



India's Agricultural Exports during the Covid-19 Pandemic

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Indian agriculture has undergone a significant structural transformation regarding the output mix, domestic demand, and international trade in food and non-food commodities. Between 2011 and 2021, the agricultural sector grew at an annual growth of 3.66%, which remains below the target of 4%. Agricultural exports can help boost agricultural growth¹ if duly supported by infrastructure and trade facilitation measures conforming with the international standards.² The COVID-19 pandemic disrupted the global supply chains and changed the landscape of economic activities, including food production, processing, distribution, consumption, and trade. The Government of India took several measures (e.g., investments in supply chains and agro-processing) to minimize the impact of such shocks on rural livelihoods and improve the resilience of agriculture and agricultural supply chains. As a result, agriculture was the only economic activity not much affected by the Covid-19 pandemic. Further, despite the pandemic, a noticeable spurt occurred in India's agricultural exports, reaching US\$41.87 billion in 2020-21 and crossing US\$50 billion in 2021-22. Understanding the current trade flows of agri-food commodities, especially during the pandemic shock, provides valuable insights to policymakers to evolve and promote resilient supply chains and exploit the untapped opportunities in the agri-food trade.

This brief note is about 'how India's agricultural exports behaved amidst the rapid changes in the global trade during the Covid-19 pandemic'. It provides evidence of how government facilitation could boost agricultural exports. It analyses the performance

of some important export-oriented commodities using the monthly export data from January 2011 to December 2021 and projects how the exports would have behaved had the historical trends prevailed.³

India's Exports during the COVID-19 Pandemic

Rice: Rice has always been the most important exported commodity from India. It exports basmati and non-basmati rice. The exports of non-basmati rice have picked up in recent years. India shipped rice mainly to Bangladesh, Saudi Arabia, Iran, Iraq, Benin, Nepal, and China in 2020 and 2021. However, the export diversification in rice has expanded, India exported rice to 166 countries in 2021 as against 153 in 2019. Rice exports during the COVID-19 pandemic witnessed a remarkable increase of 24.4% during the biennium ending (BE) 2021 from US\$ 7.07 billion over the pre-COVID period, i.e., BE 2019. Thus, the actual exports exceeded the projections (Fig 1A). This spurt in India's rice exports has been attributed to the Indian government's measures to ensure exports of rice and other cereals while taking COVID-19 appropriate safety precautions. The Agricultural and Processed Food Export Development Authority (APEDA) has been promoting rice exports through collaborations with various stakeholders. The Government set up a Rice Export Promotion Forum (REPF) involving representatives from the industry, exporters, the Ministry of Commerce, APEDA, and directors of the agricultural department of major rice-producing states.

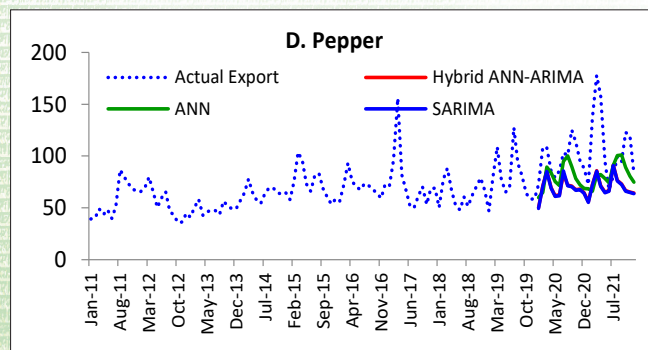
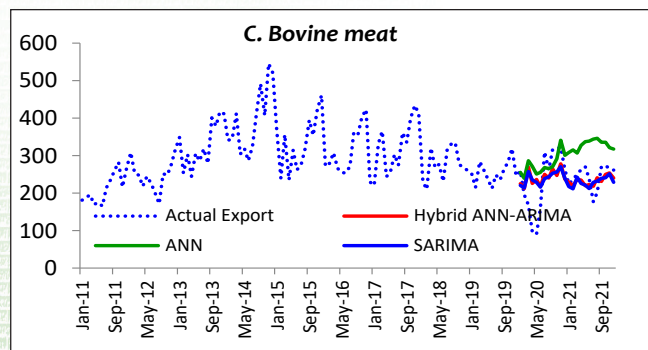
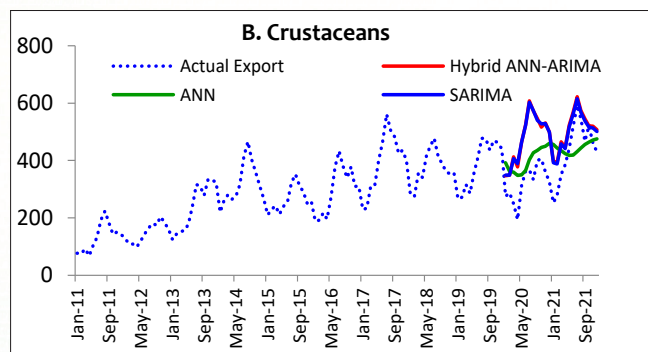
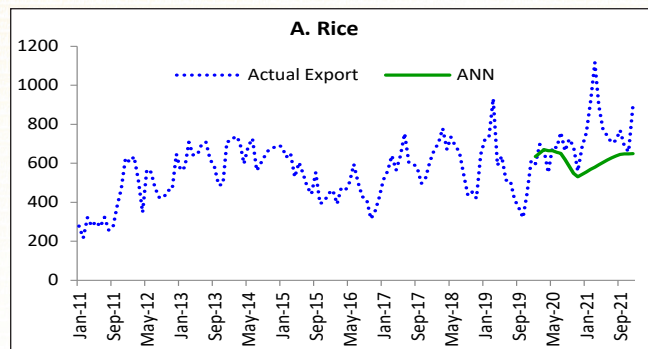
¹ Ohlan, R. (2013). Agricultural exports and the growth of agriculture in India. *Agricultural Economics* 59 (5), 211-218. <https://ssrn.com/abstract=2721297>

² Mustafa, G., Rizov, M., & Kernohan, D. (2017). Growth, human development, and trade: The Asian experience. *Economic Modelling* 61, 93-101. <https://doi.org/10.1016/j.econmod.2016.12.007>

³ For export projections, we applied various time series models, namely, autoregressive integrated moving average (ARIMA), seasonal ARIMA (SARIMA), artificial neural network (ANN), and hybrid models (ANN-ARIMA).

Crustaceans: Indian crustaceans hold significant importance in global trade, and these will remain highly traded. India contributes around 5% to the total global fish export. Crustaceans are the most exported fish from India, accounting for 75% of the total exports of fish products. Exports of crustaceans declined in 2020. However, the country recovered from the crisis, leading to an 11% increase in its exports in 2021.

Fig 1. Trends in major exportable commodities (US\$, million)



Overall, crustacean exports experienced a decline, and the actual exports remained below the projected exports (Fig 1B and Table 1).

Bovine meat: The export of animal products significantly contributes to Indian agriculture. Frozen bovine meat forms a significant share (88% in 2021) of total meat export. India ranks first in the production of buffalo meat and exports around 70% of it. However, bovine meat exports have dwindled in recent years due to global competitiveness and quality issues. Similar trends continued even during Covid-19 pandemic, and bovine meat exports declined by about 11% during the COVID pandemic. The export decline exceeded projected trends (Fig 1C). Vietnam, Egypt, Malaysia, Hong Kong, Indonesia, Iraq, and Saudi Arabia are the main markets for India's 'buffalo meat'. Notably, India's export markets consist mainly of countries whose sanitary regulations permit meat imports from countries classified as endemic for foot-and-mouth disease (FMD) by the World Organization for Animal

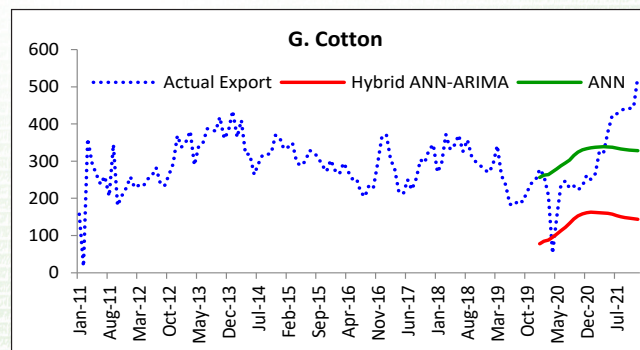
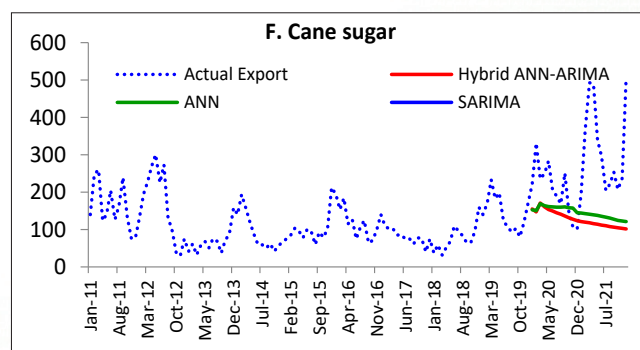
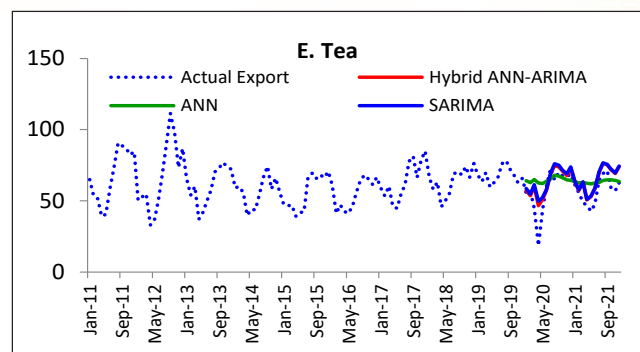


Table 1. Impact of Covid-19 on major agricultural exports

Commodity	Particular	BE 2001	BE 2011	Pre-Covid-19 (BE 2019)	During Covid-19 (BE 2021)	% Change as compared to BE 2019		
						Covid-19 Period (2020-21)	2020	2021
Bovine meat (HS 0202)	Quantity	210	715	1093	973	-11.04	-14.53	-7.55
	Value	213	2122	3198	2849	-10.88	-13.61	-8.16
Crustaceans (HS 0306)	Quantity	144	209	621	612	-1.33	-13.50	10.84
	Value	906	1359	4580	4569	-0.23	-15.18	14.72
Tea (HS 0902)	Quantity	189	271	260	204	-21.66	-19.12	-24.21
	Value	390	780	790	690	-12.65	-12.39	-12.92
Pepper (HS 0904)	Quantity	77	220	441	554	25.76	20.27	31.26
	Value	109	552	851	1237	45.38	37.20	53.56
Rice (HS 1006)	Quantity	1608	3762	10742	17945	67.05	36.01	98.09
	Value	620	3185	7073	8802	24.43	12.82	36.05
Cane sugar (HS 1705)	Quantity	757	2242	3862	8100	109.74	82.86	136.63
	Value	195	1386	1321	3154	138.83	88.91	188.75
Cotton yarn (HS 5205)	Quantity	315	787	1099	1126	2.43	-10.50	15.36
	Value	834	2757	3346	3652	9.16	-22.04	40.37

Note: BE refers to the biennium average. The numbers in parentheses indicate the harmonized system (HS) codes of selected commodities at 4-digit. The quantity is expressed in thousand tonnes, value is in US\$ million.

Health (OIE). Because the OIE classified India as FMD-endemic, its status prevents it from accessing the primary markets served by the USA beef exports.⁴

Spices, tea, and sugar: India is the world's largest producer, consumer, and exporter of spices and their value-added products. Pepper is also one of the most important spices exported from India. Its exports during the pandemic witnessed a significant jump (Table 1), the increase in actual exports was much higher than the projection (Fig 1D). Spices like ginger, pepper, cinnamon, cardamom, turmeric, and saffron have known therapeutic qualities, and their exports have increased substantially. India is also the largest producer of tea and coffee. However, the Indian tea industry is challenged from both the supply and demand sides. Tea consumption has declined globally. As a result, tea exports significantly declined during the pandemic than the expected trend (Fig 1E). Sugar also witnessed a significant increase in its exports during the pandemic (Fig 1F)

Cotton: Cotton is a dominant export commodity. India is amongst the largest cotton producers and exporters of cotton products, viz., cotton yarn and woven cotton fabrics. Exports of cotton products exhibited an increasing trend during the last three decades but with some extreme aberrations. China is the biggest buyer of India's cotton. Like other products, cotton yarn exports dipped to the lowest levels during the

decade due to the Covid-19 pandemic across the globe. A similar decline was noticed in India too. However, the country improved its global trade share (Fig 1G). As a result, India's cotton exports increased tremendously in 2021, much higher than in the pre-COVID period.

Trade Facilitation

The COVID-19 pandemic compelled several countries to introduce trade-related measures to manage its impacts on health, economy, and food security. Many countries have adopted these measures to restrict their exports or facilitate imports, notably medical supplies such as drugs and devices. Of more than 345 such measures adopted globally to date, more than 80% are aimed at restricting exports or allowing imports. However, less than 8% of such measures were export-facilitating. In the case of agricultural trade in the context of the pandemic, the status had been much similar. About 27% of all the interventions were related to agriculture, in which import facilitation dominated. Export-enhancing measures such as (temporary) elimination of export duties, eliminating export prohibitions, and terminating prior export authorization, were less than 9%. Given these, the performance of India's agricultural exports is laudable. The country stepped in through its missions abroad, interacted through buyer-seller meets, coordinated

4 Landes, M., Melton, A., & Edwards, S. (2016). From Where the Buffalo roam: India's Beef Exports. Economic Research Service/USDA, U.S. Department of Agriculture, Washington, D.C. https://www.ers.usda.gov/webdocs/outlooks/37672/59707_ldpm-264-01.pdf?v=794.5

with the authorities at different levels, and removed the bottlenecks when surfaced. It created a COVID-19 emergency response cell to help exporters and ensured real-time export clearance. Certificates were issued in time, and in a few cases, the validity of certifications and accreditations was extended.

Logistics performance is critical in enhancing trade. The World Bank computed the Logistics Performance Index (LPI) for 160 countries.⁵ LPI ranges from 0 to 5; the higher the score, the better the performance. India stood at the 44th rank in 2018, improving its rank continuously since 2014. However, the country scored less in timeliness, infrastructure, and customs implying that the timeliness in clearing the exports, poor infrastructure, and customs procedures hinder the agricultural and non-agricultural trade. It is established that a 10% reduction in the number of days to export will likely increase 9.6% in agricultural trade.⁶ Creating the ease of doing business and infrastructure could further boost the exports of highly perishable commodities like meat, fish, and horticultural products, which occupy a significant share of India's agricultural exports. The Indian government has adopted many policy measures to drive medium- and long-term agricultural modernization. The New Agricultural Export Policy aims to facilitate agricultural exports by fostering infrastructure, quality, competitiveness, and diversification. These policies will guide the future direction of agricultural exports in a progressive manner.

Conclusions and Implications

India's agri-food exports have continuously exhibited an increasing trend with a clear export diversification pattern towards new commodities and markets. The efforts to harness higher global food demand induced by the pandemic have been fruitful. The following patterns could be established from the analysis:

- As rice remains the staple crop in many Asian countries, its exports witnessed a remarkable jump during the Covid-19 pandemic due to the food security concerns. A significant quantum of

rice is also exported to middle-east countries. At the same time, other major trading nations like Thailand, Pakistan, and China lost their shares during the Covid-19 pandemic, creating greater scope for India's rice exports.

- The occurrence of Covid-19 pandemic worldwide created a lot of health concerns and reliance on herb-based Ayurvedic medicines. This led to a global upsurge in the demand for spices. Thus, a strong positive impact was noticed on the export of spices from India.
- Livestock and fisheries products faced many stringent import requirements from importing countries, particularly during the initial phase of the pandemic, when apprehensions existed about animal to human transmission of the virus. Thus, the animal-based exports suffered during 2020, however, the crustaceans' exports recovered during 2021.

The policy facilitation put India in an advantageous situation, and the exports crossed US\$ 50 billion. Post-Covid pandemic, international markets are becoming stringent on food safety and quality requirements. Thus, there is a strong case for India to invest in infrastructure for food quality and safety, create awareness among supply chains actors on the global best practices and develop resilient supply chains to improve competitiveness of its exports, and to consolidate its share in the global market. Product-specific value chains and supply chains must be developed encompassing a system of traceability, improved logistics, and cost effectiveness. Information and communication technology and internet of things (IoT) in agriculture (i.e., artificial intelligence, drone-based applications, and farm-based technologies) are immensely needed to improve the management of agri-food value chains. Farmer organizations or associations should be more proactive in aggregating produce and providing technical advice on the best global practices in production, marketing and trade to farmers and other stakeholders.

⁵ Arvis, J. F., Ojala, L., Wiederer, C., Shepherd, B., Raj, A., Dairabayeva, K., & Kiiski, T. (2018). Connecting to compete: Trade logistics in the global economy. The International Bank for Reconstruction and Development/The World Bank, Washington D.C. <https://openknowledge.worldbank.org/bitstream/handle/10986/29971/LPI2018.pdf>

⁶ Liapis, P. (2011), Changing Patterns of Trade in Processed Agricultural Products, OECD Food, Agriculture and Fisheries Working Papers, No. 47, OECD Publishing, Paris

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