

## The Weaponization of Wheat Climate Change and Russian Agricultural Power

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Climate change is often considered universally harmful. However, recent studies indicate that climate change is increasing Russia's wheat production, while reducing its competitors' relative share of the global market. At the same time, the demand for wheat in Asia, the Middle East, and North Africa is expected to rise significantly in response to demographic changes. The Middle East and North Africa, in particular, are already unable to meet their demand for wheat due to a lack of arable land. These regions will be increasingly reliant on the world's future breadbasket: Russia. The United States should expect Moscow to exploit this agricultural leverage to influence vulnerable countries.

#### *The Impact of Climate Change on Russia's Wheat Competitors*

Increasingly arid and severe weather at lower latitudes will hurt wheat cultivation for the majority of producers. Rising temperatures will impede crop yield by exceeding optimal growing conditions and increasing the occurrence of extreme weather events like drought and flooding. Three of the world's five largest wheat exporters—the United States, Europe, and Australia—will experience these climate trends, increasing the cost of their wheat production and potentially lowering yields.

- *The United States.* The U.S. global wheat market share is expected to decrease from 15.4 percent to 13 percent between 2016 and 2027, in part due to climate challenges like drought, flooding, and disease. Furthermore, lower wheat prices caused by Russia's large wheat production has caused wheat producing areas like Kansas and Oklahoma to shift toward crops where U.S. prices are higher, yet still competitive, such as corn.
- *Europe.* E.U. export shares are expected to stay near current levels, dropping from 20 percent to 18.7 percent between 2016 and 2027. Not all major wheat growing regions will be negatively affected by climate change. However, Europe's potential for greater agricultural production is limited by stagnation in yield growth and an expected 3 percent decrease in arable land by 2030 due to urbanization and afforestation.
- *Australia.* Australian wheat exports are projected to decline by 10 percent from 2016 to 2027 largely due to severe climate change challenges, such as large declines in

precipitation and increases in wildfires. Furthermore, Australia's production costs are much higher than Russia's due to strong regulations on wages, working conditions, and standard of living. Finally, China's Belt Road Initiative (BRI), is connecting Russia to Southeast Asian markets, previously one of Australia's main markets.

### *Russia as Tomorrow's Bread Basket*

Russian production will benefit the most from climate change. Its large reserves of newly arable land will give it significant advantages over other northern producers like Ukraine and Canada. Russia's proximity to major markets gives Moscow a decisive cost advantage that will result in Moscow gaining a large share of the global wheat market.

- *Longer Growing Seasons.* Temperatures in Russia's wheat production regions is expected to increase by 1.8 °C by the 2020s and up to 3.9 degrees by the 2050s. Higher temperatures, especially during the winter, result in longer growing seasons as agricultural areas are exposed to ideal temperature and moisture levels for longer periods of time. Growing seasons and frost-free days may increase by 10-20 days per year.
- *More Arable Land.* Climate change also will expand the amount of profitable arable land in Russia. Previously, some land was too far north for efficient production. Russia can potentially add 50 million acres of land to its 79 million acres of current production and produce 40 Mt more because of the growth in arable land. This growth in land under cultivation will especially take place in Siberia, making the region essential to Russia's future wheat production.
- *Lower Transportation Costs.* Russia's geographic position allows it cheap and easy transportation of wheat to important regions. Russia is situated in Eastern Europe, allowing easy land transportation to Western Europe. Russia's Black Sea border gives it sea access to the Middle East and North Africa. In Asia, trade and infrastructure projects like China's BRI are overcoming Russia's traditional transportation obstacles in the region.
- *Economic policies.* The 1998 Russian financial crisis caused Russia to cut agricultural subsidies and devalue the ruble. The Kremlin's decision to push privatization by allowing land to be bought and sold freely set off a wave of investment and farm expansion. The devaluation of the ruble benefitted agriculture by making domestic products price competitive relative to imports.

Russia holds several advantages in wheat production. Combined with climate change, these advantages will make Russia the world wheat leader in the next decade. Global wheat market shares, 12 percent in the 1990s, are predicted to reach 31 percent by 2027.

### *Asia: Russia-China Competition*

Imports of Russian wheat in China and Southeast Asian states like Indonesia will allow Russia to challenge Chinese influence in Asia. In the past, Russian wheat has not been a strong factor in Asian markets. However, population growth and urbanization, along with the decline of traditional barriers to Russian trade, are increasing Russian wheat exports in Asia.

- *Population Growth and Urbanization in Asia.* Asia currently holds 60 percent of the world's population. From 2017 to 2050, Asia's population is expected to increase by 750 million, second only to Africa. Asia has traditionally consumed rice, rather than wheat, but rapid urbanization is changing Asian diets.
- *Potential for Russian market expansion in Asia.* Barriers to Russian trade in Southeast Asia have recently declined. Australia, which is currently the largest wheat exporter to Southeast Asia, is gradually losing its wheat market share in the region to Russia and Ukraine because of high production costs. The United States, the primary exporter of wheat to China, will also lose its wheat market share due to costs imposed by climate change.

China's BRI project expands Russia's opportunities to influence Asia through trade routes for wheat exportation. Russia is interested in using the BRI to orient its neighboring states' economies towards itself, enhancing its regional and global power. Wheat also will be used to diversify ties with Southeast Asia through agricultural products, which will help Russia create stronger links with ASEAN.

Russia's expansion into Asia is part of a larger strategy to adapt to its isolation from the West and strengthen its image as a global power. Wheat and other trade will be an important part of Russia's pivot to Asia, a vital aspect of Russia's foreign policy and competition with the West.

### *Middle East and North Africa: Expansion of Russian Presence*

Russia is involved in the Middle East and North Africa through arms sales and military intervention but seeks to further increase its influence in the region. In MENA, Russian wheat exports will create deeper economic cooperation with Russia as MENA states imports the most wheat in the world.

- *Population Growth and Urbanization in MENA.* MENA, alongside Asia, is one of two regions with substantial expected growth in the next 50 years. Urbanization is expected to increase further as climate change drives populations to cities and away from increasingly barren rural areas. Respectively, North Africa and the Middle East have the first and second highest wheat consumption per capita rates in the world because of urbanization and population sizes.
- *Low Wheat Production.* Wheat imports in North Africa and the Middle East will increase 130 percent and 104 percent respectively between 2010 and 2050 because of domestic production constraints. Increasing extreme heat, drought, and arid conditions in MENA's

few areas of large-scale wheat production, such as Iran and Turkey, will cause water scarcity and decrease wheat production.

Currently, Russia is involved in MENA through arm sale, participation in the Syrian Civil War, and anti-terrorism operations. Russia has already courted Egypt, formerly a U.S. ally, through bilateral trade and closer military cooperation. Russian wheat exports to Egypt are so large that Russia and Egypt are discussing the building of grain storage facilities for Russian wheat in Egypt. In Saudi Arabia, a state with no domestic wheat production, Moscow and Riyadh are discussing making Saudi Arabia a Russian grain trade hub.

Wheat exports will strengthen Russia's involvement in states like Egypt and Saudi Arabia, providing a challenge to regional and even European security. Gaining political power in MENA will also service Russia's overarching goal of challenging the West and overturning the current world order.

### *Conclusion*

Russian control of the wheat market in Asia, the Middle East, and North Africa will strengthen Moscow's global influence. U.S. policies currently underestimate how Russia can challenge the United States, not through force, but by influencing states reliant on Russia for one of the world's most important commodities, wheat. Many of the forces driving this trend are environmental and thus are difficult to address through U.S. policy alone. Going forward, the United States should seek to counter Russia's growing wheat influence.