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The Ukraine War and its Food Security Implications for India

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Introduction

Russia's war on Ukraine shows no signs of subsidence. Its economic and societal adversities have already been felt worldwide but keep evolving, with food and energy being the most affected. Low-income, food-deficit nations importing from these two countries – many of which are in Northern Africa and Western and Central Asia – face critical challenges. The South Asian region, which has grappled with surging commodity prices and supply constraints even before the war, is likely to witness further inflation with rising food and oil prices.

India is home to around 18% of the world's population and accounts for 74% of the South Asian population. It is predicted to be the fastest-growing big economy this year. The country's central bank (RBI) predicts that GDP will grow by 7.5% in FY 2022-23 (RBI, 2022), while many international organizations forecast growth between 6.4% and 8.2% (ADB, 2022; IMF, 2022; United Nations, 2022; World Bank, 2022). Still, in the wake of the ill effects of COVID-19, the country's dependence on imports such as oil, fertilizers, and edible oils, and given surging domestic food and nonfood inflation in recent months, raises concerns about economic stability and possible interventions that might curtail fragility.

The country consumes around 5 million barrels of crude oil daily but imports over 89% of its requirement from overseas. Crude oil prices have increased by 27% in just four months since the start of the war (February- June 2022). Edible oils have similarly increased, with palm and soybean oil prices rising by around 14% and 18%, respectively. The price of sunflower seed oil has increased by 42%, of which 86% originates from Ukraine and Russia. Fertilizer import dependency from the conflict regions is also sizeable. Russia was the 5th largest supplier of fertilizers to India in 2021-22, and Ukraine and Belarus were the 9th and 10th largest suppliers. The rise in prices of both finished fertilizers and fertilizer inputs has prompted the Government to double the fertilizer subsidy budgeted earlier this year.

This policy brief investigates India's susceptibility to the war's disruptions and higher prices for commodities where import dependence is high. It then discusses potential income, food, and nutritional impacts on farmers, the poor, and the vulnerable. It also evaluates the Government's policy measures

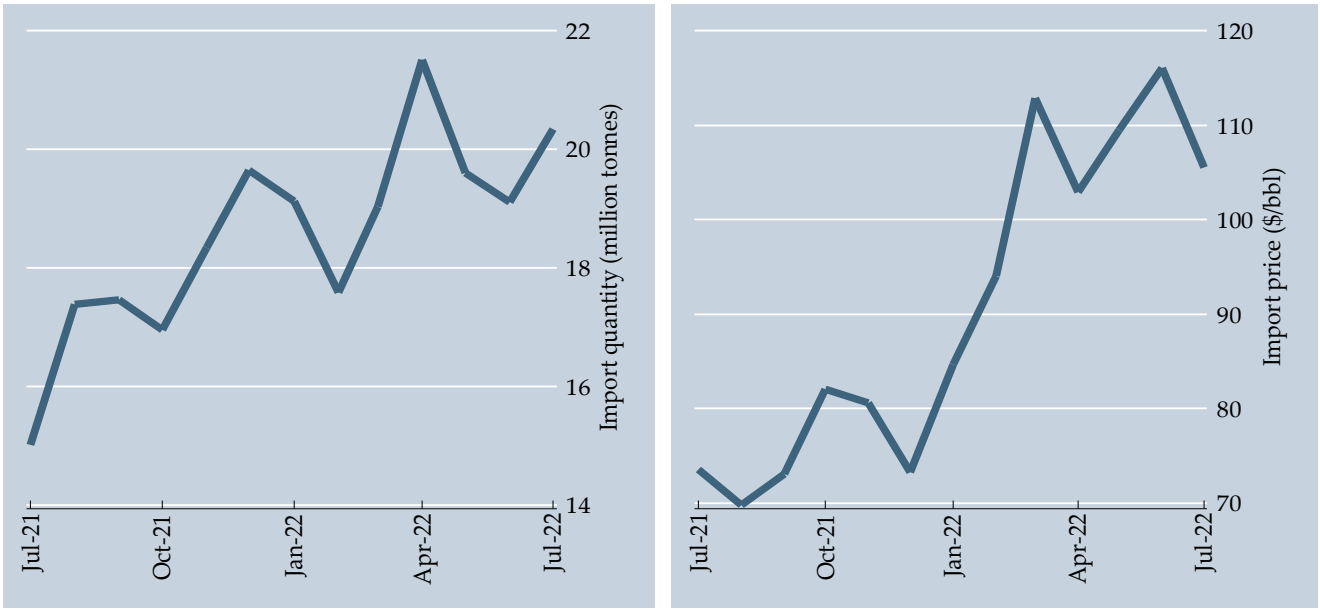
such as subsidization, social safety nets, and trade diversification to reduce the impact of the war. Finally, it explores the market opportunities the conflict has created and the required structural reforms that would equip the country to handle such shocks in the future.

Impact of the War on Food and Energy Prices

India has depended heavily on imports to meet its crude oil, fertilizer, and edible oil demands, among others. Iraq, Saudi Arabia, the USA, UAE, and Kuwait contributed around 80% of its crude oil imports in 2021-22. The war has led to a crude oil price increase in the international market (Figure 1) from $101.29/bbl. On 24th February, when Russia invaded Ukraine, to $128.44/bbl. On 13th June, a 27% hike. India has registered an equal price increase during the same period. The price of Indian crude oil, at FOB prices, has increased from $94.07/bbl. and in February to $119.8/bbl.

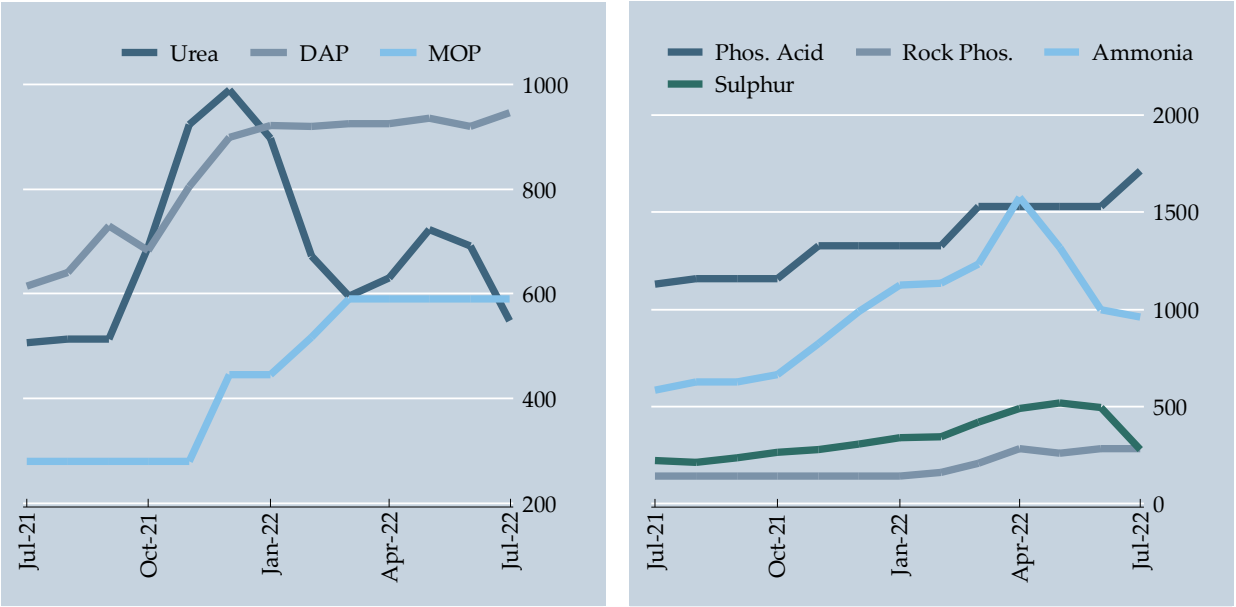
International fertilizer prices have also increased as Russia is a key global exporter of fertilizers (Figure 2). Russia was the top exporter of nitrogenous fertilizers in 2021, the second-largest exporter of potassic fertilizers, and the third in the case of phosphatic fertilizers., It was the 5th largest supplier of fertilizers to India in 2021-22, with its imports costing around US$0.8 billion. Ukraine and Belarus were the 9th and 10th largest fertilizer suppliers. These three countries together contributed around 12% of India's fertilizer imports in 2021-22. While India imports much of its urea from China, Oman, UAE, and Egypt, Ukraine supplied about 10% of India's imported urea in 2020-21 and 7.4% in 2021-22. Russia stood next to Ukraine with around 1% in 2020-21 and 3% in 2021-22.

Figure 1. India's crude oil imports and global prices



Source: Ministry of Petroleum & Natural Gas (MoP&NG, 2022)

Figure 2. Price hike in fertilizers and fertilizer inputs in the global market



Source: Ministry of Chemicals & Fertilizers (MoC&F, 2022)

Note: Values are in US$/MT

Likewise, China, Saudi Arabia, and Morocco are the leading suppliers of DAP to India. In 2021-22, these three countries contributed over 88% of India's DAP imports. Russia stood 5th, following Jordan, contributing less than 6% of India's imports. Unlike urea and DAP, part of which are produced domestically, India depends entirely on imports for MOP. Over one-third of MOP originates in Belarus and Russia. Together these two countries supplied around 32% of India's MOP demand in 2020-21, which rose further to 36.3% in 2021-22. In just three months, the international price for urea has increased by 7.4%, and the MOP price has risen by 14%. Prices of key inputs in fertilizer industries such as phosphoric acid, rock phosphate, ammonia, and sulfur have increased by 15-62%.

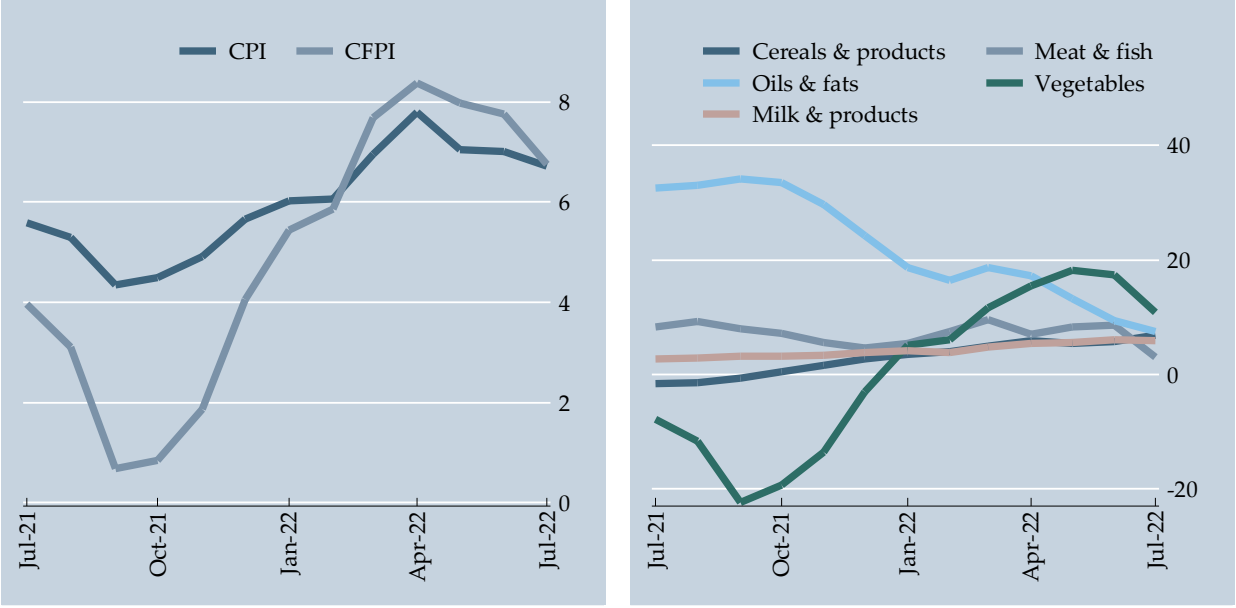
This rise in import prices has impacted the Indian fertilizer retail market. While urea's price remains fixed at Rs.5,360/tonne as per the Government's subsidy policy, market-determined prices for phosphatic and potassic fertilizers have risen. Against a less than 2% rise in global DAP prices during February-May, domestic retail prices have increased over 10% i.e., from Rs. 24,000/tonne in February to around Rs. 26,600/tonne in May. For MOP, domestic prices have risen by 5.4% despite a sharp increase in the international market.

India is substantially dependent on imports of edible oil. Between November 2020 to October 2021, the country imported 13.13 million tonnes of edible oils valuing Rs. 1.2 trillion. Palm oil, in crude form, constituted about 57% of all edible oil imports, followed by soybean oil (21.8%) and sunseed oil (14.4%). About 94% of the palm oil was imported from Malaysia and Indonesia alone, both roughly making equal contributions. Argentina contributed 83% of the soybean oil imports, followed by Brazil (14%). In the case of sunseed oil, Ukraine supplied about 74% of its imports, while Russia supplied another 12%. This has been the lowest quantity of edible oil imported in the past six years.

Despite declining import volumes, prices have risen sharply, resulting in high import bills. For instance, while quantities of edible oil imports have fallen by 9.9% between 2016 and 2021, the cost has increased by 67%. In other words, the per-unit cost of imports has risen over 86% during these five years. The Russia-Ukraine war has further aggravated prices. In April this year, imports of sunseed oil

from Ukraine declined by 93% and from Russia by 24%. While Argentina has more than doubled its supply, given its limited share in India's total sunseed oil demand, the total import supply has fallen by 60% since last year, pushing up prices. Between February and May this year, palm and soybean oil prices have risen by around 14% and 18%, respectively. In the case of sunseed oil, 86% of which originates from Ukraine and Russia, prices have risen by around 42%.

Figure 3. Trends in commodity inflation (Year on Year, %)



Source: Ministry of Statistics and Programme Implementation (MoSPI, 2022)

Note: CPI (General Index); CPIF (Consumer Food Price Index)

The rise in prices of these commodities, together with other factors, has inflated consumer and producer prices (Figure 3). In April this year, India's inflation rate (year-on-year) was 7.8% – the highest in the past eight years. While this is close to double the rate of inflation the Indian central bank targets (4%) to maintain in the economy, the state of food inflation is more disturbing. Food prices had risen steeply before the war but were not ahead of overall inflation in the country. This pattern has changed in the post-war period, with food inflation reaching 8% in May against the overall rate of 7%. Notably, vegetable prices have tripled, observed by a shift in its inflation rate from 6.1% in February to 18.3% in May. Edible oil and fuel prices have increased by 10%. Since the beginning of the year, food price inflation has gradually been converging with the overall inflation rate, but the war has altered this pattern. Such a shift will have profound implications for poverty, food, and nutritional security.

Poverty, Agriculture, and the War

The share of the poor in India was 21.9% in 2012 as per the last consumption expenditure survey conducted by the National Sample Survey Office (NSSO) using the Tendulkar Committee methodology (but 29.5% using the Rangarajan Committee methodology) (Planning Commission, 2014). The office[1] has not released more recent surveys conducted since then: hence the country lacks official current poverty estimates. Bhalla *et al*. (2022), using the 2011-12 survey data of the NSSO, and the Private Final Consumption Expenditure (PFCE) estimates from the National Accounts Statistics, find that poverty

1 The survey conducted in 2017-18 is not released in the public domain.

in India is as low as 2.5% in 2020 at the 1.9$ PPP[2] poverty line. When the State Domestic Product estimates are used instead of PFCE, the rate is 4.1%. Roy & Weide (2022) obtained an NSSO-compatible poverty estimate of 10.2% for 2019 and noted that poverty had declined more in rural regions than urban.

Declining rural poverty bodes well for improved food security, given that 64% of the population is rural and over half of them are involved in farming. Still, increasing price inflation would directly erode the welfare of the poor. Over 93 million farm households live in rural regions, and estimates show that farm income has grown by less than 1% per year between 2013 and 2019 if inflation is accounted for (MoSPI, 2021). About 69% of the farmers engaged in the crop sector have registered negative income growth during this period. Given that over half of farm households are already indebted, it is difficult to imagine their ability to cope with rising inflation, especially during climatic hazards (Birthal et al., 2021).

Farmers' Response

The reaction of the agrarian sector to the present war and its consequences seems too early to predict. In the *Kharif* season, farmers sow food grains on around 72 million hectares of land, of which 56% is rice, 25% is coarse cereals, and pulses make up about 19%. Another 20 million hectares are planted with oilseeds. The India Meteorological Department has predicted normal and spatially well-distributed rainfall for the northwest and southern peninsular regions for the ongoing *Kharif* season. In contrast, while the central region is expected to have above-normal rainfall(IMD, 2022). Notably, the rainfed areas are predicted to receive above-normal rainfall.

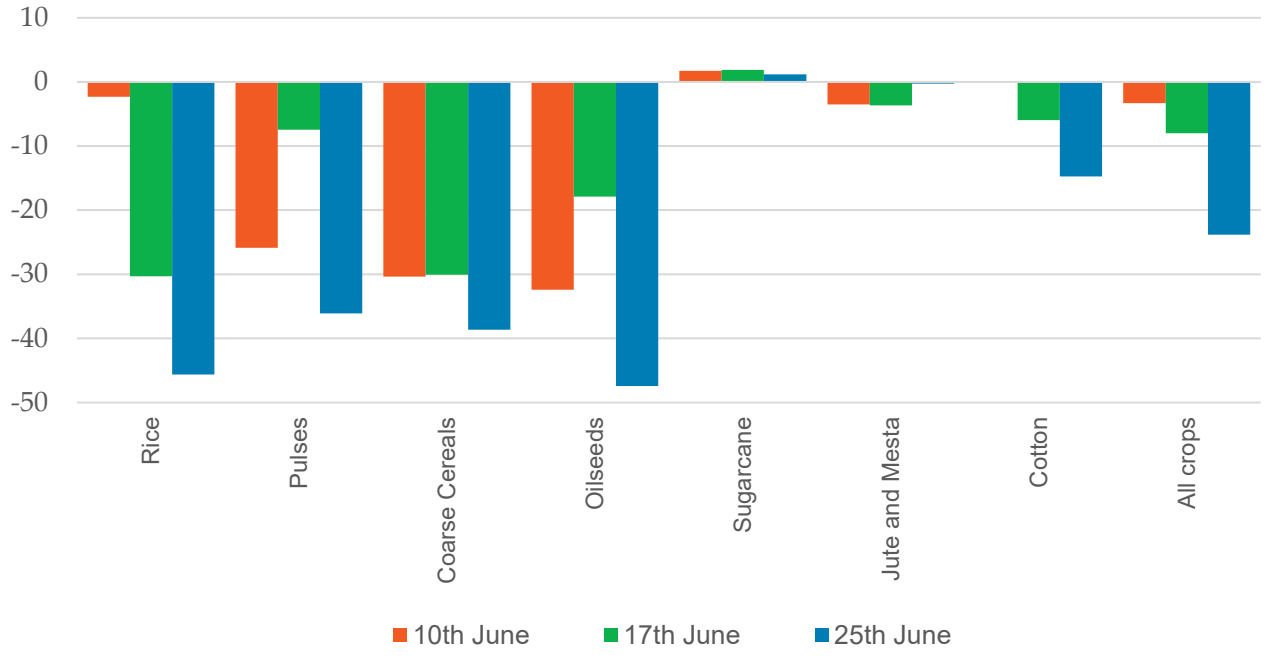
While much of the sowing is yet to occur (estimates for June 25th cover only 5-6% of the total area), farmers may be sowing crops in lesser regions (Figure 4). For instance, until June 10th, the total area sown decreased by 3.3%[3] compared to the previous year's date. It fell by 8% by June 17th and was at only 24% of the previous year's estimates on June 25th. Almost all crops have witnessed a decline. Against 3.6 million hectares of rice sown in 2021, estimates of June 25th this year have registered only 2 million hectares– a reduction of over 45%[4]. Coarse cereals, pulses, oilseeds, and industrial crops like cotton have similarly declined. Further updates signal an improvement in sowing, so no severe impact on agricultural production is expected. Still, as prices of fuel and fertilizers increase production costs, this could affect input use and investment in farming, influencing production and profits.

2 Poverty rates based on Modified Mixed Recall approach. This approach is perceived to be more precise than other approaches like Mixed Recall Period or Uniform Recall Period approaches.

3 Excludes cotton, as the estimates were not reported on this date.

4 This has improved as 27% on 1st July. In case of pulses, an addition of 7% area is reported on 1st July. Since the estimates for other crops were not reported, they're not discussed in the main section

Figure 4. Change of area sown under different crops (% change in 2022 w.r.t. 2021)

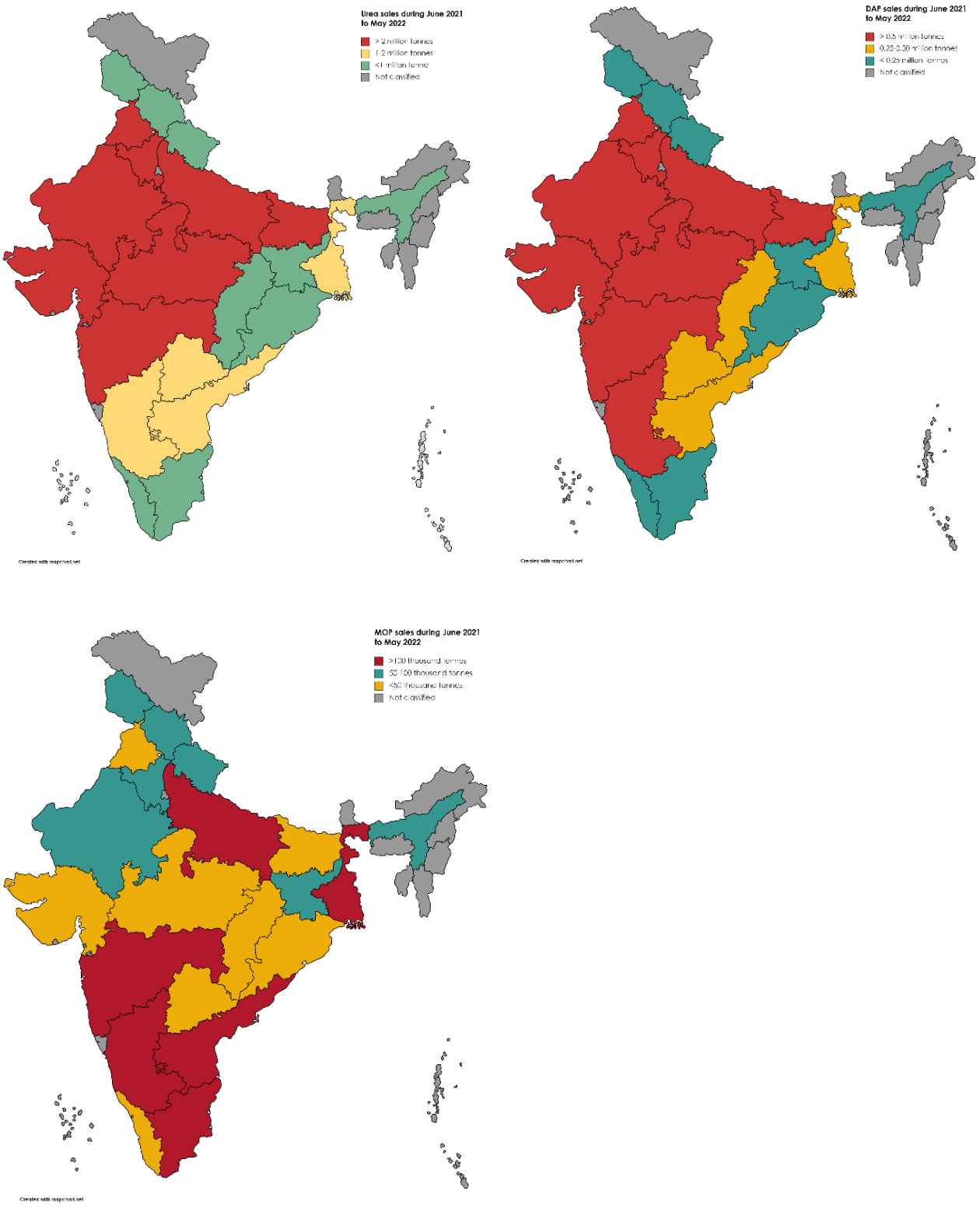


Source: Ministry of Agriculture & Farmers Welfare (MoAFW, 2022)

Ensuring Food Production

The Indian Government has acted quickly to ensure adequate availability of inputs for agriculture. Estimates show the country has a 17% surplus stock of seeds for paddy, 11% for bajra, 11-12% for arhar and moong, and around 5% for groundnut. Soybean seeds are assessed to have a shortage of about 6%. The stock position and recent trade deals signal that India may not face supply constraints in fertilizers for the first half of the agricultural year. Fertilizer sales from June 2021 to May 2022 are displayed in Figure 5. The requirement for the ongoing *Kharif* season is around 18 million tonnes of urea, 6 million tonnes of DAP, and 2 million tonnes of MOP, among others. Domestic urea production averages slightly above 2.1 million tonnes a month, and sales hover around 2.8 million tonnes. Even with slightly higher demand, despite the declining crop area observed to date, the gap between sales and production should not widen by more than 1 million tonnes a month. However, the country currently has around 7 million tonnes of urea in stock. In early February this year, before the start of the war, India revived its urea trade with Oman India Fertilizer Company after a lapse of a 15-year deal in 2020 by signing a three-year agreement to import 1 million tonnes of urea each year. The recent deal with the USA brings an additional 47,000 tonnes to the country, meaning that farmers should get adequate urea without significant hurdles during the first half of the agricultural year.

Figure 5. Fertilizer sales across states in India (June 2021-May 2022)



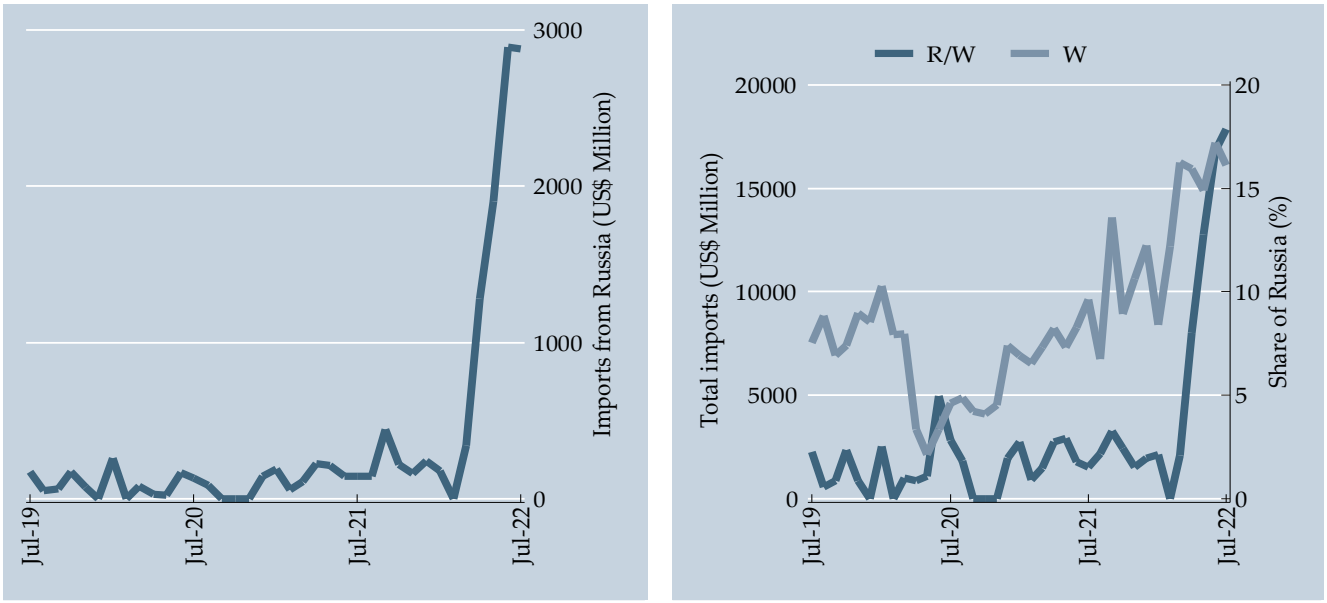
Source: Based on monthly data by the Ministry of Chemicals & Fertilizers (MoC&F, 2022)

Domestic DAP production is around 0.4 million tonnes a month against average sales of over 0.8 million tonnes. The country has 2.1 million tonnes in stock, and 0.6 million tonnes have already been imported. In mid-May, the government signed an MoU with Jordan to receive 0.25 million tonnes of DAP this year, along with 3 million tonnes of rock phosphate and 0.1 million tonnes of phosphoric acid. The agreement also includes imports of 0.27 million tonnes of MOP annually for five years, for which the country is entirely import-dependent. The demand for MOP averaged around 0.22 million tonnes a month during June-September last year but averaged 0.15 million tonnes over the entire agricultural year. In March this year, Indian Potash Limited signed a pact with Israel to import around 0.60-0.65 million tonnes annually until 2027. From Canada, it has proposed to buy 1.2 million tonnes. Discussion is also underway with Egypt to trade fertilizer for wheat. These efforts are believed to supply adequate fertilizers to farmers, thus ensuring food security.

Containing Inflation

To contain domestic inflation triggered by the global energy and food crises, the Indian Government has begun diversifying its import sources, signaling significant changes in geopolitical relations, predominantly through trade. India has opted to purchase oil from Russia in significant quantities. The value of Russian oil imports has not averaged more than 2% of total oil imports in the past (Figure 6). While imports remained at the same rate in March, they increased to around 8% in April and 12.8% of the total import value in May. In May, it became the second-largest oil supplier to India replacing Saudi Arabia, and is believed to have turned into the largest supplier in June.

Figure 6. Rise of India's crude oil imports from Russia



Source: Estimated based on Ministry of Commerce & Industry (MoC&I, 2022)

The price for Russian oil in the international market has dropped following sanctions. The surge in India's oil imports from Russia at this lower price is a means to stabilize domestic supplies. Despite agreement among OPEC+ to raise output for July and August, the limited spare capacity of most member nations adds uncertainty to a possible fall in global prices. Saudi Arabia's price increase for its July shipments to Asian buyers appends additional risks. To ease oil supplies in the future and incentivize upstream oil and gas industries, the Cabinet Committee on Economic Affairs of India

approved deregulating the sale of domestically produced crude oil from October 1st, 2022. This waives the obligation of selling crude oil to the Government or its nominees for companies involved in exploring and producing crude oil in the country. Still, for an economy consuming 5 million barrels a day and heavily dependent on imports, a reduction in import bills, even by a marginal extent, could help finance social safety nets for the affected at a time when inflation remains high.

To ease edible oil prices, the Government has exempted customs duties and the Agriculture Infrastructure Development Cess for about 2 million tonnes (per year) of crude soybean and sunflower oil imports for 2022-23 and 2023-24. Prices decreased by around 5% in domestic retail markets following this measure, but Indonesia, the primary source of Indian palm oil, banned exports on April 28th, introducing greater uncertainty. Malaysia could not fill the supply gap due to the short labor supply in its plantations, so although exports resumed after three weeks, the impacts could have been much worse for India.

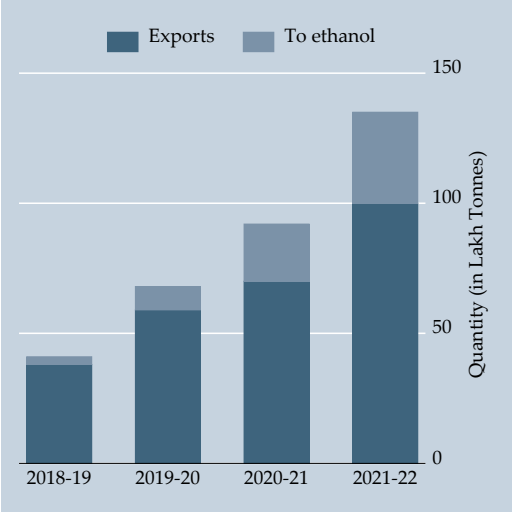
Efforts to reduce edible oil import dependence began in 1986 when the Government launched the Technology Mission on Oilseeds and continues to date under the National Mission on Edible Oils – Oil Palm (NMEO-OP), introduced in 2014, which focuses on the potential of oil palm cultivation in the country. Still, domestic demand and relatively slow growth in oilseeds production have kept edible oil imports high.

In the case of fertilizers, subsidies are used to contain prices. Initially, the Union Budget allocated Rs. 1.05 trillion for fertilizer subsidies for 2022-23. Given price increases, the Government has now doubled the subsidy to Rs. 2.15 trillion. Farmers now receive a bag of urea for Rs. 300 against its actual price of Rs.3,500 and an additional 51% subsidy for DAP from the previous rate of Rs. 1650 a bag. These additional expenditures have helped to moderate fertilizers prices.

War Brings Opportunities

The conflict, despite infusing inflationary pressure on the economy, has also brought a few opportunities. Apart from causing a surge in its oil products export, on which the Government imposed a windfall tax recently, it has created a vibrant food trade ecosystem where India is exporting to the world, especially to developing nations. While the country imposed a ban on wheat exports on May 13th to ease domestic supply constraints following concerns over sudden export growth, it has maintained exports through G2G contracts. About 1.8 million tonnes of wheat are being exported to several countries, including Bangladesh. The Directorate General of Foreign Trade has now allowed an additional 1.6 million tonnes of exports. Discussions to exchange wheat with Indonesia for palm oil, and with Nigeria for fertilizers are also on the table.

Figure 7. India's sugar exports and diversion to ethanol production

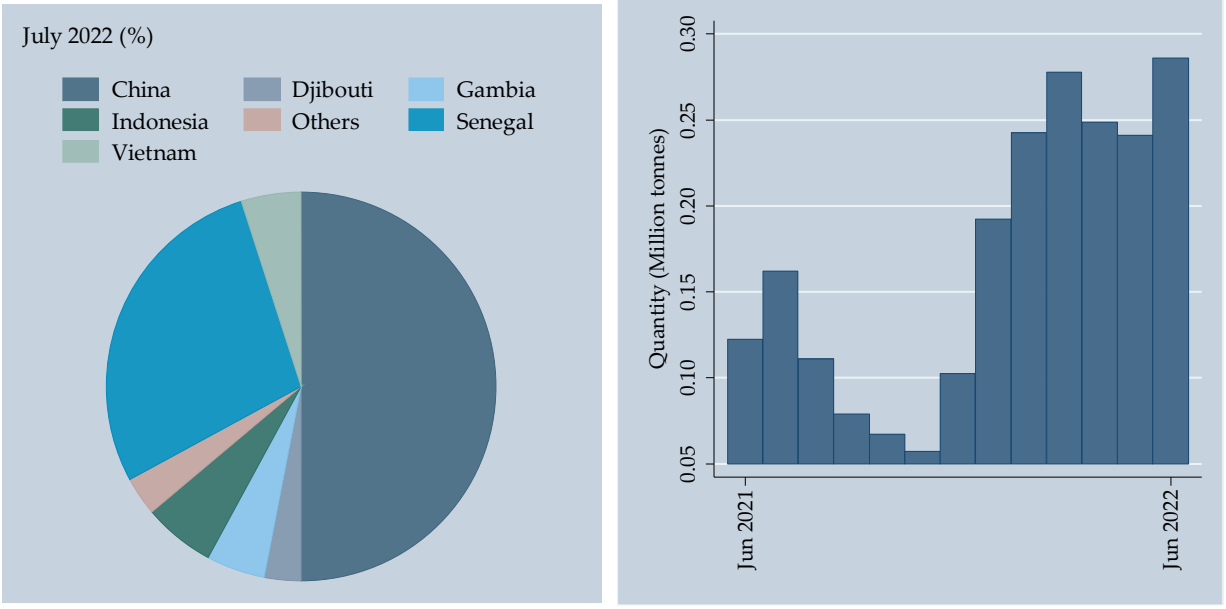


Source: Ministry of Consumer Affairs, Food & Public Distribution (MoCAF&PD, 2022)

Note: Years represent sugar seasons (October-September)

India has also introduced legislation to regulate sugar exports, given the high global demand after poor production in Brazil and increased processing for ethanol in other countries. In the past few years, the government has had a surplus of sugar. In 2018-19, India exported just 3.8 million tonnes of sugar, but this rose to 5.9 million tonnes in 2019-20 and 7.0 million tonnes in 2020-21 (Figure 7). For 2021-22, the Government will allow 10.0 million tonnes of sugar exports while the rest of the production will be allocated to ethanol production. In 2018-19, 0.3 million tonnes of sugar were allocated to ethanol, increasing to 2.2 million tonnes in 2020-21 and increasing to 2.2 million tonnes in 2020-21, and to 3.5 million tonnes in 2021-22.

Figure 8. India's export of rice (broken) to the world & China



Source: Ministry of Commerce & Industry (MoC&U, 2022)

India's broken rice exports have also grown, with China emerging as a major buyer (Figure 8). In 2020-21, China imported 0.27 million tonnes of broken rice from India, but this increased to 1.6 million tonnes in 2021-22. Much of that which was exported earlier was destined for African nations.

The Ukraine war has highlighted the need to stimulate domestic production to counter agricultural trade deficits. Pulses, in particular offer opportunities for growth, given that yield gaps are as high as 42% in lentils, 81% in red gram, and 61% in black gram. Similarly, while India imports much of its edible oil, Total Factor Productivity (TFP) growth is less than 1% in oilseeds (Chand et al.et al, 2012), and the domestic production response to a higher tariff on edible oil imports has been limited (Balaji et al.et al, 2021). The yield gap in soybean is 36%, 149% in sunflower, 57% in groundnut, and 43% in rapeseed & mustard. Additionally, less than one-fourth of pulses and less than one-third of oilseeds are grown on irrigated lands, limiting growth potential. Making improved seeds available and expanding irrigation facilities for these crops will help reduce the gap. In the fertilizer sector, the opportunity lies in scaling up innovations and efficiency in production and use. Products like nano-urea greatly enhance efficiency by reducing urea use by 50%, dramatically cutting imports. A gradual shift towards more diversified agriculture that balances agricultural production between crops, livestock, and fisheries may also help increase resource efficiency and encourage sustainable agriculture.

Conclusion

The Russia-Ukraine war has induced oil and food supply shocks across the world. The impact has been felt in India, noted by surging prices in imported oil, fertilizers, and edible oils, which have had spill-over effects on other commodities as well. If left unchecked, food and fertilizer price inflation will erode the welfare of the poor, including some farmers. The Government has taken measures to ensure the supply of essential items in the domestic market through trade and domestic policy measures. It has diversified oil and fertilizer import sources and has reduced duties in the case of edible oils. India has also imposed export restrictions and regulations on commodities such as wheat and sugar to ensure domestic inflation does not hurt the poor. Despite experiencing a slight decline in the area, food production should remain unaffected.

Prices will likely remain high in the coming months, but despite these challenges, the war may provide opportunities for India. The country's current stocks of wheat offer the chance to help neighbors and food deficit countries tackle rising prices while generating political goodwill. While technically exports are banned, government-to-government agreements are likely to continue. Strong harvests this year may also offer opportunities to exchange surplus stocks for edible oils or fertilizers with a more diversified set of trade partners to gain access to needed imports. In the long term, India will require continued research and support actions to reduce the need for imports such as edible oil and pulses in line with existing government ambitions.

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