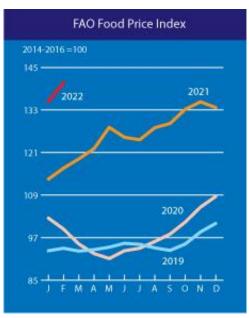
Impacts of the Russian invasion of Ukraine on agriculture and food security.

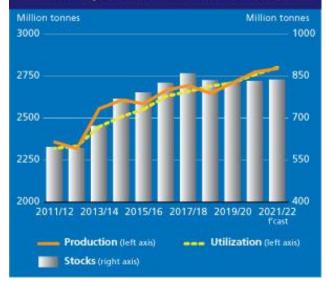
Starting position



Prior to the invasion we have the highest global food price index since the *"Great Grain Robbery"* and no increase in global cereal stocks despite a good global crop in 2021



Cereal production, utilization and stocks

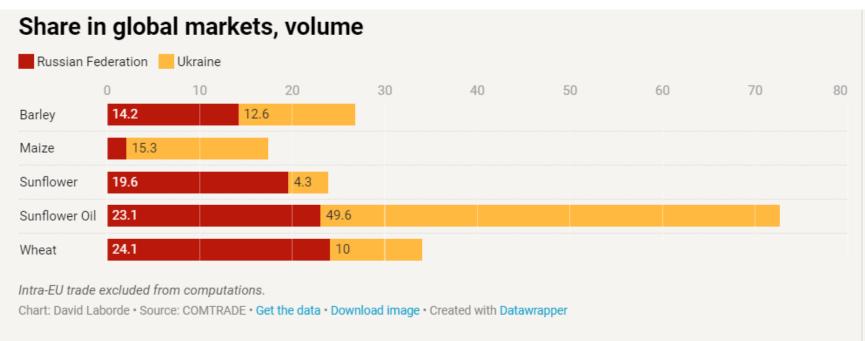


Wheat, corn and rice account for more than 40% of all <u>calories</u> consumed. But grain stockpiles are poised for a fifth straight annual decline

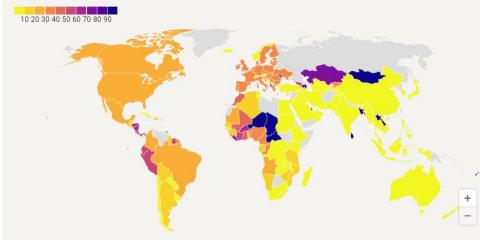


How will Russia's invasion of Ukraine affect global food security?

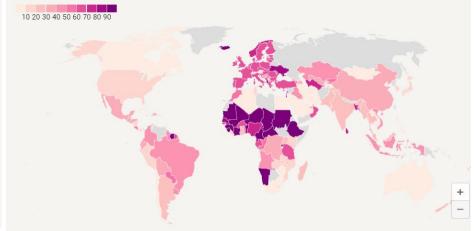
BY JOSEPH GLAUBER AND DAVID LABORDE



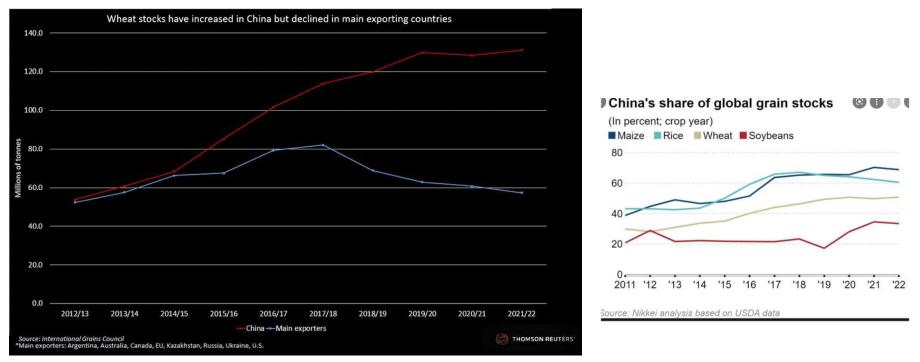
Percentage of the Russian Federation and Belarus in nitrogenous fertilizer imports by country



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



Global food security risk? Using wheat example

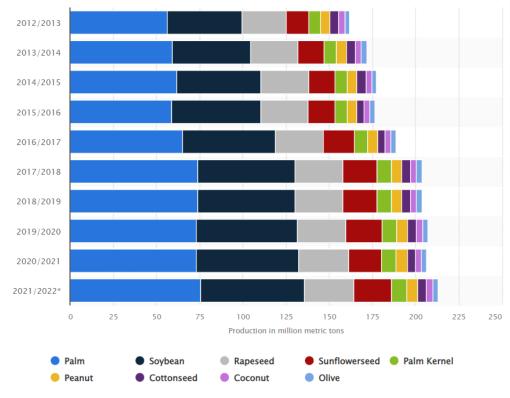


- The majority of wheat stocks not held by major exporters are now in China, which is expected to account for **131 million tonnes, or 47%,** of global inventories at the end of the current season- IGC data.
- Stocks in major wheat exporters the European Union, Russia, the United States, Canada, Ukraine, Argentina, Australia and Kazakhstan set to fall to a nine-year low **of 57 million** tonnes by the end of the 2021/22 season. - International Grains Council (IGC)
- The major exporters account for just one-fifth of global inventories and, with world consumption expected to total **781 million tonnes, that would feed the world for just 27 days** –Dan Basse

World veg oil already under severe stress before disruption of Ukraine sun oil

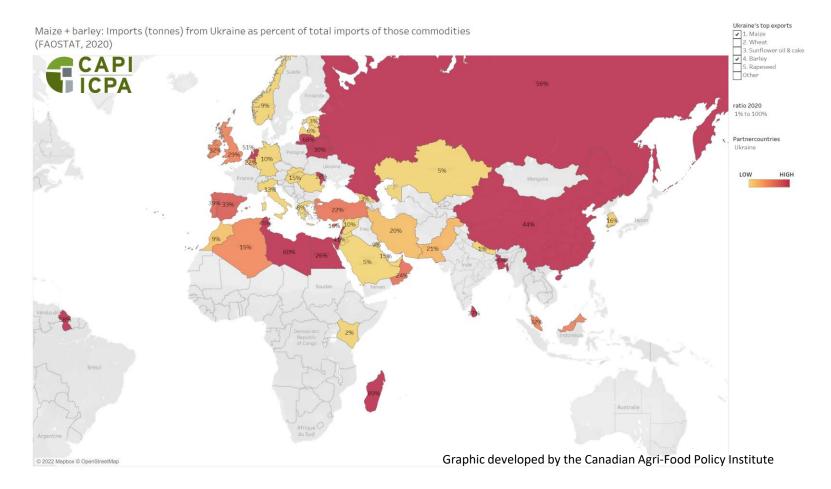
- Malaysia's benchmark crude palm oil prices have soared 45% so far this year, boosted by a COVID labour shortages, weather, aging trees, increasing restrictions on expansion
- Export restrictions by top palm producer Indonesia
- Much reduced canola crop in Canada
- Disruption to sunflower oil supply by Russia's invasion of Ukraine
- Major reduction in South American, particularly Brazil soybean crop coming to market now
- Many countries rapidly seeking alternative supplies. Consumer panic hoarding in India

Production of major vegetable oils worldwide from 2012/13 to 2021/2022, by type(in million metric tons)



Source: Statista

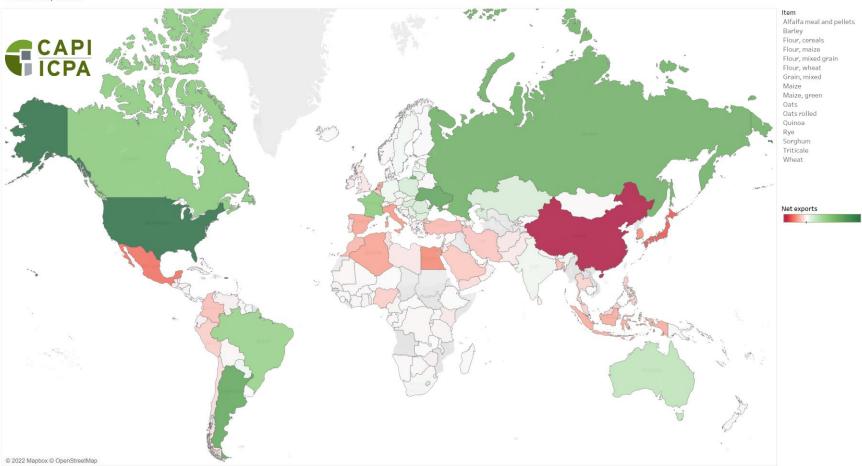
Maize + Barley: Imports (tonnes) from Ukraine as percent of total imports of those commodities FAOSTAT, 2020



May pressure relocation of meat production globally

Global net cereals importers and exporters

Net exports of cereals, no rice (tonnes) FAOSTAT, 2020



Net exports

-100247582 to 82125681

Graphic developed by the Canadian Agri-Food Policy Institute The crisis may trigger a reassessment of surplus meat production in grain deficit countries. The iron law of the meat business states: without subsidies, tariffs and NTBs you can't economically move grain or forage to 4 legged animals you must move the animals to the feed.

For example note major grain deficit meat exporters in E.U.