THE GRAIN MARKET IN INDIA AND THE CREATION OF THE BRICS GRAIN UNION

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The article examines the current situation in the wheat market in India and its potential within the global food security dynamic. In particular, it analyzes a number of instruments and programs of national policy in the grain sector: minimum support prices, public procurement, public distribution systems, storage facilities and their management, market regulation, trading mechanisms and platforms. In the aspect of the development of Indian grain trade and infrastructure, the Electronic Platform for National Agriculture Market (eNAM) and food commodities exchanges are considered. The article provides explanation on why India's ambitious plans announced several years ago to expand wheat exports to the world market can hardly be fully realized in the near future due to such reasons as climate risks, phytosanitary problems and quality controls, lack of storage and logistics infrastructure, as well as the huge social and political importance of wheat supplies in the local market. Through the continuation of the current reforms in an efficient manner, India can resume the position of one of the leading wheat exporters. It is proposed that Russia, India and South Africa (as well as the potential new members – Iran and Argentina) create a new BRICS Grain Union.

Keywords: food security; Indian wheat market; wheat futures trading in India; grain market regulation in India; BRICS Grain Union.

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Introduction

Despite the developments of new technologies, growing level of internet access and financial inclusion, food security remains a challenge for many regions of the world. Per capita world food production in 2010 was 5359 calories,[1] which amounts to 2870 kcal per capita per day after deducting food waste, animal feed, and non-food consumption.

According to researchers, international trade liberalization in the second half of the twentieth century resulted in a decreased level of food security in African countries, which used to be food self-sufficient. According to Luan et al., Africa's food self-sufficiency rate declined from 100% in 1961 to 80% in 2007.[2] Presently, food self-sufficiency is hardly possible in 66 countries, MENA and Andean countries having the highest dependency

[1] Jennifer Clapp, *Food Self-Sufficiency: Making Sense of It, and When It Makes Sense*, 66(1) Food Pol'y 88, 90 (2017), referring to Food and Agriculture Organization (FAO), FAO Statistical Yearbook 2012: World Food and Agriculture (2012), at 174 (Jun. 20, 2022), available at http://www.fao.org/docrep/015/i2490e/i2490e00.htm.

[2] Clapp 2017.

on imports.[3] There are various reasons for the increase of import reliance.[4] These reasons include: production decline, demographic and dietary changes, and the availability of relatively cheap foods in the international market. As depicted by MacDonald, there is a tendency of bilateral dependency of an importing country from the main exporting country supplying particular foods (high level of concentration).[5]

The Action Plan for 2021–2024 for Agricultural cooperation among BRICS countries, adopted in 2021, provides for enhanced cooperation in the agricultural sphere among the member countries. It includes, among others, the topics of food security, farmers' welfare, and promoting digital agricultural solutions.

India is the world's second largest producer of wheat and rice.[6] Among other important cereals produced by the country are paddy, sorghum, millet, barley and maize. Together with Russia, India is on the list of major grains exporters, thus the country plays an important role in enhancing food security globally.

The crises in the financial markets and shocks in the global supply chains as a result of financial imbalances and the global pandemic led to new issues and challenges to international food commodity trading. India's recent ban on wheat exports requires a detailed look at the situation in the country's grain market, its production, trade and distribution, and the role the state plays in these processes.

This paper provides a systematic overview of the grain market in India, its challenges and prospects, with a special accent on the wheat market. We analyze the factors influencing the country's export of wheat, including production capacity, minimum support price policy, procurement and distribution programs as well as mechanisms for trading in wheat in the open market.

1. India in the World Trade Map of Grains

India's overall trade balance is negative: almost $395 billion of exports against over $570 billion of imports in 2021.[7] When it comes to food trade, India is a net exporter: $46 billion of agricultural exports against almost $29 billion of agricultural imports, in 2021. However, the situation was not the same half a century ago. Until the 1960s India suffered from deficit of wheat and had to import it for the purpose

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[3] Marianela Fader et al., *Spatial Decoupling of Agricultural Production and Consumption: Quantifying Dependences of Countries on Food Imports Due to Domestic Land and Water Constraints*, 8(1) Env't Res. Lett. 014046 (2013).

[4] Clapp 2017, at 90, with reference to Yibo Luan et al., *Historical Trends of Food Self-Sufficiency in Africa*, 5(3) Food Secur. 393 (2013) and Manitra A. Rakotoarisoa et al., *Why Has Africa Become a Net Food Importer? – Explaining Africa Agricultural and Food Trade Deficits* (2011).

[5] Graham K. MacDonald, *Eating on an Interconnected Planet*, 8(2) Env't Res. Lett. 021002 (2013).

[6] Cereals, Agricultural and Processed Food Products Export Development Authority (APEDA) (Jun. 20, 2022), available at https://apeda.gov.in/apedawebsite/six_head_product/cereal.htm.

[7] U.N. Comtrade Database (Jun. 20, 2022), available at https://comtrade.un.org/.

of food security. Due to a series of agricultural reforms, started in 1960s, the country achieved self-sufficiency, and gradually became a net exporter of wheat.

Cereals are by far the largest agri-export item: it forms almost 27% of total agri-exports, with $12.4 billion in 2021.[8] India is the second largest exporter of wheat and the world leader in rice export. Rice export takes a portion of over 87% in total cereals export.[9] In 2021, Indian rice exports reached 21.3 million tonnes worth $9.6 billion; wheat exports amounted to 6 million tonnes worth $1.7 billion.[10] The increase in agri-exports in 2020–2021 was mainly due to the significant increase in exports of wheat (840%), vegetable oils (268%), and other cereals (257%).[11] The core buyers of Indian rice are Saudi Arabia, Iran, Iraq, Yemen and the UAE for basmati rice (total export in 2020–2021 worth $4 billion),[12] and Benin, Nepal, Bangladesh, Senegal and Togo for non-basmati rice.[13] The country's main export destinations for wheat are Bangladesh, Nepal, the UAE, Sri Lanka, and Yemen.[14]

BRICS total imports of Indian basmati rice is less than 1% of the total export, South Africa being the largest buyer within the group;[15] for non-basmati rice the share of BRICS importers is 5%, with China and South Africa being the leaders.[16] In wheat exports to BRICS, only South Africa buys a small portion of the total exports, which is far below 1%.[17] India created Agri-cells in 15 countries, in order to bring focus on agricultural exports, among them are two BRICS countries – China and Brazil.

The food situation in India had significant problems even before the COVID crisis, but the pandemic showed that the situation in the field of food security is unstable and can fall relatively quickly into a critical one.

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8 Fish and seafood, which is the second largest export item, brought to India $6.7 billion in 2021.

9 Cereals, *supra* note 6.

10 U.N. Comtrade Database, *supra* note 7.

11 Department of Agriculture & Farmers Welfare, Ministry of Agriculture & Farmers Welfare, Government of India, Annual Report 2021–22, at 157 (Jun. 20, 2022), available at https://agricoop.nic.in/sites/default/files/Web%20copy_eng.pdf.

12 Basmati Rice, APEDA (Jun. 20, 2022), available at https://apeda.gov.in/apedawebsite/SubHead_Products/Basmati_Rice.htm; India Export of Agro Food Products, Product: Basmati Rice, AgriExchange, APEDA (Jun. 20, 2022), available at https://agriexchange.apeda.gov.in/indexp/Product_description_32head.aspx?gcode=0601.

13 Non-Basmati Rice, APEDA (Jun. 20, 2022), available at https://apeda.gov.in/apedawebsite/SubHead_Products/Non_Basmati_Rice.htm.

14 Wheat, APEDA (Jun. 20, 2022), available at https://apeda.gov.in/apedawebsite/SubHead_Products/Wheat.htm; Exports from India of Wheat, AgriExchange, APEDA (Jun. 20, 2022), available at https://agriexchange.apeda.gov.in/product_profile/exp_f_india.aspx?categorycode=0603.

15 Exports from India of Non-Basmati Rice, AgriExchange, APEDA (Jun. 20, 2022), available at https://agriexchange.apeda.gov.in/indexp/Product_description_32head.aspx?gcode=0601.

16 India Export of Agro Food Products, Product: Basmati Rice, AgriExchange, APEDA (Jun. 20, 2022), available at https://agriexchange.apeda.gov.in/product_profile/exp_f_india.aspx?categorycode=0602.

17 Exports from India of Wheat, *supra* note 14.

India has been struggling with hunger for a long time. In 2019, 195 million people – 14.5% of the population – were malnourished as a result of extreme inequality, a lack of investment in rural communities (which are home to 70% of the population), a failure to protect workers living in poverty, corrupt and inefficient systems for distributing food aid and social support, and an increasingly erratic and extreme climate. On 23 March 2020, the Indian government announced a lockdown to control the spread of the coronavirus. Millions of people who were already living precarious existences on the brink of hunger – rural communities, lower castes, minority groups, women and children – were suddenly tipped over the edge. An estimated 40 million people, predominantly lower-caste migrant workers who make a living as domestic workers, street vendors, or daily wage labourers on construction sites, were made jobless overnight. Facing starvation and disease in the overcrowded slums they call home, and with public transport shut down, hundreds of thousands of people began walking sometimes hundreds of kilometres back to their villages. Strict restrictions on travel also left farmers without a migrant labour force at the peak of the harvest season, forcing many to leave crops in the field to rot. This had a huge impact on farmers' incomes and the food security of rural communities. Five weeks into lockdown, a survey of 5,000 rural households across 12 states revealed that half were having to cut back on the number of meals they ate, while almost a quarter had been forced to ask others for food since the lockdown began. It also showed that a significant proportion of households were getting into debt or selling assets to get by, with 22% of households reporting having to sell livestock and 16% saying they had recently borrowed from money lenders.[18]

The 2022–2023 season has brought a number of shocks to the international wheat market. Initially, India was regarded as an important wheat supplier to balance the unstable supplies from the Black Sea region. In March 2022, it set up a helpline for wheat exporters.[19] However, the drought that happened in April which led to the drop in harvest made the Indian government correct its forecast: the initial 110 million tonnes of production was reduced to 106 million tonnes for the year 2021–2022, and the forecast for the season 2022–2023 was reduced to 99 million tonnes (Table 1),[20] which meant an almost double reduction of exports forecast – from 10 million tonnes to 6 million tonnes.[21] For the international community this was a shock. This resulted

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[18] The Hunger virus: how COVID-19 is fueling hunger in a hungry world, Oxfam International, 9 July 2020, at 12–13 (Jun. 20, 2022), available at https://www.oxfam.org/en/research/hunger-virus-how-covid-19-fuelling-hunger-hungry-world.

[19] APEDA, Helpline for Wheat Exporters, 31 March 2022 (Jun. 20, 2022), available at https://apeda.gov.in/apedawebsite/Announcements/Helpline_Wheat_Exporters.pdf.

[20] Directorate of Economics and Statistics, Department of Agriculture and Farmers Welfare, Ministry of Agriculture and Farmers Welfare, Third Advance Estimate of Production of Foodgrains for 2021–22, 19 May 2022 (Jun. 20, 2022), available at https://eands.dacnet.nic.in/Advance_Estimate/Time%20Series%203%20AE%202021-22%20(English).pdf.

[21] U.S. Department of Agriculture (USDA), India: Grain and Feed Update, 8 June 2022 (Jun. 20, 2022), available at https://www.fas.usda.gov/data/india-grain-and-feed-update-30.

in growing demand for the reduced amount of wheat, and subsequently, price spikes in the global market.

Indian producers started tending to prefer selling in the international markets at higher prices rather than selling to the government. In January–April, 2022, India sold six times more wheat in USD compared to the same period of 2021.[22]

However, on 13 May 2022, the Indian Government declared a wheat export ban. The suddenness of the ban led to chaos and a huge accumulation of wheat destined for export at logistics hubs, in particular in the port of Kandla.[23]

One of the reasons contributing to such decisions was a low level of wheat procurement, which is the result of the speculators' and traders' activities in the international market, who were aiming at getting higher wheat stocks in the context of growing uncertainty in international wheat supplies. The speculators were buying wheat directly from the Indian local farmers.[24] As it is stated in a U.S. Department of Agriculture (USDA) report, in June 2022 the situation with state procurement was still tough since the market prices were much higher than the government minimum support price.[25]

Table 1: Indian wheat production, exports and stocks, million tonnes[26]

Marketing year starting from April	2020–2021	2021–2022	2022–2023
Beginning stocks	24.7	27.8	19.5
Production	107.9	109.6	99.0
Exports	2.6	8.1	6
Total consumption	102.3	109.8	104
Ending stocks	27.8	19.5	8.5

The Indian Government's decision on the export ban of wheat was first of all aimed at stabilizing the situation in the local market. In the country which is edging towards having the largest population of the world, wheat and rice form the most important food commodities. The decision on the export ban was referring to the "sudden changes in the global market for wheat" resulting in food security risks for

[22] Department of Commerce, Ministry of Commerce & Industry, Government of India (Jun. 20, 2022), available at https://tradestat.commerce.gov.in/ftpa/comgrp.asp.

[23] Jenny Daniel, *India's Kandla Port faces cargo flow disruptions due to wheat export ban*, Container News, 26 May 2022 (Jun. 20, 2022), available at https://container-news.com/indias-kandla-port-faces-cargo-flow-disruptions-due-to-wheat-export-ban/.

[24] *Мишутин Г.* Индия запрещает экспорт пшеницы, за исключением зерна для бедных соседей // Ведомости. 16 мая 2022 г. [Gleb Mishutin, *India Bans Wheat Export, Except Grain for Poor Neighbours*, Vedomosti, 16 May 2022] (Jun. 20, 2022), available at https://www.vedomosti.ru/finance/articles/2022/05/15/922116-indiya-zapreschaet-eksport.

[25] USDA, *supra* note 21.

[26] *Id*.

"India, neighbouring and other vulnerable countries." The new measures did not involve shipments with an irrevocable letter of credit issued on or before the date of the decision. It is worth noting that on the date the decision was announced out of 2.2 million tonnes of wheat in the Indian ports only up to 20% had issued LCs.[27] An exception was made for the consignments under Customs examination before 14 May 2022.[28] As it is explained in the official documents, the supplies to other countries "to meet their food security needs" would be possible under the Government permission,[29] and "will be allowed on case-to-case basis, with the specific approval of competent authority."[30]

This is not the first time in recent history when India has imposed an export ban for wheat. The previous export ban was imposed on wheat and rice in 2007–2008 "to meet domestic needs,"[31] with a number of successive exemptions for certain countries, and removed in 2011, with certain limits imposed on the total amount to be exported.[32]

Within a few days of the export ban, India received requests from several countries for the supply of wheat. These countries need large quantities of 1.5 million tonnes in order to fight the shortage. According to expert estimates, more people in Afghanistan may die of starvation in the near future than due to 20 years of war. Farmers and the people of Kabul are already waiting in line for humanitarian aid, which is not enough. This is the first time this has happened in the country. Half of the people in Afghanistan, or at least 20 million, do not have enough food. People have already begun to starve in Sri Lanka, Lebanon and Morocco.[33] In fact, Sri Lanka

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27 Rajendra Jadhav, *Exclusive: India's surprise wheat export ban traps 1.8 million tonnes at ports*, Reuters, 16 May 2022 (Jun. 20, 2022), available at https://www.reuters.com/markets/commodities/exclusive-indias-surprise-wheat-export-ban-traps-18-mln-t-ports-trade-2022-05-16/.

28 Directorate General of Foreign Trade, Department of Commerce, Ministry of Commerce & Industry, Government of India, Trade Notice No. 07/2022-23, Implementation of Notification No. 06/2015-2020 dated 13th May, 2022 – Prohibition on export of wheat, New Delhi, 17 May 2022 (Jun. 20, 2022), available at https://content.dgft.gov.in/Website/dgftprod/d612e853-cc32-441b-9ae5-05598a8e646e/TN%2007.pdf.

29 Directorate General of Foreign Trade, Department of Commerce, Ministry of Commerce & Industry, Government of India, Notification No. 06/2015-2020, Amendment in the Export Policy of Wheat, New Delhi, 13 May 2022 (Jun. 20, 2022), available at https://apeda.gov.in/apedawebsite/DGFT_notificationfile/Notification_No_13_05_2022.pdf.

30 Directorate General of Foreign Trade, Department of Commerce, Ministry of Commerce & Industry, Government of India, Trade Notice No. 06/2022-23, Implementation of Notification No. 06/2015-2020 dated 13th May, 2022, 14 May 2022 (Jun. 20, 2022), available at https://content.dgft.gov.in/Website/dgftprod/2c5e002d-8a42-4e71-a5b0-4f9b4464c785/TN%2006.pdf.

31 Cereals, *supra* note 6.

32 Wheat, APEDA (Jun. 20, 2022), available at https://apeda.gov.in/apedawebsite/Latest_Notification/Wheat.html; Cereals, *supra* note 6.

33 Индия поставит пшеницу нуждающимся странам // Agrotrend.ru. 1 июня 2022 г. [India Will Supply Wheat to Needy Countries, Agrotrend.ru, 1 June 2022] (Jun. 20, 2022), available at https://agrotrend.ru/news/26743-indiya-postavit-pshenitsu-nuzhdayuschimsya-stranam.

is already experiencing street food riots that could easily escalate into civil war. According to the Prime-Minister Ranil Wickremesinghe, Sri Lanka received a wheat offer from Russia.[34]

The importance of the Indian local market of wheat can hardly be underestimated. The self-sufficiency of wheat and other types of staple food is the main concern for the Indian Government. Therefore, it strives to take the necessary precaution measures in order to provide stability in the local food supplies.

The uncertainty with the supply of Black Sea grain to the international market, which arose in March–April 2022, and the initial forecast of Indian wheat exports could have been a good chance for India to increase its market share in the global wheat market. India was able to more than double its wheat exports over the past few years, to about 6 million tonnes per year, and announced an ambitious program aiming for super-fast export growth to 15 million tonnes per year as early as 2023. In April 2022, India reached a record wheat export volume of 1.4 million tonnes.[35] Although extreme heat was the direct cause of the export ban, even in the absence of a heat wave, the feasibility of such a program was in doubt. First, it is doubtful that India has the logistical capacity for such a surge in supplies. Secondly, India has significant phytosanitary problems in terms of grain quality[36]. Thirdly, it is unlikely that India was going to offer wheat at prices significantly below market prices so it is not clear where the poor countries would get the money to buy enough. Fourthly, such a program is unlikely to be fully compatible with ensuring domestic food security. At the same time, India's success in promoting the export of cheap rice to China should be recognized.

2. Specifics and Organization of the Local Grain Market in India: Production, Procurement, Storage and Distribution

2.1. Hunger, Food Security and the Farmers

The National Food Security Mission was created in India in 2007–2008, with the aim to increase the production of the main grain commodities – rice, wheat and pulses.[37] The mission includes the implementation of certain programs aimed at farmers.

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[34] Krutika Pathi, *The AP Interview: Sri Lanka PM says he's open to Russian oil*, Associated Press News, 12 June 2022 (Jun. 20, 2022), available at https://apnews.com/article/russia-ukraine-moscow-china-asia-314a2bc7c9ce9d3dabb02f19b3cf6418.

[35] Mayank Bhardwaj & Rajendra Jadhav, As *Black Sea supplies fall, India sells record 1.4 mln tonnes wheat in April*, Reuters, 10 May 2022 (Jun. 20, 2022), available at https://www.reuters.com/world/india/black-sea-supplies-fall-india-sells-record-14-mln-tonnes-wheat-april-2022-05-10/.

[36] Pratik Parija & Abdel Latif Wahba, *Quality Matters in India's Drive to Fill Global Wheat Export Gap*, Bloomberg, 19 April 2022 (Jun. 20, 2022), available at https://www.bloomberg.com/news/articles/2022-04-19/quality-matters-in-india-s-drive-to-fill-global-wheat-export-gap.

[37] Department of Agriculture & Farmers Welfare, *supra* note 11, at 60.

By 2020–2021 the mission has been active in certain districts in 28 states and 2 union territories.

The agricultural sector in India plays an important role for the citizens, as almost half of its households are involved in agriculture.[38] According to the Ministry of Agriculture, in 2011, 54.6% of the total workforce was engaged in the agricultural sector.[39] There are about 146.5 million farming families who own agricultural land.[40] Moreover, it is more about small farmers who are contributing to the general agricultural production, with average land size of 1.1 hectares, around 12% of which are producing crops on leased land.[41] The land used for rice and wheat production accounts for 23% and 16% of the total cropped land.[42]

This is not to say about the high level of poverty and hunger. The extreme poverty rate[43] and low middle income poverty[44] in India was estimated by the International Monetary Fund (IMF) at 1.4% and 18.5% respectively, in 2019. These rates increased during the pandemic, to 2.5% and 26.5% respectively. However, the government food subsidy program "absorbed a major part of the pandemic shock."[45] In the Global Hunger Index India ranks 101,[46] the worst among BRICS countries. This reflects the importance of social subsidy programs in India, which have been in place for the last 50 years.[47]

Therefore, the government is extremely interested in securing the necessary food stocks in the country, which is achieved through the public procurement at minimum support prices (MSP). Another objective is providing access to the small farmer to the trade platforms so that the bigger part of the income would be with the farmers and not the intermediaries.

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38 National Bank for Agriculture and Rural Development (NABARD), All India Rural Financial Inclusion Survey 2016–17 (2018), at 109 (Jun. 20, 2022), available at https://www.nabard.org/auth/writereaddata/tender/1608180417NABARD-Repo-16_Web_P.pdf.

39 Department of Agriculture & Farmers Welfare, *supra* note 11, at 1.

40 Chandrasen Kumar et al., *Warehouse Storage Management of Wheat and Their Role in Food Security*, Frontiers (2021) (Jun. 20, 2022), available at https://www.frontiersin.org/articles/10.3389/fsufs.2021.675626/full.

41 NABARD, *supra* note 38.

42 Department of Agriculture & Farmers Welfare, *supra* note 11, at 2.

43 This poverty rate includes people who live on less than 1.9 USD per day.

44 This poverty rate includes people who live on less than 3.2 USD per day.

45 Surjit Bhalla et al., *Pandemic, Poverty, and Inequality: Evidence from India*, IMF Working Paper, WP/22/69, 5 April 2022, at 31 (Jun. 20, 2022), available at https://www.imf.org/en/Publications/WP/Issues/2022/04/05/Pandemic-Poverty-and-Inequality-Evidence-from-India-516155.

46 Global Hunger Index Scores by 2021 GHI Rank, Global Hunger Index (GHI) (Jun. 20, 2022), available at https://www.globalhungerindex.org/ranking.html.

47 Bhalla et al., *supra* note 45, at 17.

The U.N.'s World Food Program (WFP) has adopted the India Country Strategic Plan (2019–2023) upon the request of the Indian Government. The plan includes a joint effort by the WFP and the Government in reducing the level of hunger and malnutrition in the country. The program's budget is 20 million USD, which is formed by the parties and the private sector.[48]

In 2016, the Committee on doubling the farmers' income was formed in the Government of India. It identified seven sources of potential income growth, which include: increase in crop productivity; increase in livestock productivity; resource use efficiency; increase in cropping intensity; diversification towards high value crops; improvement in real prices received by farmers; and a shift from farm to non-farm occupations.[49] Subsequently, the government adopted a number of programs and reforms to increase the farmers' income. Among them is the fixing of the MSP at a level of at least 50% margin, adopting the Model APLMC Act, establishing 22,000 Gramin Agricultural Markets (GrAMs), and an Agri-Export Policy aimed at the doubling of agri-exports. A number of funds were established: the Agricultural Infrastructure Fund, the Micro Irrigation Fund, the Agri-Marketing Fund, to strengthen eNAM and GrAMs.[50] There is also a number of government initiatives aimed at the creation of a common electronic ecosystem in the country's agricultural sphere.[51]

The Agricultural Infrastructure Fund is aimed at providing low-interest loans to the farmers through a certain range of cooperatives and unions, to create infrastructure "at the farm gate."[52]

2.2. The Policy of Minimum Support Prices

Minimum support prices for agricultural produce in India has been in place for several decades. MSP is a method to support farmers and protect them from uncertainties at the times of low prices for their crops. MSP was first introduced for wheat, at the time of the first agricultural reforms in the 1960s. This was invented as an incentive to farmers for the production of labour-intensive wheat of certain quality during the times of food crisis.

Presently the level of MSP is recommended for 23 commodity products (including wheat) by the Commission for Agricultural Costs and Prices (CACP) in the Ministry of

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48 Department of Agriculture & Farmers Welfare, Ministry of Agriculture & Farmers Welfare, Government of India, Memorandum of Understanding between the Government of India and the United Nations' World Food Program for cooperation during 2019–2023, New Delhi, 11 February 2019 (Jun. 20, 2022), available at https://agricoop.nic.in/sites/default/files/GoI-WFP%20MoU%202019-2023.pdf.

49 Department of Agriculture & Farmers Welfare, *supra* note 11, at 9.

50 *Id*. at 10.

51 *Id*. at 32.

52 *Id*. at 10.

Agriculture. It is announced "well before" each agricultural season (rabi and kharif).[53] MSP is regarded by the Ministry of Agriculture as an incentive to the farmers to adopt new technologies.

Although MSP is not written as a part of any federal law, in recent history, MSP has become a political instrument. It is often proclaimed in the election campaigns. Guaranteed MSP for farmers is a matter of social policy and if there are doubts over the guarantees, the farmers are likely to initiate protests. In 2018, at a time of low prices, as a response to farmers' protests over the drop in prices for their products, the government announced the MSP at the level of 150% of the cost of production for two agricultural years.[54] This level of a 50% minimum margin still forms a part of the MSP policy.[55] The cost of production includes: hired human resources, wages for family labour, bullock and machine labour, land rent (for owned and leased land), expenses for seeds, fertilizers, manures, irrigation electricity etc., insurance charges, as well as depreciation for machinery and buildings.[56]

In the season 2020–2021 and 2021–2022, the margin over the cost of production for basmati rice was 50%, for wheat – 100%. The latter is the highest support over the cost, which is also the level for rapeseed/mustard (Table 2). The MSP for wheat and rice for the period from 2010–2011 to 2021–2022 is presented in Tables 3 and 4. When stipulating the MSP level, the CACP considers a number of factors, in addition to the cost of production. These include the market prices in the states, country-wise and internationally, trade terms and the potential effect on the regions, and the country's economy.[57]

Table 2: The expected return to farmers within the MSP program over the cost of production

Commodity	2020–2021			2021–2022		
	Cost	MSP	Return over cost	Cost	MSP	Return over cost
Wheat	960	1975	106%	1008	2015	100%
Rapeseed/ mustard	2415	4650	93%	2523	5050	100%

[53] Department of Agriculture & Farmers Welfare, Ministry of Agriculture & Farmers Welfare, Government of India, Price Support Scheme (PSS): The Operational Guidelines, at 3 (Jun. 20, 2022) available at https://agricoop.nic.in/sites/default/files/pssguidelines.pdf.

[54] Explained: How the 1.5-times formula for crops MSP is calculated, The Indian Express, 2 December 2020 (Jun. 20, 2022), available at https://indianexpress.com/article/explained/explained-how-the-1-5-times-formula-for-crops-msp-is-calculated-7075865/.

[55] Department of Agriculture & Farmers Welfare, *supra* note 11, at 8.

[56] Department of Agriculture & Farmers Welfare, *supra* note 53.

[57] *Id*.

Bajra	1175	2150	83%	1213	2250	85%
Lentil	2864	5100	78%	3079	5500	79%
Gram	2866	5100	78%	3004	5230	74%
Barley	971	1600	65%	1019	1635	60%
Basmati rice	1245	1868	50%	1293	1940	50%
Maize	1213	1850	53%	1246	1870	50%
Sunflower seed	3921	5885	50%	4010	6015	50%

Source: Ministry of Agriculture & Farmers Welfare[58]

Table 3: Average annual futures prices (National Commodity and Derivatives Exchange Limited, NCDEX) and minimum support prices for wheat in India, 2010–2011 – 2020–2021 (Rs. quintal)

	2010–2011	2011–2012	2012–2013	2013–2014	2014–2015	2015–2016	2016–2017	2017–2018	2018–2019	2019–2020	2020–2021	2021–2022
Futures price	1239	1187	1442	1564	1577	1517	1787	1659	1871	1993	NA	
MSP	1120	1285	1350	1400	1450	1525	1625	1735	1840	1925	1975	015

Source: compiled by the authors based on the data from the Securities and Exchange Board of India (SEBI), NCDEX,[59] Farmers' portal[60]

Table 4: Minimum support prices for basmati rice in India, 2010–2011 – 2020–2021 (Rs. quintal)

Rice type	2010–2011	2011–2012	2012–2013	2013–2014	2014–2015	2015–2016	2016–2017	2017–2018	2018–2019	2019–2020	2020–2021	2021–2022
Common	1000	1080	1250	1310	1360	1410	1470	1550	1750	1815	1868	1940
Grade A	1030	1110	1280	1345	1400	1450	1510	1590	1770	1835	1888	1960

Source: Farmers' portal,[61] Ministry of Agriculture of the Government of India

[58] Department of Agriculture & Farmers Welfare, *supra* note 11, at 9.

[59] SEBI, Handbook of Statistics 2020, Table 50, Commodity-wise Trading Statistics at NCDEX (Jun. 20, 2022), available at https://www.sebi.gov.in/reports-and-statistics/publications/may-2021/handbook-of-statistics-2020_50238.html.

[60] Minimum Support Prices, Statement Showing Minimum Support Prices – Fixed by Government (Rs. quintal), Farmer Portal (Jun. 20, 2022), available at https://farmer.gov.in/mspstatements.aspx.

[61] *Id*.

Researchers claim that the policy of MSP can result in price distortions across markets and lead to shifts in land allocation.[62]

2.3. Public Procurement

The MSP policy is part of the government's public procurement activities for the main agricultural commodities through the Food Corporation of India and other public and private agencies. The Ministry of Agriculture usually announces the duration of the procurement period together with the MSP for the certain type of commodity. The duration of MSP and procurement is usually limited to 90 days, but can vary state-wise and commodity-wise.[63]

In order to implement the public procurement, the government appoints the responsible agencies, the quality requirements for the crops, and organizes the logistic infrastructure. The latter includes identification of the points for procurement, packaging (gunny bags), transportation, weighing and testing facilities, warehouses (godowns) etc. The program includes establishing the new infrastructure whenever possible and necessary, including godowns and processing plants, through public private partnership schemes.

Procurement of wheat takes place in the main wheat producing states, – Punjab, Haryana, Uttar Pradesh, Madhya Pradesh, Himachal Pradesh, Uttarakhand, and Bihar. The procurement period is from April to June. The distribution is mainly in the states which do not produce wheat. Some other regions are used for wheat transit.

The procurement procedure consists of the following steps: the farmers bring their crop to the local market; the sample grain is tested as per the fair average quality stipulated by the government; the grain which meets the requirements is weighed in bags, upon which the farmer gets the receipts for payment. The government purchases any quantity of wheat that farmers are ready to sell at MSP, subject to the wheat meeting quality requirements.

The level of procurement has been increasing throughout the last 10 years. The procurement level for grain (procurement to production) in 2015–2016 – 2018–2019 was between 33–38% for rice and 25–36% for wheat.[64] Average wheat procurement till the season 2021–2022 was about 36 million tonnes, out of which only around 80% was subject to distribution, which led to a high level of storage wheat.[65] The level of wheat procurement increased from average 35% of total production to 40% and above during the pandemic years of 2019–2020 and 2020–2021. This was part

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62 Luis E. Morales et al., *How Has the Minimum Support Price Policy of India Affected Cross-Commodity Price Linkages?*, 24(2) Int'l Food Agribus. Mgmt. Rev. 179 (2021).

63 Department of Agriculture & Farmers Welfare, *supra* note 53, at 3.

64 Ministry of Consumer Affairs, Food & Public Distribution, Government of India, Storage of Foodgrains, 16 July 2019 (Jun. 20, 2022), available at https://pib.gov.in/Pressreleaseshare.aspx?PRID=1578907.

65 Kumar et al., *supra* note 40.

of the COVID-19 relief package, which included increased procurement to support farmers and increased distribution.

2.4. Public Distribution System

The Public Distribution System (PDS) is implemented by the Government, enhanced by the National Food Security Act, adopted in 2013, and involves the bottom two-thirds of the population (bottom 75% of rural population and 50% of urban population)[66] and includes either in-kind support or food price subsidies.[67] The grain (wheat or rice) in-kind support was 5 kg per person per month, which was doubled during the pandemic, which in fact was totally covering the basic need for the grain, since 10 kg per month is the average total consumption of grain in the country for the last 18 years.[68]

The PDS has its challenges. According an IMF working paper, around two-thirds of the subsidized food does not reach the recipient due to corruption.[69]

The stock utilizations include distribution under the Targeted Public Distribution System, and other schemes. Among the types of distributions are:

• Ration Cards and Fair Price shops, where the food is provided to the poor at subsidized rates. The amount is 25 kg wheat[70] per family per month (around 90 million people are subject to this program);

• Priority households (around 703 million people) are provided with 5 kg rice/wheat per person per month at subsidies prices;

• During the pandemic the government distributed free amounts of wheat/rice 5 kg per person to around 800 million people, specifically, the people who lost their jobs, the poor and migrant workers.[71]

The types and amount of the people subject to each type of distribution are stipulated through the Antyodaya Anna Yogana program, launched in 2000, focusing on the poorest part of the population.

2.5. Storage Facilities for Grain in India and their Management

A country's performance in grain production, export and distribution is highly dependent on the state of its storage and logistics system. Without a proper and up-to-date system of storage and transportation and its efficient management, there

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66 Bhalla et al., *supra* note 45, at 18.

67 For example, if the market price for rice is 30 Rp/kg, the subsidies price is 3 Rp/kg.

68 Bhalla et al., *supra* note 45, at 18.

69 *Id*. at 19.

70 Other sources stand for an increase to 35 kg per month. *See* Antyodaya Anna Yojana (AAY), Department of Food & Public Distribution, Ministry of Consumer Affairs, Food & Public Distribution, Government of India (Jun. 20, 2022), available at https://dfpd.gov.in/pds-aay.htm.

71 Kumar et al., *supra* note 40.

is high risk of losses and leakages of grain, which implies physical deficit, inadequate or deficient quality of grain, and financial losses. As a result of improper management and lack of infrastructure (in the case of India), millions of poor people will not receive their necessary nutrition throughout the year, and the country will not have the necessary volumes of grain for exports when the international prices are attractive.

The storage losses of grain is between 1–2% in the developed countries, but it can be up to 50% when there is no necessary infrastructure in place and the process is not managed professionally.[72] Researchers identify over 20 factors that can affect the grain if it is stored or managed improperly, among which are temperature, moisture level, air velocity, insects, dirt, etc.[73] This is especially relevant for open air storage.

In India, the level of food losses was estimated at 15% by the Foundation for Community Driven Innovation (FDCI) and 40% by the Food and Agriculture Organization (FAO),[74] which mainly related to fruits and vegetables. The major portion of losses was at the storage phase. For grains, the official figure for losses was up to 6% in 2019–2020, which is around 13–18 million tonnes of grain, according to the National Academy of Agricultural Sciences. Around 10% of produced wheat is subject to annual losses due to improper storage.[75]

The Food Corporation of India (FCI) is the agency in charge of the grain procurement at MSP, storage and distribution in the regions with food deficit, as well as stock management. The governments of states distribute the grains through the Targeted Public Distribution System. Part of the food procured is sold in the open market. The FCI was created in 1965 in the framework of the significant shortage of grain (specifically, wheat) in the country (which was importing wheat at that time).

India's Warehousing Development and Regulatory Authority (WDRA) has a list of accredited warehouses, which are integrated with eNAM for trade.[76] The storage capacities are under the FCI, Central Warehousing Corporation, state warehousing corporations, and privately owned warehouses. The total storage capacity as of May 2019 was 862.45 lakh metric tonnes. The average utilization level of storage for wheat, rice and pulses was 82–88% throughout 2017–2019.[77] For grains, usually four types of storage facilities are being used in India: covered warehouses or godowns

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72 Digvir S. Jayas, *Storing Grains for Food Security and Sustainability*, 1(1) Agric. Res. 21 (2012).

73 Kumar et al., *supra* note 40.

74 Shantanu G. Ray, *To stop wastage, India developing capacity to store 10 million tonnes of food grains*, Sunday Guardian Live, 7 August 2021 (Jun. 20, 2022), available at https://www.sundayguardianlive.com/news/stop-wastage-india-developing-capacity-store-10-million-tonnes-food-grains.

75 Virat Bahri, *Foodgrain storage losses in India: Waste not, want not*, Trade Promotion Council of India, 19 June 2020 (Jun. 20, 2022), available at https://www.tpci.in/indiabusinesstrade/blogs/foodgrain-storage-in-india-waste-not-want-not.

76 Department of Agriculture & Farmers Welfare, *supra* note 11, at 139.

77 Ministry of Consumer Affairs, *supra* note 64.

with grain stored in jute bags; storage in the open with the necessary precautions against humidity and rats; silos; plastic tubes (for short-term storage).

Back in 2013, India had to admit the high level of inefficiency of its food storage system. Food leakages and losses are claimed to be the result of corruption and inefficiency. Additionally, there is a huge lack of storage facilities at the farm level, and a significant imbalance in storage infrastructure from region to region. The majority of storage facilities are in the producing states, but there is a significant shortage in the food consuming states. This is not to mention that many existing warehouses and tubes need improvement or replacement by up-to-date facilities. Moreover, the management of the grain storage and logistics is not up to contemporary standards. All these problems in the storage system in India have been outlined in a Comptroller and Auditor General (CAG) report published in 2013.[78] In many cases, the precaution measures when storing in the open air were not taken at all. According to the report, around 100,000 tonnes of wheat were damaged due to the fact that the management of the relevant two agencies did not follow the "first-in-first-out" (FIFO) principle in grain storage.

To address these and other issues, the government of India formed a six-member committee chaired by Shanta Kumar. The main task of the committee was to suggest reforms related to FCI in order to improve efficiency in procurement, storage and distribution of food grains.

The committee released a list of profound recommendations aimed at improving the food distribution system[79], which are summarized below:

• The forwarding of all procurement operations of grains to the states that gained more experience in this regard, and possess the necessary infrastructure;

• Private companies should be admitted to the procurement process to support competition;

• The procurement rules and procedures should be announced and brought to the interested parties before the crop season;

• A negotiable warehouse receipt system should be introduced.[80] Farmers should have the opportunity to store the grain right upon harvesting and receive advance payment from the banks based on the receipts;

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[78] Ministry of Consumer Affairs, Food & Public Distribution, Government of India, Report of the Comptroller and Auditor General of India on Storage Management and Movement of Food Grains in Food Corporation of India for the year ended March 2012, Report No. 7 of 2013 (Performance Audit) (Jun. 20, 2022), available at https://cag.gov.in/cag_old/sites/default/files/audit_report_files/Union_Performance_Ministry_Consumer_Affairs_Food_Public_Distribution_7_2013.pdf.

[79] Ministry of Consumer Affairs, Food & Public Distribution, Government of India, Recommendations of High Level Committee on restructuring of FCI, 22 January 2015 (Jun. 20, 2022), available at https://pib.gov.in/newsite/PrintRelease.aspx?relid=114860.

[80] It should be noted that, according to Prabina Rajib, negotiable warehouse receipts have been introduced by the Indian government in 2011. Probably, the system did not work for all types of commodities. *See* Prabina Rajib, *Indian Agricultural Commodity Derivatives Market – In Conversation with S. Sivakumar, Divisional Chief Executive, Agri Business Division, ITC Ltd*., 27 IIMB Mgmt. Rev. 118, 119 (2015).

• MSP policy should better cater for the food that is being imported at lower prices;

• The level of 67% of the population receiving the food distribution should be lowered to 40%, and the weight should be increased from 5 kilo/person to 7 kg;

• These people should be given 6 months ration immediately after the procurement season, that would save the cost of storage for agencies;

• Cash transfers should be gradually introduced;

• Storage should be outsourced on a competitive bidding basis;

• Covered storage facilities – open air should be phased out and replaced with silo bag technologies and conventional storage;

• Containarizing grain transportation.

Although some of the Shanta Kumar Committee's statements and recommendations were broadly criticized, during the 5 years after its report was released, certain improvements have been seen in storage management.

In 2021, a research article was published, stating that the FCI has a wheat procurement, storage and distribution system unique to the world, which is "the best example of a sustainable food storage system with only 0.3% storage losses in 3 years of wheat storage."[81] It should be noted however that two out of four of the research authors are FCI representatives.

Based on the research, presently FCI uses 2,085 warehouses and cover and plinth (CAP)[82] systems for storage of cereals. The CAP system is used for short-term storage of less than 12 months. As it is described by the authors, wheat storage is managed based on FIFO principle, and certain measures, including sampling, are undertaken to ensure quality control. The total wheat storage capacity of FCI in 2020–2021 was 41.19 million tonnes, including warehouse storage capacity of 37.45 million tonnes (out of which 65% is hired from other agencies and private companies).[83]

It is also stated in open sources, that the Government of India and the FCI are working on expanding storage capacity for grain. In particular, there are plans to develop silo capacities of 10 million tonnes on a bidding basis, and 249 sites across the country are already identified, mainly close to railway stations.[84] As well, there are plans to eliminate storage in the open by the end of 2022. There are still around 19 million tonnes of grain storage in the open, where the cereals should not be stored for longer than 6 months.[85]

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81 Kumar et al., *supra* note 40.

82 The CAP storage looks as follows. A plinth is constructed on a suitable site. Dunnage is provided and covers are made of polyethylene. The covers are secured by nets and nylon lashing. To prevent condensation, a layer of paddy husk-filled sacks are put on top of the stack under the polyethylene. CAP storage is vulnerable to wind damage and the storage system requires frequent inspection.

83 Kumar et al., *supra* note 40.

84 Ray, *supra* note 74.

85 Sandip Das, *FCI to stop storing wheat in the open by September*, Financial Express, 12 March 2022 (Jun. 20, 2022), available at https://www.financialexpress.com/market/commodities/fci-to-stop-storing-wheat-in-the-open-by-september/2458581/.

3. Grain Market Regulation in India and Grain Trading Mechanisms

3.1. Wheat Trade Regulation: History and Recent Reforms

The history of agricultural market regulation in India goes back to 1897, when the British Empire adopted the Berar Cotton and Grain Market Law of 1897. This was however aimed at increasing supplies of cotton to the mills in Manchester.[86] Generally, the period of the British Rule in India is characterized with the withdrawal of agricultural output from the population.

As depicted by Bisen and Kumar, the discussion on the reasons for the inefficiency of the current agricultural market in India is ongoing, with the main outlined challenges being the inefficiency of the distribution system and lack of modern market institutions. Generally, there are proponents and opponents to a high level of state intervention into the market. However, the tendency in recent years has been towards market liberalization and a lower level of the state intervention.[87]

Some of the important steps towards the increase of the market integration of farmers, price liberalization and creating the necessary infrastructure were the Agricultural Produce Markets Regulations Acts (APMRA), adopted by most of the Indian states in the 1980s.[88] In many states, market areas (yards) were constructed, and in order to regulate the local markets, special committees were formed – Agricultural Produce Market Committees (APMCs).

However, over time, further steps were needed to continue improving and upgrading the infrastructure and limiting the excessive intermediaries' intervention. Further reforms came in the beginning of the 2000s, within the framework of adjusting to the World Trade Organization (WTO) rules, when the Model Agricultural Marketing Act was issued. Among the new initiatives was eliminating barriers for private farmers to trade, including prohibiting fees from the farmers (which, however was not followed in many cases, and in practice the commission size was from 1 to 2.5% for grains, not to mention about other fees and intermediary activities),[89] establishing standardization in many related processes, and promotion of contract farming. Another issue was the great difference in price for the same commodity between the states and even inside one state. There are cases when the price difference per one tonne in the markets was up to 850 rupees at the same day.[90]

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86 Jaiprakash Bisen & Ranjit Kumar, *Agricultural Marketing Reforms and e-National Agricultural Market (e-NAM) in India: A Review*, 31 Agric. Econ. Res. Rev. 167, 167 (2018).

87 *Id*. at 170.

88 *Id*. at 169.

89 *Id*. at 170.

90 Rajib 2015, at 120.

A number of traders and wholesale buyers started practicing contract farming. Among them are Cargill India, ITC-ABD, Marico, Nestle, Hindustan Unilever, and Satnam Overseas.[91]

It took around 10 years for the states to start adopting the new model. An important achievement was the switch from the manual trading system to the electronic trading system, which was first implemented by the Karnataka state with the support of the NCDEX.[92] As a result, in 2016, the Unified Market Platform (UMP) was created in the state as a joint venture of the state government and NCDEX, under the name of Rashtriya e-Market Services (ReMS), uniting over 100 markets from 27 districts, with the participants being admitted based on unified market license. The system admitted international traders to join.[93] The Karnataka's positive experience was followed by other states, and supported by the federal government. The Indian Government further allocated budget funds through an Agritech Infrastructure Fund aimed for establishing electronic agricultural platforms in wholesale markets.

3.2. Electronic Platform for National Agriculture Market (eNAM)

In 2016, the electronic platform for National Agriculture Market (eNAM) was established, as a "platform for platforms."[94] As it is stated on the project's website, eNAM is

> a pan-India electronic trading portal which networks the existing APMC mandis (physical markets) to create a unified national market for agricultural commodities. Small Farmers Agribusiness Consortium (SFAC) is the lead agency for implementing eNAM under the aegis of the Ministry of Agriculture and Farmers Welfare, Government of India.

As of June 2022, the platform united 1000 markets (APMCs) across the country. Each APMC was granted a sum up to 7.5 million rupees for the necessary hardware and software, such as computers and internet access, as well as equipment related to sorting, grading, cleaning and packaging.[95]

In total there are over 115 thousand participants in the system as per the number of unified licenses issued by 22 states.[96] The system is multilingual and includes

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91 Rajib 2015, at 120.

92 Bisen & Kumar 2018, at 170.

93 *Id*. at 170–171.

94 Department of Agriculture & Farmers Welfare, *supra* note 11, at 140.

95 *Id*. at 135.

96 Number of Unified Licenses, National Agriculture Market, Government of India, 31 May 2022 (Jun. 20, 2022), available at https://enam.gov.in/web/state-unified-license/no-of-unified-licenses.

12 local languages. Farmers can register with the system either individually or by forming a group, called Farmer Producer Organization (FPO), that acts as aggregator of the agricultural produce of its members in order to increase their bargaining power. As of 2022, there were over 2,000 FPOs registered with the eNAM.[97] There are 26 types of grain traded in the system. In order to enable online transactions, five banks have been integrated into the system.

The achievements of eNAM however met hurdles via a number of challenges. Transportation as an important element of agricultural commodities sales were difficult due to the underdeveloped logistic infrastructure in many states (roads, warehouses, etc.), as well as a lack of high-speed internet connection in some areas, and the low level of smartphone penetration in rural areas (18% only[98]). In some states, another impediment was an inactive APMC, a committee which plays a crucial role in the integration into eNAM, combined with a lack of professional human resources. Additionally, there was slow information spread on the opportunities of the system in some of the areas.

It is likely that the existence of the common electronic agricultural market resulted in the fact that many farmers in 2022 tended to sell the products for export purposes and the state faced difficulties in wheat procurement. Back in 2016, Chand highlighted farmers' reduced dependency on public procurement as one of the features of eNAM.[99] The two years of pandemic are an exception in this case.

Therefore, India's way towards the current electronic trade system was through the creation of general rules, establishing local markets regulated by committees, picking up the positive state-wise cases and extrapolating the best practice country-wise. Then uniting all the markets in a unified electronic trading system with no institutional or legal barriers (a common agri-market). This approach fully takes account of the specifics of the Indian agrarian sector. To continue the positive developments, infrastructure creation, increasing awareness of the electronic trading system, and reduction of harvest loss are among the main tasks of the federal and state governments.

3.3. Food Commodities Exchanges in India

India has six exchanges registered with the SEBI.[100] Three commodity exchanges (Table 5) deal in agricultural commodities. They all were established in 2002–2003 in the development of the recommendations of the special committees. The exchanges

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97 FPOs, National Agriculture Market, Government of India (Jun. 20, 2022), available at https://enam.gov.in/web/stakeholders-Involved/fpos.

98 Department of Agriculture & Farmers Welfare, *supra* note 11, at 27.

99 Ramesh Chand, *E-Platform for National Agricultural Market*, 51(28) Econ. Polit. Wkly 15 (2016).

100 Details of Stock Exchanges, List of Stock Exchanges, SEBI, 17 January 2020 (Jun. 20, 2022), available at https://www.sebi.gov.in/stock-exchanges.html.

function in the form of electronic commodity exchanges. One of the major tasks of the exchanges is to increase market transparency and to assist the farmers in price discovery. This led to the decrease of the share of the intermediaries and speculators in the commodity price. Another function successfully performed by the exchanges was raising the level of contracts standardization with regard to the terms of payment and delivery, and quality of the product.

Table 5: India's main commodity exchanges and online trading portals dealing in agricultural commodities

Commodity exchange	Type of commodities traded	Financial instruments	Significant shareholders
National Commodity and Derivatives Exchange Limited (NCDEX) (est. 2003, Mumbai)	Commodities (mainly agricultural) The trade leaders: barley, wheat & soybean	Futures on 23 commodities and options on 7 commodities; three agricultural commodity indexes	Life Insurance Corporation of India (LIC), the National Stock Exchange of India Limited (NSE), and the National Bank for Agricultural and Rural Development (NABARD) ICICI Bank, LIC, CANARA BANK, PNB, CRISIL, IFFCO, Goldman Sachs, Intercontinental Exchange, Renuka Sugar, J.P. Capital
Multi commodity exchange of India Limited (est. in 2003 in Mumbai)	Over 40 commodities. Agri Commodities, Bullion, Metals, Pulses, Oils & Oilseeds, Energy, Plantations, Spices and other soft commodities	Commodity derivatives	National spot exchange limited, India energy exchange, Singapore mercantile exchange global board of trade, IBS Forex, National Bulk Handling Corporation, ticker plant limited.
National Multi commodity exchange of India Ltd. (NMCE) (est. in 2002, Ahmedabad)[101]	Cash crops, food grains, plantations, spices, oil seeds, metals & bullion etc.	–	• Central warehousing corporation • Gujarat State Agricultural Marketing Board • Gujarat Agricultural Industries Corporation Limited • National Institute of Agricultural Marketing • Neptune Overseas • Punjab National Ban

Source: compiled by the authors based on the data from the SEBI

[101] This exchange is not listed on the website of SEBI (Jun. 20, 2022), available at https://www.sebi.gov.in/stock-exchanges.html.

The exchange which more than others specializes in agricultural commodities is the National Commodity and Derivatives Exchange Limited (NCDEX) (established in 2003, with the main office in Mumbai). It is the only commodity exchange that trades in wheat-related contracts.[102] As it was depicted by a market practitioner Sivakumar in 2015, the commodity futures market is India is "lacking depth": the prevailing futures instruments in the commodity exchanges were only 1–2 month long, while the market needed longer-term futures.[103] For certain reasons, the farmers due to the low scale of their individual production, as well as due to standardization and financial reasons do not actively participate in futures trading. One of the reasons for low level involvement of agriholdings in the wheat futures market is the specifics of the commodity: the low level of price volatility and the high level of government intervention in the market:

> given the high influence of Government actions on wheat prices – such as minimum support prices to farmers, consumer prices through public distribution, and extent of buying by the Government agencies, the market is distorted and commodity exchanges are not able to offer viable risk management mechanisms.[104]

As of March 2021, options for wheat as well as five other commodities were traded at NCDEX.[105] However, in December 2021, the SEBI banned futures and options trading in a number of agricultural commodities, including wheat and basmati rice, for a period of one year. As it is explained, this ban is aimed at keeping inflation down.[106] The efficiency of this measure is questioned by some researchers.[107] In general, the number of commodities permitted for futures trading in NCDEX decreased from 28 in 2010 to 22 in 2020. Subsequently, the turnover of agricultural commodities futures decreased from 337 million tonnes to 43 million tonnes respectively.[108] Similarly,

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[102] List of contracts approved for continuous trading – Annexure Q. 1-330, 251. Master Circular for Commodity derivatives Market, SEBI/HO/CDMRD/DMP/P/CIR/2022/64, 17 May 2022. SEBI (Jun. 20, 2022), available at https://www.sebi.gov.in/legal/master-circulars/may-2022/master-circular-for-commodity-derivatives-market_58937.html.

[103] Rajib 2015, at 124.

[104] *Id*. at 126.

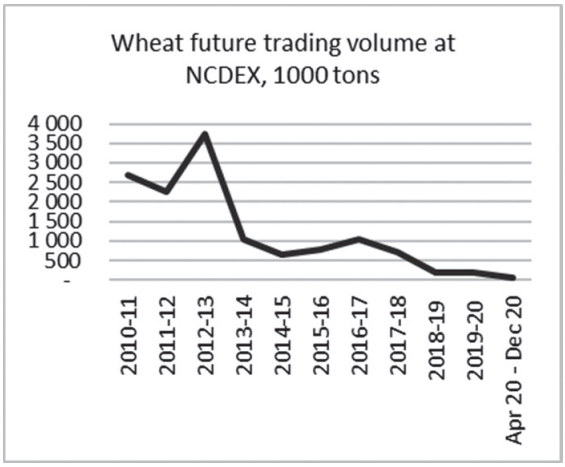
[105] SEBI, Annual Report 2020–21, at 91 (Jun. 20, 2022), available at https://www.sebi.gov.in/reports-and-statistics/publications/aug-2021/annual-report-2020-21_51610.html.

[106] Rajendra Jadhav, *India halts futures trade in key farm commodities to fight inflation*, Reuters, 20 December 2021 (Jun. 20, 2022), available at https://www.reuters.com/world/india/indias-regulator-restricts-futures-trading-some-agri-commodities-2021-12-20/.

[107] S. Kalyansundaram, *Commodities futures ban: Adding to farmers' troubles*, Business Line, 24 December 2021 (Jun. 20, 2022), available at https://www.thehindubusinessline.com/opinion/commodity-futures-ban/article38022818.ece.

[108] SEBI, *supra* note 59, Table 42, Trends in Commodity Futures and Options at NCDEX.

a decrease in number can be spotted with regard to metal and energy commodities.[109] The volume of wheat futures trading declines respectively (Figure 1a,b). Basmati rice futures trading seems to have been on an experimental basis, and is documented only in the 2019–2020 marketing year in the amount of 1,000 tonnes.[110]



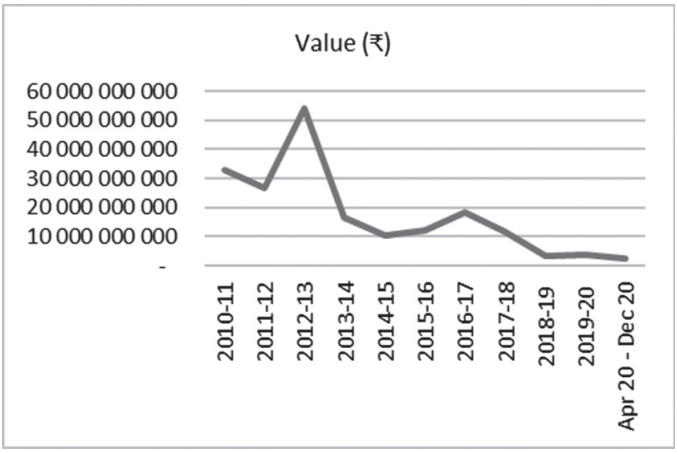


Fig. 1: a) Wheat futures trading at NCDEX, 2010–2020, thousand tonnes
b) Wheat futures trading at NCDEX, 2010–2020, rupees

Source: made by the authors based on the data from the Handbook of Statistics 2020, Table 50

[109] SEBI, *supra* note 59, Table 39.

[110] *Id*. Table 50, Commodity-wise Trading Statistics at NCDEX.

This situation implies that spot trading is the only type of trading in these commodities in 2022. The ban for futures trading implies that farmers will not tend to wait for the forecasted price increase for their products, and will most likely sell their grains at the prevailing spot prices. This is not the first time when a ban on grain futures was imposed in India. It happened in 2007, when the Forward Markets Commission imposed a trading limit on wheat and rice futures until the running contracts terminated.[111]

The emergence and development of commodity exchanges in India significantly contributed to market development, making pricing more transparent and closer linked to the international market, which is to the benefit of the farmers. Spot trading through exchanges was another incentive from the market to develop the storage infrastructure.[112]

In 2020, the SEBI formed the Commodity Derivatives Advisory Committee, with the range of responsibilities including recommending measures for improving market safety, efficiency and transparency, advising on matters related to delivery and storage mechanisms, and recommending changes in the regulatory framework.[113]

4. BRICS Grain Union instead of International Grains Council

Far from supporting American sanctions, India has worked out local-currency swap and investment mechanisms to conduct trade with Russia in rubles and rupees and invest Russia's surplus proceeds in the Indian corporate bond market.[114] India is proposing to settle trade with Russia in rupees, according to a person with knowledge of the matter, as the South Asian nation presses ahead with purchases of oil and weapons from the sanctions-hit country. India had a trade deficit of $6.61 billion with Russia in the year ended March 2022, with total bilateral trade at $13.1 billion. New Delhi is working on boosting exports of products such as pharmaceuticals, plastics and chemicals to balance the books.[115] Settlements in national currencies between India and Russia have already been tested in the supply of tea. It is unlikely that the settlements will be only in rupees. Probably, settlements in dollars and euros between Russia and India in the second half of 2022 will remain only for oil, all other

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111 Kalyansundaram, *supra* note 107.

112 Rajib 2015, at 126.

113 Commodity Derivatives Advisory Committee (CDAC), SEBI (Jun. 20, 2022), available at https://www.sebi.gov.in/sebiweb/about/AboutAction.do?doMember=yes&committeesId=40.

114 Demographics push China-India-Russia triple entente, Asia Times, 27 April 2022 (Jun. 20, 2022), available at https://asiatimes.com/2022/04/demographics-push-china-india-russia-triple-entente/.

115 Shruti Srivastava, *India Proposes Settling Russia Trade in Rupees as Purchases Rise*, Bloomberg, 16 June 2022 (Jun. 20, 2022), available at https://www.bloomberg.com/news/articles/2022-06-16/india-proposes-settling-russia-trade-in-rupees-as-purchases-rise.

settlements will be completely transferred to rubles and rupees. In this case, the Chinese yuan could be used as the base currency.

The efficiency of Russia, India and South Africa's participation in the International Grains Council (IGC) is questionable, as it limits their freedom of action, with no power forthcoming. In the organization, two voting systems are used. Under the first system, out of 2000 votes, Russia has only 86, India 42, and South Africa has 15 votes. However, the USA, the European Union, Australia, Canada and Japan have a total of 1307 votes. Under the second system, out of 2000 votes, Russia has only 56, India 28, South Africa 31 votes, and the US, EU, Australia, Canada and Japan have a total of 1084 votes.[116] Brazil and China are not the members of the IGC.

According to the XIV BRICS Summit Beijing Declaration of 23 June 2022, the BRICS countries declared the following:

> BRICS countries produce around $^{1}/_{3}$ of the world's food, we stress our commitment to furthering agricultural cooperation and driving sustainable agricultural and rural development of BRICS countries aimed at safeguarding food security of BRICS countries and the world. We emphasize the strategic importance of agriculture inputs, including, inter alia, fertilizers, on ensuring global food security. We reiterate the importance of implementing the Action Plan 2021–2024 for Agricultural Cooperation of BRICS Countries, and welcome the Strategy on Food Security Cooperation of the BRICS Countries.

The BRICS members also stressed the importance of issues including infrastructure development and food for the sustainable development of Africa.[117]

Based on the above, it is therefore suggested that BRICS could work out a regional Grain Union to meet their objectives with regard to food security and develop an efficient grain supply trading system.

Conclusion

India has been witnessing significant development of its agriculture, through implementation of various programs, schemes and incentives aimed at production increase, improvement of the farmers income level, and raising efficiency in grain storage and trade systems.

Apart from the procurement systems, which accounts for around 36–43% of wheat produced, trade in wheat in the country is switching to the electronic system,

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[116] International Grains Council, Report for Fiscal Year 2019/2020 (January 2021) (Jun. 20, 2022), available at http://www.igc.int/downloads/publications/rfy/rfy1920.pdf.

[117] XIV BRICS Summit Beijing Declaration, 24 June 2022, paras. 56 & 61 (Jun. 20, 2022), available at http://brics2022.mfa.gov.cn/eng/dtxw/202206/t20220624_10709295.html.

uniting all the producing states, buyers and traders. It is very important that the system is supported by the physical markets (mandis) located at sites and registered and managed in a proper manner by the relevant committees. This is the necessary guarantee for the buyers of the physical availability of the commodity on sale.

With regard to futures trading, India has shown doubts in its efficiency for wheat market development, specifically, in times of uncertainty. In particular, there are concerns that wheat futures stimulate inflation. This resulted in a ban for all wheat derivatives until the end of 2022. However, it should be noted that wheat futures as a financial instrument didn't enjoy growing demand, which is one of the outcomes of the high level of market distortion due to the state interference through MSP and public procurement.

The lack of storage facilities at the farm gate may be an issue impeding trade. Without proper storage, the grain sold is subject to losses and a decrease in quality. For this reason, the FCI's efforts and the government's programs to upgrade storage facilities (including those in the consuming states) and volumes and to improve the management efficiency are crucial.

Once the country solves the issue of grain leakage and losses, builds up an efficient logistic chain for wheat, from farm to port, it will lead to improving India's position in the poverty rank, as well as making the country stronger in wheat export, and these events would increase its budget inflows, as well as contribute to improving the food security in the neighboring and African countries.

The authors believe that the future BRICS membership of Iran and Argentina is strategically important for ensuring the food security of the countries of Asia and Africa, since Argentina is one of the world's leading wheat producers, and Iran can become a global food hub. The food security of the countries of Asia and Africa is highly dependent on the grain exporting countries, and this task is a global mission of the BRICS countries. The creation of a BRICS Grain Union could be an important step in achieving this objective, in addition to ensuring their own food security which the Union will provide as well.

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