO Food Price Index in nominal and real terms



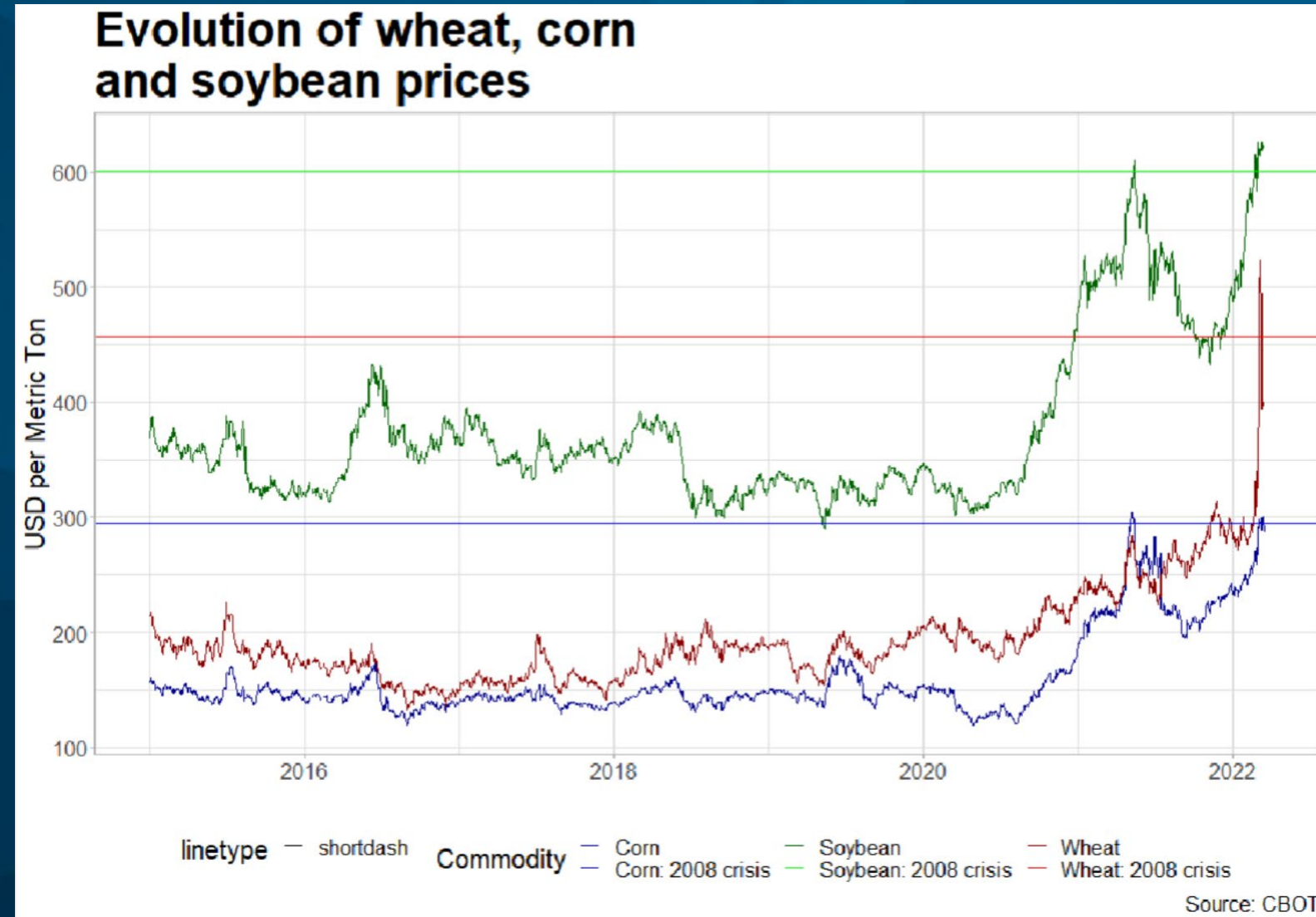
FAO Food Commodity Price Indices







# Prices have skyrocketed with the invasion







# Pre-crisis drivers of rising prices

## Strong demand:

- ✓ Large purchases from China since early 2021

## Limited supply:

- ✓ La Nina hurt South America, in particular soybean production
  - ✓ But Argentina wheat production has been spared
- ✓ Drought in Middle-East: increased demand
- ✓ Supply constraint and trade restrictions on Palm Oil in SE-Asia

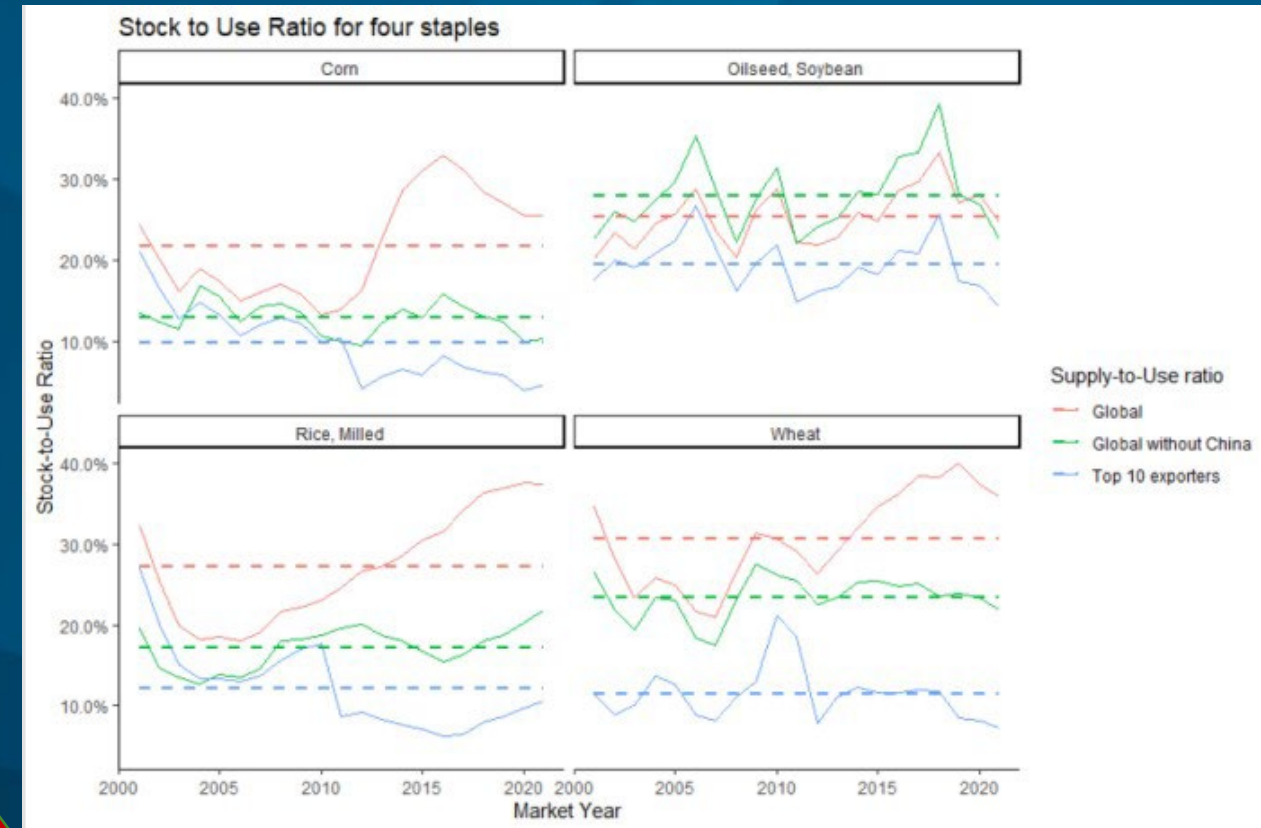
## Low Inventories:

- ✓ Wheat stocks at lowest level since 2007/08
- ✓ Corn stocks at lowest level since 2012/13
- ✓ Soybean stocks at lowest level since 2011/12
- ✓ Rice stocks at *highest* level in more than 20 years

## Rising production costs :

- ✓ Fertilizers
- ✓ Energy
- ✓ Labor

??? For  
many LMIC  
stocks



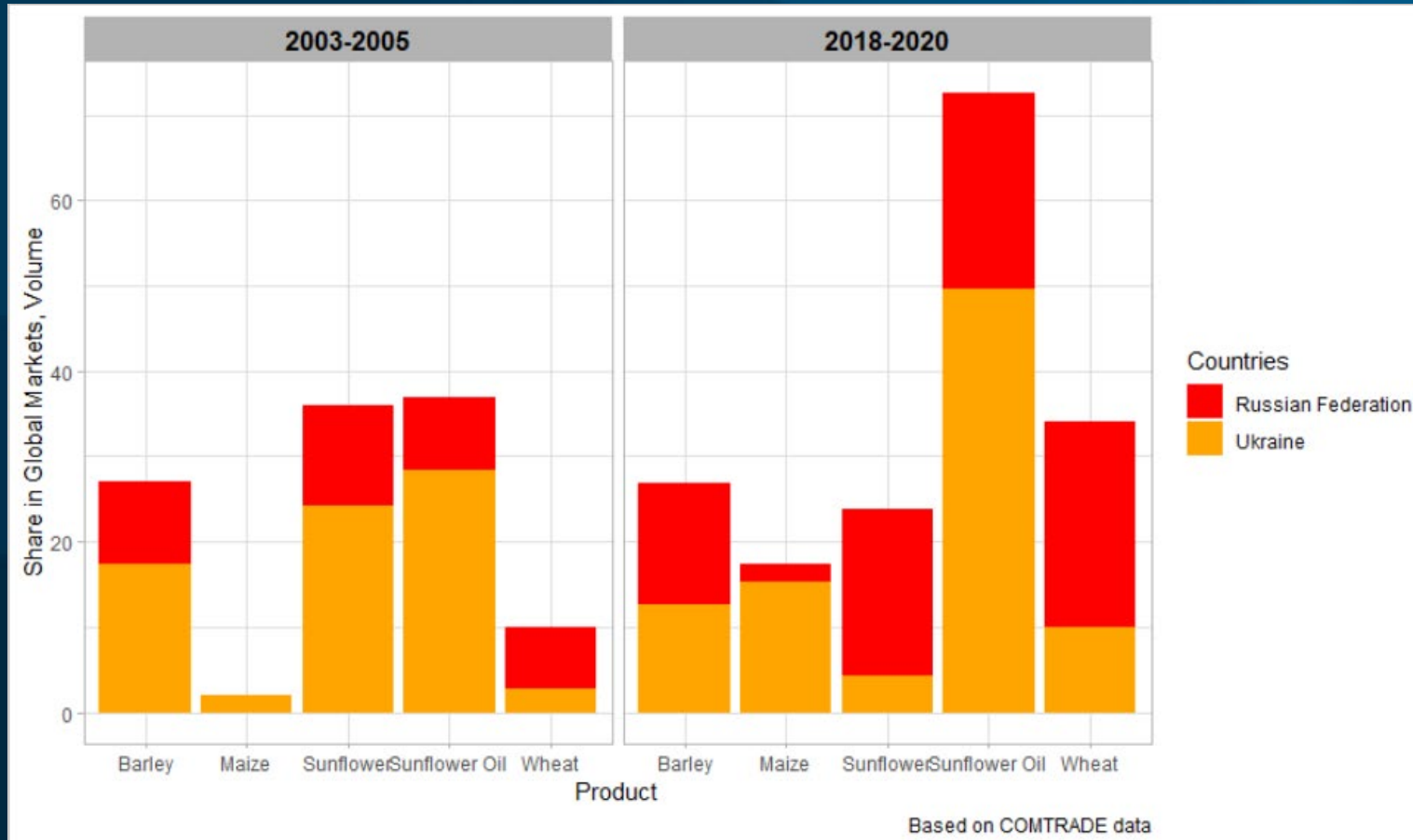
More at **Production and Stocks Monitoring System**

\*\*\*\*\*[.foodsecurityportal.org/node/1734](https://foodsecurityportal.org/node/1734)





# Global market share, key products 2018-2020



Russia  
5.8%  
Global  
Market  
Share in  
Calories

Ukraine  
6%  
Global  
Market  
Share in  
Calories





## Egypt's wheat imports, Million metric tons

Breakdown by exporter

Other Exporters Russian Federation Ukraine

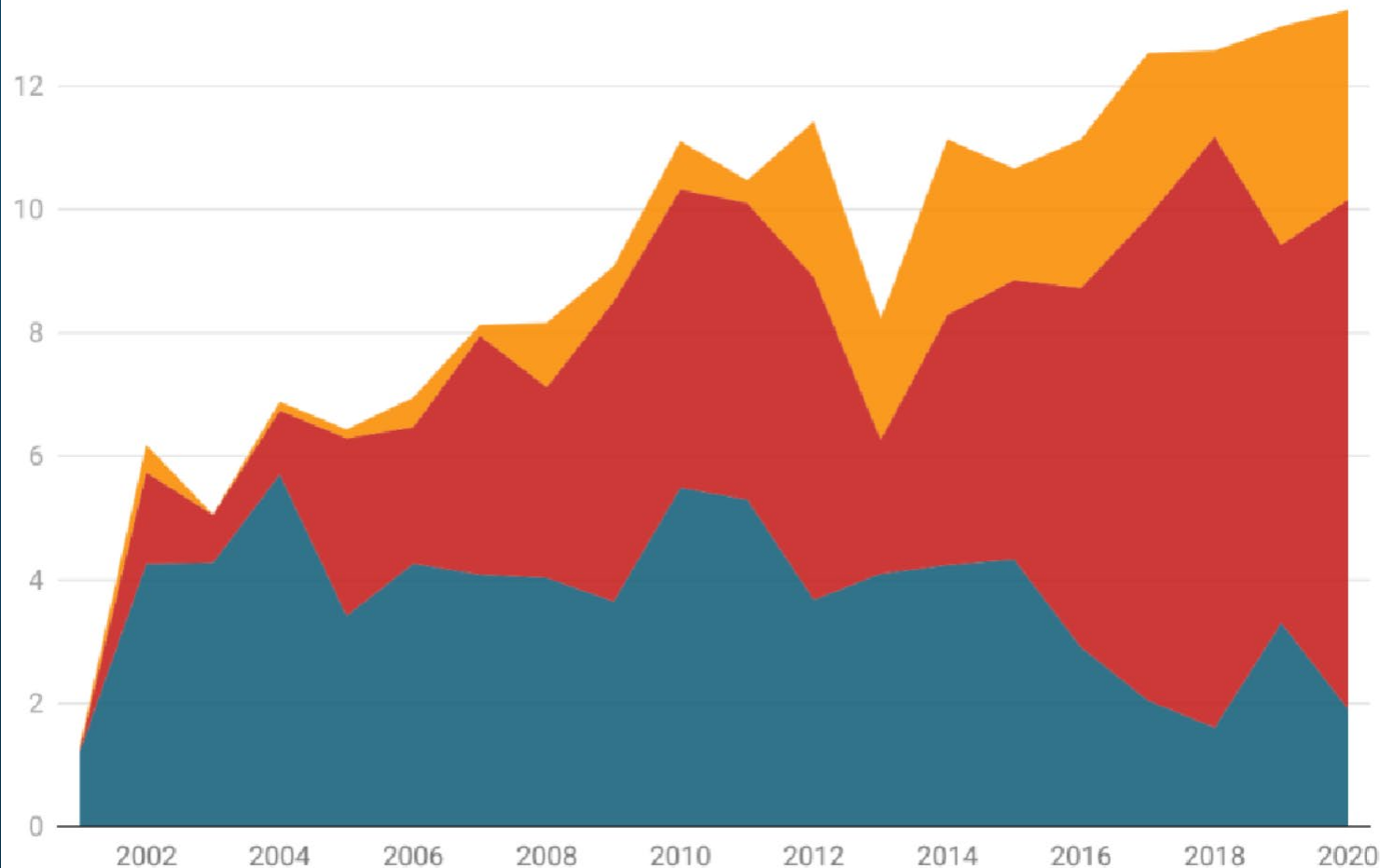


Chart: David Laborde • Source: COMTRADE • Created with Datawrapper

The world has changed in 20 years, and some countries rely “a lot” on the Black Sea breadbasket

More on MENA later

\*\*\*\*\*[ifpri.org/blog/russia-ukraine-crisis-poses-serious-food-security-threat-egypt](https://ifpri.org/blog/russia-ukraine-crisis-poses-serious-food-security-threat-egypt)





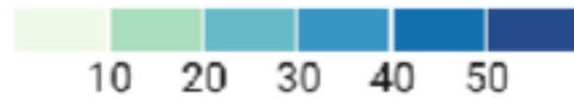
# **Country vulnerability and food security risks**

GENERAL ISSUES AND  
ILLUSTRATIONS FOR  
MENA COUNTRIES





# Share of the Russian Federation & Ukraine in imported calories



## Egypt

Russia+Ukraine=50.4  
Russia=33.5  
Ukraine=16.9

## Lebanon

Russia+Ukraine=34  
Russia=22.3  
Ukraine=11.7

## Yemen

Russia+Ukraine=22.2  
Russia=15.1  
Ukraine=7.1

*EU countries are considered as one market.*

Map: David Laborde • Created with Datawrapper

\*\*\*\*\*.datawrapper.de/\_/LX3Bg/





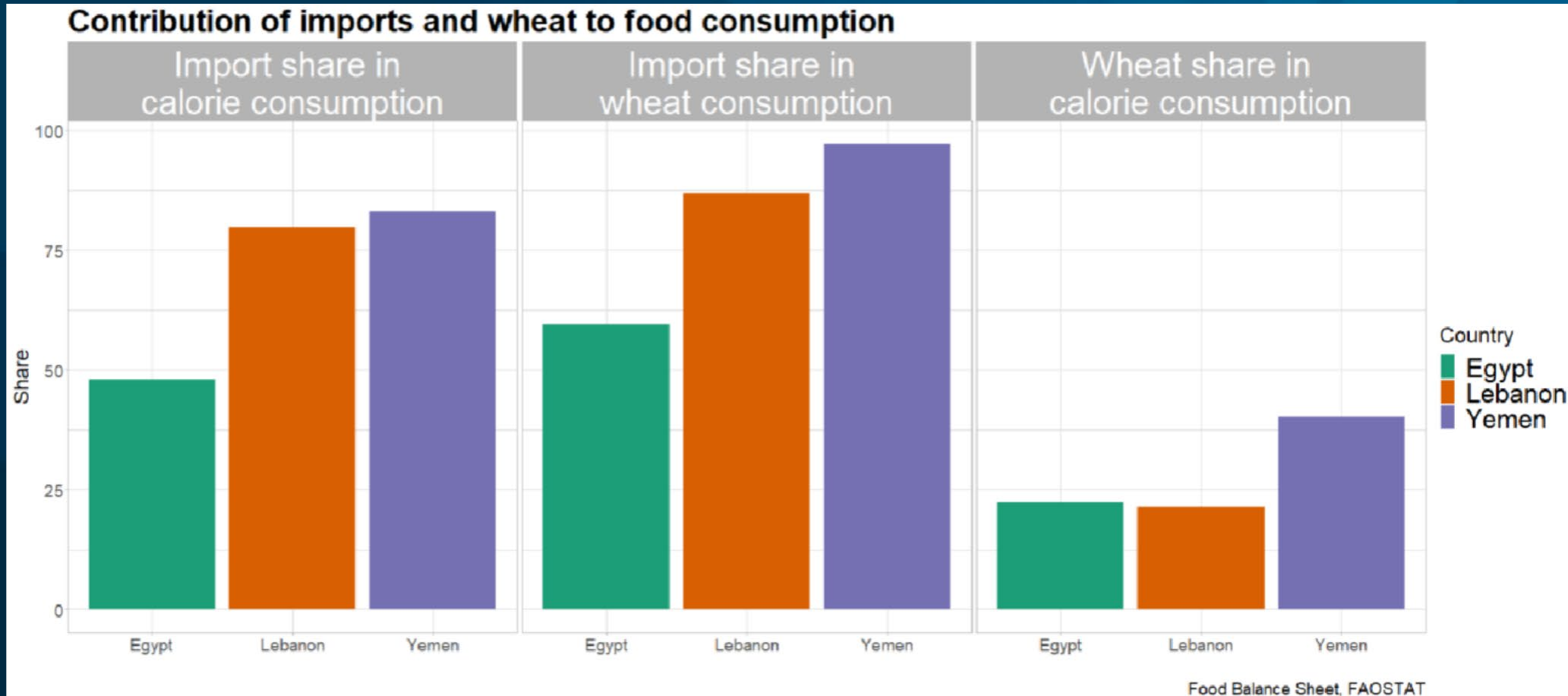
# What matters in defining country level vulnerability

- q Very short term: dependency to key products, at specific moment in time [A], and from specific sources [B]
- q Short term [C]: all (prices) move: Can the country pay its (food) import bill?
- q Export dynamics [D]: prices and income
- q Exchange rate evolution (current account response: trade and remittances, debt, panic...) [E]
- q Fertilizer markets: rising prices and less input availability productivity losses [F]
- q Within countries: heterogenous household vulnerability to price shocks & the role of social policies [G]



# Dependency to imports and key products

New blog focusing on Egypt released today by IFPRI



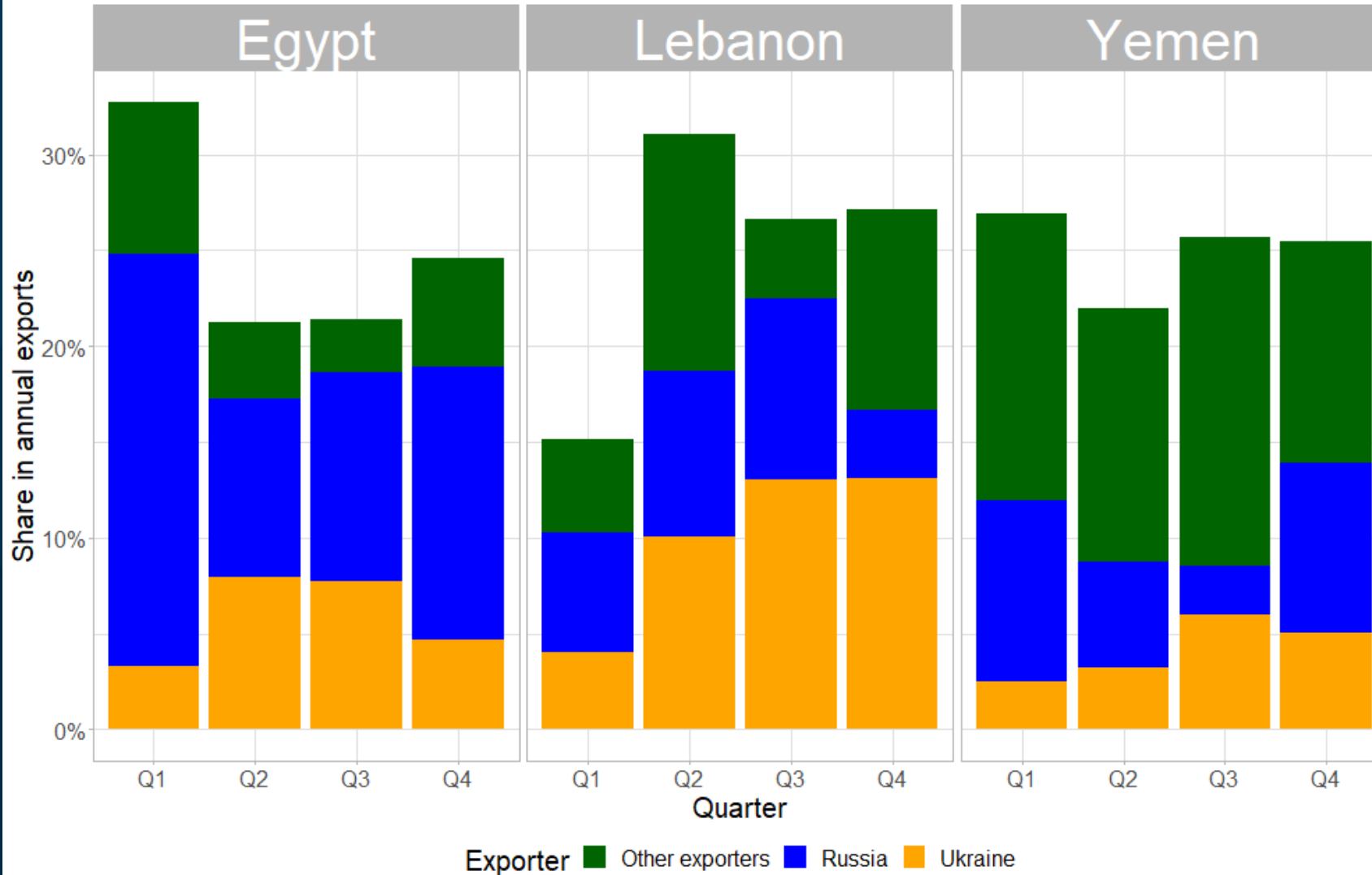
EGY  
Imports:  
**120 Kg**  
per  
capita

YEM  
Imports:  
**114 Kg**  
per  
capita

LBN  
Imports:  
**96.6 Kg**  
per  
capita



## Distribution of imports by quarter, average 2017-2020



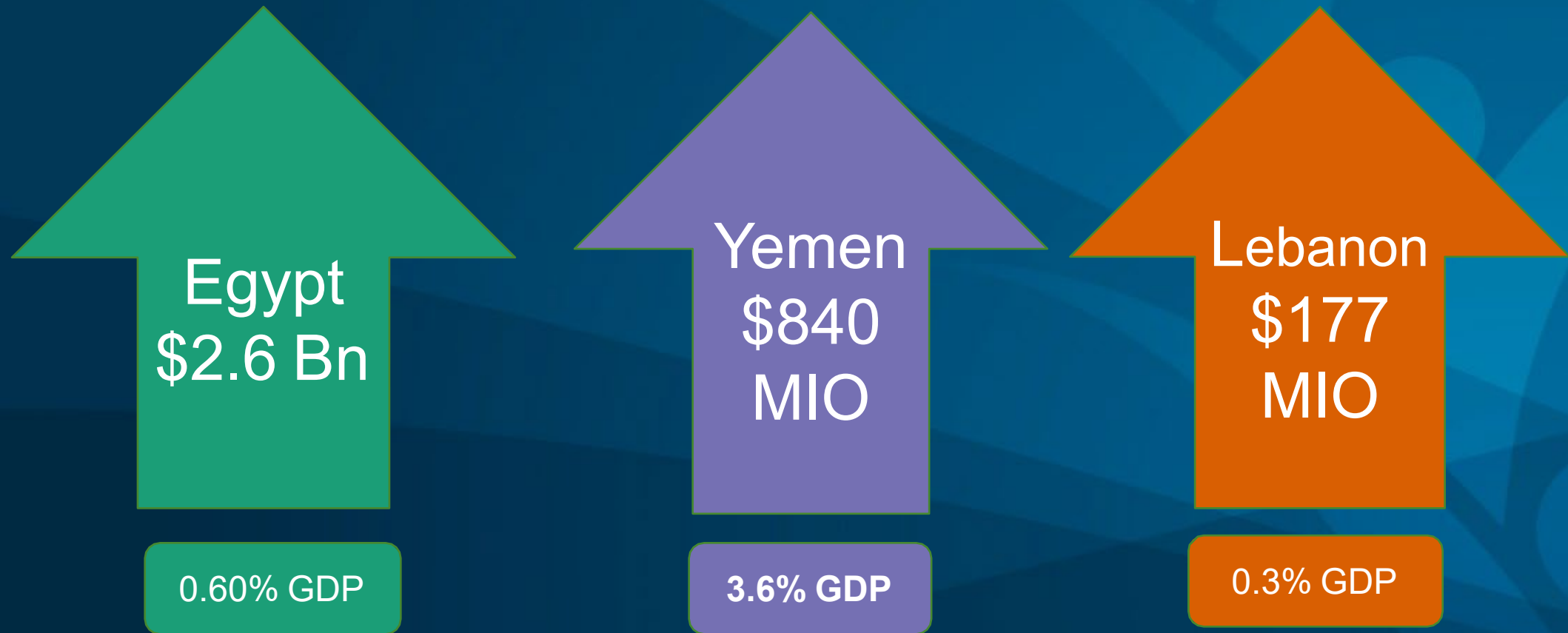
Source: COMTRADE

**A matter of timing  
and sourcing**





## Additional cost of importing wheat (based on price change since mid-2021)

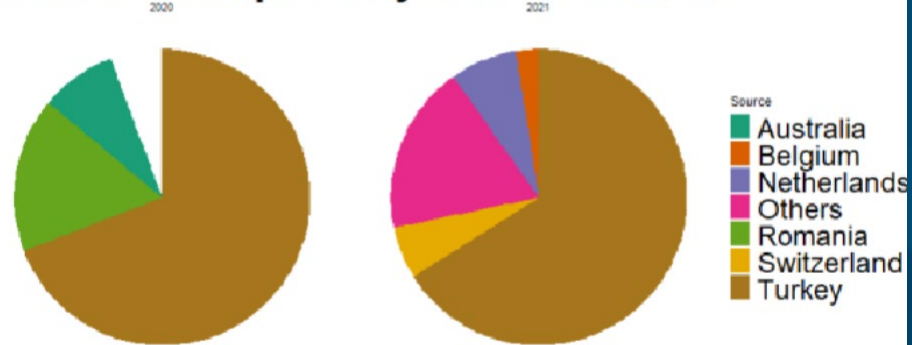




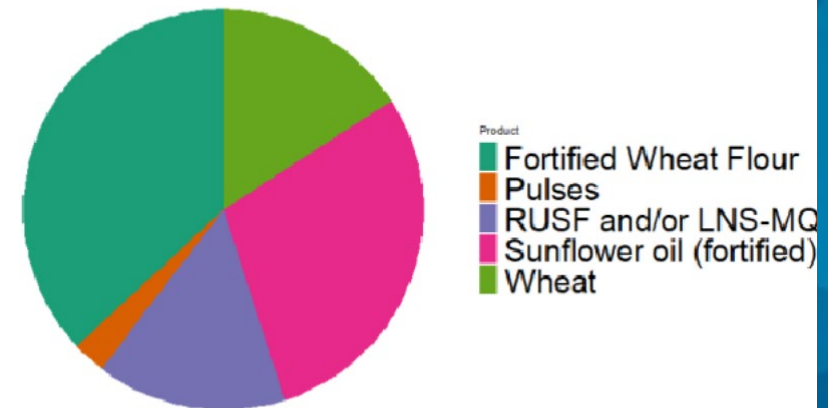


# Focus Humanitarian crisis: WFP sourcing for Yemen

Sources of imports by WFP in Yemen



Imported products by WFP in Yemen

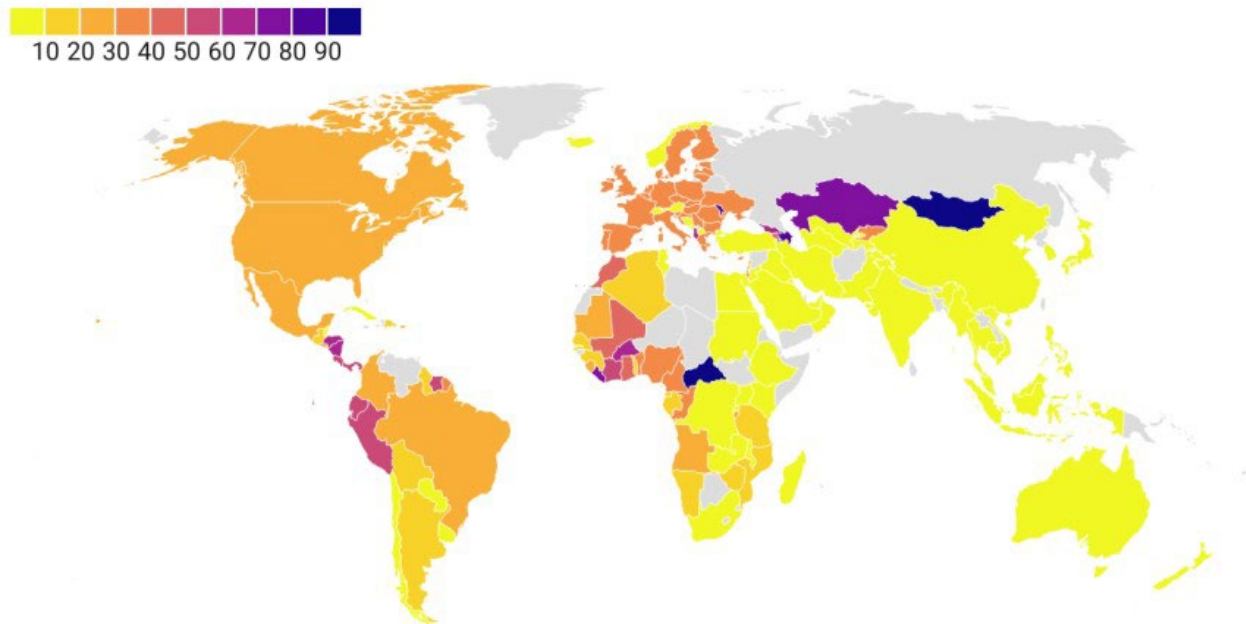






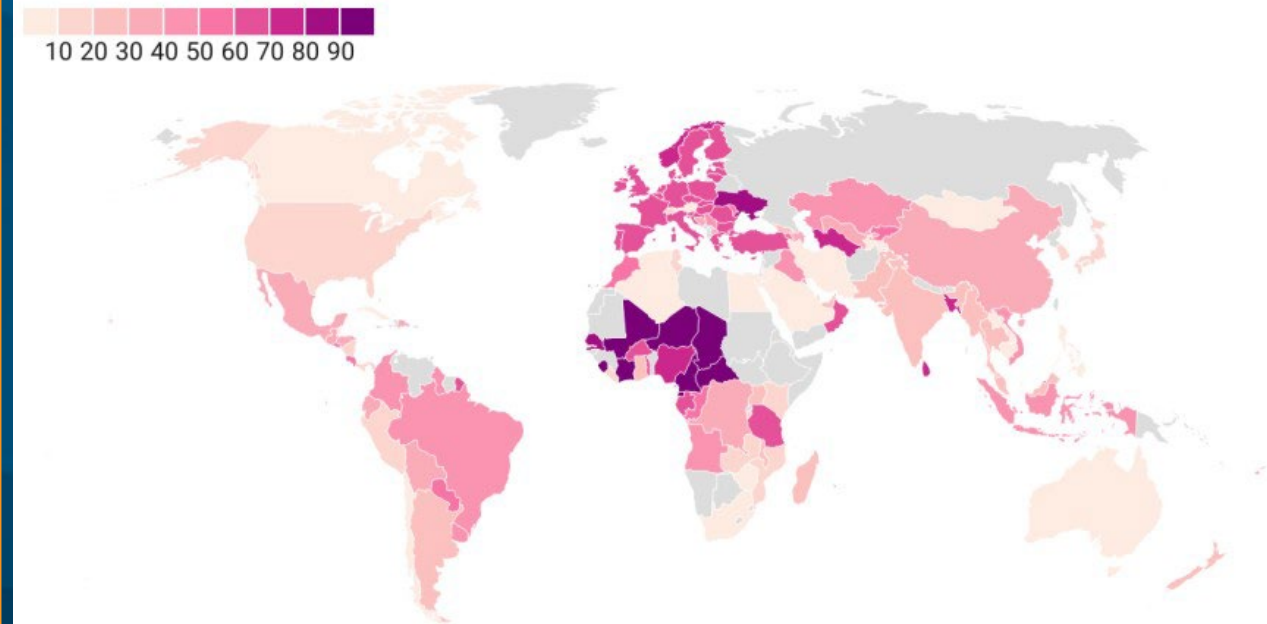
# Russia + Belarus : About 15% of world market for fertilizers

Percentage of the Russian Federation and Belarus in nitrogenous fertilizer imports by country



Map: David Laborde • Source: COMTRADE • Created with Datawrapper

Percentage of the Russian Federation and Belarus in potassium fertilizer imports by country



Map: David Laborde • Source: COMTRADE • Created with Datawrapper

China's ban since September 2021 on exporting **phosphate** fertilizer to ensure domestic supply supported fertilizer prices (25% of global exports). 40% of India's supply.



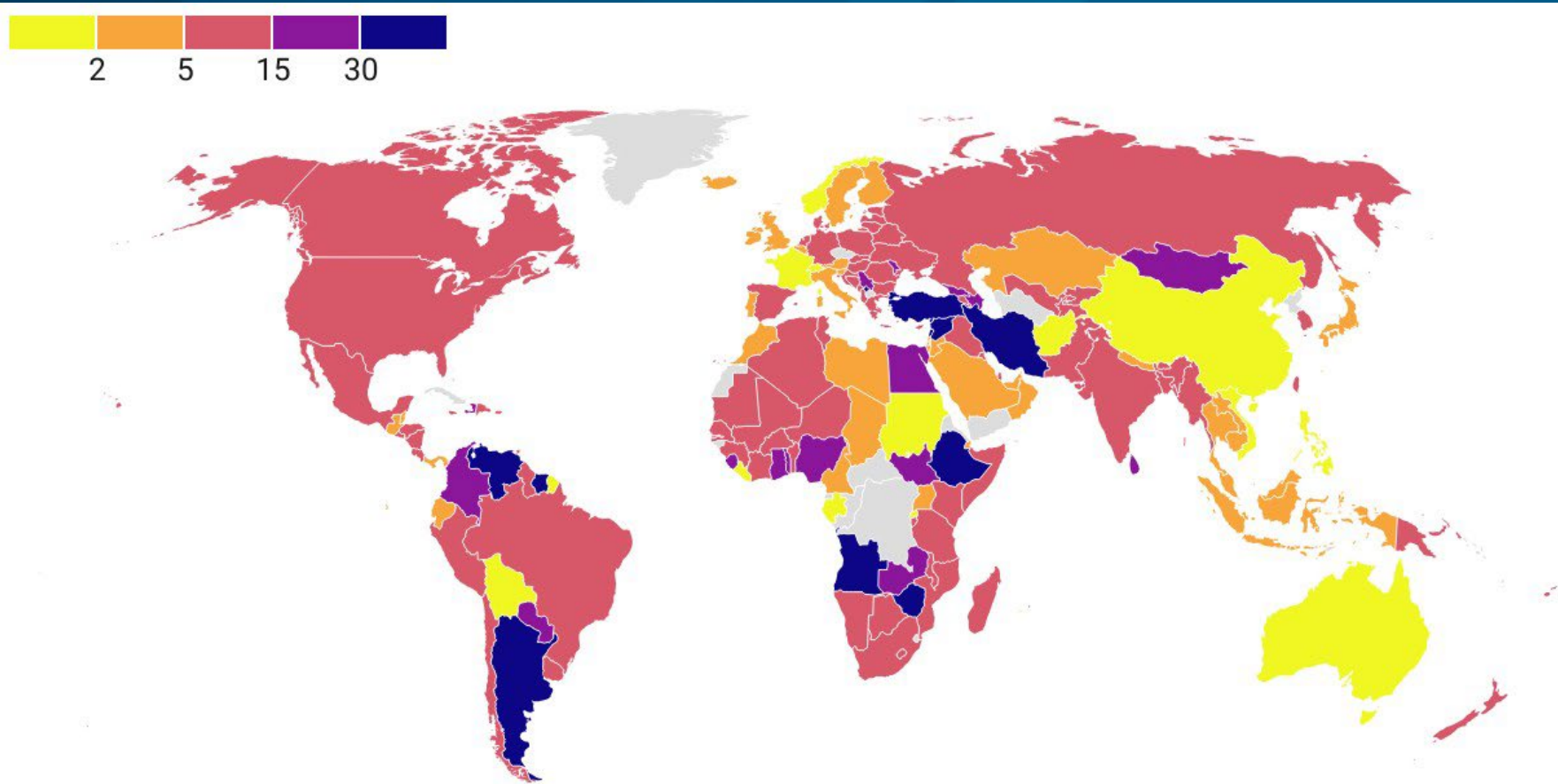
# Domestic Food Inflation

(% change; year over year, Feb 2022)

(consumer price index for food and beverages)

High food price inflation worldwide, but shock felt harder in macroeconomically vulnerable countries

- ✓ Higher pass-through effects among food-importing low-income countries
- ✓ Exchange rates and fiscal space for food subsidies also matter



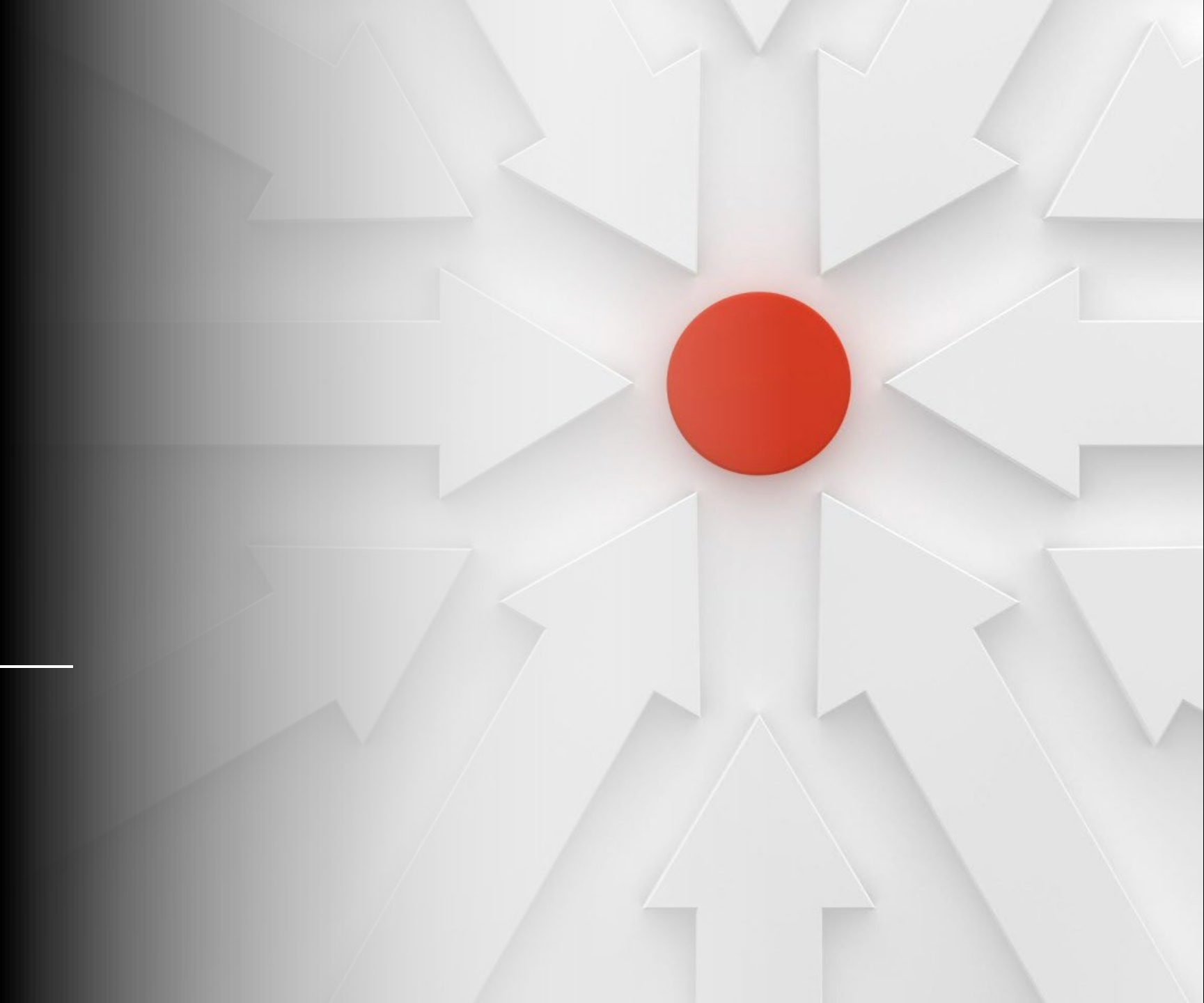
Source: Trading economics and IMF • Created with Datawrapper





# Policy responses

---







# Short term policy responses

## Global Stage

§ “Do No Harm” policies

§ Trade **sanctions** should avoid **food** and **fertilizer** products.

§ Avoiding a spiraling crisis triggered by **export restrictions** and bans

§ Avoiding **panic buying** and **hoarding**

§ Encourage oil exporters to support a **special fund** for helping food importing countries

## Individual countries

§ Rationale use of existing crops

§ Addressing global demand of crops for **biofuels**

§ Well **targeted** protection for **farmers** and vulnerable **consumers**

§ Allow farmers to have access to inputs (**fertilizers**) for the next planting season and could take the **best decisions**.

§ Protecting consumers during the storm: strengthen **social safety nets** & support governments facing **fiscal constraints**

## In LMICs



# Thanks

[j.glauber@cgiar.org](mailto:j.glauber@cgiar.org)

@JoeGlauber1









# SAVE THE DATE FOR THE UPCOMING FARM FOUNDATION FORUM

**April 12, 2022:** Solving Barriers to  
Agricultural Carbon Markets

Get all the details at  
[www.farmfoundation.org/forums/](https://www.farmfoundation.org/forums/)





# THANK YOU!

## Support our Mission

- Become a Friend of Farm Foundation
- <https://www.farmfoundation.org/friends>

**We hope to see you at a future event!**

**#FarmFoundationForum**