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ANALYZING THE IMPACT OF GLOBALIZATION ON AGRICULTURAL TRADE AND MARKETS

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ABSTRACT
Over the last 40 years, economic globalization (EG) in the world's poorest nations has only accelerated. The agricultural industry is not immune to the positive and negative effects of EG. Time series secondary data from a variety of sources was used to conduct the current investigation. Many different commodities and products were studied in order to capture the patterns and results of agricultural commerce. As a result of modern globalization, the prices at which agricultural and other goods may be traded internationally have fallen.
Keywords: globalization; trade costs; distorted incentives; agricultural.

INTRODUCTION

In the early 2000s, there was a dramatic uptick in agricultural trade across international borders. Increases in both direct and indirect ties between nations opened up new opportunities for low-income countries to participate in the global economy. The seeds that nations exchange with one another are often held by huge corporations that create hybrid seeds like Bayer. Because of this, they cannot be used for subsequent harvests and must be discarded. The seeds' potential for further development or replanting is doubtful, given that they return to the parent plant after a single growing season. Big companies, which Civil Eats calls "landlords of seeds," are allegedly renting to farmers year after year, reaping billions in rent and crop profits. The impact on farmers and rural areas is catastrophic. The positive effects of agricultural globalization, such as increased cross-national communication, are outweighed by the many negative consequences.

Trade, investment, finance, and the long-distance mobility of these components, as well as the information and attitudes that accompany market exchanges, all accelerate economic globalization (EG) when national governments swiftly liberalize them. An evaluation tool for EGs would include of indicators including the prevalence of hidden import barriers, average tariff rates, levies on international trade and capital limitations, and an index of actual flows (including trade, FDI, portfolio investment, income transfers to foreign nationals, and capital employed). Because of this, we can evaluate the spread of EG in both developing and developed countries.

There has been a gradual but steady growth of EG in underdeveloped nations over the last 40 years. Between 1970 and 2018, EG increased by double digit percentages in Sub-Saharan Africa, Latin America and the Caribbean, and South Asia, whereas it increased by closer to 60% in the United States, Canada, and other developed countries (KOF Swiss Economic Institute 2021). There have been reports of a growing openness to EG even in formerly communist nations like China and Vietnam.

China is one of the world's largest trade partners for agricultural products, making it susceptible to shocks that might have far-reaching effects. Several programs exist to assist developing nations with adopting EG. When it comes to international commerce, many nations cooperate closely on local, national, and global levels. Svatos (2007) and Awad and Youssof (2016) point out that other nations have begun economic reform projects to liberalize trade policy, reduce trade barriers, and integrate their economy with global markets. Some examples of such programs include export subsidies, export processing zones, currency depreciation, and the encouragement of import substitution industrialization. Meanwhile, developing nations are adapting by expanding into new markets and diversifying their product lines in an effort to fend off EG.

There has been a reduction in inflation, income inequality, poverty, malnutrition, unemployment, and illegal economic activity as a result of these activities, and an increase in trade volumes, FDI inflow, economic growth, infrastructure development, technology, foreign tourists, and international events in

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developing countries. Nonetheless, several studies have shown that EG is detrimental to low-income nations. When it comes to shocks, EG leaves underdeveloped nations exposed.

Multiple authors, attribute EG to the proliferation of urbanization, the widening of economic and resource gaps, and the intensification of worker exploitation. Agriculture is only one industry that seems to be feeling the effects of environmental deterioration (EG) in developing nations today. A robust agricultural sector is beneficial for many reasons, including but not limited to: food production, food and nutrition security, employment, foreign currency revenue, GDP, capital accumulation, and tertiary industries. As a result, problems in the agriculture sector might pose a serious danger to national security. Existing tensions and problems might be exacerbated by disruption in the agricultural industry, which could result in lower earnings and fewer hours for employees in rural regions. This means that in underdeveloped nations, EG should be considered as a potential source of agricultural disturbance.

LITERATURE AND REVIEW

Agus Dwi Nugroho et al (2021) Economic globalization (EG) implementation indicators vary among countries. This is a reference to both the good and negative results of its use, most notably in the agricultural sector. In many third-world nations, the economy relies heavily on this industry. Furthermore, these nations' poor incomes may be traced back to their inability to maximize agricultural value-added (AVA). Therefore, developing nations should use EG to boost agricultural export earnings and farmer income. There is no other research that looks at the effects of EG on AVA in third world nations. This research aims to assess the effects of varying exchange rates, FDI flows, total agricultural export values, agricultural import levies, and fertilizer imports on agricultural value added (AVA) in developing nations. Its influence in 17 developing nations from 2006-2018 is evaluated using panel data analysis. Foreign direct investment (FDI) and the value of agricultural exports were shown to boost AVA in developing nations. Sustainable development objectives may be advanced with careful implementation of EG in underdeveloped nations, as shown in this research. If developing nations are serious about improving their agricultural exports and economic conditions, they should prioritize investments in human resources and technology (or R&D), ensuring that international investors engage with local agricultural enterprises, and boost agricultural exports.

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Martin, W. (2017) To achieve the second Sustainable Development Goal (SDG) of eliminating hunger by 2030, agricultural trade is crucial. Despite widespread concern that trade would undermine progress toward this top priority, it may actually be a crucial factor in doing so. When nations engage in trade, those with an abundance of land may export their goods while others with a scarcity of land can buy goods that were produced more effectively. Facilitating more nutritional variety and improved access to food, trade liberalization may also boost agricultural production efficiency. Trade liberalization considerably mitigates food price volatility by spreading out supply chains. When prices are high, beggar-thy-neighbor measures like export prohibitions redistribute wealth rather than reducing volatility. However, there is a severe collective action issue in international markets since other nations prefer to implement price-insulating measures. These issues would be made worse by

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the Special Safeguards proposals, which would impose significant new tariffs at a time when global prices are already falling.

Julian M. Alston et al (2014) Public and corporate expenditures in agricultural research during the last 50-100 years have led to substantial advances in agricultural output and productivity, which have had far-reaching consequences, notably for the world's poor. We begin by noting that the United States and other high-income nations are producing less of the world's food than they formerly did, while middle-income nations like China, India, Brazil, and Indonesia are producing more. Then, we analyze how other nations' agricultural sectors have achieved varying degrees of production while using the same basic set of inputs. Next, we look more carefully at productivity and the evidence that the worldwide rate of agricultural productivity growth is dropping, which might have dire consequences for the price and availability of food for the world's poorest people. Finally, we think about regularities in agricultural R&D.

U. R. Shinde (2015) We talk about international integration when we talk about globalization. It entails the free flow of commodities and services across borders, the expansion of communication networks, the globalization of financial markets, the ascendance of multinational corporations, demographic shifts, and the overall free flow of people, money, and information. It's a way of turning the globe into one cohesive civilization. In a nutshell, it's the transformation of the globe into a localized community. It's a relatively new idea that's taken over as global governance since the end of the 20th century, when the cold war ended and the Soviet Union collapsed. This has begun in many developing nations like India because to the necessity for structural changes in many global economies, the dominance of market-related economies, the rising significance of private resources and capital, and the pressure of the world bank and other International organizations like the IMF. It has opened up new possibilities for nations on the rise. Some of the benefits of this process for nations like India include increased access to global markets, the transfer of technology, increased productivity, and a greater quality of life. Inequality between and among countries, financial market instability, and environmental degradation are only some of the many problems it has spawned. Knowing how globalization will affect India's economy is important because of the country's reliance on agriculture. When looking at the agriculture industry as a whole, India shows that globalization has not been successful. It's helped a little bit in terms of reducing poverty and eliminating social inequality. In India, this method has not yielded the expected results. There has been a range of outcomes within the country's agriculture industry. The study's findings make it abundantly evident that the agricultural sector is vital to the economy. Sixty percent of Indians have jobs in agriculture, although the sector only accounts for 15 to 20 percent of the country's gross domestic product. Input cost is high and output cost is low, making the current economic situation of farmers in India less than ideal. The growth rate of Indian agriculture has increased since the country adopted globalization in 1991. The agriculture industry is struggling due to the elimination of subsidies. "Globalization instead of being an equalizing process, has only widened the gap between the two in terms of monopoly in science and technology, flow of capital, access to natural resources, communication, and nuclear armament," said GamaniCorea, former Secretary-General of UNCTAD.

METHODOLOGY

Time series secondary data from a variety of sources was used to conduct the current investigation. Many different commodities and products were studied in order to capture the patterns and results of agricultural commerce. Although just a dozen staple foods were responsible for 70% of the value of agricultural output, 71% of the calorie intake, and 58% of both the protein and fat ingested by the world's population in 2018, the value share of the following eight foods increased to four-fifths.

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TABLE 1 Shares of key foods in the global gross values of agrifood production and exports, and in global calorie, protein and fat intake by consumers, 2018 (%)

	Calorie intake	Protein intake	Fat intake	Agrifood production value	Agrifood export value
Wheat	18.6	16.4	2.6	3.9	3.2
Rice	18.0	9.9	1.7	7.2	3.4
Maize	5.3	3.8	3.0	5.7	2.4
Pork	5.3	4.6	11.7	10.5	2.3
Poultry	2.1	5.4	4.2	15.2	2.8
Beef	1.3	3.5	2.6	10.0	4.3
Soybean	3.3	1.3	10.2	2.3	6.5
Oil palm	2.3	0.0	7.6	0.8	2.4
Milk	4.9	8.6	11.4	7.9	3.4
Egg	1.3	2.9	2.7	2.6	0.4
Sugar	6.8	0.0	0.0	2.0	2.6
White potato	2.1	1.5	0.1	2.2	0.9
Sub-total	**71.3**	**57.9**	**57.8**	**70.4**	**34.6**
Barley	1.3	0.5	0.0	0.6	0.8
Sheepmeat	0.4	0.7	0.9	1.8	0.6
Groundnut	1.4	1.2	3.8	0.8	0.3
Rapeseed	1.1	0.0	3.8	0.8	1.4
Tomato	0.4	0.6	0.2	2.2	1.0
Apple	0.4	0.1	0.1	1.2	0.6
Banana	1.0	0.4	0.1	0.9	0.9
Orange	0.3	0.2	0.0	0.6	0.8
Total of above	**77.6**	**61.6**	**66.6**	**79.4**	**40.9**

how India's agricultural exports and imports have changed from 1990–91 to 2020–21. Over the years, India's trade surplus in agricultural goods has remained stable. With a growth rate of 13.9 percent in 2020-21, India's agri-exports have climbed from Rs.6012.76 crore in 1990-91 to Rs.305469 crore, over 50 times in 30 years. However, a dip of around 8% was seen in agri-exports in 2019-2020. As a result of the hard work of our farmers and a variety of measures/schemes launched by the Government of India and organizations like Farmers Producer Organizations (FPOs), India's agri-exports skyrocketed and reached a record high in 2020–21. Agricultural commodity imports have also grown steadily over time. The value of agri-imports increased from Rs.1206 crore in 1990–91 to Rs.164726.83 crore in 2016–17, a 136-fold increase. However, the value of agri-imports has decreased during 2016–17, with 2018–19 seeing a total of Rs.137019 crore. The value of India's agri-imports was Rs.147446 crore in 2019-20 and Rs.157788 crore in 2020-21.

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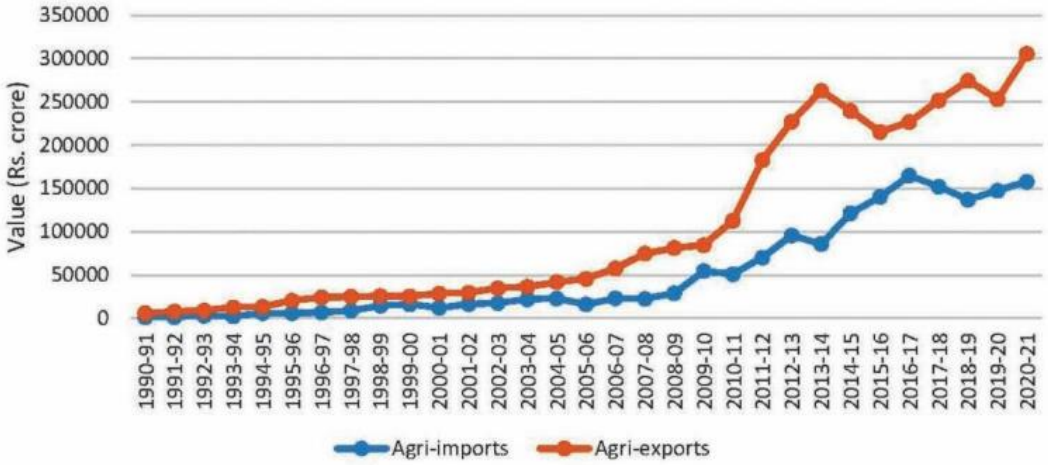

Figure 1. Trends in Exports and Imports of Agricultural Commodities.

Table 2. Indians in Exports and Imports of principal Agricultural Commodities.

Year	Agricultural imports	Total national imports	Share of agricultural imports to total national imports (per cent)	Agricultural exports	Total national exports	Share of export to total nationa exports (per cent)	Net agri export surplus (Agri-exports-agri-imports)	Agriculture GVA at current prices	Share of agri-import in agri-GVA (per cent)	Share of agri-export in agri-GVA (per cent)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1990-91	1205.86	43198.00	2.79	6012.76	32553.00	18.47	4806.90	154953	0.78	3.88
1991-92	1478.27	47850.84	3.09	7838.04	44041.81	17.80	6359.77	181017	0.82	4.33
1992-93	2876.25	63374.52	4.54	9040.30	53688.26	16.84	6164.05	203009	1.42	4.45
1993-94	2327.33	73101.01	3.18	12586.55	69748.85	18.05	10259.22	235483	0.99	5.34
1994-95	5937.21	89970.70	6.60	13222.76	82673.40	15.99	7285.55	271162	2.19	4.88
1995-96	5890.10	122678.14	4.80	20397.74	106353.35	19.18	14507.64	294848	2.00	6.92
1996-97	6612.60	138919.88	4.76	24161.29	118817.32	20.33	17548.69	354521	1.87	6.82
1997-98	8784.19	154176.29	5.70	24832.45	130100.64	19.09	16048.26	376207	2.33	6.60
1998-99	14566.48	178331.69	8.17	25510.64	139751.77	18.25	10944.16	432065	3.37	5.90
1999-00	16066.73	215528.53	7.45	25313.66	159095.20	15.91	9246.93	457081	3.52	5.54
2000-01	12086.23	230872.75	5.24	28657.37	203571.00	14.08	16571.14	462407	2.61	6.20
2001-02	16256.61	245199.71	6.63	29728.61	209017.96	14.22	13472.00	500567	3.25	5.94
2002-03	17608.83	297205.86	5.92	34653.94	255137.26	13.58	17045.11	486974	3.62	7.12
2003-04	21972.68	359107.61	6.12	36415.48	293366.74	12.41	14442.80	546794	4.02	6.66
2004-05	22811.84	481371.53	4.74	41602.65	375339.51	11.08	18790.81	567635	4.02	7.33
2005-06	15977.75	574190.89	2.78	45710.97	456417.85	10.02	29733.22	639988	2.50	7.14
2006-07	23000.28	840506.30	2.74	57767.87	571779.27	10.10	34767.59	715179	3.22	8.08
2007-08	22549.81	1012311.69	2.23	74673.48	655863.51	11.39	52123.67	820532	2.75	9.10
2008-09	28719.24	1374435.37	2.09	81064.52	840755.05	9.64	52345.28	925878	3.10	8.76
2009-10	54365.29	1363735.54	3.99	84443.95	845533.63	9.99	30078.66	1066008	5.10	7.92
2010-11	51073.97	1683466.96	3.03	113046.58	1136964.25	9.94	61972.61	1299884	3.93	8.70
2011-12	70164.51	2345463.23	2.99	182801.00	1465959.39	12.47	112636.49	1501947	4.67	12.17
2012-13	95718.89	2669161.95	3.59	227192.61	1634318.28	13.90	131473.72	1675107	5.71	13.56
2013-14	85727.30	2715420.78	3.16	262778.54	1905011.08	13.79	177051.24	1926372	4.45	13.64
2014-15	121319.02	2736676.99	4.43	239681.04	1896348.42	12.64	118362.02	2093612	5.79	11.45
2015-16	140289.22	2490303.76	5.63	215396.32	1716384.39	12.55	75107.10	2227533	6.30	9.67
2016-17	164726.83	2577671.14	6.39	226651.91	1849433.54	12.26	61925.08	2518662	6.54	9.00
2017-18	152095.20	3001028.71	5.07	251563.94	1956514.52	12.86	99468.74	2829826	5.37	8.89
2018-19	137019.46	3594674.22	3.81	274571.28	2307726.19	11.90	137551.82	3016277	4.54	9.10
2019-20	147445.81	3360954.45	4.39	252976.06	2219854.17	11.40	105530.25	3394033	4.34	7.45
2020-21	157788.16	2909830.00	5.42	305469.00	2151770.00	14.20	147680.84	3616523	4.36	8.45
2021-22**	37936.49	930961.10	4.35	65768.07	703545.37	9.35	27831.58			
CAGR	16.85	17.21		13.99	15.87			10.82		

Table 3. Composition of exports and imports of agricultural products during 2020-21

Sub-category	Exports	Imports
(1)	(2)	(3)
Agriculture & Allied Products	236258.80	147111.70
	(77.34)	(93.23)
Marine Products	44176.03	1636.36
	(14.46)	(1.04)
Plantation	11066.25	6179.19
	(3.62)	(3.92)
Textile & Allied Products	13968.33	2860.90
	(4.57)	(1.81)
Total	305469	157788
	(100)	(100)

The rice and marine product value chains, which together account for a third of India's total agri-exports, have been quite lucrative for the country in recent years. These value chains are identified as opportunities for India in both APEDA and the 2018 Agriculture Export Policy due to India's comparative advantage in producing them. Only over 30% of India's commodity and agricultural exports are sent to the European Union and the Americas, while 70% are sent to neighboring areas including the Middle East, Africa, and the Asia-Pacific. As can be seen in Figure 2, in 2020-21, India exported a total of $21.4 billion worth of agricultural goods. Of this, rice exports (including Basmati and non-Basmati) accounted for 21.4%. Afterwards, 14.5% went to marine goods, 9.7% to spices,

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7.7% to buffalo meat, and 6.8% to sugar. Since these top five products/commodity accounted for 60.10 percent of the total agricultural exports, we need to diversify our exports for more things and more destinations. In addition, the present price and production levels in domestic markets should be considered when assessing the efficacy of trade restrictions on tomato, onion, and potato (TOP) crops. The United States, China, Bangladesh, the United Arab Emirates, and Vietnam may have received agricultural goods. Figure 3 displays the top five destinations for agricultural exports, accounting for 34.9% of total shipments.

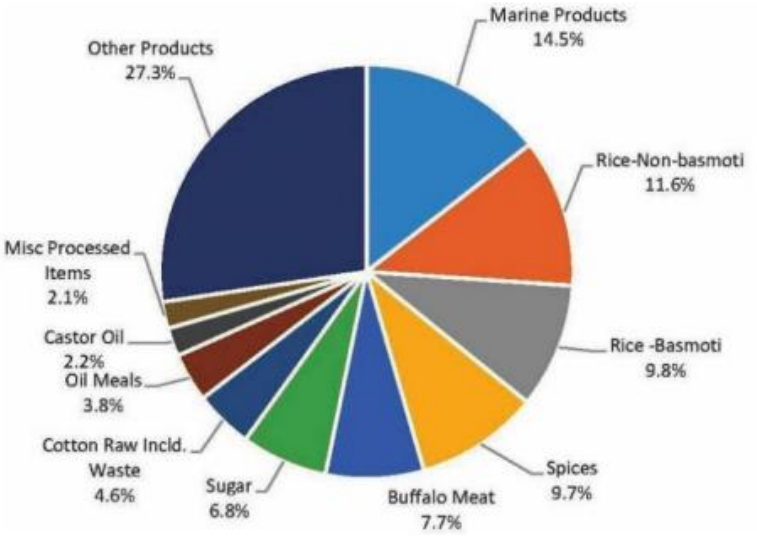

Figure 2. Share of Top 10 Exported Agricultural Commodities in 2020-21.

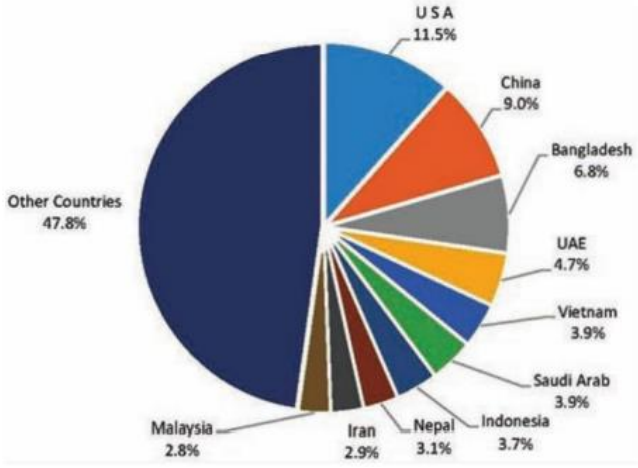

Figure 3. Share of Top 10 India's Agri-Export Destinations in 2020-21.

In terms of agri-imports, vegetable oils have been the single most imported product/commodity, accounting for 52% of the total in 2020-21 (Figure 4). With a proportion of 10%, fresh fruits are the second most imported agricultural commodity, behind pulses (7.6%), spices (5.1%), and cashews (4.7%). It is notable that India imported 90.8% more sugar in 2020-21 than it did the year before, as well as an increase of 19.8% in the import of vegetable oils, an increase of 16.8% in the import of pulses, and a decrease of 69.4% in the import of cotton. India has to detail its plans to boost local production of the agricultural items (vegetable oils, oil seeds, pulses, etc.) that it imports in large quantities. As of 2016, Indonesia accounted for 17.9% of all agricultural exports to India, followed by Malaysia (11.3%), Argentina (10.4%), Ukraine (7.6%), and the United States (7.3%). In 2020-21, India's top five agri-import partners accounted for 54.5% of the country's total agri-imports (Figure 5).

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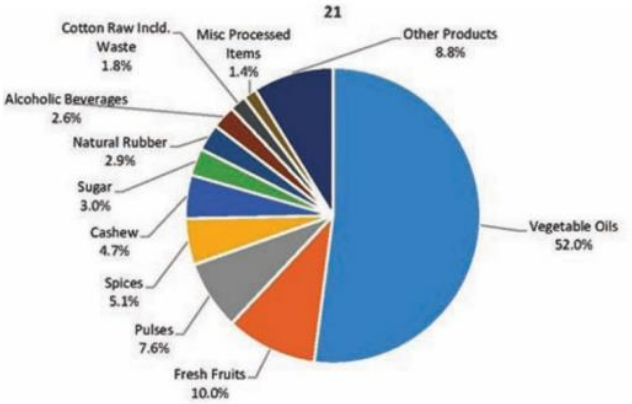

Figure 4. Share of Top 10 Imported Agricultural Commodities in 2020-21

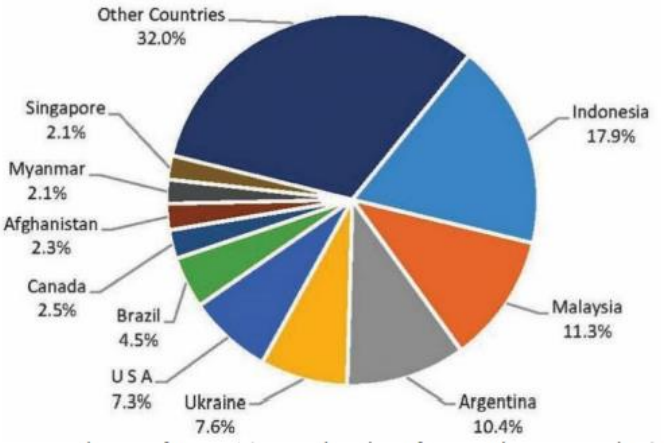

Figure 5. Share of Top 10 Destination for Agri Imports in 2020-21.

RELATIONSHIP BETWEEN AGRI-TRADE OF INDIA AND THE WORLD

Even though India's agri-trade intensity ratio has been increasing over time, the issue of how India contributes significantly to the alteration of the global ecosystem and the COVID-19 pandemic has arisen. Compared to the global average of 7.03 percent, India's exports have grown at a compound annual growth rate of 12.39 percent (Table 4), increasing the country's share in global commerce from 0.52 percent in 1990 to 1.71 percent in 2019. The dollar value of agricultural exports also increased steadily, from 0.94 percent in 1991 to 3.04 percent in 2013. It is noteworthy to see that agri-exports fell from 2013 to 2016 in both absolute and relative terms, and have still not recovered to their 2013 levels. Global Agri exports fell at the same time as India's fell, in absolute terms. One year after India, in 2014, they progressed to the higher tiers. Since 1997, when the South East Asian crisis began, the revenues from Agri-exports have been on the decline due to a combination of factors including falling agricultural prices and a global economic downturn (Sathe and Deshpande, 2016). India's percentage of global agri-exports rose from 0.94 percent in 1990 to 3.04 percent in 2003, and has since been steadily falling, reaching 2.03 percent in 2019. When compared to the global average of 6.28% and 6.14%, India's agri-exports and agri-imports expanded at substantially faster rates of 10.41% and 12.74%, respectively.

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Table 4. India's share of import and export in world trade (value in us $billion)

	Import			Export		
Year	India	World	Share (per cent)	India	World	Share (per cent)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1990	24.19	3597.78	0.67	18.22	3492.12	0.52
1991	19.62	3615.84	0.54	18.06	3497.26	0.52
1992	24.08	3874.33	0.62	20.40	3750.49	0.54
1993	23.39	3785.51	0.62	22.32	3747.12	0.60
1994	27.89	4313.70	0.65	26.46	4275.27	0.62
1995	38.03	5144.46	0.74	32.97	5112.82	0.64
1996	39.21	5389.30	0.73	33.54	5340.74	0.63
1997	42.46	5573.36	0.76	35.83	5538.24	0.65
1998	43.22	5523.53	0.78	33.87	5465.73	0.62
1999	49.99	5754.22	0.87	37.06	5665.65	0.65
2000	51.37	6536.89	0.79	45.30	6402.41	0.71
2001	51.96	6279.13	0.83	44.29	6121.73	0.72
2002	62.41	6555.49	0.95	53.58	6439.84	0.83
2003	77.14	7631.41	1.01	63.02	7516.16	0.84
2004	105.56	9367.16	1.13	79.87	9103.54	0.88
2005	149.78	10595.61	1.41	103.52	10368.67	1.00
2006	181.18	12305.42	1.47	124.49	11932.61	1.04
2007	216.76	14168.64	1.53	147.03	13980.25	1.05
2008	321.03	16421.57	1.95	194.83	16143.19	1.21
2009	257.20	12675.85	2.03	164.91	12532.23	1.32
2010	350.23	15396.14	2.27	226.35	15267.82	1.48
2011	464.46	18390.54	2.53	302.91	18297.52	1.66
2012	488.59	18506.02	2.64	296.81	18404.63	1.61
2013	466.04	18781.56	2.48	313.24	18818.41	1.66
2014	462.91	19046.72	2.43	322.69	18988.44	1.70
2015	392.87	16722.90	2.35	267.44	16536.89	1.62
2016	361.21	16227.04	2.23	264.14	16036.34	1.65
2017	448.42	17987.33	2.49	299.28	17736.58	1.69
2018	514.46	19807.69	2.60	324.78	19451.55	1.67
2019	486.06	19272.55	2.52	324.25	18928.92	1.71
CAGR (per cent)	13.82	6.99		12.39	7.03	
CV	89.55	54.57		84.48	54.90	

CONCLUSION

We find that EG has both positive and negative effects on agricultural progress in poorer nations. EG has the potential to increase output, supply chain efficiency, food security, commerce, and economic, social, political, and environmental situations while also speeding up infrastructure construction and research and development. As a result of modern globalization, the prices at which agricultural and other goods may be traded internationally have fallen.

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