

Risk Projection and Protection

How the Ukraine conflict impacts agritech – and what businesses can do to protect themselves

While the pandemic has no doubt been an accelerant for change in the foodservice industry, the war in Ukraine may be yet another one. This time, food producers are likely to feel increased pressure to protect crops, livestock and other food products as the market becomes more volatile. Tech is a natural enabler here, making it possible for farmers to monitor and manage operations with greater precision and, as a result, improve their yields, decrease their costs and waste, and shield their incomes.

But the tech industry, similar to the agriculture sector, is likely to feel the strain of the Ukraine conflict in unexpected ways. As AgFunder News reported recently, Ukraine and Russia aren't only major producers of key agricultural commodities; they are also leading exporters of many of the building blocks of tech-enabled agriculture: iron ore, concentrates, steel, metal tubing and piping, insulated wires and optical fiber cables, as well as neon and palladium, both of which are critical to the manufacture of semi-conductors.



Further, Ukraine also supplies human capital with agritech expertise. Many tech startups have outsourced their development and engineering work to the country, which has offered a well-educated, technical workforce at a lower cost than much of the remainder of Europe, the report said.

So during this period of instability and an anticipated reduction in resources from Ukraine and Russia, what can businesses on the other side of the world do to protect themselves? Much like the foodservice industry has looked to local suppliers to fill out their menus throughout the pandemic, agriculture operations must now double down on their efforts to localize and decentralize their businesses. Watch for opportunities in a number of agritech niches that can fortify localized business: Indoor farming is experiencing an investment boom right now as more developers make it possible to provide a range of vegetables year-round, far from rural fields and regardless of the weather.

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Agriculture Commodities Outlook

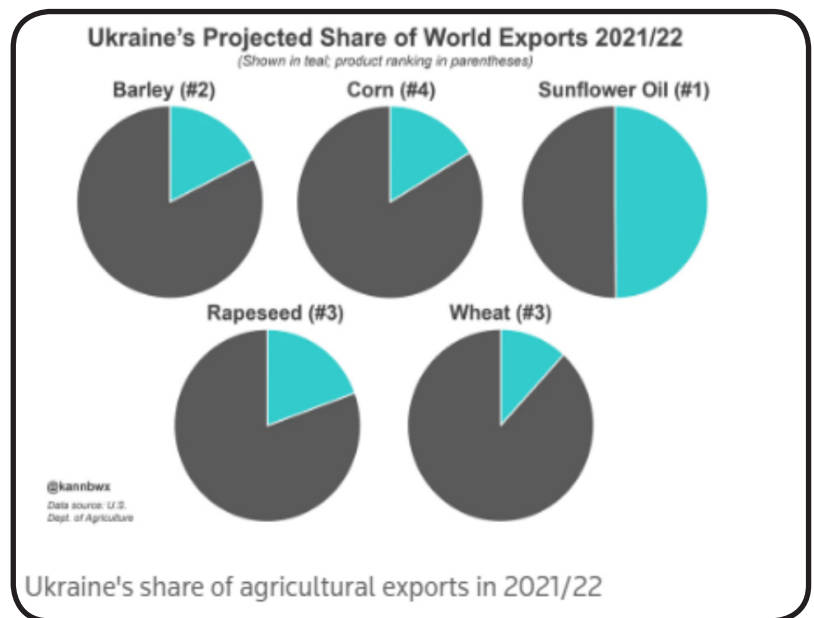
Assessing potential Ukraine impacts

As the world struggles to regain its footing amid a grab bag of significant challenges – a pandemic, extreme weather events and rising inflation among them – the war in Ukraine presents yet another major trial. In addition to the critical humanitarian impacts of the conflict, global agriculture will feel direct and indirect consequences in the short and long term, according to economists.

What can we expect? Although Russia and Ukraine aren't top destinations for U.S. commodities, the war will have trickle-down repercussions on global trade and infrastructure – and the disruption and overall uncertainty are likely to make all markets more volatile. Exports from the region will face major hurdles. As Joseph Glauber, a senior research fellow of the International Food Policy Research Institute, recently told NPR, Russia and Ukraine together export more than 30 percent of the world's wheat, as well as being top suppliers of barley, corn and sunflower seed oil. Ukraine provides about 15 percent of the global supply of corn. Russia, along with Belarus, provides 15 percent of the world's fertilizer.

Even countries that don't source these goods from the countries will be impacted downstream through rising prices and declining supplies. Damage to port infrastructure in Ukraine, as well as shipping restrictions and the effect of sanctions in the broader region, will make trade less predictable and more expensive. This comes at a time when extreme weather has gouged wheat harvests in North America and soybean and corn harvests in South America. Prices, which were already high, will escalate further. The depth of ongoing disruptions will dictate whether remaining shipments of commodities can be transported out of the countries, as well as if spring plantings and summer wheat harvests can occur.

Below are the most recent outlooks for key commodities according to the USDA. While some don't yet factor in the potential effects of the war in Ukraine, they provide a snapshot of the market factors that are merging with the conflict now:



Wheat: U.S. wheat exports for 2021-22 are at their lowest point in six years and the second lowest since 1971-72. Drought in the Northern Plains and Pacific Northwest, which slashed supplies of U.S. hard red spring, durum, and white wheat, has been a key factor limiting exports. Major markets in Asia, especially China, have dialed back purchases of U.S. wheat substantially in response to relatively high U.S. prices. Some demand has turned to Australia, which has had a record crop this year.

Corn: The 2021-22 crop is the second-largest corn crop on record, behind only 2016-17. U.S. corn exports continue to ship at a relatively strong pace, although the outlook is not as high as the record-setting export level of 2020-21. The current season-average farm price for corn is projected to be \$5.45 per bushel in 2021-22, the highest since the 2012-13 marketing year. Global record-high corn trade in 2021-22 is projected to increase further, with higher exports from Brazil and Argentina.

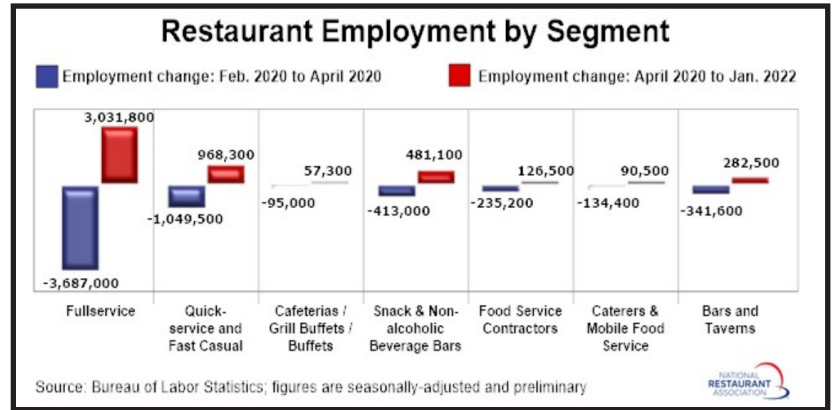
Soybeans: The global soybean production forecast for 2021-22 is lowered, with hot, dry weather in major South American soybean-producing countries expected to impact soybean yields. The anticipated reduction in soybean

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The Picture of Restaurant Work

Do employment numbers reflect a changing industry?

Across the restaurant industry, job growth has followed a surprisingly consistent path in recent months. February marked the fourth consecutive month in which foodservice operations added jobs in the range of 125,000, according to the National Restaurant Industry, and the fourteenth month of employment gains overall. The picture looks different within restaurant segments, with the foodservice business types that lost the most jobs early in the pandemic now adding the most staff and the businesses that lost the least jobs now adding fewer. Still, the image that emerges is one of consistency: From an employment numbers perspective, the restaurant industry appears to be shifting gradually back into its pre-pandemic structure.



But there are ample signs that operators are looking to do more hiring (and focus more on retention too). The association's State of the Industry report in February indicated that 70 percent of operators don't have sufficient employees to handle customer demand. About 75 percent of operators said they plan to devote more resources to recruiting and retaining employees, and about half of operators expect labor recruitment and retention to be their top challenge this year. Within your operation, are you finding the line between leaning on technology to help you offload repetitive tasks, make ordering and payment more efficient – and creating roles and a general working environment that can help you attract and retain staff?

Commodities

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output from Argentina, Brazil and Paraguay should pull exports lower and push prices higher across soybean markets. While this presents some opportunities for soybean exporters and crushers in the U.S., an overall reduction in global soybean demand is expected.

Pork: Price forecasts of lean hogs are raised in each quarter of 2022 due to tighter-than-expected supplies of slaughter hog numbers early in the year, along with and ongoing expectations of strong consumer demand. Quarterly pork export forecasts are reduced on lower-than-expected December trade data and expectations for continued recovery of China's swine sector from disease problems. Total 2022 pork exports are expected to be 6.8 billion pounds, about 3 percent lower than exports last year.

Beef/Cattle: The total number of cattle and calves was down 2 percent from a year ago, but the forecast for 2022 commercial beef production was raised by 210 million pounds on higher expected fed cattle slaughter and heavier carcass weights. Prices for fed and feeder steer were raised for 2022. According to the most recent data from December, beef imports totaled 273 million pounds, up 30 percent from a year ago. The 2022 annual forecast for beef imports was raised 105 million pounds from the previous month. Beef exports were up 288 million pounds, 1 percent over the previous year.



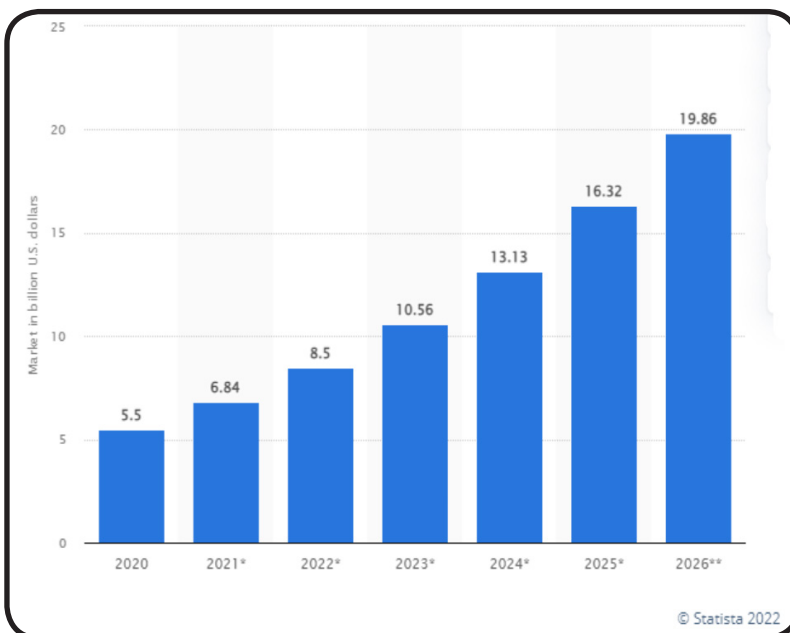
OUTLOOK

Q2/2022

Risk and Protection (from page 1)

(PlantLabs is one player that recently raised investment funds to develop more production sites in Europe and North America.) As climate change and supply chain challenges burden livestock producers, there has also been a surge in the development of businesses that remove (or nearly remove) livestock from food production via cellular agriculture. As Modern Farmer reports, approaches like tissue engineering are making it possible to use cells collected from an animal to grow meat, fish and even leather in a controlled environment, while advanced fermentation processes that genetically modify yeasts, fungi and bacteria are making it possible to produce proteins that are near-equivalent to animal proteins. Finally, at a time when fertilizer shipments from Russia are likely to be curtailed, efforts to improve soil health and nutrient availability through the use of biological fertilizers will only increase. As you review suppliers and assess new ones, consider how well they are decentralizing and fortifying their operations in such ways to help ensure you can source the foods you need.

Projected vertical farming market worldwide (in US\$ billions)



Poised for impact: Restaurant trends to watch

-Eggs will feature in all-day sandwiches, alongside premium ingredients, with housemade sauces and using elevated preparation methods.



-**Breakfast is back** with 24-7 options, morning-only virtual brands and creative menu items.

-**Labor, supply disruption and inflation** will be the industry's top challenges.

-**Functional desserts** will offer ingredients designed to improve immunity, skin and mood.

-**Regional brands** will gain popularity by promoting attributes including health, sustainability and technology.

Source: Technomic

