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Wheat Export from the United States and from Columbia River Ports

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Introduction

Global wheat exports are dominated by a few major players, including Australia, Russia, the European Union, Argentina, and the United States, which together account for nearly 90% of world wheat exports (Sowell 2024). While Russia, Australia, and Canada have expanded their market shares due to increased production, the US share has declined from nearly 20% to just above 10% between 2012–13 and 2022–23. The ongoing conflict between Russia and Ukraine has further disrupted the global wheat trade, exacerbating market volatility. The shift in global market dynamics has significant implications for US wheat producers, including producers in the Pacific Northwest (PNW) who now face increased competition from a broader array of exporters. To increase market share in this evolving global wheat trade landscape, PNW producers may also need to reevaluate their export approaches and adapt to the changing competitive environment.

This publication analyzes wheat exports from the United States and the role of Columbia River (CR) ports. It examines the export patterns of Hard Red Winter (HRW), Hard Red Spring (HRS), Soft White (SW), and Soft Red Winter (SRW) to key destinations, highlighting seasonal fluctuations and the evolving dynamics of global wheat trade. Such insights can help growers and exporters optimize strategies and guide policymakers on trade dynamics and infrastructure investments, enhancing regional agricultural competitiveness and resilience.

Main Classes of Wheat Produced in and Exported from the United States

Hard Red Winter (HRW):

Primarily grown in the Great Plains and Pacific Northwest and is predominantly used for making bread flour and as an improver for blending.

Hard Red Spring (HRS):

Primarily grown in the northern plains and is predominantly used for making bread and other flour-based food products like bagels and pizza crusts.

Soft Red Winter (SRW):

Primarily grown in the eastern states and along the Mississippi River and is predominantly used for making sponge cakes, cookies, and other confectionery products.

Soft White (SW):

Primarily grown in the Pacific Northwest and is predominantly used for making noodle products, cookies, crackers, cereals, and crusted white bread.

Trends of US Wheat Exports and Exports from the CR

Much of US grain is exported through the CR, the largest river in the PNW region. Meanwhile, the CR basin, encompassing Washington, Oregon, and Idaho, is also a major wheat-producing area, contributing nearly 13% of the total US wheat crop annually (Kok et al. 2009). Known for its favorable climate, this region cultivates varieties like Hard Red, Soft White, and Durum wheat. Almost 80% of the wheat produced here is exported, highlighting the importance of international trade on the local wheat market (Kiszonas 2024).

Figure 1 illustrates the monthly total wheat exports from the United States (blue line, left axis) and the percentage share of wheat exported through CR ports (orange area, right axis) from 2009 to 2023. The weekly export quantity of wheat, provided by United States Department of Agriculture (USDA), is aggregated into monthly totals.

Monthly total US wheat exports throughout this period averaged around 2 million metric tons (MMT), with nearly half of the exports handled by CR ports on average. While overall US wheat exports have been stable over the years, they have declined in recent years as the European Union and Russia have risen in prominence (Sowell 2024). The share of exports handled by the CR fluctuated, but in most months, it accounted for over 40% of total US wheat exports, with its share reaching over 60% in certain months.

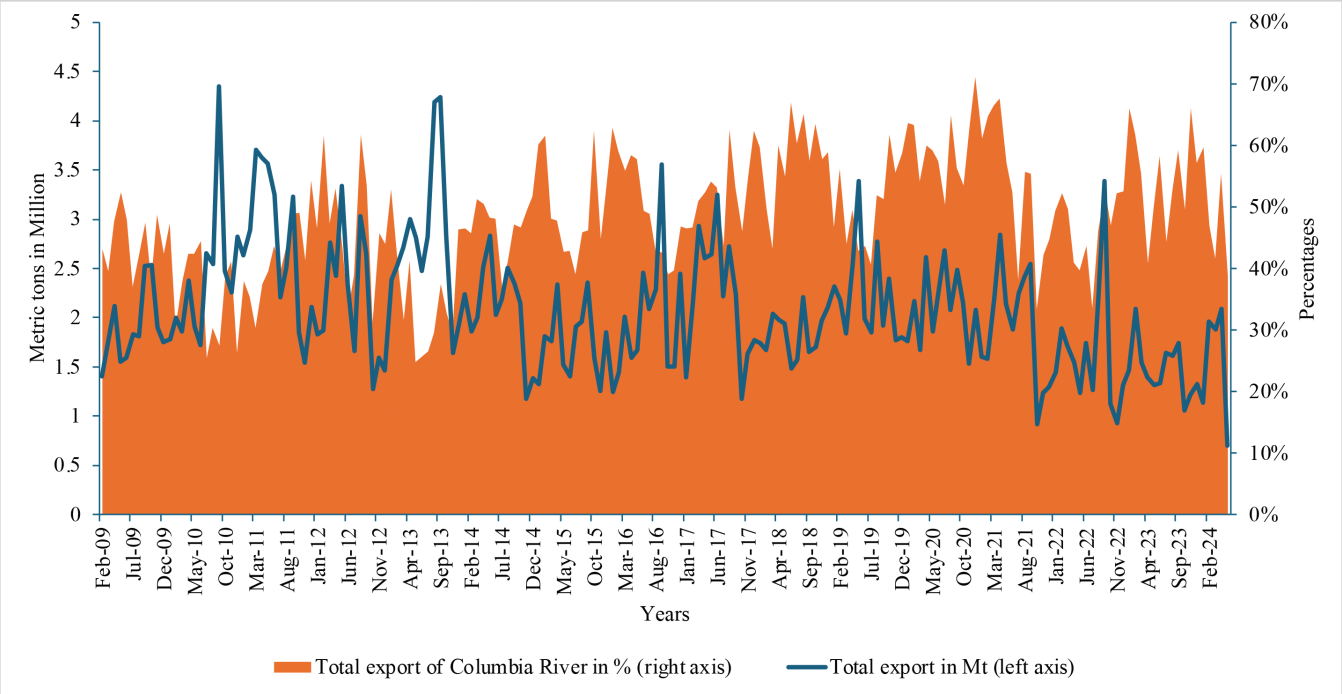

Figure 1. US total wheat exports and share of exports from CR ports, 2009–23.

As seen in Figure 2, the United States primarily exports four classes of wheat: HRW, HRS, SRW, and SW, which average around 34%, 27%, 14%, and 19% of total monthly US wheat exports, respectively. Meanwhile, HRW, SW, and HRS wheat make up 98% of the wheat exported from CR ports. Table 1 provides a breakdown of the share of US exports of these three wheat classes handled by CR ports in 2009 and 2023. In 2023, CR ports handled nearly all US SW wheat exports, as well as approximately one-third of HRW wheat exports and 40% of HRS wheat exports.

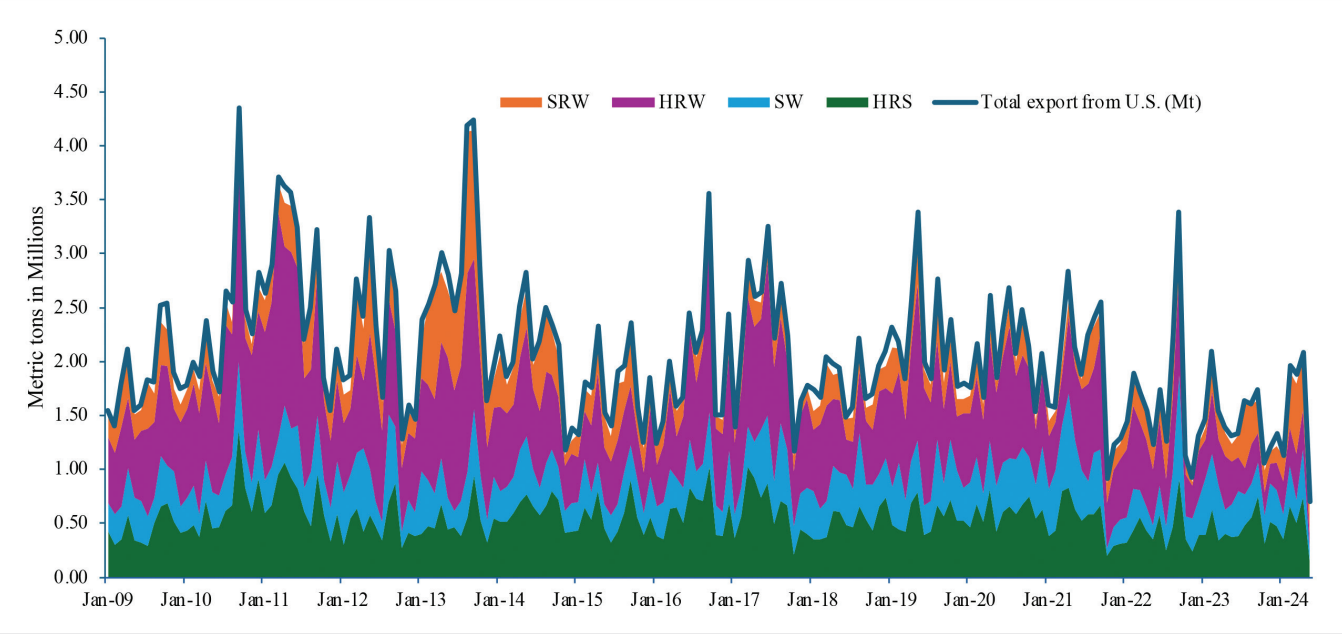

Figure 2. Monthly exports of wheat from the United States by classes, 2009–24.

Table 1. Share of different classes of US wheat exported through CR ports in 2009 and 2023.

Year	SW	HRW	HRS	All US Wheat Exports
2009	99%	28%	66%	45%
2023	100%	33%	41%	55%

Source: USDA.

Figure 3 compares annual wheat exports from US and CR ports by class between 2009 and 2023. As can be seen, total wheat exports from CR ports decreased by about 2%, while overall US exports fell by 21%.

Notably, annual HRW wheat exports have declined since 2021, dropping by 51% (from 8.4 MMT to 4.1 MMT) for the entire United States and 42% (from 2.3 MMT to 1.3 MMT) for CR ports. Similarly, US SRW exports also dropped, but with a smaller magnitude (11%).

In contrast, exports of SW and HRS wheat increased from both US and CR ports. Annual HRS exports rose by 82% from the United States and 13% from the CR, while annual SW wheat exports increased by 7% from both US and CR ports between 2009 and 2023. The decline in HRW and SRW exports from both US and CR ports is likely due to drought conditions in recent years that reduced US production, as well as global market disruptions that made US wheat less competitive internationally.

Figure 4 depicts seasonal patterns of wheat exports from the CR. On average, exports through CR ports are highest in August, September, and April. Meanwhile, October and November saw the weakest export activities. Wheat in the PNW region is typically harvested in July and August. The high export volumes in August and September reflect the shipment of the three classes of wheat (SW, HRW, and HRS) shortly after harvest.

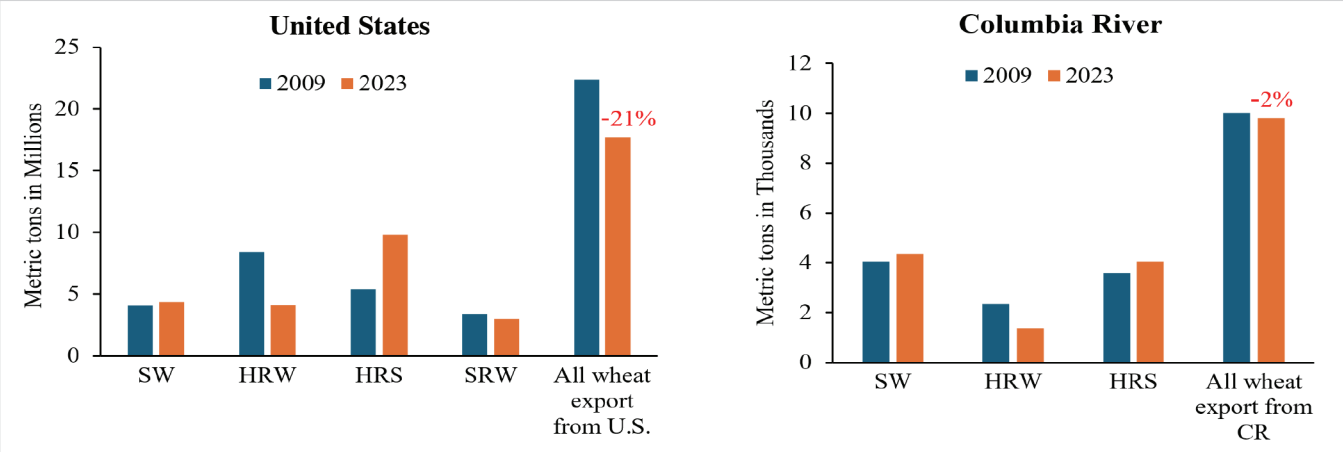

Figure 3. Comparison of exports from US and CR ports in 2009 versus 2023.

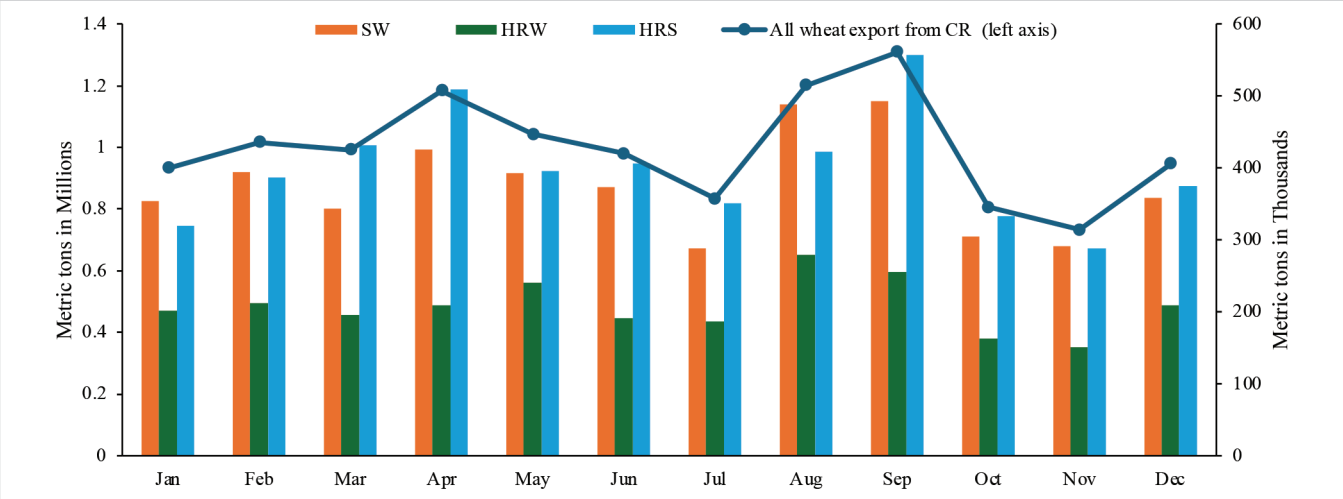

Figure 4. Average monthly exports of classes of wheat from CR ports (2009–23).

Key Export Destinations

This section discusses the major export destinations of wheat from US and CR ports.

HRW

In the early 2000s, North Texas was the primary port for HRW wheat exports. However, over the years, exports have shifted to deepwater ports on the CR and interior. This transition can be attributed to the CR ports' ability to accommodate larger ships, thereby reducing transportation costs (US Wheat Associates 2022), and its shorter shipping routes to Asia (Oldham 2020), making it more efficient for reaching key markets.

Figure 5 shows that the majority of US HRW exports went to three countries: Nigeria, Mexico, and Japan, accounting for nearly half of total exports. Nigeria's imports of US HRW declined steadily from 2009 to 2023, driven by increased costs, the end of national fuel subsidies, and a shift to cheaper alternatives like sorghum and cassava (Orji 2023).

In contrast, imports of HRW from the United States by Japan and Mexico increased during this period, with Japan experiencing some fluctuations while Mexico remained a consistent importer. Further, various countries increased imports of US HRW wheat in different periods due to specific reasons. For instance, Brazil (light green) turned to US wheat due to export restrictions in Argentina, its traditional supplier (Pham 2017). Meanwhile, Iraq sought more US wheat in 2018 because of drought and low domestic yields (Abdi 2019). Egypt imported US HRW in the early 2010s as a substitute after a ban on Russian wheat, its usual source (Mansour 2012). Recently, Ethiopia (brown) and China (dark blue) boosted imports to meet growing domestic demand and the impact of the Russia-Ukraine war (Food Business Africa 2022).

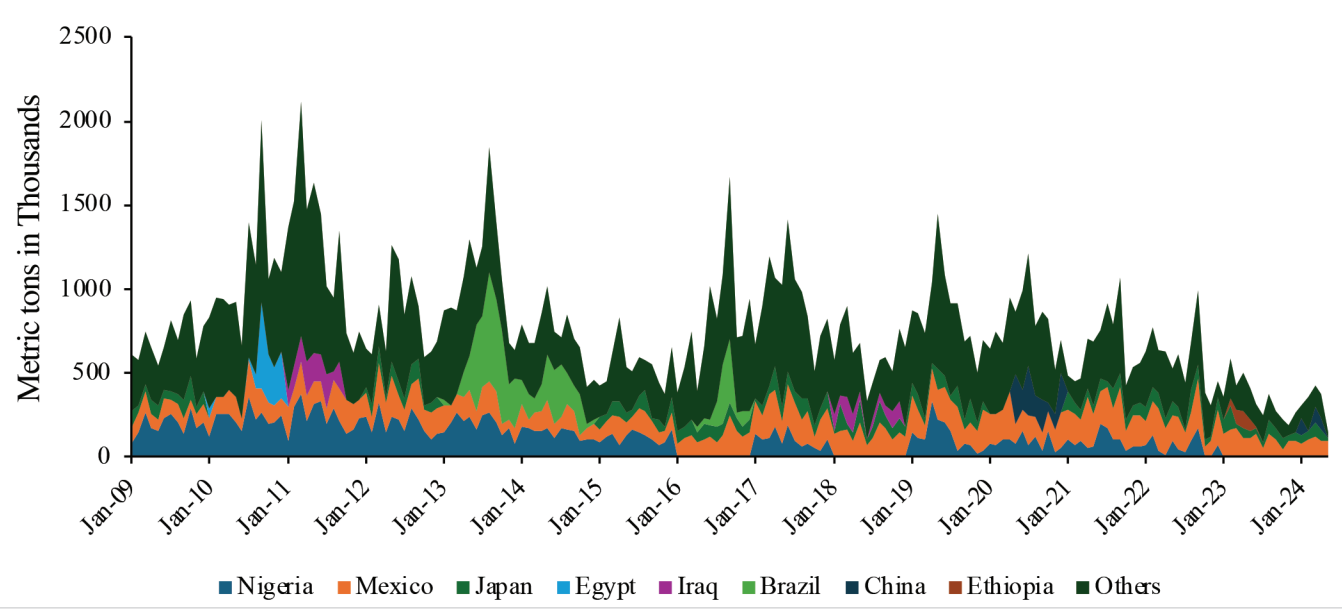

Figure 5. Major export destinations of HRW wheat from US monthly data from January 2009 to May 2024.

Figure 6 shows the primary export destinations of HRW from CR ports. Japan, Taiwan, and Korea consistently emerged as leading importers, accounting for over two-thirds of total exports. Additionally, Egypt, Brazil, Iraq, China, Indonesia, Chile, Ethiopia, and Guatemala showed significant import increases during specific years within this time frame.

SW

The United States exports virtually all of its SW wheat through CR ports. Hence, the export patterns of SW from the United States are similar to those of CR ports. Figure 7 shows that the majority of US SW exports were concentrated in three primary importing countries: Japan, the Philippines, and Korea, accounting for over 55% of total exports. The Philippines' imports of US SW wheat have been increasing over the years, while imports to Japan have been on a downward trend. Korea, however, has experienced fluctuations in its imports over time.

Further, in recent years, Yemen (purple) has turned to US SW wheat due to the war between Russia and Ukraine, as well as India's export ban on all wheat in mid-2022 following a heat wave that reduced its production (ACAPS 2023). Meanwhile, China imported US SW wheat to replenish reserves during COVID-19 (McGrath 2021).

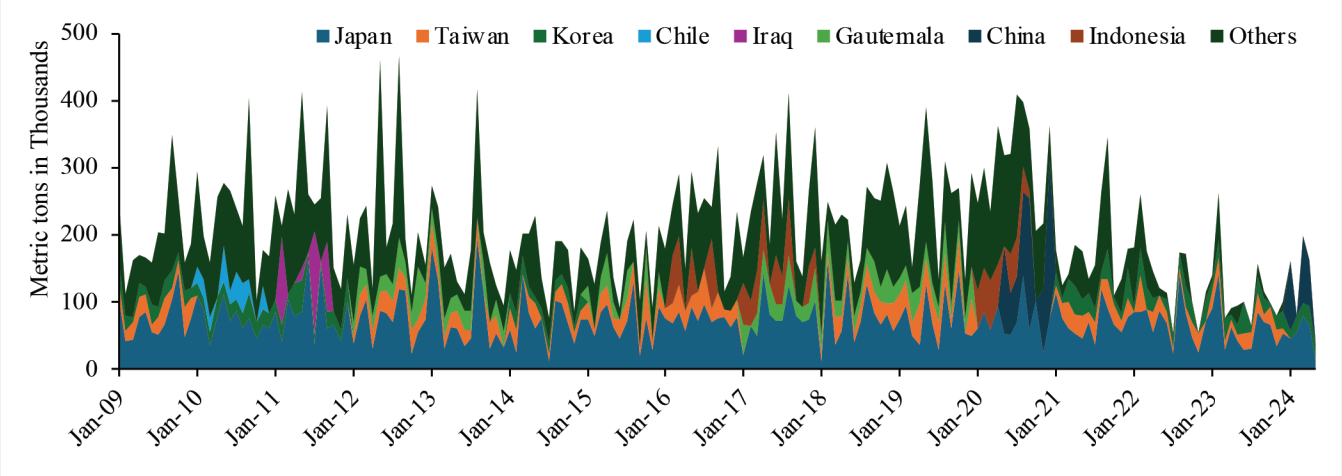

Figure 6. Major export destinations of HRW wheat from CR ports (monthly data from January 2009 to May 2024).

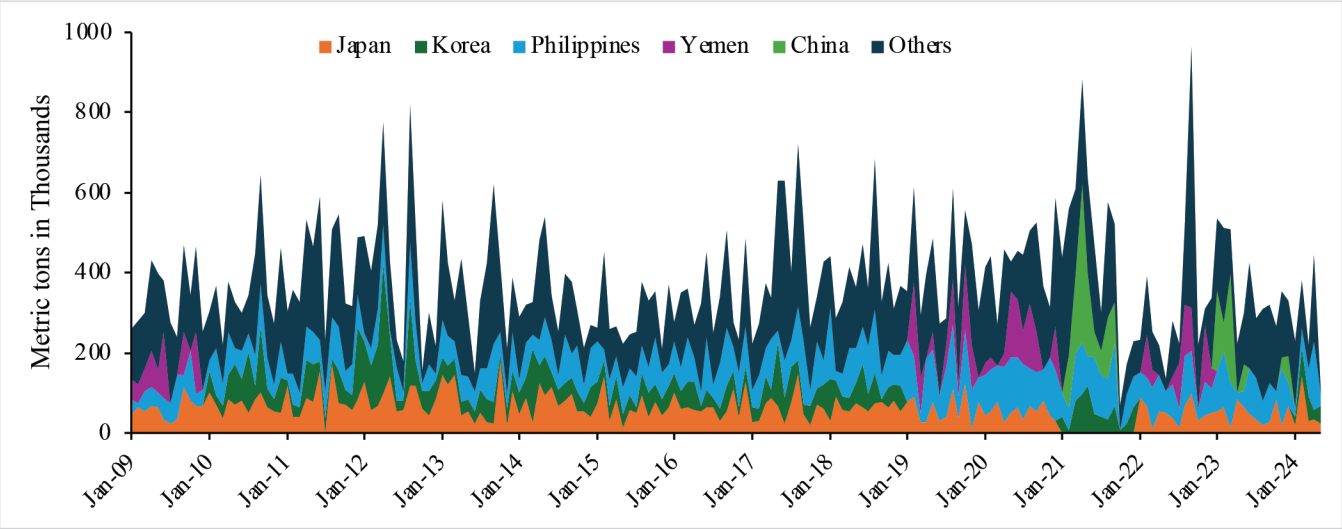

Figure 7. Major export destinations of SW wheat from the United States (monthly data from January 2009 to May 2024).

HRS

Figure 8 shows that key export destinations for US HRS exports include Japan, the Philippines, and Taiwan, which collectively account for nearly half (48.64%) of total exports. Japan's imports of US HRS have declined steadily from 2009 to 2023, influenced by government support for local wheat production, increased domestic production, and weak demand for Food, Seed and Industries (FSI) (Fujibayashi 2021).

Before 2020, Taiwan was also a key importer, but recently Mexico has risen in importance. The shift is driven by reduced local production in Mexico from adverse weather and decreased planting (Trejo 2024). Similarly, the Philippines has increased its import of US HRS wheat due to a shift in dietary preferences toward wheat-based foods (Corpuz 2019).

Figure 9 shows the export destinations of HRS from CR ports. As expected, the export destinations for HRS from CR ports closely resemble those for the United States. Japan, the Philippines, and Taiwan again emerged as primary importers, accounting for approximately 64% of total HRS exports. Additionally, Indonesia, China, and Korea demonstrated significant import increases during specific years within this time frame.

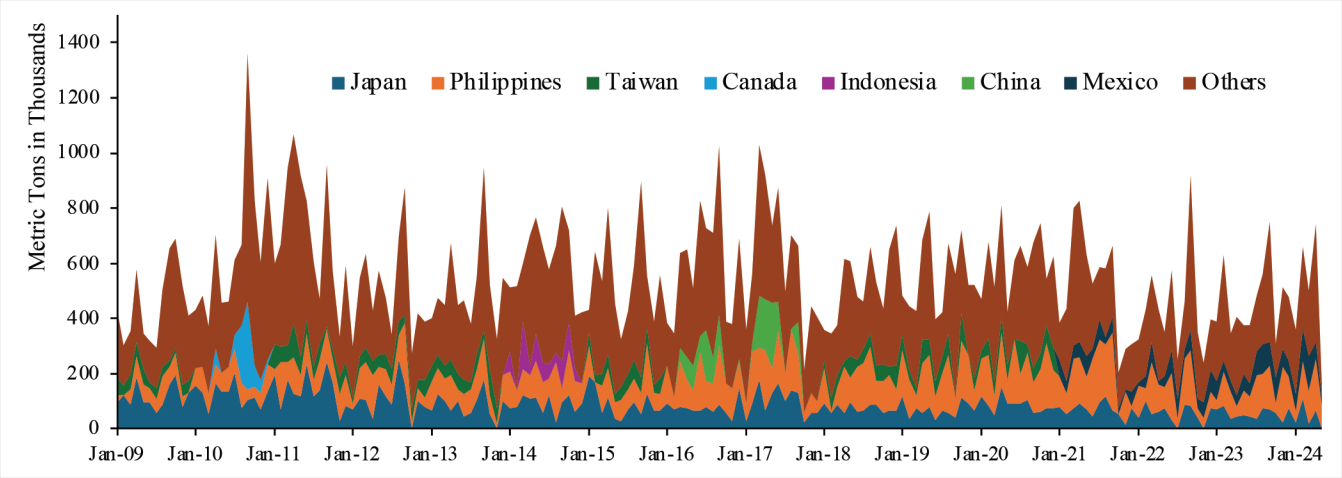

Figure 8. Major export destinations of HRS wheat from the United States (monthly data from January 2009 to May 2024).

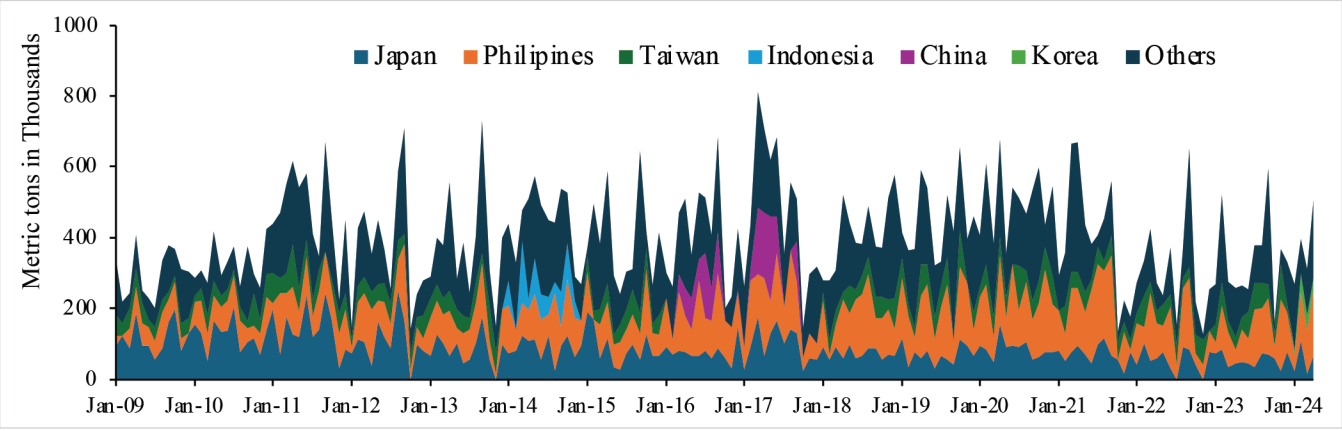

Figure 9. Major export destinations of HRS wheat from CR ports (monthly data from January 2009 to May 2024).

SRW

The Mississippi River is the primary export hub for SRW wheat, handling 78% of total US exports, while CR ports manage only a small fraction. As shown in Figure 10, most US SRW exports are destined for Mexico, Colombia, and Nigeria, which together account for over half of total exports.

Mexico's imports of US SRW wheat increased steadily from 2009 to 2024. In contrast, Colombia's imports have remained relatively consistent, with occasional fluctuations due to factors such as increased levies on wheat imports, currency devaluation, and competition from cheaper supplier (Food Agricultural Service Bogota Staff 2021). Nigeria's imports have been decreasing and fluctuating due to higher import levies, prompting flour millers to switch to more affordable, lower-quality wheat from other sources, thus reducing the US market share (Nzeka 2015).

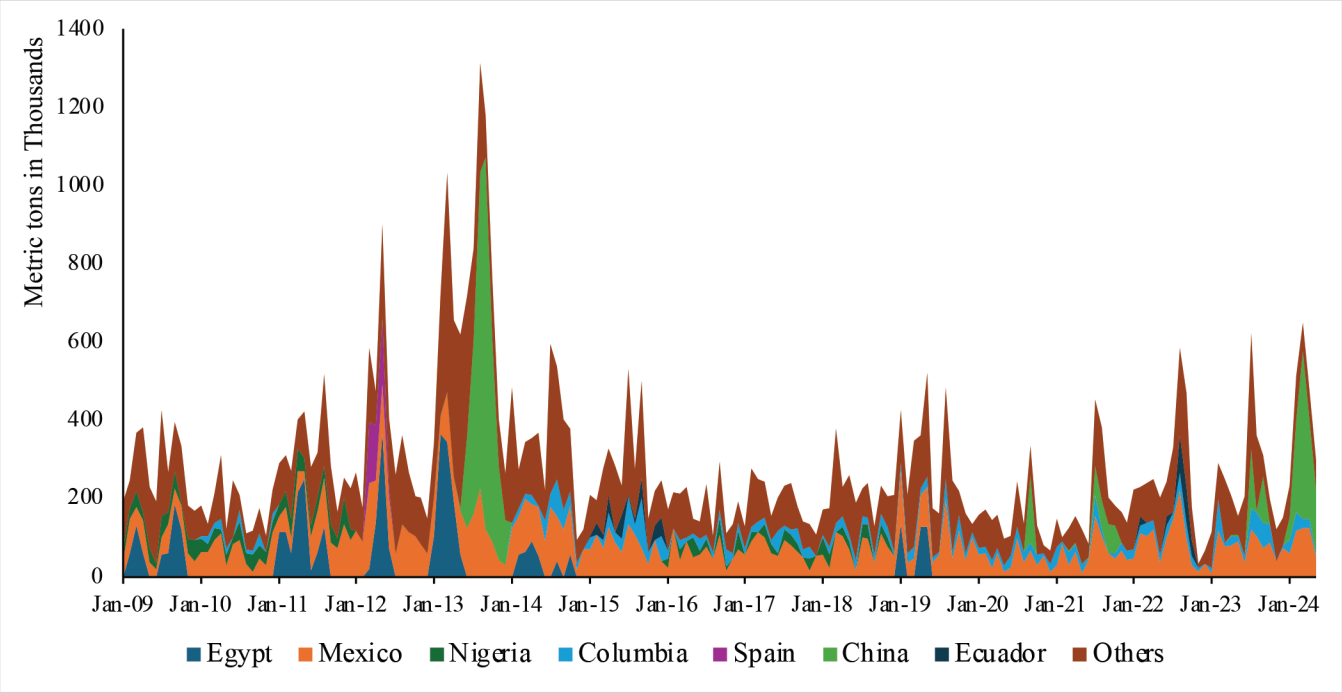

Figure 10. Major export destinations of SRW wheat from the United States (monthly data from January 2009 to May 2024).

Conclusion

Overall, US wheat exports declined in recent years, with the market share dropping from nearly 20% to just above 10%. HRW and SRW wheat exports decreased significantly due to drought and global market disruptions, while exports of SW and HRS wheat increased, reflecting shifts in global demand. The CR Basin in the PNW, which contributes about 13% of the national wheat crop and exports nearly 80% of its production, mirrors this national trend. Total wheat exports through CR ports decreased by 2%, with HRW exports dropping by 42%, while SW and HRS wheat exports increased. Ports in the CR primarily export SW wheat, along with HRW and HRS, with peak export activity in August and September and lower volumes in November, influenced by the wheat harvest schedule. Key export destinations of US wheat include Japan, Mexico, the Philippines, and Taiwan, with market dynamics shaped by global competition, domestic production issues, and changing consumer preferences.

Information from this study helps policymakers, producers, exporters, and other relevant stakeholders along the wheat supply chain enhance export strategies. With CR ports playing a key role in US wheat exports, maintaining and improving infrastructure along this route is crucial for sustaining and potentially increasing export volumes. Additionally, given the relatively concentrated export destinations of US wheat, as well as wheat exported through CR ports, diversifying export destinations and developing flexible pricing and supply chain strategies can mitigate risks associated with sudden market changes or economic shifts in importing countries. Meanwhile, it is also important to understand the specific needs and preferences of existing and emerging markets and develop tailored product offerings to foster long-term trade relationships.

Further Reading

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