



STUDY THE EXPORT TRENDS FOR AGRICULTURE GOODS

Dr. Madhu Ahlawat

Professor

Department of Economics

B.M.U Rohtak Haryana

ABSTRACT

Changing international trade dynamics and accompanying adjustments to India's foreign trade policy have had far-reaching effects on India's agriculture industry as a whole and on agricultural exports in particular. The agricultural output in India has been a major contributor to the worldwide total. India used to be the primary export destination for many types of agricultural products. This research quantified India's agricultural exports' growth and production over the aforementioned (2011-2021). When it comes to exporting food and farm goods, India is in the top 10 worldwide. The country's top exports include sugar, cattle, rice and prawn. Although rice, wheat, sugar, cotton, fruits, and vegetables may all be freely exported, the export of pulses (with the exception of chickpea) and edible vegetable oil in bulk (with the exception of coconut and rice bran oils) is "limited" to suit local demand. As India's agricultural exports rise, the share of the country's total exports that they account for falls. Moreover, the study delves at how the composition of the agricultural export basket has changed over time. It focuses on the primary crops and agricultural products that, at various times, account for the lion's share of overall agricultural exports (2011-2021). A rise in agricultural exports would lead to higher prices for farmers, more

Keywords: Agriculture, composition, export, growth, stability, reform period public knowledge of sustainable farming methods, and a subsequent drive to improve quality in the agricultural product.

1.Introduction

Agriculture in India has risen to the top of the world market throughout the years. Tea, coffee, rice, spices, cashew, oil meals, fresh fruits, fresh vegetables, meat, animal products, and marine goods are only few of the numerous agricultural commodities that India exports on a large scale (Shinoj and Mathur, 2008; Saxena and Nath, 2012; Ramesh et al. 2017). Nonetheless, the country confronts fierce rivalry from both established and up-and-coming competitors in the sector. Agricultural exports from India and other nations

in Asia face serious competition from China, Malaysia, the Philippines, Thailand, Singapore, and Indonesia. The demand and supply situation in Asia have experienced a fast shift as a result of the expansion of the global economy and the removal of trade barriers. An is a common currency unit in several S.E. Asian nations.As a result of economic progress, these countries now have a large market for agricultural goods to provide, as well as higher incomes per person and more export possibilities (Anonymous, 2020). Alliances with strong negotiating power, such as those formed as a consequence of the World Trade Organization (WTO) and regional trade blocs such as the ASEAN Free Trade Area (AFTA), the Bangkok Agreement, the South Asia Free Trade Agreement (SAFTA), etc., may have a substantial effect on demand. There was a time of great upheaval in the Indian economy when the reforms were put into place in 1991.India's redefining of its agricultural commerce has also been significantly impacted by its adoption of the WTO's Agricultural Agreement (AoA). Throughout this time period, the share of India's overall exports made up by various agricultural goods varied widely depending on the commodity and showed a clear upward trend. Indian agriculture has made significant contributions to global commerce even in its more traditional forms.

The expansion of exports is directly correlated to the agriculture sector's production once it has broken into global markets. In an effort to boost exports generally, the Indian administration has committed to doing so through encouraging the production and sale of agricultural goods. Traditional agricultural exports like as tea, cashew, spices, maize, grains, etc., provide for a large portion of the agricultural sector's revenue. India used to bring in a lot of money from its agricultural sector. The following considerations are made throughout the course of this study. To analyze the growth and shifts in India's agricultural exports and imports. To learn more about India's agricultural exports and its Revealed Competitive Advantage. The purpose of this study is to analyze alternative policy options for increasing agricultural exports.

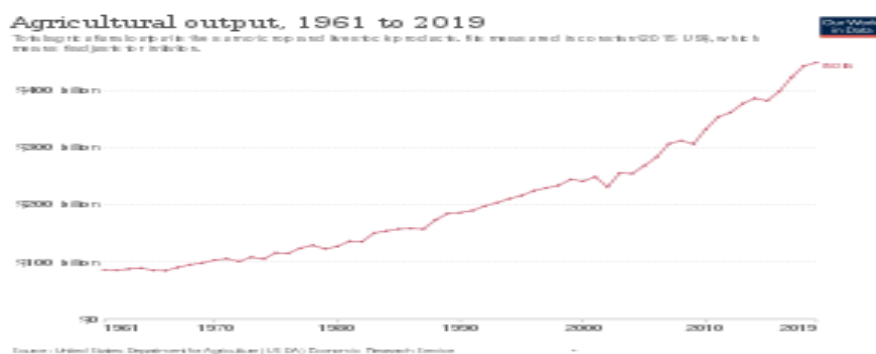


Fig no 1. Agriculture output 1961to 2019

India's agriculture industry has advanced to the forefront worldwide. Tea, coffee, rice, spices, cashew, oil meals, fresh fruits and vegetables, livestock and animal products, and marine goods are just some of the many agricultural items that India exports. Nonetheless, the country confronts formidable competition from both established firms and up-and-coming startups. India's and other Asian nations' agricultural exports face severe competition from China, Malaysia, the Philippines, Thailand, Singapore, and Indonesia. The

demand and supply situation in Asia have experienced a fast shift as a result of the rise of the global economy and the removal of trade obstacles.

This economic change has resulted in increased trade opportunities, per capita incomes, and agricultural product supplies throughout most South and Southeast Asian nations (Anonymous, 2020). The ASEAN Free Trade Area (AFTA), Bangkok Agreement, South Asia Free Trade Agreement (SAFTA), etc. are all examples of regional trade blocs with significant bargaining strength that might have a significant impact on demand. The Indian economy underwent dramatic change with the implementation of economic reforms in 1991. India's attempts to restructure its agricultural commerce have been significantly impacted by the country's adoption of the WTO's Agricultural Agreement (AoA).

The percentage of India's total exports that consisted of agricultural items fluctuated greatly throughout this time period, from around 5% to over 20%, depending on the commodity. Even in its more traditional forms, Indian agriculture has made major contributions to global business. Once agricultural output has entered global markets, exports will grow in tandem with it. The government of India has promised to increase agricultural exports as part of a larger drive to increase exports overall. Much of the money made in agriculture comes from the sale of staple commodities like tea, cashews, spices, corn, wheat, etc. India's agriculture industry used to be a major source of revenue. As this investigation progresses, the following factors are taken into account.

- 1) The purpose of this study is to analyze the development of the country's agricultural exports and imports. This research aims to examine the development of India's agricultural exports' Revealed Competitive Advantage.
- 2) The information was evaluated to check the efficacy of several governmental actions to improve up Advantage (RCA).
- 3) The semi-log growth model was employed to determine rates of expansion, and the Cuddy Della-Valle (CDVI) index was used to quantify degrees of volatility.

1.2 Deep Reflections on the Past

Some of India's oldest written records on farming may be found in the Vedas. Several of the Rigvedic hymns discuss farming practices including ploughing, fallowing, irrigating, and planting fruit trees and vegetables. Furthermore, Bronze Age ploughing patterns have been uncovered at Kalibangan in Rajasthan, indicating the cultivation of rice and cotton in the Indus Valley. The Indian Sanskrit text *Bhumivargaha*, which has been around for at least two thousand five hundred years, divides cultivable land into 12 distinct types, including *urvara* (fertile), *ushara* (barren), *maru* (desert), *aprahata* (fallow), *shadvala* (grassy), *pankikala* (muddy), *jalaprayah* (watery), *kachchaha* (adjacent to water), *sharkara* (full of pebbles), and *rainfed*.

The domestication of rice may have begun around the sixth millennium BC on the banks of the Ganges,

according to some archaeologists. Similarly, barley, oats, and wheat were cultivated in northwest India prior to the sixth millennium BC, as were legumes such as lentils and chickpeas. This is a case when a citation is required. Seeds for cotton, fenugreek, jujube, grapes, dates, jack fruit, mango, mulberry, and black plum were among the other plants grown in India between 3000 and 6000 years ago. The river buffalo may have been tamed by Indians about the year 5000. Outside the northern fertile plains, some scholars believe that agriculture expanded over the Indian peninsula about 10,000 to 3,000 years ago.

One research, for instance, notes that 12 locations in the Indian states of Tamil Nadu, Andhra Pradesh, and Karnataka show definitive signs of pulse-based agriculture. Crops like hyacinth bean (*Lablab purpureus*), sorghum (*Sorghum bicolor*), pearl millet (*Pennisetum glaucum*), finger millet (*Eleusine coracana*), cotton (*Gossypium sp.*), linseed (*Linum sp.*), and linseed (*Linum sp.*). Early plant cultivation and domestication of crops has been credited as marking the beginning of agriculture in India. Around that point people began to settle down and agricultural tools and practices were established. Due to the year's double monsoons, two crops were collected. Indian goods entered the marketplace rapidly, whereas foreign crops introduced. Plants and animals that are cultivated specifically for their ability to generate honey without the need for bees are called bees. They were known as Skhara in the native language.

As troops returned home, they brought with them "honey yielding reeds," which helped expand sugar and sugarcane farming. In 500 B.C., people in India developed a method for creating sugar crystals. The name "candy" originates from the native language, where these crystals were known as "khanda" (). Sugarcane was only grown in India until the 18th century. Even though sugar was considered a delicacy and a costly spice in Europe until the 18th century, a small group of businesspeople started trading it. In the 18th century, sugar's popularity exploded throughout Europe, and by the 19th century, it had become a global staple. Like cotton fields, sugarcane plantations prompted massive, involuntary migrations of people in the 19th and 20th centuries, this time from Africa and India in the millions.

2. Materials and Methodology

For the purpose of assessing the development of barley's area, production, and yield, compound growth rates were examined by fitting a time series of data into the following exponential function:

$$Y = ab^t \quad \dots (1)$$

Where,

Grain, Pulse, Oilseed, Tea, Coffee, and Cashew Nut Index Number (Y), Time (t) in Years (x), a (intercept), b (regression coefficient), c (coefficient of determination).

In logarithmic form, equation (1) reads as follows:

$$\log y = \log a + t \log b \quad \dots (2)$$

$$\log y = A + B t \quad \dots (3)$$

Where,

$$A=\log a; B=\log b$$

The annualized rate of expansion (r) was calculated as:

$$r = (\text{Antilog of } b - 1) \times 100 \quad \dots(4)$$

2.1 Cuddy-DellaValle Index

A de-trended yearly price and the direction of the instability may be found using the Cuddy Della Valle Index (Cuddy and Valle, 1978). Hence, it is a more accurate indicator of agricultural production, output, and volatility. If this indicator is low, then market volatility is low, and vice versa. A more accurate CV may be calculated using the Cuddy-Della Valle index, which is calculated as follows: Cuddy Della Valle Instability Index (percent) = agricultural commodity exports.

In order to achieve this goal, we will be using export and import data from a variety of public sources covering the period 2000-2019. Revealed Comparative Advantage uses a variety of statistical methods, including growth rates, to

$$CV=\text{coefficient of Variation}(\%)$$

$$\underline{R}^2=\text{adjusted coefficient of determination} \dots(5)$$

3. Results and Discussion

3.1 Agro-Export And -Import

As of the fiscal year 2000-01, India's agricultural exports were valued at Rs. 28,657 crores. It rose steadily from 2009–10, when it was at '84,444 crores, to 2018–19, when it was at '2, 74,571 crores, a total that includes a modest fall of 9 and 10 percent in 2014–15 and 2015–16. The value of agricultural exports increased dramatically from the previous decade (2000-2010, averaging '51472 crores) to the following (2011-2019), averaging '221520 crores. The index values for agricultural exports showed a multiple-by-ten rise; the compound average growth rate was 15.72% for the research period (Table 1). According to Suresh and Mathur (2016), exports have been growing at a rapid pace.

Table1: India's Agriculture Product Exports, Imports, and Trade Balance

Year	Agricultural Exports	Agricultural Imports	Balance of Trade
2011-12	182801	70165	112637
2012-13	227193	95719	131474
2013-14	262779	85727	177051
2014-15	239681	121319	118362
2015-16	215396	140289	75107

2016-17	226652	164727	61925
2017-18	251564	152095	99469
2018-19	274571	137019	137552
2019-20	296582	189544	195862
2020-21	312536	253655	201235

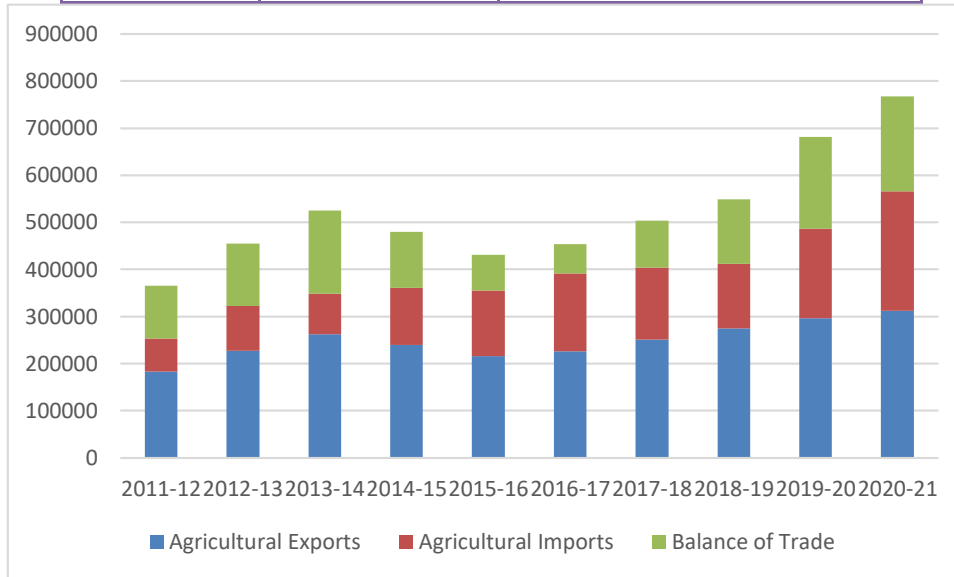


Fig no 2.India's Agriculture Product Exports, Imports, and Trade Balance

In 2011-12 to 2020-21, India spent a total of 12,086 crores on imports of agricultural goods. From 2011-12, when it fell by approximately 30 and 2 percent respectively, to its current level of 1,37,019 crores in 2018-2019, it has increased every year without interruption. In 2011-12, it was 54,365 crores. There has been a downward trend in agricultural imports during the last five years (2011-12, 2013-14, 2017-18, and 2020-21), and the growth of agricultural imports is negative. A decade ago, the average value of agricultural imports was ₹23535 crores per year, but in the next decade, that figure increased to ₹113126 crores, a fivefold rise. The agricultural import index shows a 10-11-fold rise, with a compound average growth rate of 16.84% for the research period.

3.2 Agriculture Product Trade Balance

For the period from 2011-2012 to 2021-22, exports have been more than imports each year. The trade surplus continued. So, throughout the analysis period, agricultural goods had a surplus in the trade balance. With a few years as the exception, the significance of the trade surplus is on the rise. The average annual increase during the last decade was 2.9%, from Rs. 201235 crore in 2021-22 to Rs. 112637 crore in 2011-2012. There was an upward trend in the trade balance every year except for 2015-16 and 2016-17. According to Sheeba and Reena's (2019) research, India has a positive trade balance due to its surplus in the export and purchase of agricultural products. The study period's surplus trade balance demonstrates a promising export possibility for agricultural products, as well as excess production of a select number of commodities (Table 1).

3.3 Distribution of Agriculture Imports among overall Imports And Its Trends

The percentage of total exports that was made up of agricultural products from 2011-12 to 2021-22. As compared to total exports, agricultural exports made up 14.23 percent of those in 2000-01. In 2009-10, it began a steady decline that brought it to 9.99 percent. This decade saw an average market share of 11.67 percent. Nevertheless, agricultural exports increased from 10.10 percent in the previous year to 11.39 percent in 2006-07, breaking a downward trend that persisted throughout the decade. As C. Paramasivan and P. Pasupathi noted, the proportion of exports that are made up of agricultural products and their ancillary services is on the rise. This percentage has ranged from a peak of 14.23% in 2000-01 to a low of 9.64% in 2008-09. In 2010–2011, agricultural exports accounted for 9.94 percent of overall exports.

The rate went increased from the previous year and to 13.90% in the 2012-2013 fiscal year. The percentage, however, has been steadily falling and was just 11.90% in 2018-2019. The ten-year average market share was 12.48%. Only in 2011–12 and 2012–13 did agricultural exports show any kind of growth. 2012–13 had the greatest percentage at 13.90%, while 2010–11 saw the lowest percentage at 9.94%. We calculated a CAGR of 15.72 for agricultural exports and 15.71 for overall exports for the research period. Proportion of Total Imports Consisting of Agriculture Products: In 2000-2001, agricultural imports accounted for 5.29 percent of overall imports. It went up to 3.99 percent in 2009-2010 after fluctuating throughout the decade. This decade saw an average market share of 4.20 percent. In 2001–02, 2003–04, and 2009–10, agricultural imports rose by a little margin each year. One of, if not the, highest

Table2: Share of Agricultural Exports and Imports to Total Exports and Imports in India(crores)

Year	Agricultura l Export	TotalExp orts	%	AgriculturalI mport	TotalIm ports	%
2011-12	182801	1465959	12.47	70165	2345463	2.99
2012-13	227193	1634318	13.90	95719	2669162	3.59
2013-14	262779	1905011	13.79	85727	2715434	3.16
2014-15	239681	1896445	12.64	121319	2737087	4.43
2015-16	215396	1716384	12.55	140289	2490306	5.63
2016-17	226652	1849434	12.26	164727	2577675	6.39
2017-18	251564	1956515	12.86	152095	3001029	5.07
2018-19	274571	2307726	11.90	137019	3594675	3.81
2019-20	289324	256987	19.63	215452	4012253	7.6
2020-21	312568	29683	22.36	256368	423658	8.6

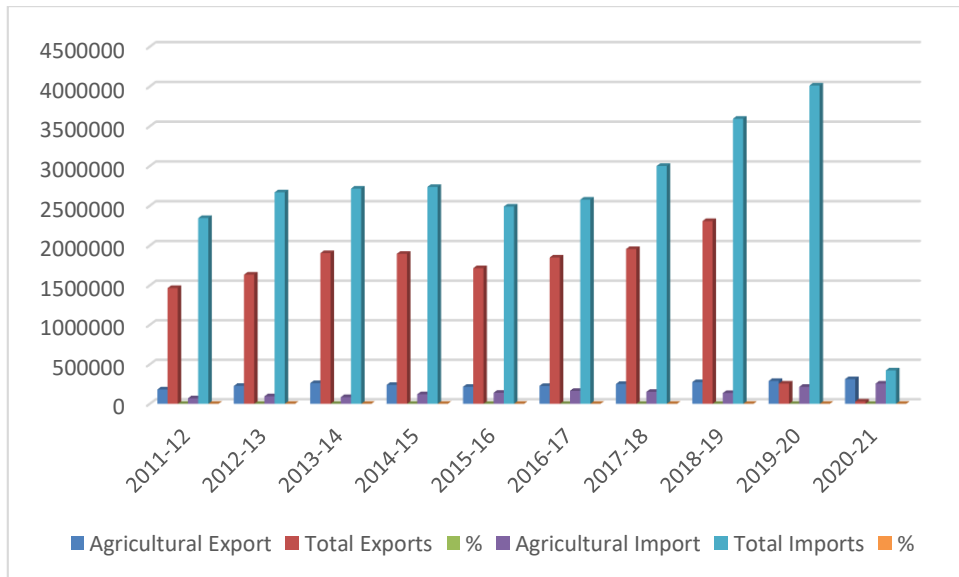


Fig no.3 Share of Agricultural Exports and Imports to Total Exports and Imports in India (₹ crores)

Share in 2011-2012 at 2.99 and the lowest at 8.6 in 2021-22. In 2012-13, agricultural imports accounted for 3.56 percent of all imports in the following decade. In 2018-2019, it peaked at 3.81 percent after displaying an erratic upward pattern.

There was an average 4.23 percent share over this time. Apart from the years 2012-2013, 2014-2015, 2015-2016, and 2016-2017, agricultural imports have decreased during the last few decades. The greatest percentage was 6.39% in 2016–17, while the lowest percentage was 2.91% in 2011–12. As compared to the country's total imports, agricultural imports had a compound annual growth rate of 16.84 percent while overall imports grew at a rate of 17.33 percent throughout the research period (Table 2).

3.4 An Overview of the Export and Import Trends In the Agricultural Sector

There was an average yearly rise of 6847 crores in agricultural exports between 2011-12 and 2021-22 an additional 13399 crores between 2010 and 2018. This number has considerable statistical impact at the 5% level. There has been a linear trend in agricultural exports throughout this time period, as shown by the modified R2 value, which ranges between 0.917 and 0.501. The first ten years had an increase of 14.31% in agricultural exports, while the years between 2010-2011 and 2018-2019 saw an increase of 7.44% annually. In India, agricultural production is growing at a pace just ahead of the country's population. This calls for a pick-up in the agricultural sector's already rapid expansion. There was an average yearly growth of Rs. 2,962 crores in agricultural imports between 2000-01 and 2009-10, and an additional increase of Rs. 1,303,6 crores between 2010-11 and 2018-19. This value has statistical merit at the 5% level.

Linearity may be inferred from the modified R2 value of 0.522, which is 0.804. This indicates that agricultural imports have followed a consistent pattern during this time period. Agricultural imports increased between 2010-11 and 2018-19, at an annualized rate of between 11.89 and 13.97 percent. In 2000, India earned \$4,950,000,000 from its agricultural exports. It rose steadily throughout the years and to a peak of \$4,248,000,000 in 2013. After this, agricultural exports followed a declining pattern over time, peaking at \$26489 million in 2016 before rising to \$30423 million the following year. Total agricultural exports increased by 14.02 percent. Cereals, lentils, oilseeds, tea, coffee, and cashew nuts each had growth rates of 14.94 percent, 6.17 percent, 15.33 percent, 5.49 percent, 10.03 percent, and 3.21 percent, respectively. (Table 3).

Table3: Commodity wise export of agricultural commodities (million\$)

Year	Cereals	Pulses	Oilseed	Tea	Coffee	Cashewnut	Totalagri. exp	ortTotalE xport
2011-12	5414.58	228.94	1632.58	867.14	682.47	1.05	30291	302905
2012-13	8810.51	190.86	1528.00	685.60	612.55	4.14	38166	296808
2013-14	11790.51	358.69	1598.70	819.63	571.02	4.29	42490	313235
2014-15	10196.49	208.41	1836.19	656.21	540.18	22.22	36179	322694

2015-16	6969.98	209.18	1407.0 3	677.9 3	540.74	10.94	28657	267444
2016-17	5647.53	217.30	1349.9 0	661.7 2	549.87	11.95	26489	264144
2017-18	7425.91	198.14	1372.6 6	768.1 9	638.41	16.34	30424	299275
2018-19	8795.6	236.45	1365.8 9	896.5 2	748.63	17.89	33562	326886
2019-20	9458.9	859.74	1896.4 5	948.2 6	849.56	25.16	35968	369785
2020-21	9866.3	123.45	2136.5 6	1026. 3	915.3	14.89	36459	402356
2021-22	11489.3	263.59	2263.2 3	1123. 5	1023.2	36.23	40235	425693

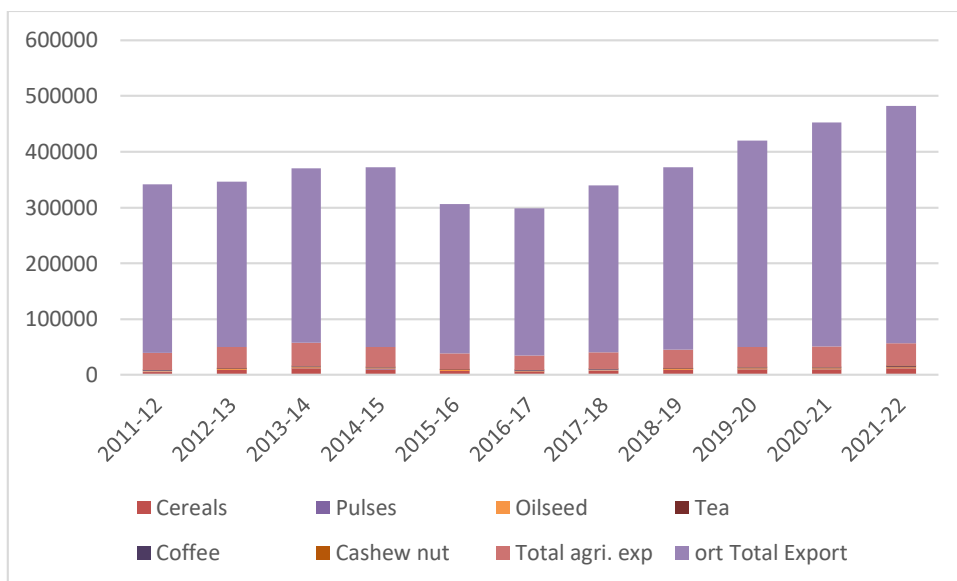


Fig. 4: India's Competitive Export Advantage in Agriculture

4. CONCLUSION

India is one of the world's most populous countries, and more than half of its citizens work in agriculture. The agricultural sector is a major contributor to national GDP. As many industries are dependent on the agricultural sector, this will benefit both the educated and the illiterate. Basmati rice, Non-basmati rice, Oil meals, Guar gum meals, Cotton, Spices, and a few more items are the main exportable agro-based products, and they obtain continual markets from other nations. India's agricultural exports have a great deal of potential and demand on the global market. As a result, we may anticipate increased exports of

Indian agricultural products, especially rice and spices, in the years ahead. Agricultural commodities have maintained a trade surplus during the investigation period, continuing an upward trend. From 2000-2001 to 2009-2010, it increased to '30079 crores, and from 2010-2011 to 2018-2019, it jumped to '137552 crores, a gain of '61973 crores. During the time period under review, the proportion of agricultural imports went from 4.20 percent to 4.23 percent, while the proportion of agricultural exports rose from 11.67 percent to 12.48 percent.

As a result of low commodity prices and over-supply on the international market, India's percentage of agricultural imports in total imports has increased somewhat, while the country's share of agricultural exports in total exports has increased steadily. Over 1.70 MT and tons of certified organic goods (oilseeds, sugar cane, cereals and millets, cotton, pulses, medicinal plants, tea fruits, herbs, dried fruits, vegetables, and coffee) were developed in 2017-18, generating around \$ 515.44 million. India's food processing sector is dominated by foreign direct investment (FDI), joint ventures, and international cooperation. It is estimated that India earned '27257.69 crore (US\$ 3.81 billion) from the export of processed food in 2017. U.S. \$ 38.49 billion was earned by exporting food and agricultural goods in 2018-2019. Top exports during that time frame were basmati rice (US\$ 4.72 billion), buffalo meat (US\$ 3.60 billion), and non-basmati rice (US\$ 3.04 billion). Total agricultural exports increased at a CAGR of 15.72 percent from 2000 through 2018. India produces a large amount of grains, ranking second only to China.

Exports of grains totaled \$8 billion in 2017–18, with rice accounting for a significant portion of that total (including basmati and non-basmati varieties). Over the same time period, exports of fruits and vegetables were valued at \$1.4 billion US dollars and exports of spices at \$3.1 billion US dollars. In 2017, exports of both tea and coffee achieved all-time highs: 240.68 million kilograms for tea and 3.95 lakh metric tons for coffee. The Coronavirus has spread and caused worry about public health, but it has also had a trickle-down effect on the global economy. China is now seen as a threat, and it appears that consumer preferences for international trade are shifting in favor of countries like India, which have a huge comparative advantage in agricultural production. COVID-19 and the broader market crisis in these economies have also had significant knock-on effects on a number of agricultural commodities where the United States and the European Union were traditionally the most competitive suppliers. As a whole, exports from India are seen as having great potential in comparison to international competitors.

REFERENCES

- 1) Anonymous.2020.WorldEconomicSituationandProspects,UN DESA.
- 2) Bhatia,J.K.andNimbrayan,P.K.2020.PocketBookofHaryanaAgriculturalStatistics.IDPNAHEP,CCSHAU, Hisar.
- 3) Cuddy,J.D.A.andValle,P.A.D.1978.Measuringtheinstabilityoftimeseries data.*Oxford B. Econ Stat.*,**40**: 53-78.

- 4) Kumar, D. and Dadhich, V. 2013. Growth and Performance of India's Agriculture Export. *Int. J. 360 Manag. Rev.*, **1**(1):2320-7132.
- 5) Paramasivan, C. and Pasupathi, R. 2017. A study on growth and performance of Indian agro based exports, *Int. J. Human. Soc. Sci. Res.*, **3**(9): 01-05.
- 6) Ramesh, G.B., Lokesha, H., Jagrati B Deshmanya, Vijaya, B., Wali, M.G. Patil and Prabhuling, T. 2017. Growth trends in Export and Import of Horticultural Crops from India and Karnataka: An Economic analysis. *Econ. Aff.*, **62**(3):367-371.
- 7) Saxena, M. and Nath, P.R. 2012. The Impact of Globalization on India's Export and Import of Agricultural Commodities. *Econ. Aff.*, **57**(2): 183-182.
- 8) Sheeba, J. and Reena, R. 2019. Export and Import Performance of Agriculture in India, *Int. J. Innov. Tech. Explor. Engg.*, **8**(12): 502-504.
- 9) Shinoj, P. and Mathurb, V.C. 2008. Comparative Advantage of India in Agricultural Exports vis-à-vis Asia: A Post-reforms Analysis, *Agric. Econ. Res. Rev.*, **21**:60-66.
- 10) Suresh, A. and Mathur, V.C. 2016. Export of agricultural commodities from India: Performance and prospects, *Indian J. Agric. Sci.*, **86**(7): 876-83.