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Russia-India Cooperation in Agriculture and Food Security

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Agricultural cooperation has been one of the pillars of Russia-India relations for decades. Both countries are leading players in the global agricultural market, however they do not compete with each other and rather enjoy wide opportunities for cooperation. The following report describes historic background of Russia-India interaction in agriculture, assesses the current dynamics and achievements of two countries in this area. The authors analyze the main challenges to bilateral cooperation in agriculture and food security, propose options for overcoming them, and evaluate the existing opportunities for strengthening collaboration.

The full text of the report is available on RIAC's website. Feel free to download it and leave comments via the direct link: **russiancouncil.ru/report103**

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Introduction

"Food security is one platform for restoring global cooperation in a world which is marked by polarisation, trade disruption, instability, war, sanctions, and India-Russia relations in this field could be a way forward."

Amb. Ranjan Mathai
Fmr Indian Foreign Secretary

Although it was the 2022 European security debacle that moved agricultural cooperation between Russia and India to the spotlight, this partnership has a rich legacy going back to the mid-20th century. Having passed several distinct development phases, including the dissolution of the Soviet Union, Russia and India's economic liberalisation, and the recent reconfiguration of trade flows due to Western sanctions, bilateral agricultural dialogue has remained one of the pillars of economic engagement between Moscow and New Delhi. Therefore, in the mid-2020s, Russia and India stand out as leading players in the global agricultural market—with their partnership encompassing trade in fertilizers, grains, and vegetable oils. Apart from this, there is potential for the two nations to explore collaboration in agricultural technologies.

Food security has always been a central subject in bilateral agricultural cooperation. The Green Revolution of the 1970s transformed India from a food-deficient country to a food-efficient one, thanks to the use of the high yielding variety seeds, mechanized farm tools, irrigation facilities, pesticides, and fertilizers. The Soviet Union contributed to this process by sharing expertise and economic support. In 1990s, Russia's agricultural sector underwent its own transition as part of market reforms. The formalisation of food security doctrines in both countries—India's National Food Security Act (2013) and Russia's Doctrine of Food Security (2010)—highlighted the growing sophistication of their approaches, emphasizing not only production but also accessibility, quality and sustainability, providing for more strategic and balanced cooperation in this sphere. Moreover, Russia and India are now discussing sustainable mechanisms of supplying food to the Global South, creating an active role for themselves as international food security providers.

The contemporary phase of Russia-India agricultural relations is characterised by dynamic trade growth and diversification. 2022 catalysed an overall increase in bilateral trade, with agricultural commodities playing a remarkable role in this process. However, the partnership faces many serious challenges today, including logistical bottlenecks, administrative barriers, and structural trade imbalances. Connectivity impediments particularly stand out, with key transport corridors such as the International North-South Transport Corridor (INSTC) and the Vladivostok-Chennai route remaining underinvested and underused. Additionally, non-tariff barriers and differing regulatory standards limit cooperation as well.

Despite these hurdles, the Russia-India agricultural partnership is now poised to embrace an innovation-driven and sustainability-oriented approach. Both nations are exploring ways to collaborate in agrotechnology, including precision farming and climate-resilient practices to address the pressing challenges of environmental degradation and resource scarcity. India has a lot of fragmented smallholder farms, while Russia's experience mostly regards large-scale mechanized agriculture. To mitigate this imbalance joint research initiatives, public-private partnerships, and investment in digital infrastructure are seen as an important means to enhance agricultural cooperation complexity and productivity.

The following report is a comprehensive analysis that examines both the historical roots and current dynamics of Russia-India agricultural cooperation by identifying key impediments for its development and suggesting possible ways to address them. By exploring the interplay of geopolitics, economics, and technology, the study aims to provide an initial understanding of how Moscow and New Delhi could strengthen their collaboration to achieve their shared goals of food security, economic resilience, and sustainable development amidst the increasingly complex global landscape.

Chapter 1. Historic Background of Russia–India Cooperation in Agriculture: Food Security Issues on the Bilateral Agenda

Trade relations between India and Russia can be traced back to the early 20th century. They gained momentum during the Cold War era, with the Soviet Union and India developing a close economic relationship. During this period, agriculture and food security emerged as crucial themes in Soviet-Indian relations, shaped by the unique challenges faced by each country. They aligned with India's Five-Year Plans, which prioritised self-reliance and modernisation, as well as complemented the Soviet course on developing economic ties with friendly countries, while simultaneously compensating for its own economic insufficiencies. Cooperation between Moscow and New Delhi evolved through several phases: from the late 1940s to the mid-1960s, from the mid-1960s to the late 1980s, and from the early 1990s to the present day, with a new chapter clearly starting only recently after 2022.

The first phase served as a foundational period for Soviet-Indian agricultural cooperation. The basis for engagement was limited, as both the USSR and India faced serious food security challenges. During the 1940s-1950s agriculture accounted for 54% of the Indian gross domestic product.[1] At that time, India's agricultural sector was recovering after decades of colonial dependencies and the resultant crises,[2] which were particularly severe in the late 1940s,[3] when India struggled with mass starvation and extremely low productivity in the agricultural sector. Following independence in 1947, India pursued a mixed economic model, gradually liberalising its trade policies.

During this period, the USSR was preoccupied with economic recovery after the Second World War, a process that continued until mid-1950s. Significant investment in the industrial sector helped the Soviet Union reach pre-war production levels by 1948, exceeding it by 73% in 1950. Agricultural sector recovery took relatively more time, thus 1950 gross agricultural production accounted for 99% of the 1940 level.[4] Following the 1953 agricultural reforms, Moscow undertook several measures to modernise the sector, including developing virgin lands and introducing new technologies. However, these efforts did not fully solve the problem of food security, as they were not fully implemented and did not lead to structural changes in Soviet agricultural practices. In addition, the USSR experienced significant grain shortages up until early 1960s.

[1] *Economic Survey 2021-22*. Statistical Appendix. New Delhi, 2022. P. 10.

[2] With the arrival of European colonial powers in India, particularly the Portuguese, Dutch, French, and British, trade dynamics on the subcontinent shifted dramatically. The British East India Company monopolised Indian trade, integrating it into the global capitalist economy, often to the detriment of indigenous industries.

[3] Deryugina, I.V. 75 Years of India's Development in the Mirror of Macroeconomic Statistics (1947–2022). *Journal of the Institute of Oriental Studies RAS*. 2022. No. 2. Pp. 67–79.

[4] *National Economy of the USSR in 1961*. Statistical Yearbook. Moscow: Gosstatizdat. 1962. Pp. 170, 293.

The USSR and India formalised agricultural trade relations through a bilateral agreement on the exchange of agricultural products on July 12, 1948, facilitating the trade of Soviet wheat for Indian tea. This was followed by another agreement on June 20, 1951, which secured the exchange of 100,000 tonnes of Soviet wheat for 5,000 tonnes of Indian jute, 2,500 tonnes of shellac, 5,500 tonnes of tobacco, and 1,850 tonnes of tea.[5] India's imports during this period were characterized by a high share of producer goods such as agricultural non-food raw materials, fuel, oil and oil products, construction materials, metals and metal products, machinery and equipment.[6]

The foundation of the economic partnership was laid out in 1953, with the conclusion of the permanent Indo-Soviet Trade Agreement and strengthening collaboration via rupee-ruble transactions. Moscow and New Delhi agreed on a list of products eligible for export-import exchange. Under this agreement, the USSR committed to supplying India with 39 categories of products such as grain products, crude oil and refined products, and equipment. India, in turn, was to meet Soviet demand for 20 product categories, such as tea, coffee, tobacco, spices, and handicrafts.[7] However, until the late 1960s, the UK and the US still remained India's key trading partners.

Notably, cooperation between the USSR and India extended beyond trade, also including certain elements of industrial cooperation, such as the establishment of joint agricultural farms, research exchanges and developing knowledge. Moscow also assisted New Delhi in constructing factories, producing agricultural machinery and fertilizers in India. A landmark initiative was the establishment of India's first state farm in Suratgarh in 1956, which focused on cultivating grain and oil-bearing and technical crops, as well as supporting pedigree animal breeding. Another pivotal achievement was the establishment of the Indo-Soviet Tractor Plant in Faridabad, which became a precedent for modernising Indian farming practices.

By the mid-1960s, India's agricultural sector had made notable progress in overcoming challenges inherited from the colonial era. During the second phase of cooperation in the 1960s-1980s, export growth facilitated the transition of Indian agriculture toward a contemporary model of economic growth. The signing of the 1971 Treaty of Peace, Friendship and Cooperation between the Republic of India and the Union of Soviet Socialist Republics,[8] along with the 1971 Agreement between the Government of the Republic of India and the Government of the Union of Soviet Socialist Republics on Scientific and Economic Cooperation in Agriculture

[5] Kashin, V.P. One Hundred Thousand Tons of Soviet Wheat for Independent India. *Journal of the Institute of Oriental Studies RAS*. 2024. No. 3. Pp. 37–42.

[6] Bugrov, A.S. *Evolution of the Potential for Economic Cooperation between India and Russia*. Dissertation for PhD in Economic Sciences. Moscow. 2010. P. 18.

[7] Shtoda A.E. Forms of Soviet-Indian Economic Cooperation (1953–1964). *Journal of the Institute of Oriental Studies RAS*. 2023. No. 4. Pp. 351–357.

[8] Treaty of Peace, Friendship and Cooperation between the Republic of India and the Union of Soviet Socialist Republics // JSC Kodeks Website. 20.02.2025. URL: https://docs.cntd.ru/document/1901358 (In Russ.)

and Animal Sciences,[9] marked a significant evolution in bilateral relations. These agreements elevated the partnership to a more diversified and strategic level.[10]

Apart from this, the 1970s saw the crystallisation of food security both as a notion and economic policy practice (mostly in India, but in the Soviet Union as well). In particular, New Delhi initiated the Green Revolution to radically increase agricultural productivity while combating hunger and poverty. Its key elements were the introduction of high-yielding varieties of wheat and rice, agriculture intensification through the use of chemical fertilizers and pesticides, the mechanisation of the agricultural sector, and state provisions to support farmers through subsidies and development programs.[11]

This process was accompanied by a conceptual development of the notion of food security. In the 1970s, food security was understood as a constant provision of sufficient staple foods.[12] However, Indian economist and Nobel laureate Amartya Sen expanded the concept to include the "right of access to food," emphasizing the importance of social and economic access to food for all segments of the population. This led food security to be viewed in the Indian academic and policy tradition as a summary of several key dimensions such as actual availability of food[13] and its economic[14] and social accessibility.[15] During these years, food security in the USSR was closely linked to the general economic policy of the state; particularly the endeavour to provide the country's population with sufficient foodstuffs. However, these efforts did not lead to a complete solution of the problem, since the country was not able to produce enough for itself and became dependent on foreign supplies.

Nevertheless, the USSR played a significant role in the Green Revolution, providing India with grain, fertilizers, and agricultural machinery. The 1970s-1980s witnessed significant trade increase. The Soviet share in Indian foreign trade rose, with the USSR becoming India's largest export destination by 1980-1981, surpassing the UK and the US, and ranked second in Indian imports. Key Soviet exports to India included kerosene, fertilizers, industrial commodities, asbestos, palladium, rolled metal, copper, and sulphur.[16] In turn, India provided the USSR with 80-85% of tea, 35-40% of coffee, and 100% of cashew nuts and shellac[17] alongside other

[9] Agreement between the Government of the Union of Soviet Socialist Republics and the Government of the Republic of India on Scientific and Economic Cooperation in Agriculture and Animal Sciences // JSC Kodeks Website. 20.02.2025. URL: https://docs.cntd.ru/document/1901408 (In Russ.)

[10] Treaty of Peace, Friendship and Cooperation between the Republic of India and the Union of Soviet Socialist Republics // JSC Kodeks Website. 20.02.2025. URL: https://docs.cntd.ru/document/1901358 (In Russ.)

[11] Viraktamath B. C. Key research inputs and technologies in rice production in pre and post green revolution era. *Innovation in Rice Production: National Institute of Advance Studies*. Bangalore, India, 2013. Pp. 1-17.

[12] McDonald B.L. *Food security.* Polity Press, 2010. Pp. 200.

[13] The availability of sufficient food, including domestic production, imports and strategic reserves.

[14] The ability of each individual to acquire sufficient food, which is directly related to the income level of the population.

[15] Equal access to food for all social groups, regardless of their economic status or geographical location.

[16] Malyarov O.V. *Independent India: Evolution of the Socio-Economic Model and Economic Development. Book 2.* Moscow: Vostochnaya Literatura RAN, 2010. Pp. 676–677. (In Russ.)

[17] Bugrov A.S. *Evolution of the Potential for Economic Cooperation between India and Russia.* Moscow, 2010. Pp. 41. (In Russ.)

products such as seed meal, spices, tobacco, jute handicraft, metal products, cotton, wool, batteries, and aluminium.

This period also saw intensified industrial cooperation driven by mutual visits of scientists and experts, joint scientific workshops, and technical document and information exchanges. Soviet expertise significantly influenced India's agricultural policies through training programs in precision irrigation, advanced soil science, and crop innovation techniques. These initiatives instilled a culture of scientific rigor and facilitated a more systematic, technology-driven approach to Indian agriculture.

Apart from this, the USSR contributed directly to the food security of India. For example, it supplied New Delhi with 2 million tonnes of wheat to help alleviate the acute food crisis[18] of 1966, and another 1 million tonnes of wheat in 1973, when India was experiencing food shortages after the major drought of 1972.[19] Paradoxically, by the 1970s, the USSR itself became dependent on grain imports, especially from the US and Canada. In 1991 New Delhi supplied 20,000 tonnes of rice as a food loan to Moscow.[20]

After the success of the Green Revolution, India made significant strides in food security. The Soviet economy, on the other hand, faced a severe crisis in the 1980s, including food shortages. The inefficiency of the planned economy, lack of investment in agriculture, and growing dependence on imports worsened the problem. By the late 1980s and early 1990s, trade and economic cooperation between the USSR and India became largely inert, limited to only fulfilling previously signed contracts. By 1991, the Soviet share in Indian imports declined from 8.1% in 1980-1981, to 5.9%, with export share falling from 18.3% to 16.2%.[21]

The third phase of agricultural cooperation began following the liberalisation of Russian and Indian foreign trade and their transition to export-oriented economic models in the 1990s.[22] Market transformation in both countries resulted in reduced state control over trade, necessitating new agreements that accounted for the structural shifts in their economies. This transition led to a decline in state-sponsored agricultural collaborations, contributing to a significant reduction in overall trade volume particularly in agriculture. After the collapse of the Soviet Union in 1991, Russia inherited its agricultural problems. The transition to a market economy was accompanied by the destruction of collective farms, lack

[18] Fifty years ago | Russia to give India two million tonnes of grain // The Hindu. 29.09.2023. URL: https://www.thehindu.com/archives/from-the-hindu-archives-september-29-1973-russia-to-give-india-two-million-tonnes-of-grain-as-loan/article67357440.ece

[19] Signing of an agreement for the Soviet Union to provide one million tonnes of wheat to India // RIA News website. 04.05.2018. URL: https://riamediabank.ru/media/5489568.html (In Russ.)

[20] Saransh Pankaj. 70 Years of Indian-Russian Relations: A Historical Milestone // The International Affairs. 30.11.2017. URL: https://interaffairs.ru/news/show/18881 (In Russ.)

[21] Malyarov O.V. *Independent India: Evolution of the Socio-Economic Model and Economic Development. Book 2.* Moscow: Vostochnaya Literatura RAN, 2010. Pp. 676–677. (In Russ.)

[22] Rastyannikov V.G., Deryugina I.V. *Agricultural Dynamics. 20th Century. A Comparative-Historical Study.* Moscow: IV RAN, 1999. Pp. 49–73. (In Russ.); Bugrov A.S. *Evolution of the Potential for Economic Cooperation between India and Russia.* Moscow, 2010. Pp. 15–16. (In Russ.)

of investment, and a sharp decline in food production. The country became even more heavily dependent on food imports. Agricultural cooperation between Moscow and New Delhi declined, although certain aspects of trade persisted in a fragmented manner. Russia remained a destination for Indian exports like rice, groundnuts, and sesame seeds while India imported Russian fertilizers and agricultural chemicals.

In 1992, Russia and India formalised their economic ties anew by signing the Agreement on Trade and Economic Cooperation,[23] followed by the general Treaty on Friendship and Cooperation in 1993.[24] However, until the adoption of the 2000 Declaration on Strategic Partnership between the Russian Federation and the Republic of India,[25] India's share of Russian exports and imports remained modest. Russia's share by 2000-2001, accounted only for 1% of Indian imports and 2% of Indian exports.[26] In the 2000s, Russia and India revitalised their agricultural relationship as part of a broader strategic partnership. The establishment of the India-Russia Inter-Governmental Commission in 2000 has been instrumental in this process. Moscow and New Delhi identified new areas of cooperation, particularly in nuclear energy, space research, and technology transfers. Yet until the late 2000s, agricultural trade barely expanded. From 1992-2010, exports from India to Russia had only risen from 256.4 to 287.9 million dollars, while Indian imports from Russia grew from 2.9 to 253.8 million dollars.

In 2010-2022, trade in agricultural commodities was slightly revitalised, owing to the emergence of BRICS and the Eurasian Economic Union (EAEU). Russia re-emerged as a significant market for Indian tea, accounting for nearly a quarter of India's tea export. Fertilizer trade became another cornerstone of the partnership, with Russia continuing to supply potash and nitrogen-based fertilizers critical for Indian farming. By 2020, Indian exports to Russia reached 504.3 million dollars, while Russian exports to India achieved 555.5 million dollars.[27]

Russia and India have continued to improve industrial cooperation in agriculture, including establishing joint facilities for grain production and handling, exports of meat and dairy, as well as fruit and vegetable processing. The two nations also explored collaborations in agrotechnology, food processing, and cold storage, addressing shared challenges in supply chain management. In 2016 Moscow and New Delhi—represented by United Innovation Corporation (UIC), Rosatom subsidiary company, and Hindustan Agro Co-Op Ltd (HACL)—signed an agreement on cooperation in developing a network of 25 integrated infrastructural centres for irrigation. The partnership envisions a joint venture, with HACL holding

[23] Agreement on Trade and Economic Cooperation between the Government of the Russian Federation and the Government of the Republic of India // JSC Kodeks Website. 20.02.2025. URL: https://docs.cntd.ru/document/901872080 (In Russ.)

[24] Treaty on Friendship and Cooperation between the Russian Federation and the Republic of India // JSC Kodeks Website. 20.02.2025. URL: https://docs.cntd.ru/document/901884900 (In Russ.)

[25] Declaration on Strategic Partnership Between the Republic of India and the Russian Federation // Ministry of External Affairs, Government of India. URL: https://www.mea.gov.in/Images/pdf/DeclerationStrategicPartnership.pdf

[26] Malyarov O.V. *Independent India: Evolution of the Socio-Economic Model and Economic Development. Book 2.* Moscow: Vostochnaya Literatura RAN, 2010. Pp. 676–677.

[27] World Integrated Trade Solution // WITS.
URL: https://wits.worldbank.org/WITS/WITS/AdvanceQuery/RawTradeData/QueryDefinition.aspx?Page=RawTradeData

a majority stake of 51%, while UIC serving as a partner in technology, assisting in constructing irradiation centres in Maharashtra in Sindhudurg, Satara, Solapur, JNPT, Jalna, Nagpur, and Pune.[28] Additionally, Indian companies showed interest in Russia's vast agricultural lands, particularly in the Russian Far East, where opportunities for joint ventures in dairy and aquaculture began to materialise.

However, cooperation between two countries is currently impeded by several structural conditions. Over the last 30 years, India has achieved self-sufficiency in food grain production. India's public food security system is now comprised of two main components: buffer stocks—a strategic reserve of grains, including wheat and rice, held by the government of India through the Food Corporation of India—and the public distribution system. The process of forming and utilising buffer stock includes procuring grain from farmers in states with surplus production, storing it in specialised food granaries located throughout the country, and redistributing it to regions experiencing food shortages. The public distribution system ensures that socially vulnerable groups have access to staple foods through a network of government regulated food shops selling at subsidised prices.

These measures did strengthen India's food security, but one consequence was the excessive accumulation of grain in buffer stocks. This led to problems with poor-quality products being sold in stores, the costs of grain storage increasing, and the underutilised availability of large quantities of food. All of this pushed the national government to develop broader food security initiatives. One key piece of legislation was the National Food Security Act (NFSA) passed in 2013. Such initiatives signalled a new approach to food security, including not only access to basic food, but also improved nutritional quality and social protection for the most vulnerable groups.

The key document defining Russia's food security policy is the Doctrine of Food Security of 2010.[29] It set targets for self-sufficiency in basic foodstuffs (grains, meat, milk). Food security in Russia is defined as the state of the economy that ensures the availability of food products for all citizens of the country in the volume and assortment corresponding to the established nutritional standards, as well as the sustainability of food production and supply, regardless of external and internal threats. The main elements of food security in Russia include actual and economic availability of food, food quality and safety, sustainability of the food system, and independence from external supplies. Thus, Russia began to define food security as a complex task that includes not only the production of a sufficient quantity of products, but also their availability and quality. The formalisation of food security concepts in both countries has also transformed the nature of relations in this area. Thus, in 2010 Russia and India signed an agreement on food and agriculture cooperation.[30] In recent years, the emphasis has shifted to exchanging technology and joint research.

[28] India, Russia ink agreement to set up 25 Agro Irradiation Centres // Examveda.com Website. 20.02.2025. URL: https://www.examveda.com/india-russia-ink-agreement-to-set-up-25-agro-irradiation-centres/

[29] The Doctrine of Food Security of the Russian Federation // FAO. URL: https://www.fao.org/faolex/results/details/en/c/LEX-FAOC179601/

[30] Joint Statement furthering the India-Russia Strategic Partnership to meet the challenges of a changing World // Embassy of India in Moscow. URL: https://indianembassy-moscow.gov.in/challenges-of-a-changing-world.php

Today, India plays a significant role in global trade, actively participating in multilateral organizations such as the World Trade Organization and fostering strategic trade agreements worldwide. India and Russia cooperate in the energy, defence, pharmaceutical, and IT sectors, with a renewed focus on reducing trade imbalances and increasing bilateral investments. This creates significant opportunities for upscaling traditional cooperation in the agricultural sector and food security.

Chapter 2. Current State of the Market: Trade Dynamics in Agricultural Goods and Services, Structural Changes after 2022, Achievements and Room for Growth

"In recent years, India and Russia have done a lot in making their agriculture more export-oriented. Today both countries are among the top 15 agricultural products exporting countries (based on export value). Finding complementarity between the agricultural markets of the two countries is particularly challenging, but this is the work that needs to be done."

Dr. Lydia Kulik
Head of India Studies at Moscow School of Management SKOLKOVO

After a slowdown in the early 1990s, trade and economic ties between Russia and India have been on a gradual upswing since the late 2000s-early 2010s, largely thanks to joint efforts by President Vladimir Putin and Prime Minister Narendra Modi. However, there was a common perception that the economic cooperation between Russia and India lagged behind their strong political partnership. In 2014, the countries set a goal of reaching a combined trade volume of 30 billion dollars by 2025,[31] which seemed very ambitious at the time.

In 2022, economic relations between Moscow and New Delhi received a new impetus. Reconfiguration of Russian trade under Western sanctions spurred its pivot towards alternative directions, including India. Subsequently, the volume and structure of Russia-India trade has changed significantly: trade turnover increased from 12 billion dollars to 71.2 billion dollars from 2021 to 2024, Russia's exports have risen from 8.7 billion dollars to 67.1 billion dollars, and India's exports grew from 3.3 billion dollars to 4.1 billion dollars.[32] Thus, by 2024, trade turnover between Russia and India has more than doubled the target set in 2014.[33]

The above-mentioned reconfiguration of Russia's trade relations was also reflected in the agricultural sector. Indian agriculture remains an integral part of the country's economy, contributing 16% to the country's GDP in 2024.[34] Both India and Russia are among the leaders in the global agricultural market. India's agricultural sector experienced steady growth during the first quarter of the 21st century, with the

[31] A. Kortunov, T. Simon. *Russia – India Relations in Broader Geopolitical Context: Report No. 92 / 2024.* Russian International Affairs Council (RIAC). Moscow, NP RSMD, 2024. Pp. 15.

[32] Authors' calculations based on Trade Map data. See: Trade statistics for international business development // ITC. URL: https://www.trademap.org/Bilateral_TS.aspx?nvpm=1%7c699%7c%7c643%7c%7cTOTAL%7c%7c%7c2%7c1%7c1%7c1%7c2%7c1%7c1%7c1%7c1%7c1

[33] Joint statement on the results of the XXII Russian-Indian annual summit "Russia-India: a strong and expanding partnership. URL: http://www.kremlin.ru/supplement/6168

[34] Economic Survey 2024-25 // Government of India. Ministry of Finance. URL: https://www.indiabudget.gov.in/economicsurvey/

country becoming one of the world's top eight agricultural commodity exporters in 2019.[35] Notably, agriculture was the only sector of the economy that showed growth during the COVID-19 pandemic,[36] and India exported 50.7 billion dollars worth of agricultural products to the world market in 2023; its share is currently 3% of the world export volume. Russia exported agricultural products worth 43 billion dollars to the world market in 2023, and accounts for 2.2% of world exports.[37] However, despite being the leading exporters in the global agricultural market, the two countries do not compete, but complement each other.

From 2015 to 2023, India's exports of agricultural goods to Russia almost doubled and amounted to 748 million dollars in 2023. India's imports from Russia, on the other hand, increased three and a half times to over 1.3 billion dollars in 2023 (Table 1), meaning that during this period, the average growth rate of exports from India to Russia was 8% per annum, and imports at 18% per annum. However, while exports of agricultural goods from India to Russia grew smoothly, Indian imports from Russia were characterised by explosive growth in 2022.

Table 1. India's agricultural exports to Russia and imports from Russia, million dollars

	India Exports to Russia		India Imports from Russia	
	All Agricultural Commodities	Food Products	All Agricultural Commodities	Food Products
1992	252.6	203.6	0.6	0.0
1996	337.1	305.4	2.8	0.4
2000	253.7	219.8	0.5	0.1
2005	232.3	188.2	5.9	5.6
2010	304.1	238.4	45.0	39.5
2015	421.5	352.9	214.7	209.3
2020	526.8	466.7	457.4	455.9
2021	622.2	541.3	316.2	312.8
2022	640.1	570.7	938.2	932.8
2023	715.9	579.7	1322.8	1318.7

Source: WITS—World Integrated Trade Solution[38]

Up until 2021, exports of agricultural goods from India to Russia exceeded imports; however, in 2022, the situation significantly changed amid a sharp increase in the supply of Russian agro-industrial products to the Indian market (Figure 1). This trend continues to gain momentum; for example, in 2023, India purchased 80%

[35] India can be among top-5 agri goods exporters with effective policies: Report. India Brand Equity Foundation. URL: https://www.ibef.org/news/india-can-be-among-top5-agri-goods-exporters-with-effective-policies-report

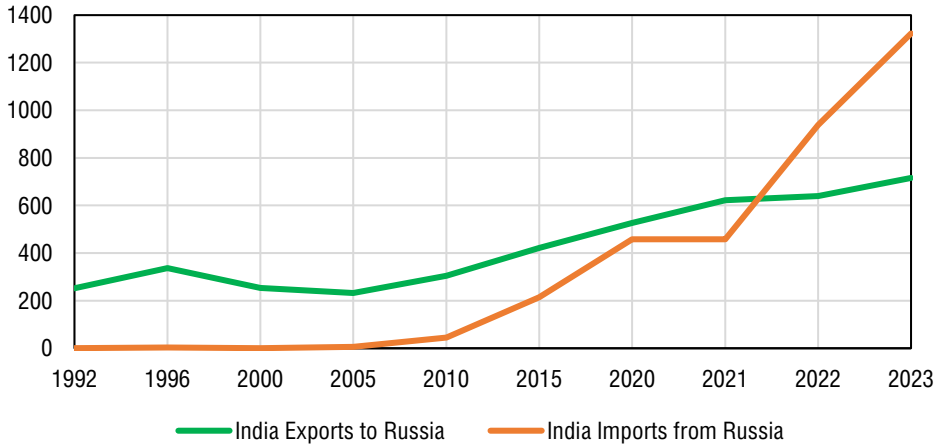
[36] Shavlai E.P. Challenges for India's agriculture: On the way to a new green revolution? *Asia and Africa today.* 2021. No 11. Pp. 13-21. (In Russ.)

[37] Results of Imports and Exports of Agricultural Products in the Russian Federation for 2023 // Grainrus. URL: https://grainrus.com/novosti-kompanii/articles/itogi-importa-i-eksporta-selkhozproduktsii-v-rf-za-2023-god/

[38] World Integrated Trade Solution. URL: https://wits.worldbank.org/WITS/WITS/AdvanceQuery/RawTradeData/QueryDefinition.aspx?Page=RawTradeData; All agricultural commodities (SITC 0+1+21+22+265+268+29+4); food products (SITC 0+11+22+4).

more agricultural goods from Russia than it sold (Table 1). At the same time, mutual trade in agricultural goods (over 97%) is mainly in food products.

Figure 1. Dynamics of foreign trade between India and Russia in agricultural commodities, million dollars



Source: WITS—World Integrated Trade Solution[39]

In 2023, the main commodities dominating Indian food exports to Russia were as follows: tea, coffee, spices (accounting for 27% of the value); fish and seafood (25%); fruits and vegetables (14%); cereals (9%); and meat products (8%) (Figure 2).

In 2023, India exported 21.4 thousand tonnes of seafood worth 150 million dollars (including 20.9 thousand tonnes of shrimp) to Russia, 132 thousand tonnes of rice worth 64.3 million dollars, 30 thousand tonnes of vegetables worth 33.6 million dollars, 18.2 thousand tonnes of fruits worth 26.4 million dollars, 37.2 thousand tonnes of tea and coffee worth 79 million dollars, 13.3 thousand tonnes of cattle meat worth 47.3 million dollars, 7 thousand tonnes of spices worth 13 million dollars, and 15.3 thousand tonnes of tobacco worth 69.5 million dollars.[40] Therefore, Russia accounted for over 3.9% of Indian agricultural imports in 2023—a sharp increase from 2.5% in 2022.[41] At the same time, Russia was the destination for approximately 1.5% of Indian agricultural exports in 2023, compared to 1.3% a year before.[42]

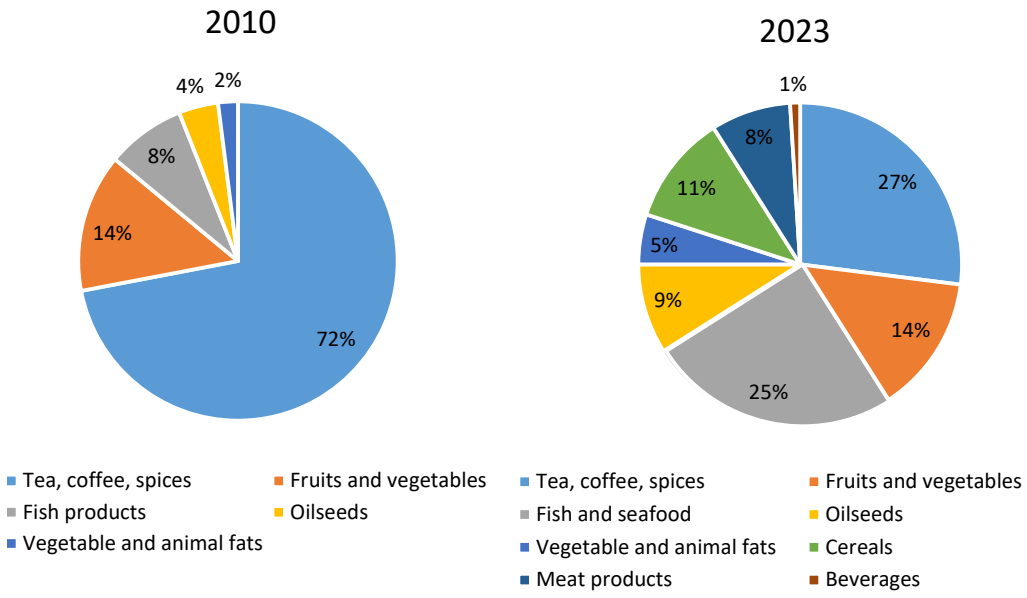
[39] World Integrated Trade Solution.
URL: https://wits.worldbank.org/WITS/WITS/AdvanceQuery/RawTradeData/QueryDefinition.aspx?Page=RawTradeData

[40] Authors' calculations based on Trade Map data. See: Trade statistics for international business development // ITC.
URL: https://www.trademap.org/Index.aspx

[41] Authors' calculations based on Trade Map data. See: Trade statistics for international business development // ITC.
URL: https://www.trademap.org/Index.aspx

[42] Authors' calculations based on Trade Map data. See: Trade statistics for international business development // ITC.
URL: https://www.trademap.org/Index.aspx

Figure 2. Structure of food exports from India to Russia in 2010 and 2023



Source: WITS—World Integrated Trade Solution[43]

Comparing the supply of food products from India to Russia for 2010 and 2023, India has significantly diversified its exports. In 2010, 72% of food exports were in the category of tea, coffee, spices; 12% in fruits and vegetables, and 8% in fish products. In 2023, exports were expanded by supplies of fish and seafood, as well as meat products, while the share of sales of oilseeds and vegetable fats increased considerably (Figure 2).

In 2023, India's purchases were mainly in "vegetable and animal fats" and accounted for 96% of all food supplies from Russia, although in 2010, this category accounted for 56% of purchases. Over 13 years, the share of vegetables in India's imports from Russia has declined from 30% to 3% (Figure 3).

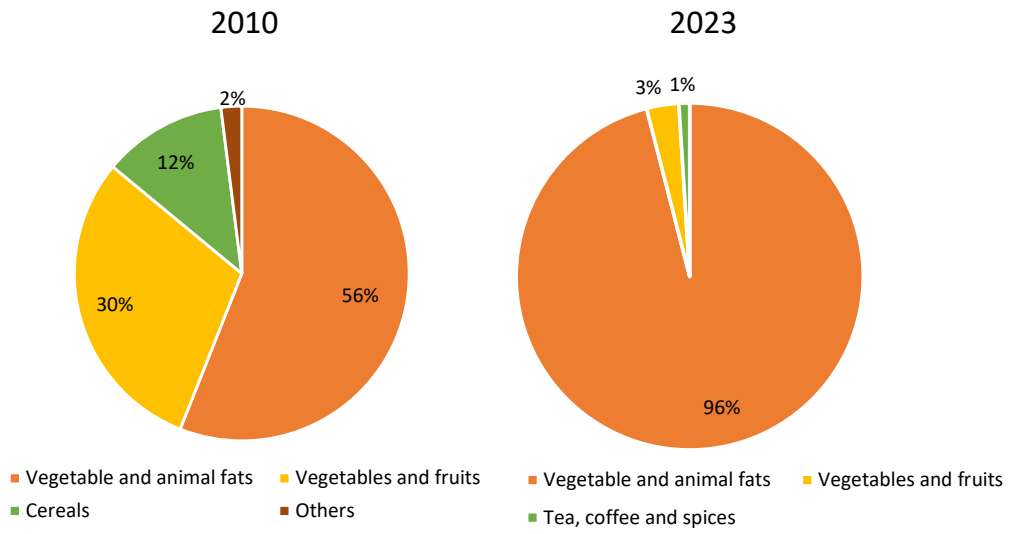
Apart from the sheer revenue it brings in, agriculture has large social significance in India: as of 2024, it was the primary source of income for approximately 55% of the population.[44] Nevertheless, the industry is currently facing several serious challenges that adversely affect both development and social conditions in the country. The most urgent of these challenges is the issue of food security, in particular — the task of improving nutrition quality and diversity. Despite major strides since obtaining independence in 1947, in 2021-2023, 13.7% of Indians

[43] World Integrated Trade Solution.
URL: https://wits.worldbank.org/WITS/WITS/AdvanceQuery/RawTradeData/QueryDefinition.aspx?Page=RawTradeData

[44] Agriculture and Allied Industries Report // India Brand Equity Foundation.
URL: https://www.ibef.org/industry/agriculture-india

were still undernourished.[45] Moreover, only 11% of Indian children received an adequate diet in 2019-2020.[46] The problem is attributed to a combination of social, economic, and natural factors, including a rapidly growing population, social and economic inequality, deteriorating environmental conditions in certain regions, natural resource depletion, and the weather dependency of Indian agriculture. Increases in per capita income in India also contribute to the growing demand for agriculture products. This requires the Indian government to take concrete measures to both raise agricultural productivity and increases the importance of agricultural imports, opening prospects for expanding agricultural cooperation between India and the Russian Federation.

Figure 3. Structure of India's imports of food products from Russia in 2010 and 2023



Source: WITS—World Integrated Trade Solution[47]

For India, one of the most important aspects of agricultural trade with Russia is the import of vegetable oils and fats. The country is currently the leading importer of seed oils in the world, with the sunflower oil market alone expected to grow at a rate of 7% a year in 2024-2032.[48] In 2023, India imported 1 million tonnes of sunflower oil worth 1.1 billion dollars, and 181,200 tonnes of soybean oil worth 187.2 million dollars, from Russia.[49] The same year, Russia ranked 2nd as the largest exporter of crude sunflower oil to India—its share increasing to 31.7%—

[45] The State of Food Security and Undernourishment in the World // Food and Agriculture Organization. URL: https://openknowledge.fao.org/items/ebe19244-9611-443c-a2a6-25cec697b361

[46] Nutrition and Food Security // United Nations in India. URL: https://india.un.org/en/171969-nutrition-and-food-security

[47] World Integrated Trade Solution. URL: https://wits.worldbank.org/WITS/WITS/AdvanceQuery/RawTradeData/QueryDefinition.aspx?Page=RawTradeData

[48] India Sunflower Oil Market Report // IMARC. URL: https://www.imarcgroup.com/india-sunflower-oil-market

[49] Authors' calculations based on Trade Map data. See: Trade statistics for international business development // ITC. URL: https://www.trademap.org/Index.aspx

and 3rd among soybean oil supplying markets. Overall, Russia accounts for 7.7% of the Indian imports of vegetable oils and fats. Russian Agriculture Minister Dmitry Patrushev expressed Russia's intentions to boost vegetable oils exports even further.[50]

Another promising direction for cooperation is the import of Russian grain and grain products. In 2023, cereal imports from Russia increased 13-fold compared to 2022.[51] Among other items, India imported 45,100 tonnes of lentils, worth 37.8 million dollars and 27,400 tonnes of coriander seeds, worth 17.2 million dollars.[52] At the same time, Russia still accounted for less than 0.1% of Indian cereal imports.

There are some important prerequisites for the expansion of the bilateral trade in this area. Russia consolidated its leading position in the wheat market in 2023, supplying the world market with 19% of global exports,[53] while India is the world's second-largest wheat consumer. However, wheat imports from Russia ceased after the 2017-2018 agricultural year.[54] By the 2020-2021 season, India managed to accumulate large wheat stocks and even started exporting them by imposing a prohibiting tariff of 40%.[55] In 2022-2023, the situation changed when harvests started to decrease: India's wheat stocks fell to a seven-year low of 9.7 million tonnes in March 2024.[56] This stimulated India to return to importing wheat in order to replenish reserves and lower prices, even prompting discussions about scrapping the wheat import duty in 2024.[57]

There is currently a substantial amount of political will to increase Indian grain imports from Russia. During the XXII Russia-India summit in 2024, it became known that it increased 22-fold in the 2023-2024 agricultural season.[58] According to Bimal Kothari, Chairman of the Indian Association of Producers and Importers of Grains and Pulses, Russia remains a "reliable supplier" when it comes to wheat.[59]

One of the most important items in India-Russia trade cooperation is Russia's export of mineral fertilizers. The demand for fertilizers in India's agriculture

[50] Dmitry Patrushev: Agricultural trade between Russia and India surged by more than 60 percent in 2024 // The Russian Government. URL: http://government.ru/en/news/54206/

[51] World Integrated Trade Solution.
URL: https://wits.worldbank.org/WITS/WITS/AdvanceQuery/RawTradeData/QueryDefinition.aspx?Page=RawTradeData

[52] Ibid.

[53] Authors' calculations based on Trade Map data. See: Trade statistics for international business development // ITC.
URL: https://www.trademap.org/Index.aspx

[54] Russia could become leading supplier of wheat to India – Rusagrotrans // Interfax. 08.04.2024.
URL: https://interfax.com/newsroom/top-stories/101162/

[55] Ibid.

[56] Ibid.

[57] India set for wheat imports after six years, to shore up reserves // The Economic Times. 29.05.2024.
URL: https://economictimes.indiatimes.com/news/economy/agriculture/india-set-for-wheat-imports-after-six-years-to-shore-up-reserves/articleshow/110531794.cms?from=mdr

[58] India boosts Russian grain imports as Modi thanks Putin for fertilizer supply // Reuters. 09.07.2024.
URL: https://www.reuters.com/markets/commodities/india-boosts-russian-grain-imports-modi-thanks-putin-fertilizer-supply-2024-07-09/

[59] India plans to import 3-5 mln tonnes of wheat in 2024, counting on shipments from Russia // Interfax. 31.05.2024.
URL: https://interfax.com/newsroom/top-stories/102856/

sector is constantly increasing, with the fertilizer market expected to grow from 43.54 billion dollars in 2024, to 74.06 billion dollars by 2033.[60] This makes India highly dependent on imports, with Russia as one of its largest suppliers. In 2022, fertilizer imports from Russia to India increased significantly, as the country sought to secure reliable supplies amidst global shortages. In Russia's total exports to India, fertilizers rank second after mineral fuels. In 2023 alone, India imported over 5.7 million tonnes of potash and nitrogen-based fertilizers from Russia.[61] Fertilizer trade was valued at 2.63 billion dollars, making Russia India's top supplier, followed by China and Saudi Arabia.[62] According to Indian Ambassador to the Russian Federation Vinay Kumar, India's demand for fertilizers from the Russian Federation is high, and Russia is making a significant contribution to India's food security.[63] Indian Prime Minister Narendra Modi said, "friendship with Russia has helped India meet farmer needs for fertilizers in times of crisis."[64] At the XXII India-Russia Summit, the countries agreed to continue cooperation on sustainable fertilizer supplies to India on the basis of long-term contracts between companies within the framework of the Joint India-Russia Fertilizer Committee.[65]

Comparing the total exports of agricultural commodities to the world market from both India and Russia, trade between Moscow and New Delhi remains underdeveloped. At the same time, current trends in Russian-Indian cooperation allow the possibility of hope for a significant increase in agricultural trade turnover in the near future and, most importantly, for increased diversification of mutual trade.

Russian producers are actively working to increase exports to India. Russian Deputy Agriculture Minister Maxim Titov recently said, "trade in agricultural products between Russia and India grew by more than 50% in the first nine months of 2024, and Russia is ready to increase exports of vegetable oil and livestock products, including fish, wheat and grain legumes to the Indian market. Cooperation between Russia and India has reached a qualitatively new level in almost all areas of agribusiness, but there is still potential for a further increase in mutual trade. For example, in 2024, Russian feed for fish farming and pets began to arrive on the Indian market."[66]

At the XXII Russian-Indian Summit, parties agreed to prepare a programme for the development of strategic areas of Russian-Indian economic cooperation for

[60] India Fertilizer Market Analysis, Volume Forecasts, and Company Analysis Report 2025-2033 // Renub Research. URL: https://www.renub.com/india-fertilizers-market-p.php

[61] Authors' calculations based on Trade Map data. See: Trade statistics for international business development // ITC. URL: https://www.trademap.org/Index.aspx

[62] Authors' calculations based on Trade Map data. See: Trade statistics for international business development // ITC. URL: https://www.trademap.org/Index.aspx

[63] India expects increased fertilizer supplies from Russia // TASS. URL: https://tass.ru/ekonomika/21774039 (In Russ.)

[64] Modi: friendship with Russia helped India to meet farmers' needs during the crisis // Rambler. 09.07.2024. URL: https://news.rambler.ru/tech/54841363-v-egipetskoy-grobnitse-obnaruzhili-5000-letnyuyu-rukopis-soderzhaschuyu-uzhasayuschee-poslanie/ (In Russ.)

[65] Joint statement on the outcome of the XXII Russian-Indian annual summit "Russia-India: a strong and expanding partnership // The Kremlin. URL: http://www.kremlin.ru/supplement/6168

[66] Russia To Develop Agriculture & Fertilizer Export Trade With India // Russia's Pivot To Asia. URL: https://russiaspivottoasia.com/russia-to-develop-agriculture-fertilizer-export-trade-with-india/

the period up to 2030 (the "2030 Programme"). In addition, the countries set a new target to increase mutual trade volumes to 100 billion dollars by 2030.[67] There are also prerequisites for emerging new Indian food companies in the Russian market. Vermisheli and Everest—which produce pasta and spices—and Nafed, which produces cereals, oils, oat flakes, and tea, are some examples.[68]

[67] Joint statement of the leaders of the Russian Federation and the Republic of India on the development of strategic directions of the Russian-Indian economic cooperation until 2030 // The Kremlin. URL: http://www.kremlin.ru/supplement/6169/print (In Russ.)

[68] RUSSIA – INDIA. Challenges and solutions of economic cooperation // The National Coordinating Center for International Business Cooperation. URL: https://bigasia.ru/wp-content/uploads/2024/07/russia_india.pdf (In Russ.)

Chapter 3. Challenges and Opportunities for Russia–India Cooperation in Food Security and Agriculture

"There are opportunities in cutting-edge technology, especially in the field of artificial intelligence and digital agriculture. This should go on in parallel. It should not be at the cost of anything, but an ongoing thing."

Mr. S.K. Pattanayak
Fmr. Agricultural Secretary

The agricultural partnership between Russia and India has taken on new dimensions in the recent years, proceeding from evolving trade dynamics and renewed food security concerns amidst geopolitical shifts. The COVID-19 pandemic was the first impetus for Russia and India to intensify their agricultural trade, given the need for resilient food supply chains. While fertilizers, tea, and grains remain the cornerstone of Moscow-New Delhi exchanges, newer areas of collaboration—including investments in agricultural infrastructure and exploration of untapped segments—are slowly but steadily gaining prominence.

Trade in all agricultural commodities has grown significantly, reflecting the mutual dependence of the two nations. Russia remains one of the largest markets for Indian tea, accounting for approximately 7.5% of India's total tea exports.[69] Indian coffee and spices, such as cardamom and black pepper, have also gained a strong foothold in Russian markets. Additionally, India has become a key importer of Russian fertilizers, which are essential for agricultural productivity: Russia accounts for approximately 25% of India's annual fertilizer imports, primarily potash and urea.[70] In 2023 alone, India imported over 5.4 million tonnes of mineral fertilizers from Russia, marking an increase of nearly 50% compared to 2022.[71]

These achievements notwithstanding, the potential of the Russia-India dialogue on food security is considerably underused. Russia's strained relations with Western economies have recently pushed it to seek alternative markets, including India. However, geopolitical uncertainties and increased non-linearity of global development still pose potential hurdles to long-term collaboration. There are certain concerns that India's balancing act between the West and Russia could complicate their meaningful partnership, while Russia's increasing reliance on China as a trading partner may overshadow its engagements with India. Even

[69] Tea Industry and Exports in India // India Brand Equity Foundation. URL: https://www.ibef.org/exports/indian-tea-industry

[70] Russia boosts share in India's fertilizer imports to 28%, growth potential remains – fertilizer assoc CEO // Interfax. 12.10.2024. URL: https://interfax.com/newsroom/top-stories/107660/

[71] Russia to Increase Fertilizer Supplies to India by 1.5 Times in 2023 // Neftegaz.RU. 06.06.2024. URL: https://neftegaz.ru/news/transport-and-storage/837552-rossiya-v-2023-g-narastila-postavki-udobreniy-indii-v-1-5-raza/ (In Russ.)

though Russia has been outspoken that it does not prioritize one partner over another and only seeks to diversify its exports, Indian scholars highlight that the Indian side might sometimes abide by the stereotype. The same might concern Russia, especially amidst Western sanctions.

Strengthening agricultural cooperation, thus, will require proactive policy alignment to ensure that mutual strategic priorities, like productivity gain while preserving jobs or development of local processing enterprises in food industry, remain intact.

Eliminating Transport and Logistics Bottlenecks

Logistics remains probably the most sensitive bottleneck of the Russian-Indian dialogue in agriculture, between major centres of production and consumption of agro-industrial products naturally provoke high transportation costs. Disruptions in supply chains, caused by unilateral Western sanctions against the Russian Federation, severely exacerbated the issue in the recent years. Rapidly ageing transport infrastructure and its limited capacity for both countries complicate delivery further.

For India, the most pressing challenge involves cold chain logistics, or the maintenance of a constant temperature at all transportation stages. Malfunctions in existing logistics results in the loss of 526 million tonnes of food annually worldwide, accounting for 12% of global production. This loss is enough to feed around 1 billion people.[72] In India, the state of cold chain logistics is insufficient to meet the country's alimentary needs: although improving, it is still rather fragmented and technically obsolete. This prohibits India, a net food-exporting country, from the supply of several agro-industrial groups of products to both global and domestic markets. For instance, horticulture, while contributing more than 30% to agricultural GDP,[73] suffers losses of over 20% due to inadequate cold storage facilities.[74] At the same time, transferring and implementing Russian cold chain solutions in India would require substantial investment and technical training, not to mention the fact that Moscow is not among the frontrunners in cold logistics and storage.

Cold chain logistics is part of a more complicated general logistical issue. The two biggest possible routes between Russia and India, namely the International North-South Transport Corridor (INSTC) and the Vladivostok-Chennai Corridor, are underutilized by Russian agricultural producers, partially due to the poor quality of food storage. Businesses predominantly rely on established yet lengthier transportation routes through the Russian ports of Novorossiysk and St. Petersburg. This trend is expected to persist until the infrastructure along the INSTC is built to meet necessary standards.

[72] Sustainable Food Cold Chains: Opportunities, Challenges and the Way Forward // UNEP and FAO. 2022. URL: https://openknowledge.fao.org/server/api/core/bitstreams/cf42e3c6-157e-4ea9-8873-8b3cc9242b96/content

[73] India's horticulture sector holds untapped potential despite challenges // The Economic Times. 25.04.2023. URL: https://economictimes.indiatimes.com/news/economy/agriculture/indias-horticulture-sector-holds-untapped-potential-despite-challenges/articleshow/99763533.cms

[74] Ranjan J., Sahni R. (2023). Post harvest losses of fruits and vegetables in India. URL: https://www.researchgate.net/publication/374116896_Post_harvest_losses_of_fruits_and_vegetables_in_India

The challenge is greater for agricultural producers based in Russian regions that are far from major transshipment hubs, even though food production is abundant elsewhere. For example, due to gaps in logistics infrastructure, it is impossible to expand the Russian export base with Siberian grains or fruit and vegetables. Apart from this, there remains a serious imbalance in cargo flow, as containers transported from India back to Russia, are (for now) largely unfilled with goods. This lowers trade efficiency and raises operational costs across the entire sector, increasing prices for end customers. Unfortunately, addressing these issues separately is more difficult because they are linked to complexities in Russian-Indian trade and current payment mechanisms.

Logistical problem-solving in the Russian-Indian dialogue should start with developing the multimodal infrastructure of the INSTC and the Vladivostok-Chennai Corridor. Optimizing bilateral trade turnover, boosting Indian goods exports to Russia, and accelerating cold chain technology transfers should also be high on the agenda. In Russia, several companies, including Rostec, posses the relevant know-how and could export it to India.

Overcoming Administrative Barriers

Administrative and trade barriers also significantly hinder the steady development of the Russia-India food security dialogue. Agricultural products are traditionally sensitive to trade liberalisation. So, although fertilizers remain the cornerstone of Russian-Indian agricultural relations, and India enjoys the position of the largest importer of fertilizers globally, it imposes a flat 5.5% import duty on these essential goods.

This, coupled with obstacles such as limited transport accessibility, high freight costs associated with shipments from Russia's Baltic ports, and the geographical distance between suppliers and end consumers, prevents Russian producers from offering fertilizers to India at prices competitive with those from China and countries of the Middle East and North Africa. Other non-tariff barriers include sanitary and phytosanitary standards and certification requirements, which differ for Russia and India. Illustrative of this are the hurdles faced by Indian exporters of organic agricultural products to Russia.

However, both sides agree that it is not the barriers per se that can halt trade but rather their unpredictability and lack of justification and transparency. According to representatives of the Russian agro-industrial complex and relevant government agencies, variability in customs regulations in India prevents Russian agricultural exporters from operating effectively within the Indian market. Owing to the lack of clarity on both ends, those in trade are often unable to learn about the next regulatory customs revisions in time and, consequently, plan business activities without incorporating them. Naturally, this raises non-production costs and limits the capacity for strategic long-term partnerships.

Similarly to logistics, barriers present a broader systemic challenge. It is widely believed among Russian and Indian businesses that a Free Trade Agreement (FTA) between India and the EAEU could provide a framework for advancing both

bilateral and interregional trade and prove especially beneficial in the fertilizer sector, where Russia is a world export leader and India ranks as the largest importer.[75] If operationalised, an EAEU-India trade agreement would benefit not only Russian exporters of raw materials and mineral fertilizers but also the whole of India's agro-industrial complex, especially during increased seasonal demand and price fluctuations. Agreed supply volumes based on permanent contracts and predictable conditions provided by the FTA would allow both parties to carry out operational and strategic planning of exchanging goods, even during high season.

Both parties have a background in FTAs and trade liberalisation. The case in point is the Trade and Economic Partnership Agreement between India and the European Free Trade Association (EFTA).[76] The EFTA-India Agreement was essentially a trade-off. For example, reduced duties on alcohol mainly affected middle and premium segments, which were dominated by foreign suppliers rather than local companies producing cheaper options even before the Agreement was concluded.[77] This allowed for a seamless transition to new trade terms in competition-sensitive sectors. Mutually beneficial terms of the Agreement, including trade in agricultural goods, were negotiated over a period of 16 years.[78] At the same time, the deal resulted in Russian exporters of alcoholic beverages losing about 60% of the Indian market due to decreased competitiveness compared to EFTA suppliers.[79] Similar and more large-scale concerns are now raised regarding the looming FTA Agreement between India and the European Union, as negotiations have been resumed after years of stalemate.

All in all, it is in Russia's interest to expedite the start of negotiations with India on the EAEU-India FTA, which were initiated back in 2016. It remains up to Russian stakeholders to effectively communicate the full benefits of trade cooperation with the EAEU for stakeholders in India. As of 2025, EAEU Member States coordinated agricultural policies and initiatives in livestock breeding while also supporting internal warehouse certificate circulation and common standards for food storage. This, coupled with regular FTA provisions, could ease barriers, bolster trade, and strengthen food security in Russia-India relations. Establishing an FTA would also resolve some logistical challenges while broadening the range of traded goods.

Before any deal is reached, countries might benefit from interim measures to partially liberalise bilateral trade and stabilise critical supplies. At this stage, the respective governments could jumpstart more profound deregulation by compiling a trade-off list of mutual concessions on complementary goods not sensitive to foreign competition. For example, any potential talks on duty-free exports of dairy

[75] Fertilizers // The Observatory of Economic Complexity. URL: https://oec.world/en/profile/hs/fertilizers

[76] Trade and Economic Partnership Agreement between the EFTA States and the Republic of India. URL: https://www.efta.int/sites/default/files/documents/legal-texts/free-trade-relations/india/1.%20Main%20Agreement.pdf

[77] India, EFTA trade pact to help push growth of domestic wine industry: CIABC // The Economic Times. 11.03.2024. URL: https://economictimes.indiatimes.com/industry/cons-products/liquor/india-efta-trade-pact-to-help-push-growth-of-domestic-wine-industry-ciabc/articleshow/108399373.cms?from=mdr

[78] India // EFTA. URL: https://www.efta.int/trade-relations/free-trade-network/india

[79] India Imports from Russia of Beverages, spirits and vinegar // Trading Economics. URL: https://tradingeconomics.com/india/imports/russia/beverages-spirits-vinegar

products to India—as opposed to grains, pulses, and oilseeds—would be rendered practically futile.[80] Defining an initial range of "safe" goods, not necessarily limited to horticulture and oils, would accelerate the two countries towards free trade and provide a reliable framework for long-term strategic agreements addressing India's projected food deficits. Beyond conventional import-export models, these agreements could include leasing farmland in Russia's fertile regions to cultivate wheat varieties tailored to Indian national preferences. For example, Russia's Rostov and Krasnodar regions—known for their high agricultural productivity—as well as regions in the Russian Far East with many unexploited sowing areas could offer India an opportunity to secure a stable wheat supply.

A system of exchanging up-to-date information on tariff and non-tariff restrictions between Russian and Indian customs could provide an appropriate second track for the "safe" list negotiations. This would establish closer institutionalised cooperation between specialised agencies and businesses, as well as streamline procedures and ignite mutual recognition agreements for quality standards. This would allow the promotion of e-commerce and digital payment solutions within the agricultural sector—backed by government-supported digital wallets—and facilitate cashless transactions, thereby enhancing the overall efficiency of agricultural commerce.

Escaping Traditional Sector Dependency

Arms have historically constituted a significant share of Russian exports to India. However, over the past few decades, Indian authorities have been effectively executing a policy of diversifying military imports, adding Western nations such as the US and the EU to its list of partners in the national military-industrial complex. Subsequently, now less than half of India's arms imports (around 36% in 2024) come from Russia, the first time since the 1960s.[81]

Considering the persistent negative trend in the supply of Russian military equipment, Russian stakeholders might need to strategically reassess their trade patterns and redirect their focus toward alternative sectors that demonstrate higher potential for high-tech and knowledge-intensive exports to India. Although not evident to more traditional enterprises, the agricultural sector offers opportunities for innovation and robust economic growth. By investing in advanced agricultural practices, developing sustainable farming solutions, and exploring precision agricultural know-how, the two countries can not only enhance their export capabilities but also contribute positively to food security on a global scale.

[80] Dairy is sensitive sector; no plans to open up in any FTAs: Piyush Goyal // The Economic Times. 25.09.2024. URL: https://economictimes.indiatimes.com/news/economy/foreign-trade/dairy-is-sensitive-sector-no-plans-to-open-up-in-any-ftas-piyush-goyal/articleshow/113653014.cms
No free trade pact if EU insists on opening up dairy biz: Piyush Goyal // The Economic Times. 26.10.2024. URL: https://economictimes.indiatimes.com/news/economy/foreign-trade/india-eu-free-trade-deal-cannot-include-dairy-sector-trade-minister-says/articleshow/114571651.cms

[81] India remains world's largest arms importer, Russia its top supplier // The Economic Times. 12.03.2024. URL: https://economictimes.indiatimes.com/news/defence/india-remains-worlds-top-arms-importer-sipri-report/articleshow/108399377.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst

Since Russia and India have valuable experience in the modernisation and digitalisation of agriculture, sharing expertise and innovation in the agro-industrial sector can enhance resilience against geopolitical and climatic challenges. This way, they can narrow the gap with economic giants that started transitioning to efficient agriculture earlier.[82] For example, secondary products like rice bran oil are highly valued but remain underutilized; 4 million tonnes of rice bran go unprocessed annually. By leveraging Russia's expertise in industrial processing, the two countries can improve the use of useful outputs and reduce food waste. Joint investments in processing infrastructure, especially in underserved rural areas, could boost farmer incomes and improve the value chain.

A potential area for additional development is in agricultural drones. Both countries have profound expertise in their design, manufacturing, and exploitation for a variety of purposes, including crop monitoring and diagnostics, irrigation control, precise land measurement, and efficient pesticide treatment. Given India's almost complete ban on drone imports to help domestic producers, the two parties could concentrate on training drone operators and technology transfers. Meanwhile, India's leadership in AI-powered sensors, blockchain-based supply chain tracking, and digital public infrastructure—including platforms like eNAM and soil health cards—provides a blueprint for integrating best practices in software engineering.

Attracting Investment

To boost foreign direct investment in the agricultural sector, Russia and India should implement investment-friendly policies. Strategies could involve streamlining legal frameworks and implementing fast-track approvals for food startups, providing tax incentives and reductions, and land allocation programs for businesses that invest in rural agricultural infrastructure. Establishing public-private partnership (PPP) innovation funds would promote cutting-edge technology, including AI-powered climate prediction models, CRISPR-based crop enhancement systems, and hyper-efficient irrigation systems.

Robust bilateral trade, including in the agricultural sector, also necessitates an adequate PPP ecosystem with innovative financing mechanisms. Among the key financial models that can facilitate this alignment are viability gap funding (VGF), blended finance models, and impact investment strategies. VGF involves designing government subsidies to close investment gaps in high-risk yet impactful agricultural projects. Blended finance models pool concessional public funding with commercial capital from institutional investors, thereby minimizing the risks associated with private sector participation.

Addressing Environmental Challenges

Climate change represents a critical challenge for the agricultural partnership between India and Russia. While Russia's climate is projected to benefit from

[82] Dubashi N., Fiocco D., Goyal A., Gupta A., Nathani N., Tandon A. How agtech is poised to transform India into a farming powerhouse // McKinsey. 10.05.2023. URL: https://www.mckinsey.com/industries/agriculture/our-insights/how-agtech-is-poised-to-transform-india-into-a-farming-powerhouse

increased arable land due to global warming (with an estimated 37 million hectares potentially becoming cultivable by 2080), India's tropical agriculture is set to suffer.[83] The International Food Policy Research Institute estimates that Indian wheat yields could decline by 6-23% by 2050 due to rising temperatures and erratic rainfall.[84] India therefore seeks mitigation and adaptation strategies, while Russia also focuses on utilizing new opportunities. If these diverging priorities are not aligned, collaborative efforts may encounter friction. Although this disparity in climate change impacts could create asymmetrical effects, there is potential for Russian-Indian climate cooperation on agriculture and investments, like green bonds and impact investments.

In response to the issues of land degradation and scarce water availability, India is aiming to gradually transition to a mixed type of agriculture. This approach will combine organic farming with the selection of heat-resistant, high-yielding crop varieties and the use of nano-fertilizers and biological pest control agents.[85] Technologies such as micro-irrigation, laser land levelling, and direct seeding of rice could be pivotal in reducing water use in paddy cultivation by 20-30%, according to Indian estimates.

Carbon sequestration (capturing and storing atmospheric carbon dioxide), quantitative assessment of carbon recycling and return rates into depleted soils, data processing, and its conversion into carbon credits—all these constitute vital measures for India's future CO_2 market. To enhance its potential effectiveness and meet climate goals, India could leverage Russian experiences in developing a national integrated carbon trade system from the ground up.[86]

However, the exchange of best practices in agriculture and sustainability is complicated not only by the sheer diversity of both countries but also by the fundamental differences in the structure of their agricultural sectors. While India's agriculture is predominantly smallholder-based, with 86% of its farmers cultivating less than 2 hectares, Russian agriculture is dominated by large-scale mechanised farms, with an average farm size exceeding 150 hectares. As a result, Russia's agricultural mechanisation and soil management technologies, as well as satellite-based monitoring systems for tracking land use and carbon emissions, are designed for vast, contiguous land areas whereas India's fragmented landholdings demand customized solutions. Similarly, Indian advancements in digital agriculture, such as AI-driven advisory systems, parametric insurance models, and mobile apps for farmers, may require substantial adaptation for Russian agricultural systems.

To implement the whole set of measures aimed at strengthening dialogue in the field of new agrarian and climate technologies, collectively known as "generation

[83] S.N. Kumar, P.K. Aggarwal, D.S. Rani, R. Saxena, N. Chauhan, S. Jain. Vulnerability of wheat production to climate change in India. *Climate Research*. 2014. Vol. 59. No 3. Pp. 173-187

[84] Ibid.

[85] Including predators, parasitoids, pathogens, and competitors detrimental to plant diseases and pests.

[86] A pilot project on achieving carbon neutrality is launched on Sakhalin in September 2022.

4.0" agriculture,[87] relevant stakeholders might consider establishing joint research centres. This could include collaboration between Russia's Skolkovo, Rostec, Rosatom, K.A. Timiryazev Russian State Agrarian University, All-Russian Scientific Research Institute of Electromechanics and other leading Russian institutions with the Indian Council of Agricultural Research, the Council of Scientific and Industrial Research, the Indian Space Research Organization, and the Department of Biotechnology of the Ministry of Science and Technology of India. The private sector can also significantly contribute via PPP funds for agricultural, financial, and climate technologies.

[87] Orlova N.V. Agriculture 4.0. Russia in a Global Context and the Most Promising Innovative Segments // Institute for Agrarian Studies, HSE University. URL: https://inagres.hse.ru/data/2020/10/30/1359755922/INNOVATIVE%20DEVELOPMENT%20OF%20AGRICULTURE%20IN%20RUSSIA.%20Agriculture%204.0.pdf

Conclusion

Russian-Indian cooperation on agriculture, rooted in decades of shared experiences, now faces the challenge of going beyond traditional commodity exchanges to a more sophisticated technology-based strategic engagement. Although geopolitical shifts and global economic transformations might constrain its full potential, much remains to be done.

The recent expansion of trade—particularly in sunflower oil, fertilizers, and grains—needs to be complimented by addressing critical infrastructure limitations. The modernization of the International North-South Transport Corridor and Vladivostok-Chennai maritime route would dramatically enhance the efficiency of cooperation, particularly if paired with building cold chain facilities to preserve perishable goods. Such investments would not only reduce current logistical bottlenecks but also create new opportunities for trade in higher-value agricultural products.

Equally important is the harmonisation of regulatory frameworks. Official start of negotiations of a comprehensive free trade agreement between India and the Eurasian Economic Union, with special provisions for agricultural goods, could help significantly reduce administrative barriers. Establishing mutually recognized food safety standards and creating a joint digital platform for trade documentation would further streamline cross-border commerce, while maintaining quality controls.

The overall future of the Russia-India agricultural partnership will depend on its ability to embrace technological innovation. Joint research initiatives in precision agriculture, climate-resilient crops, and sustainable farming techniques could position both nations as global leaders in agricultural innovation. Beyond technology, however, the relationship requires institutional reinforcement. Regular high-level dialogue, coordinated through existing frameworks like BRICS, could ensure sustained political commitment, while industry forums would foster deeper business-to-business connections.

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Notes

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