

April 29, 2024

# White Paper



This White Paper is the second installment in a series on Strategic Resources. Last month's paper, titled [Resource Security Part 1](#), explored two of the four strategic resources: energy and minerals. This month's paper (Part 2) focuses on agriculture and fishing.

Like energy and minerals, agriculture and fish are increasingly becoming central to Global and Great Power Competition. As the global population increases and arable land becomes inadequate to feed the world, the U.S., Russia, and China will vie for positions of advantage with respect to Agriculture and Fish. The Global South will compete for these resources as well, but unfortunately, it will remain vulnerable to food insecurity for the foreseeable future.

The following previously published papers provide helpful background: [Great Power Competition](#), [Strategic Competitors](#), and the [Global South](#).

## **Key points:**

The tension between food security and insecurity is increasing. It is becoming a significant factor in Global and Great Power Competition:

### **Agriculture:**

- China is the world's greatest agricultural importer, and the U.S. is the world's greatest exporter. China has insufficient arable land to meet its agriculture needs and is food insecure. It will continue to aggressively pursue agriculture imports.
- The war in Ukraine adversely effects global agriculture supply and prices, especially in Africa.
- The Global South concern over food insecurity is increasing. Africa has 65% of the world's uncultivated land. However, it is a net importer of agriculture products and is severely impacted by the rise of global agricultural prices. Africa will remain food insecure for the foreseeable future.
- Food insecurity will accelerate as the earth's population exceeds 10 billion within 30 years and the existing arable land becomes insufficient to meet global agricultural demand.

### **Fishing:**

- Fish is a major protein source for over 40% of the global population. However, fishing is threatened by pollution, climate change, and IUU (illegal, unreported, and unregulated) fishing.
- The U.S. considers IUU the top global maritime security threat.
- China, followed closely by Russia, is by far the most aggressive IUU violator and preys on smaller nations that are unable to defend their waters against China's Distant Water Fishing (DWF) fleet.
- Whole-of-world and multilateral collaboration and cooperation will be increasingly essential to successfully address the increasing threats to fisheries.



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## Discussion:

There are a few definitions of common terms associated with agriculture:

- Agriculture is the science, art and/or practice of cultivating the soil, producing crops, and raising livestock, and in varying degrees the preparation and marketing of the resulting products. Agriculture is essential to human life and of paramount importance to nations, societies, and individuals, particularly when it comes to economic and social well-being and political stability.
- Food security, according to the UN's Food and Agricultural Organization, is when all people always have physical, social, and economic access to sufficient, safe, and nutritious food that meets their dietary needs and food preferences for an active and healthy life.
- Food insecurity, as defined by the U.S. Department of Agriculture, refers to a household's limited or uncertain ability to access enough nutritious food, due to economic and social challenges.

The tension between food security and insecurity is gaining increased attention from international and regional institutions, as well as many nation-states. For example, The Economist produces an annual report called the Global Food Security Index (GFSI) that measures food security within 113 countries as a function of affordability, availability, quality and safety, and sustainability and adaptation. In terms of ranking in the GFSI report, eight of the recent top ten performers come from Europe, with the U.S. ranked 13th, China 25th, and Russia is 43rd.

As it stands to reason, nations do best when they are able to enhance agriculture through technology, education, governmental investment in R&D, and a strong supply chain infrastructure. Conversely, there are several prevalent factors impacting global food security, such as decreasing availability of arable land relative to population growth, climate change and global warming, technology related to agri-business, water supply, poverty, urbanization, invasive species, and disease.

Of concern, food security has worsened in the past three years mainly due to food affordability, as well as quality and safety. The worst of the worst are Yemen, Haiti, and Syria.

Here are some notable statistics regarding global food production relative to imports and exports:

- The world's top four food-producing countries include: China, India, the U.S., and Brazil, and the top five global exporters include the EU, the U.S., Brazil, China, and Canada.
- The U.S. is the world's top single nation food exporter largely due to crop yields and agricultural infrastructure. In 2022, total U.S. agricultural trade reached record levels with exports valued at \$196 billion and imports at \$198 billion.
- The top five countries to which the U.S. exported agriculture in 2022 were: China (19%) followed by Canada and Mexico (29% combined), Japan and the EU (14% combined); 62% total combined.
- The top five global importers of agricultural goods include China, the U.S., the EU, the U.K, and Japan.
- The top five importers to the U.S. in 2022 were Mexico 22% (\$43.3 billion), Canada, and the EU 37% combined (\$37.5 billion and 35.8 billion), Brazil and China (5% combined); 64% total combined.
- According to the UN, "although Africa has over 65% of the world's uncultivated land, it is a net food importer, and as such, has been severely impacted by the rise of global food prices, resulting in increased food insecurity." Additionally, the IMF reports that, "climate change is intensifying food insecurity across sub-Saharan Africa."

## Security Concerns:

According to the World Bank, China has only 13% of arable land and will continue to rely on massive imports to feed its population. China purchases more soybeans, corn, wheat, rice, beef, pork, barley, and sorghum than any other nation and is also the top purchaser according to S&P Global. China will continue to be aggressive in securing agricultural imports and control of sources.

The war in Ukraine will continue to threaten global food supply and prices, especially in Africa.

## Fishing:

In terms of resource security, fishing might seem an issue of low importance; however, considering global demand, fish is a major source of protein for over 40% of the global population. But there are challenges too, like that of pollution – in fifty years, it is possible that there may be more plastic pollutants in the ocean than there will be in fish. Climate change is also a concern, with degrading ecosystems and illegal, unreported, and unregulated (IUU) fishing.

To clarify, IUU is an acronym used by the Food and Agriculture Organization of the UN:

- Illegal fishing: fishing activities which violate applicable laws and regulations.
- Unreported fishing: fishing activities which are not reported or are misreported to relevant authorities.
- Unregulated fishing: fishing activities by vessels without nationality or not regulated by their flag state, meaning the country in which a vessel is registered. Unregulated fishing also applies to fishing in areas or for stocks for which there are no applicable conservation or management measures.

IUU is an issue of increasing importance to national and international security. According to the Council on Foreign Relations' article: *Illegal Fishing is a Global Threat*, as recently as 2020, the U.S. Coast Guard prioritized IUU Fishing as the leading global maritime security threat over piracy. The Global Initiative Against Transnational Organized Crime's IUU Fishing Index measures the prevalence, response and vulnerability of countries to IUU. While IUU impacts countries around the world, not surprisingly, China then Russia tops the list, followed Yemen, India, Iran, and Indonesia. Statistics show that 20% of all fish caught globally are a result of IUU fishing equating to a loss of ~\$23 billion for the legal fishing industry.

## Security Concerns:

According to a report published by the Office of Naval Intelligence, "The People's Republic of China (PRC) is the only nation that employs fishing vessels within its distant water fishing (DWF) fleet in a manner that poses a threat to U.S. and partner countries' interests." ([Office of Naval Intelligence Report](#)).

China's DWF fleet enables it to be the largest violator of illegal fishing. Its DWF misbehavior in the vicinity Ecuador in 2020 is an example, when 350 Chinese vessels were observed conducting predatory high seas fishing around Ecuador's Galapagos Islands, a UN Educational, Scientific and Cultural Organization (UNESCO) World Heritage site. Ecuador lacks robust maritime enforcement capabilities, as is the case for many smaller nations, as such, when possible, the U.S Coast Guard dispatched a single cutter to patrol the area.

In the 2023 Posture testimony to Congress, U.S. Southern Command cited the seriousness of the PRC threat stating "environmental crimes such as illegal, unreported, and unregulated fishing (IUUF), illegal logging, and illegal mining continue to have devastating impacts on the region and the PRC is the largest perpetrator of these biodiversity crimes. Every year, there are between 350 and 600 Chinese Communist Party-subsidized vessels fishing off the coast of South America." The Council on Foreign Relations proposes "a whole-of-world approach with opportunity for state-to-state cooperation in facing IUU globally to preclude increasing threats to fish stocks, economies whose survival depends on fishing, ocean ecosystems, coastal countries' ability to provide security for their own national resources, and both national and global food security."

There are a number of organizations and initiatives dedicated to this increasing challenge, such as the International Maritime Organization, Interpol's Project Scale, the Pew Charitable Trusts' Oversea Ocean Monitor and Global Fishing Watch's satellite-based platforms, the Sea Shepherd Conservation Society and Greenpeace. In sum, this work is critical to safeguard sensitive marine environments and food sustainability, prevent irreparable damage to coastal economies, counter corruption and associated criminal activity, and uphold the sovereignty and security of the world's maritime nations.

## **Implications and Forecasts:**

### **Agriculture:**

- China is the world's greatest agricultural importer, and the U.S. is the world's greatest exporter. China has insufficient arable land to meet its agriculture needs and is food insecure. It will continue to aggressively pursue agriculture imports.
- The war in Ukraine adversely effects global agriculture supply and prices, especially in Africa.
- The Global South concern over food insecurity is increasing. Africa has 65% of the world's uncultivated land. However, it is a net importer of agriculture products and is severely impacted by the rise of global agricultural prices. Africa will remain food insecure for the foreseeable future.
- Food insecurity will accelerate as the earth's population exceeds 10 billion within 30 years and the existing arable land becomes insufficient to meet global agricultural demand.

### **Fishing:**

- Fish is a major protein source for over 40% of the global population. However, fishing is threatened by pollution, climate change, and IUU (illegal, unreported, and unregulated) fishing.
- The U.S. considers IUU the top global maritime security threat.
- China, followed closely by Russia, is by far the most aggressive IUU violator and preys on smaller nations that are unable to defend their waters against China's Distant Water Fishing (DWF) fleet.
- Whole-of-world and multilateral collaboration and cooperation will be increasingly essential to successfully address the increasing threats to fisheries.

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