

India's International Trade of Four Specific commodities in the Recent Past Some Insights

Preface

The study uses trade indicators to analyse merchandise export and import data in a way that should be useful for the purpose of policy. The indicators provide a glimpse of the trade patterns of the world and the performance of India in comparison to various other countries. They have been used in the case of India's exports of **Wheat Flour & Ground-Nuts, not roasted** and imports of **Air-Conditioning Machine and Electric Filament** to indicate the possible directions policy may take.

The data used in this study has been sourced from the Export Import Data Bank of the DGCI&S, Department of Commerce, and Government of India and from the United Nations Comtrade Database. Introduction notes of each commodities has been sourced from the various sights –viz Wikipedia, Britannica, The Economic Times etc.

Computations are based on data at ITC-HS four-digit level (ITC-HS Code-1101 & 1202 for export and 8415 & 8539 for import) and the latest finalized data available on the UN Comtrade Database up to year 2021 and on the DGCI&S Database up to Mach '2023. So, trends from 2018 to 2021 have been shown when we extract the data from UN Comtrade and from 2019 to 2022 have been shown when we extract the data from DGCIS Data base.

In this report, we will see various analysis and aspects of India's Precious as well as International export trade of Wheat Flour & Wheat Flour & Ground-Nuts, not roasted and imports of Air-conditioning Machine and Electric Filament. We will use both the 4 digit Commodity codes, for our analysis, as appropriate.

Trends in India's as well as International Trade i.e. Exports and Imports of above four Commodities are given below in different tables :

- Table 1 : India's top 10 Export destination of Wheat Flour with their shares in percentage.
- Table 2 : World's top 10 Exporters of Wheat Flour with their shares in percentage.
- Table 3 : World's top 10 Importers of Wheat Flour with their shares in percentage.
- Annex- I : Top 3 sources of Wheat Flour of World's top 3 Importers.
- Table 4 : India's top 10 Export destination of Ground-Nuts with their shares in percentage.
- Table 5 : World's top 10 Exporters of Ground-Nuts with their shares in percentage.
- Table 6 : World's top 10 Importers of Ground-Nuts with their shares in percentage.
- Annex-II : Top 3 sources of Ground-Nuts of World's top 3 Importers.
- Table 7 : India's top10 Sources of Air-Conditioning Machine with their shares in percentage.
- Table 8 : World's top 10 Importers Air-Conditioning Machine with their shares in percentage.
- Table 9 : India's top 10 Sources of Electric Filament with their shares in percentage.
- Table 10 : World's top 10 Importers of Electric Filament with their shares in percentage.

EXPORT Wheat Flour

Wheat flour is a powder made from the grinding of wheat used for human consumption. Wheat varieties are called "soft" or "weak" if gluten content is low, and are called "hard" or "strong" if they have high gluten content. Hard flour, or bread flour, is high in gluten, with 12% to 14% gluten content, and its dough has elastic toughness that holds its shape well once baked. Soft flour is comparatively low in gluten and thus results in a loaf with a finer, crumbly texture. Soft flour is usually divided into cake flour, which is the lowest in gluten, and pastry flour, which has slightly more gluten than cake flour.

In terms of the parts of the grain (the grass fruit) used in flour—the endosperm or protein/starchy part, the germ or protein/fat/vitamin-rich part, and the bran or fiber part—there are three general types of flour. White flour is made from the endosperm only. Brown flour includes some of the grain's germ and bran, while whole grain or wholemeal flour is made from the entire grain, including the bran, endosperm, and germ. Germ flour is made from the endosperm and germ, excluding the bran.

To produce refined (*white*) wheat flour, grain is usually tempered, i.e. moisture added to the grain, before milling, to optimize milling efficiency. This softens the starchy "endosperm" portion of the wheat kernel, which will be separated out in the milling process to produce what is known to consumers as white flour. The addition of moisture also stiffens the bran and ultimately reduces the energy input required to shatter the kernel, while at the same time avoiding the shattering of bran and germ particles to be separated out in this milling process by sieving or sifting.

The endosperm portion of the kernel makes up about 80% of the volume and is desirable because the products made from this white flour are often considered to have milder flavor, smoother texture, and, in the case of bread, greater volume. The balance of the kernel is composed of the bran and the germ which tend to be coarser. With the invention of the roller milling system in the late 19th century, the bran and the germ were able to be removed, dramatically improving the appeal of baked products to the public.

The moistened grain is first passed through the series of break rollers, then sieved to separate out the fine particles that make up white flour. The balance are intermediate particles of endosperm and coarse particles of bran and germ. The middling then makes multiple passes through the reduction rolls, and is again sieved after each pass to maximize extraction of white flour from the endosperm, while removing coarser bran and germ particles.

To produce whole wheat flour, 100% of the bran and germ must be reintroduced to the white flour that the roller milling system was originally designed to separate it from. Therefore, these elements are first ground on another mill. These finer bran and germ fractions are then reintroduced to the endosperm to produce whole wheat flour made of 100% of the kernel of wheat.

Wheat flour is available in many varieties; the categorization is regional, and the same name may have several different regional meanings. Indian flours are generally categorized by how much of the grain is stripped away.

- Wheat powder/flour – 'whole grain' (mixture of germ, endosperm and bran)
- Atta flour – mixture of endosperm and bran
- Maida flour – endosperm, bleached; a very white flour, similar to the American bleached flour
- Sooji/rava – coarse-ground endosperm.

Wheat Flour is an essential ingredient for most home chefs. You can use it to make bread, baked goods, pancakes, and more. Additionally, it can be used to thicken sauces or create a roux. Flour is also used for coating foods like fried chicken or cutlets. Finally, flour is a key ingredient in making pasta.

These are broadly classified under **H.S. Code-1101**

Table - 1

India's Top 10 destination of Wheat Flour (H.S Code-1101)

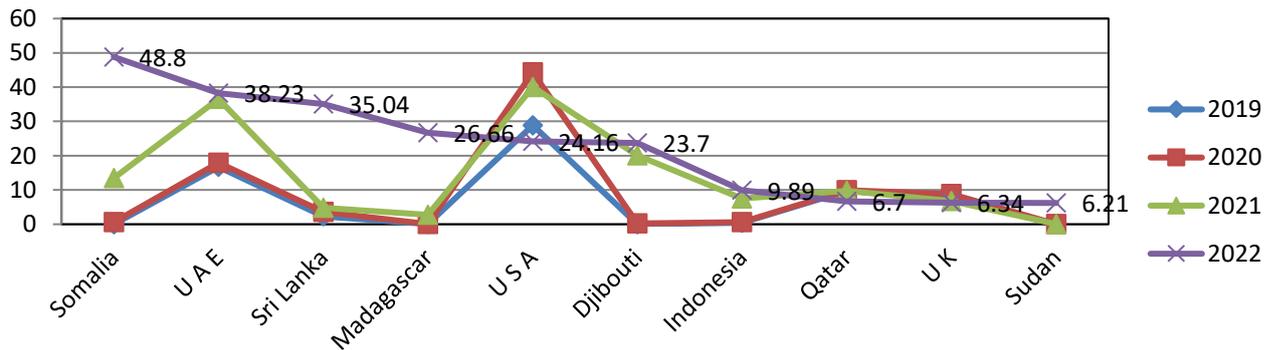
Rank	Countries	2019		2020		2021		2022	
		Value (million\$)	Share (%)						
1.	Somalia	0.00	0.00	0.60	0.43	13.49	7.35	48.80	17.53
2.	U A E	16.72	15.71	17.96	12.94	36.57	19.92	38.23	13.73
3.	Sri Lanka	2.29	2.15	3.59	2.58	4.76	2.59	35.04	12.59
4.	Madagascar	0.03	0.03	0.07	0.05	2.71	1.47	26.66	9.58
5.	U S A	28.87	27.13	44.30	31.91	40.03	21.80	24.16	8.68
6.	Djibouti	0.00	0.00	0.27	0.20	20.12	10.96	23.70	8.51
7.	Indonesia	0.46	0.43	0.62	0.44	7.52	4.10	9.89	3.55
8.	Qatar	9.74	9.15	9.90	7.13	9.78	5.33	6.70	2.41
9.	U K	7.37	6.93	8.82	6.35	6.73	3.66	6.34	2.28
10.	Sudan	0.06	0.05	0.08	0.06	0.05	0.03	6.21	2.23
	Others	40.90	38.43	52.64	37.91	41.86	22.80	52.72	18.93
	Total	106.43	100	138.85	100	183.61	100	278.45	100

Source: DGCI&S.

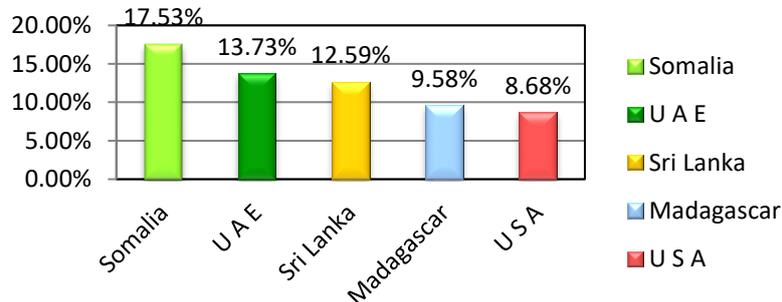
Note : India's Export including re-export

Leading importers of Wheat Flour from India for 2019-2022 (Values in million US \$)

Data label given on the basis of 2022



India's top 5 destinations of Wheat Flour by percentage India in 2022:



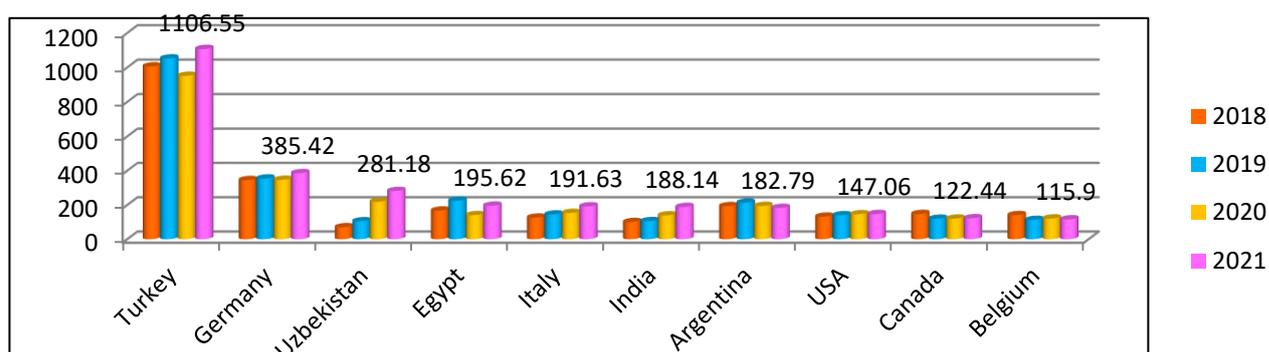
In the year 2022, India has exported Wheat Flour worth of US \$ 278.45 million. Between 2021 and 2022, India's Wheat Flour export volume has increased to \$ 278.45 Million in 2022 from US \$ 183.61 Million in 2021, which was accounted 51.65% increased. Among the top countries, Somalia market share of the total Wheat Flour export shipments from India was 17.53 %. Followed by U A E with the Wheat Flour shipment value being US \$ 38.23 Million which was accounted 13.73% and Sri Lanka with 12.59 % share of India's total export in 2022. It is noticeable during the review period USA was the topmost destination of Indian wheat flour up to 2021. The top 10 countries in total shared the share of 81.07% of the Wheat Flour export value from India in the same year.

Table-2
World's Top 10 exporter of Wheat Flour (H.S Code-1101)

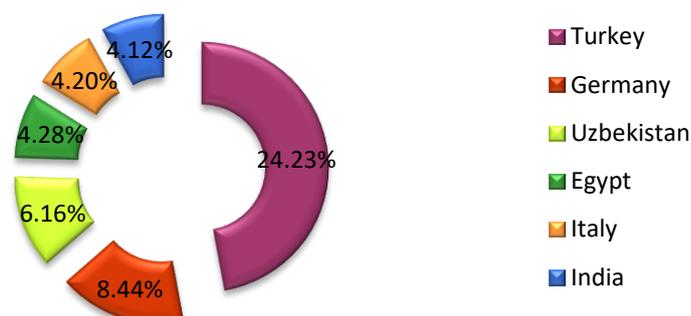
Rank	Countries	2018		2019		2020		2021	
		Value (million \$)	Share (%)	Value (million\$)	Share (%)	Value (million\$)	Share (%)	Value (million\$)	Share (%)
1.	Turkey	1005.77	20.37	1051.91	20.59	951.07	19.81	1106.55	24.23
2.	Germany	344.94	6.99	354.11	6.93	346.72	7.22	385.42	8.44
3.	Uzbekistan	70.09	1.42	104.57	2.05	218.61	4.55	281.18	6.16
4.	Egypt	167.16	3.39	225.00	4.40	140.49	2.93	195.62	4.28
5.	Italy	126.12	2.55	144.23	2.82	153.32	3.19	191.63	4.20
6.	India	100.20	2.03	105.42	2.06	138.98	2.90	188.14	4.12
7.	Argentina	192.98	3.91	213.64	4.18	194.07	4.04	182.79	4.00
8.	USA	131.53	2.66	139.95	2.74	145.71	3.04	147.06	3.22
9.	Canada	147.18	2.98	119.35	2.34	120.23	2.50	122.44	2.68
10.	Belgium	140.56	2.85	112.58	2.20	120.81	2.52	115.90	2.54
	Others	2511.71	50.86	2538.13	49.68	2269.79	47.29	1649.35	36.12
	Total	4938.24	100	5108.88	100	4799.80	100	4566.07	100

Source: UN Comtrade

Leading exporters of Wheat Flour of world from 2018 to 2021 (Values in million USD)
 Data label given on the basis of 2021



Country wise world's leading exporter of Wheat Flour by percentage in 2021



Global sales for Wheat Flour exported totaled US\$ 4.56 billion during 2021. That dollar amount reflects a 8.33% decrease from 2018 when flour exports were worth US \$ 4.94 billion. From 2020 to 2021, the value of globally exported flours lined via a 5.26% downturn. From a country perspective, US \$ 1.10 billion or 24.23 % worth of Wheat Flour exports worldwide during 2021 originated from Turkey. In second and third place suppliers were Germany (8.44%) and Uzbekistan (6.16%) in that year. **India** has exported US \$ 188.14 million and obtained the 6th rank in the world export of Wheat Flour in 2021.

Table-3

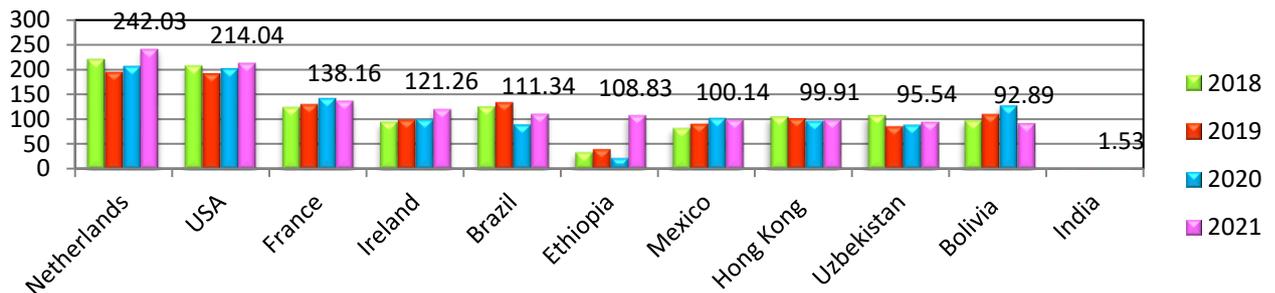
World's top 10 Importers of Wheat Flour (H.S Code-1101)

Rank	Countries	2018		2019		2020		2021	
		Value (million\$)	Share (%)						
1.	Netherlands	220.33	5.45	195.25	5.09	206.53	6.72	242.03	8.24
2.	USA	207.36	5.13	192.74	5.03	201.84	6.57	214.04	7.29
3.	France	124.56	3.08	130.54	3.41	142.30	4.63	138.16	4.70
4.	Ireland	95.06	2.35	100.09	2.61	99.79	3.25	121.26	4.13
5.	Brazil	125.47	3.11	134.35	3.51	89.67	2.92	111.34	3.79
6.	Ethiopia	34.13	0.84	40.48	1.06	22.24	0.72	108.83	3.71
7.	Mexico	82.72	2.05	91.65	2.39	102.48	3.33	100.14	3.41
8.	Hong Kong	105.68	2.62	102.22	2.67	96.66	3.14	99.91	3.40
9.	Uzbekistan	108.12	2.68	86.21	2.25	88.60	2.88	95.54	3.25
10.	Bolivia	97.71	2.42	111.06	2.90	127.35	4.14	92.89	3.16
105	India	1.51	0.04	2.01	0.05	1.12	0.04	1.53	0.05
	Others	2837.50	70.23	2646.22	69.04	1895.16	61.66	1611.38	54.86
	Total	4040.14	100	3832.81	100	3073.72	100	2937.04	100

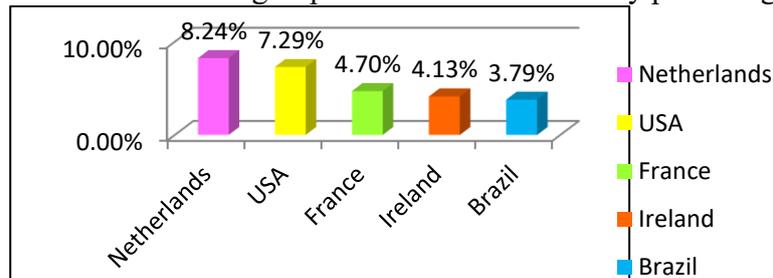
Source : UN Comtrade

Leading Wheat Flour importers of world from 2018 to 2021 (Values in million USD)

Data label given on the basis of 2021



Country wise world's leading importers of Wheat Flour by percentage in 2021

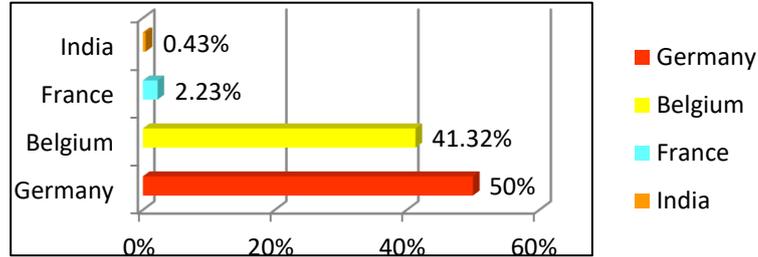


Globally, Wheat Flour imports during 2021 cost a total US\$58.6 billion in international purchases. The overall value of imported Wheat Flour for all buying countries decreased by an average 11.66% since 2018 when the world's tally for wheat purchases was US \$ 4.40 billion. From 2020 to 2021, the worldwide bill for imported Wheat Flour downturned by 4.77%. By value, the 5 biggest buyers of Wheat Flour were Netherlands, USA, France, Ireland and Brazil, purchased more than one quarter (18.15%) of overall Wheat Flour imports bought in 2021. In the same year Wheat Flour import to **India** was only US \$ 1.53 million, which was accounted 0.05% share of world's total import and holds the 105th rank in the world.

Annexure-1

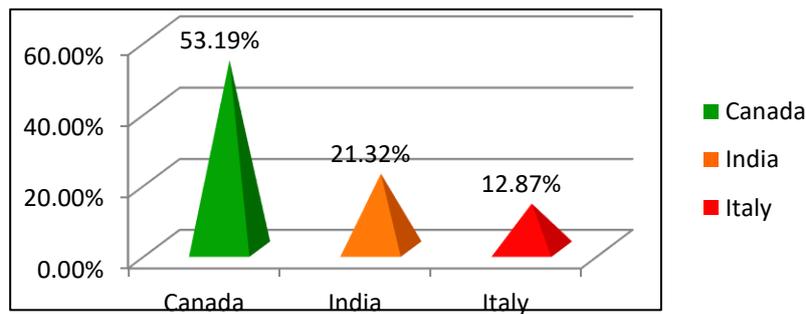
Major sources of world's top three importers of Wheat Flour (H.S Code-1101)

Top 3 Sources of Wheat Flour to Netherlands in 2021 by percentage:



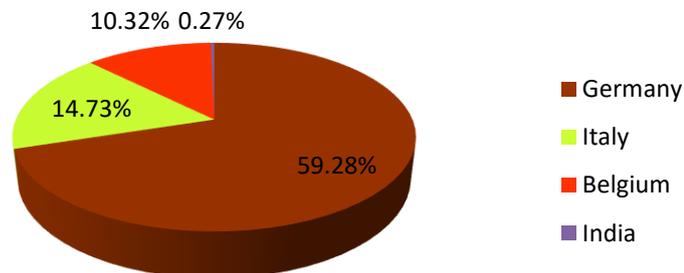
In 2021, Netherlands imported 50% share of Wheat Flour from Germany. Belgium was the 2nd major source country of Wheat Flour to Netherlands, exported 41.32% share of Netherland's total import of Wheat Flour. It was distantly followed by France. France exported 2.23% share of Wheat Flour to Netherlands in that year. In 2021 India exported only 0.45% of Wheat Flour to Netherlands. **.Source : UN Comtrade)**

ii) Top 3 Sources of Wheat Flour to USA in 2021 by percentage:



In 2020 USA imports most of its requirements of Artificial Waxes from Germany with a share of 20.70% ,2nd and 3rd largest exporter of the commodity to USA were Canada with a share of 14.33%and Malaysia with a share of 8.38% . In that year USA imported Artificial Waxes from **India** with a share of 8.38%.**.Source: UN Comtrade)**

iii) Top 3 Sources of Wheat Flour to France in 2021 by percentage:



France's 3 major source countries of Wheat Flour in 2021 were Germany (59.28%), Italy (14.73%) and Belgium (10.32%). In that year India's export of Wheat Flour to France was only 0.27% of France's total import. **(Source: UN Comtrade)**

Ground-nut, not roasted

The **Ground – Nut** is a legume crop grown mainly for its edible seeds. It is widely grown in the tropics and subtropics, being important to both small and large commercial producers. It is classified as both a grain legume and, due to its high oil content, an oil crop. World annual production of shelled peanuts was 44 million tonnes in 2016, led by China with 38% of the world total. Atypically among legume crop plants, peanut pods develop underground rather than above ground. With this characteristic in mind, the botanist Carl Linnaeus gave peanuts the specific epithet *hypogaea*, which means "under the earth".

The Ground-Nut belongs to the botanical family Fabaceae (or Leguminosae), commonly known as the legume, bean, or pea family. Like most other legumes, peanuts harbor symbiotic nitrogen-fixing bacteria in root nodules. The capacity to fix nitrogen means peanuts require less nitrogen-containing fertilizer and improve soil fertility, making them valuable in crop rotations.

Ground-Nut are similar in taste and nutritional profile to tree nuts such as walnuts and almonds, and, as a culinary nut, are often served in similar ways in Western cuisines. The botanical definition of a nut is "a fruit whose ovary wall becomes hard at maturity". Using this criterion, the peanut is not a nut. However, peanuts are usually categorized as nuts for culinary purposes and in common English more generally.

The Ground-Nut is an annual herbaceous plant growing 30 to 50 cm (12 to 20 in) tall. As a legume, it belongs to the botanical family Fabaceae, also known as Leguminosae, and commonly known as the legume, bean, or pea family. Like most other legumes, peanuts harbor symbiotic nitrogen-fixing bacteria in their root nodules.

Ground -Nut fruits develop underground, an unusual feature known as geocarpy. After fertilization, a short stalk at the base of the ovary — often termed a gynophore, but which actually appears to be part of the ovary — elongates to form a thread-like structure known as a "peg". This peg grows down into the soil, allowing the fruit to develop underground. These pods, technically called legumes, are 3 to 7 centimetres (1 to 3 in) long, normally containing one to four seeds. The shell of the peanut fruit consists primarily mesocarp with several large veins traversing its length.

Ground-Nut is rich in oil and protein and has a high-energy value. it is an important oilseed and food crop.

The Ground - Nut is a native of South America, now generally cultivated throughout India. This was not known in the Old World before the discovery of America. According to Dymock this plant reached India through China. It does not appear to have been cultivated for more than 150 years. This was brought to western India from Africa.

It is native of Brazil. It is widely grown in South India, Maharashtra and Uttar Pradesh. North Gujarat is famous for peanut cultivation. The plant is a bushy or creeping annual with the peculiar habit of ripening its fruit underground. A sandy soil is best for its cultivation. The soil must be friable so that the ripening fruit can be buried, and it must be well fertilized.

China and India together are the world's leading groundnut producers accounting for nearly

60 percent of the production and 52 percent of the crop area. India cultivates about 7.74 million hectares and produces 7.61 million tonnes of groundnut with the productivity level of 991.8 kg ha⁻¹. South Africa is the major producer in Africa, while in Latin America almost one half of the total groundnut produced in that region may be credited to Argentina. Among the developing countries Egypt has the highest productivity and capacity to produce groundnuts.

China and India are not only the largest producers of Ground-Nut but also the largest consumers in the world, following the sharp increasing the consumption, export from China declined steadily. As a result Argentina became the largest exporter of Ground –Nut for the year 2020 and 2021, where as for a brief period of two years 2018 and 2019 India was the top exporter in the world.

These are broadly classified under **H.S. Code-1202**

Table - 4

India's Top 10 destination of Ground-Nut, not roasted (HS Code –1202)

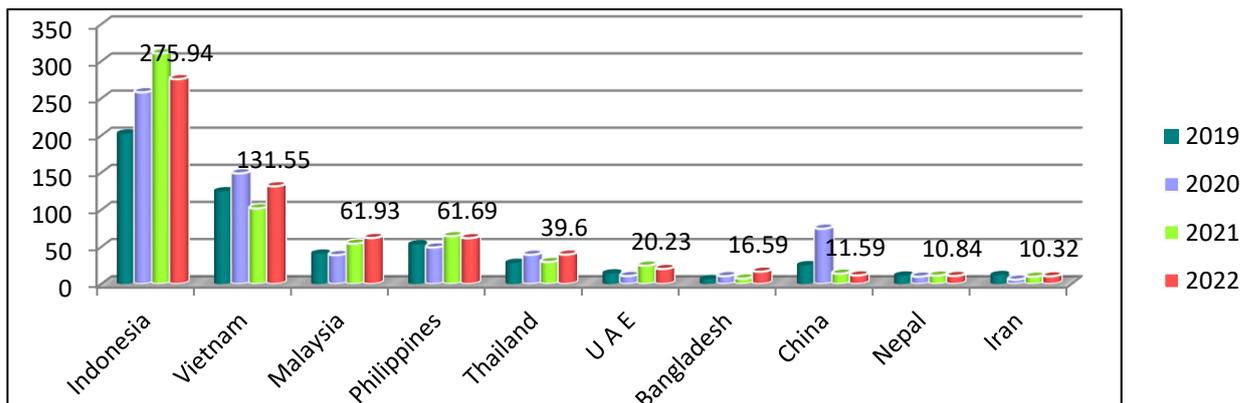
Rank	Countries	2019		2020		2021		2022	
		Value (million\$)	Share (%)						
1.	Indonesia	202.49	32.74	258.29	34.32	310.65	45.16	275.94	39.15
2.	Vietnam	124.70	20.16	149.04	19.81	101.70	14.78	131.55	18.66
3.	Malaysia	40.72	6.58	38.92	5.17	54.21	7.88	61.93	8.79
4.	Philippines	53.14	8.59	49.17	6.53	64.30	9.35	61.69	8.75
5.	Thailand	28.30	4.58	39.33	5.23	29.56	4.30	39.60	5.62
6.	U A E	14.15	2.29	10.75	1.43	24.63	3.58	20.23	2.87
7.	Bangladesh	6.43	1.04	10.57	1.41	7.35	1.07	16.59	2.35
8.	China	25.09	4.06	74.44	9.89	13.87	2.02	11.59	1.64
9.	Nepal	11.21	1.81	9.91	1.32	11.31	1.64	10.84	1.54
10.	Iran	11.87	1.92	5.86	0.78	9.81	1.43	10.32	1.46
	Others	100.37	16.23	106.23	14.12	60.54	8.80	64.57	9.16
	Total	618.48	100	752.50	100	687.93	100	704.85	100

Source: DGCI&S

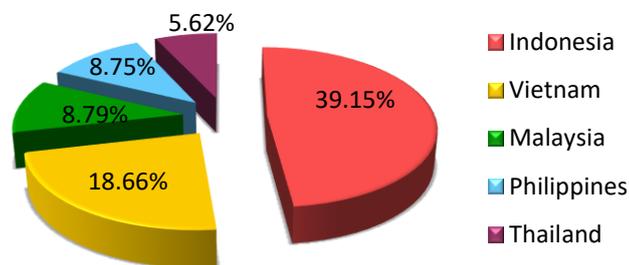
Note : India's Export including re-export

Major destinations of Indian Ground Nut, not roasted from 2019-2022(Values in million \$)

Data label given on the basis of 2022



India's top 5 major destinations of Ground-Nut, not roasted by percentage in 2022:



In the year 2022, India has exported Ground-Nut, not roasted worth of US \$ 704.85 million, which was up by 2.45% from 2021. Indonesia was the largest market for Ground-Nut, not roasted export from India. In 2022, Indonesia imported US \$ 275.94 million worth Ground-Nut, not roasted from India. Which is accounted by 39.15%, followed by Vietnam and Malaysia with 18.66% and 8.79% share of India's total export in 2022 respectively. The top 10 countries in total shared of 90.84% of the Ground-Nut, not roasted export value from India.

Table - 5

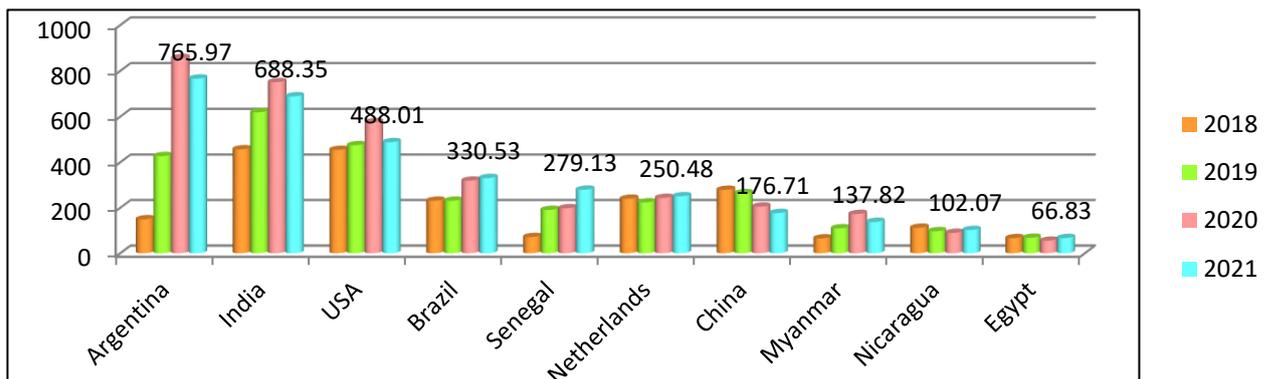
World's Top 10 exporters of Ground-Nut, not roasted (HS Code –1202)

Rank	Countries	2018		2019		2020		2021	
		Value (million \$)	Share (%)	Value (million\$)	Share (%)	Value (million\$)	Share (%)	Value (million\$)	Share (%)
1.	Argentina	149.24	6.15	426.95	14.21	855.39	22.57	765.97	21.50
2.	India	456.61	18.81	618.96	20.60	750.37	19.80	688.35	19.32
3.	USA	454.09	18.70	474.78	15.80	575.35	15.18	488.01	13.70
4.	Brazil	230.71	9.50	230.64	7.67	318.90	8.42	330.53	9.28
5.	Senegal	71.17	2.93	190.44	6.34	197.58	5.21	279.13	7.83
6.	Netherlands	239.37	9.86	223.51	7.44	243.29	6.42	250.48	7.03
7.	China	278.58	11.47	263.84	8.78	204.85	5.41	176.71	4.96
8.	Myanmar	65.14	2.68	109.51	3.64	172.42	4.55	137.82	3.87
9.	Nicaragua	112.06	4.62	96.80	3.22	89.65	2.37	102.07	2.86
10.	Egypt	66.28	2.73	67.93	2.26	54.86	1.45	66.83	1.88
	Others	304.59	12.55	301.69	10.04	326.66	8.62	277.13	7.78
	Total	2427.85	100	3005.05	100	3789.33	100	3563.04	100

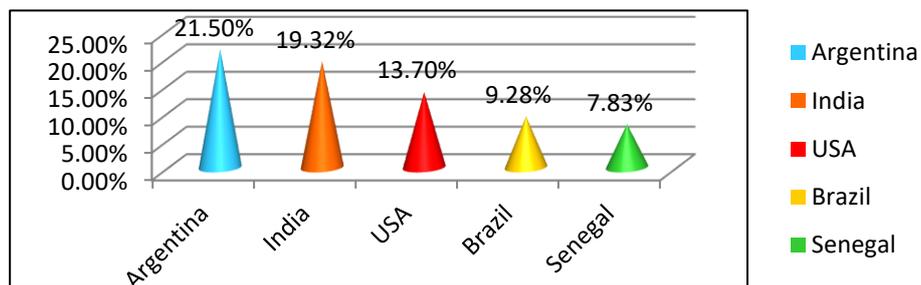
Source: UN Comtrade

Leading Ground-Nut, not roasted exporters of world from 2018 to 2021 (Values in million \$)

Data label given on the basis of 2021



Country wise export trends of Ground – Nut, not roasted by percentage in 2021:



The total global export value of Ground Nuts, Not Roasted Or Otherwise Cooked was US \$ 3.56 Billion in 2021 which was briefly declined by 6.46% from the year 2020. Argentina was the largest exporter of Ground-Nuts, Not Roasted Or Otherwise Cooked in the world in 2021. Argentina exported US \$ 766 Million of 21.50% share of World export of the commodity in that year. **India** became the 2nd largest exporter of it with export worth value of US \$ 688.35 or 19.32% of world export in the same year. Which was followed by USA with the shipment value US \$ 488.01 Million. Here it is noticeable that Argentina became the largest exporter of Ground –Nut for the year 2020 and 2021, where as in the year 2018 and 2019 India was the top exporter in the world.

Table - 6

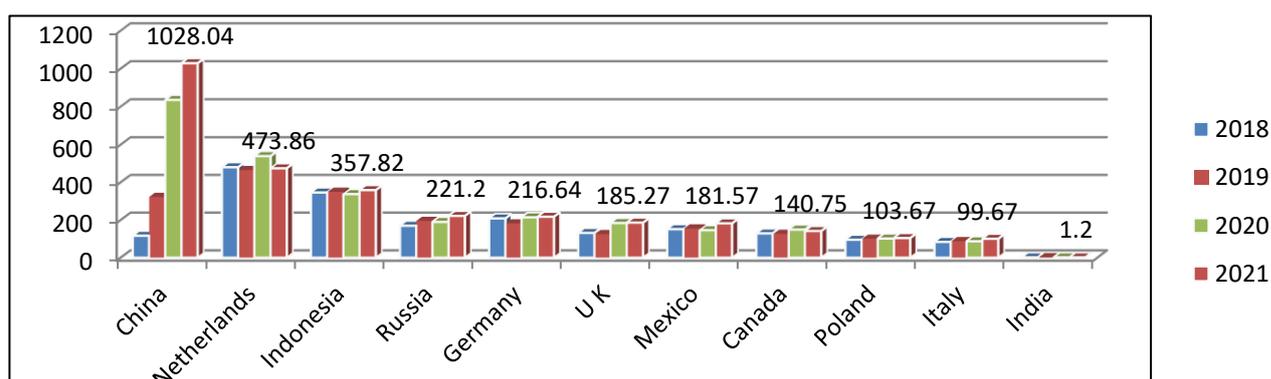
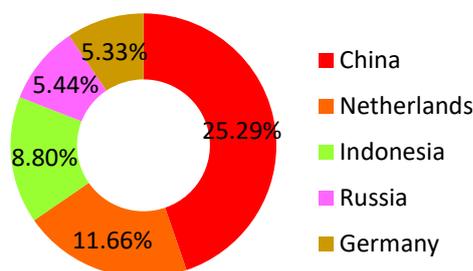
World's Top 10 Importers of Ground-Nut, not roasted (HS Code –1202)

Rank	Countries	2018		2019		2020		2021	
		Value (million \$)	Share (%)	Value (million\$)	Share (%)	Value (million\$)	Share (%)	Value (million\$)	Share (%)
1.	China	115.88	3.86	321.62	9.95	835.01	20.88	1028.04	25.29
2.	Netherlands	479.52	15.98	464.38	14.36	538.37	13.46	473.86	11.66
3.	Indonesia	345.13	11.50	349.26	10.80	336.93	8.43	357.82	8.80
4.	Russia	169.22	5.64	194.86	6.03	189.60	4.74	221.20	5.44
5.	Germany	207.82	6.93	181.51	5.61	213.62	5.34	216.64	5.33
6.	U K	130.80	4.36	124.50	3.85	183.80	4.60	185.27	4.56
7.	Mexico	150.86	5.03	154.65	4.78	145.28	3.63	181.57	4.47
8.	Canada	128.00	4.27	126.07	3.90	148.40	3.71	140.75	3.46
9.	Poland	94.66	3.16	100.02	3.09	101.06	2.53	103.67	2.55
10.	Italy	82.99	2.77	87.02	2.69	86.05	2.15	99.67	2.45
82.	India	1.36	0.05	1.69	0.05	1.17	0.03	1.20	0.03
	Others	1093.97	36.46	1128.31	34.89	1219.47	30.50	1055.40	25.96
	Total	3000.20	100	3233.88	100	3998.76	100	4065.10	100

Source :UNComtrade

Ground-Nut importers of world from 2018 to 2021 (Values in million USD)

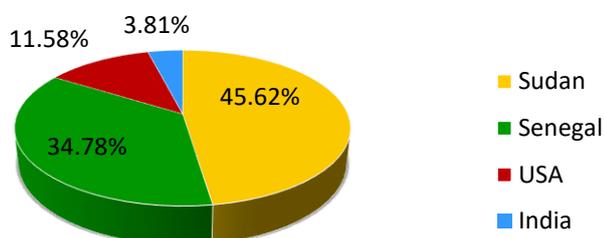
Data label given on the basis of 2021

**Country wise import trends of Ground-Nut, not roasted by percentage in 2021**

World Import of Ground-Nuts, not roasted amounted to US \$ 4.06 Billion in 2021. Overall, it indicated a temperate increase from 2018 to 2021. In 2021 the total imports value increased at 1.75% over the year 2020. Ground-Nuts, not roasted imports attained its maximum level of US \$ 4.06 Billion in 2021. China (US \$ 1.03 B), Netherlands (US \$ 473.86 M) and Indonesia (US \$ 357.82 M) appeared as the countries with the highest levels of imports in 2021, together accounting for 45.75% of global imports. India was the 82nd importing country of global import with share of only 0.03% in 2021.

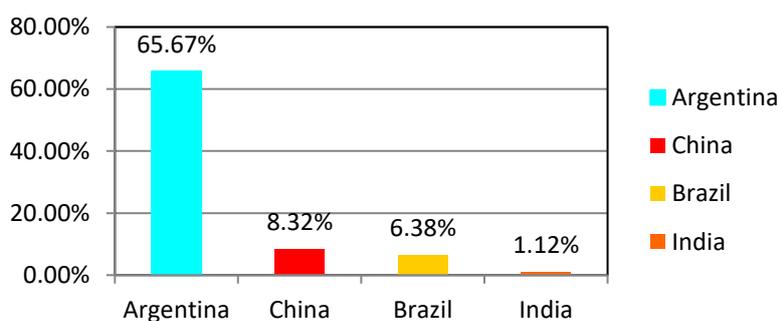
Major sources of world's top three importers of Ground-Nut (HS Code –1202)

(i) Top 3 Sources of Ground-Nut to China in 2021 by percentage:



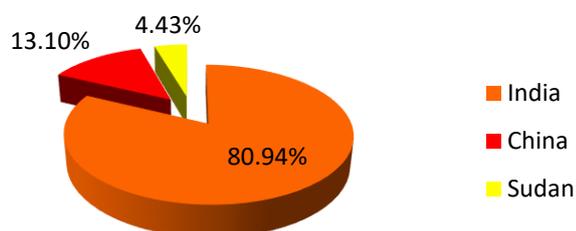
Sudan was the principle source country of Ground-Nut, not roasted to China in 2021. China imported almost 46% of the commodity from Sudan in the same year. Senegal (34.78%) and USA (11.58%) were 2nd and 3rd major source countries of Ground-Nut, not roasted to China. In the same year there **India** exported 3.81% of China's total import value of Ground-Nut, not roasted. (Source: UN Comtrade)

(ii) Top 3 Sources of Ground-Nut to Netherlands in 2021 by percentage:



Germany's 3 major source countries of Ground-Nut, not roasted in 2021 were Argentina (65.67%), China (8.32%) and Brazil (6.38%) in 2021. In the same year **India** exported 1.12% of Netherland's total import of Ground-Nut, not roasted to Netherland. (Source: UN Comtrade)

(iii) Top 3 Sources of Ground-Nut to Indonesia in 2021 by percentage:



Almost 81% of Ground-Nut, not roasted imports of Indonesia comes from **India** in 2021, followed by China (13.10 %) and Sudan (4.43 (Source : UN Comtrade).

IMPORT

Air-conditioning Machine

Air conditioning, often abbreviated as **A/C** or **AC**, is the process of removing heat from an enclosed space to achieve a more comfortable interior environment (sometimes referred to as 'comfort cooling') and in some cases also strictly controlling the humidity of internal air. Air conditioning can be achieved using a mechanical 'air conditioner' or alternatively a variety of other methods, including passive cooling or ventilative cooling. Air conditioning is a member of a family of systems and techniques that provide heating, ventilation, and air conditioning (HVAC). Heat pumps are similar in many ways to air conditioners, but use a reversing valve to allow them to both heat and also cool an enclosed space.

Air conditioners, which typically use vapor-compression refrigeration, range in size from small units used within vehicles or single rooms to massive units that can cool large buildings. Air source heat pumps, which can be used for heating as well as cooling, are becoming increasingly common in cooler climates.

According to the International Energy Agency (IEA), as of 2018, 1.6 billion air conditioning units were installed, which accounted for an estimated 20% of electricity usage in buildings globally with the number expected to grow to 5.6 billion by 2050. The United Nations called for the technology to be made more sustainable to mitigate climate change and for the use of alternatives, like passive cooling, evaporative cooling, selective shading, windcatchers, and better thermal insulation. CFC and HCFC refrigerants such as R-12 and R-22, respectively, used within air conditioners have caused damage to the ozone layer, and HFC refrigerants such as R-410a and R-404a, which were designed to replace CFCs and HCFCs, are instead exacerbating climate change. Both issues happen due to the venting of refrigerant to the atmosphere, such as during repairs. HFO refrigerants, used in some if not most new equipment, solve both issues with an ozone damage potential (ODP) of zero and a much lower global warming potential (GWP) in the single or double digits vs. the three or four digits of HFCs.

Air conditioning dates back to prehistory. Ancient Egyptian buildings used a wide variety of passive air-conditioning techniques. These became widespread from the Iberian Peninsula through North Africa, the Middle East, and Northern India.

Passive techniques remained widespread until the 20th century, when they fell out of fashion, replaced by powered A/C. Using information from engineering studies of traditional buildings, passive techniques are being revived and modified for 21st-century architectural designs. The coefficient of performance (COP) of an air conditioning system is a ratio of useful heating or cooling provided to work required. Higher COPs equate to lower operating costs. The COP usually exceeds 1; however, the exact value is highly dependent on operating conditions, especially absolute temperature and relative temperature between sink and system, and is often graphed or averaged against expected conditions. Air conditioner equipment power in the U.S. is often described in terms of "tons of refrigeration," with each approximately equal to the cooling power of one short ton (2,000 pounds (910 kg) of ice melting in a 24-hour period.

The efficiency of air conditioners is often rated by the seasonal energy efficiency ratio (SEER) which is defined by the Air Conditioning, Heating, and Refrigeration Institute in its 2008 standard AHRI 210/240, Performance Rating of Unitary Air-Conditioning and Air-Source Heat Pump Equipment. Air conditioners allow the building's indoor environment to remain relatively constant largely independent of changes in external weather conditions and internal heat loads. They also allow deep plan buildings to be created and have allowed people to live comfortably in hotter parts of the world.

These are broadly classified under **H. S. Code- 8415**.

Table - 9

India's Top 10 Sources of Air-conditioning Machine (HS Code : 8415)

Rank	Countries	2019		2020		2021		2022	
		Value (million \$)	Share (%)	Value (million\$)	Share (%)	Value (million\$)	Share (%)	Value (million\$)	Share (%)
1.	Thailand	370.30	36.04	237.93	29.72	367.50	45.00	391.20	45.14
2.	China	452.04	44.00	403.61	50.42	307.17	37.62	295.36	34.08
3.	Korea RP	28.91	2.81	22.40	2.80	31.78	3.89	46.42	5.36
4.	Japan	47.98	4.67	29.16	3.64	32.55	3.99	36.47	4.21
5.	U K	20.42	1.99	9.03	1.13	8.84	1.08	16.74	1.93
6.	Germany	15.77	1.53	6.46	0.81	12.28	1.50	12.83	1.48
7.	Singapore	25.68	2.50	30.52	3.81	10.62	1.30	12.74	1.47
8.	Malaysia	15.25	1.48	5.53	0.69	7.86	0.96	11.79	1.36
9.	U S A	8.51	0.83	6.78	0.85	6.46	0.79	9.72	1.12
10.	Italy	6.56	0.64	7.38	0.92	4.28	0.52	6.46	0.75
	Others	35.99	3.50	41.72	5.21	27.24	3.34	26.85	3.10
	Total	1027.42	100	800.52	100	816.58	100	866.57	100

Source: **DGCI&S**

Note : India's Import including Re-import

The above data indicates that India's import of Air-conditioning Machine has grown to US \$ 866.57 million in 2022 from US \$ 816.58 million in 2021, which shows a growth of 6.12% from the previous year's import i.e. in 2021. In the year 2022 India's major sources of Air-conditioning Machine are Thailand (US \$ 391.20 Million), China (US \$ 295.36 Million), Korea RP (US \$ 46.42 Million), Japan (Us \$ 36.47 Million), and UK (US \$ 16.74 Million). These 5 countries in total sold US \$ 786.19 Million value of Air-conditioning Machine import into India Which shows more 90.72% of total import value of Air-conditioning Machine imported by India from these 5 countries in 2022.

Table - 10

World Top 10 Importer of Air-conditioning Machine (HS Code : 8415)

Rank	Countries	2018		2019		2020		2021	
		Value (million\$)	Share (%)	Value (million\$)	Share (%)	Value (million\$)	Share (%)	Value (million\$)	Share (%)
1.	USA	9268.24	19.75	9163.62	19.25	8946.85	19.65	11615.15	21.92
2.	Japan	2679.36	5.71	2684.35	5.64	2516.06	5.53	2935.26	5.54
3.	France	1674.13	3.57	1936.29	4.07	1923.13	4.22	2366.48	4.47
4.	Germany	2161.37	4.61	2173.76	4.57	2213.14	4.86	2288.15	4.32
5.	Italy	1561.81	3.33	1620.92	3.40	1504.00	3.30	1995.46	3.77
6.	Canada	1558.65	3.32	1734.63	3.64	1576.19	3.46	1991.25	3.76
7.	Spain	1358.20	2.89	1362.53	2.86	1284.37	2.82	1515.41	2.86
8.	Netherlands	811.71	1.73	1005.91	2.11	1195.87	2.63	1439.73	2.72
9.	Mexico	1255.91	2.68	1231.47	2.59	1031.19	2.26	1358.97	2.56
10.	Australia	1166.06	2.49	1038.28	2.18	1069.31	2.35	1284.30	2.42
17.	India	1305.69	2.78	1025.27	2.15	800.57	1.76	816.96	1.54
	Others	22118.62	47.14	22635.64	47.54	21469.51	47.15	23376.03	44.12
	Total	46919.76	100	47612.67	100	45530.19	100	52983.14	100

Source :UN Comtrade

The worth value of Global import of Air-conditioning Machine was nearly US \$ 53 Billion in 2021 which was rose at 16.53 % from the year 2020. USA has become the world's largest importer of Air-conditioning Machine among world's largest importers. Imports 21.92% share of world's import of Air-conditioning in 2021 followed by Japan and France. In the same India's imports of Air-Conditioning have hit an all-time high and its share in the world-wide export market of this product was 1.54 % of total world import trade value of Air-conditioning Machine and ranked in 17th position in the world.

Electric Filament

An electrical filament is a thread of metal, usually tungsten, which is used to convert electricity into light in incandescent light bulbs (as developed in 1874 by Alexander Lodygin and in 1878 by Joseph Wilson Swan, among others), and into heat in vacuum tube devices.

The first successful light bulb filaments were made of carbon (from bamboo), later placed with tungsten.

An electrical current travels through the filament and because of the electrical resistance of the filament makes it white-hot and generates light and heat. It is normally in a vacuum or an oblegasor insert gas inside a glass enclosure to stop oxidation. Small amounts of a halogen can be added to facilitate transport of evaporated tungsten atoms back to the filament, resulting insignificantly prolonged lifetime when use the higher temperatures, which is exploited in halogen lamps. Electrical filaments are used in hot cathode so various types of vacuum tubes and electron guns as sources of electrons.

There are several different types of filament configuration available and it all depends on the lamp itself, and what characteristics are required. Some of these include but are not limited to C-6, CC-6, C-2V, CC-2V, C-8, CC-88, C-2F, CC-2F, C-Bar, C-Bar-6, C-8I, C-2R, CC-2R, Axial.

The carbon-filament bulb was actually highly inefficient, but it banished the soot and fire hazards of coal-gas jets and thus soon gained wide acceptance. Indeed, thanks to the incandescent lamp, electric lighting became an accepted part of urban life by 1900. The carbon-filament bulb was eventually succeeded by the more efficient tungsten-filament incandescent bulb, which was developed by George Coolidge of the General Electric Company and first appeared in 1908. In 1911 the drawn tungsten filament was introduced. In 1913 filaments were coiled, and bulbs were filled with inert gas—at first nitrogen alone and later nitrogen and argon in proportions varied to suit the wattage. These steps increased efficiency. Beginning in 1925, bulbs were “frosted” on the inside with hydrofluoric acid to provide a diffused light instead of the glaring brightness of the unconcealed filament. The double-coiled filament used today was introduced about 1930. With these improvements, the filament lamp became the principal form of electric lamp for domestic use until it began to lose favour to the more-efficient fluorescent lamp.

In 2019, Electric Filament were the world's 377th most traded product, with a total trade of \$8.14B. Between 2018 and 2019 the exports of Electric Filament decreased by - 12.7%, from \$9.32B to \$8.14B. Trade in Electric Filament represent 0.045% of total world trade.

In 2021 year the top importers of Electric Filament were USA(US \$ 3.41 B), Germany (US \$ 886 M), France (US \$ 711.88 M), China (US \$ 612.90 M).

These are broadly classified under H. S. Code 8539.

Table - 7

India's Top 10 Sources of Electric Filament (HS Code :8539)

Rank	Countries	2019		2020		2021		2022	
		Value (million \$)	Share (%)	Value (million\$)	Share (%)	Value (million\$)	Share (%)	Value (million\$)	Share (%)
1.	China	99.00	54.28	73.01	53.60	89.73	53.34	85.56	48.54
2.	Germany	26.88	14.74	17.20	12.63	18.92	11.25	22.73	12.89
3.	Korea RP	9.54	5.23	9.66	7.09	10.56	6.28	10.97	6.22
4.	U S A	6.22	3.41	3.88	2.85	5.02	2.98	9.61	5.45
5.	Japan	9.06	4.97	5.47	4.02	9.10	5.41	9.52	5.40
6.	Netherland	0.56	0.31	1.10	0.81	2.36	1.40	8.68	4.92
7.	Poland	7.80	4.27	7.29	5.35	8.11	4.82	7.00	3.97
8.	Singapore	3.34	1.83	2.77	2.04	3.17	1.88	3.29	1.87
9.	Hong Kong	6.89	3.78	3.56	2.61	2.20	1.31	2.68	1.52
10.	U K	1.74	0.95	1.24	0.91	1.92	1.14	2.27	1.29
	Others	11.37	6.23	11.03	8.10	17.15	10.19	13.98	7.93
	Total	182.40	100	136.22	100	168.23	100	176.27	100

Source: **DGCI&S**

Note : India's Import including re-import

There is a total of 82 countries India imports Electric Filament, Discharge Lamps from. The Electric Filament, Discharge Lamps import in 2022 stood at US \$ 176.27 Million and US \$ 182.40 Million in 2019, which shows a negative growth of 3.37% from the 2019 of India's import value of Electric Filament. Major three source countries of Electric Filament to India in 2022 were China (US \$ 85.56 Million), Germany (US \$ 22.73 Million), Rep. of Korea (US \$ 10.97 Million). These 3 countries in total sold US \$ 119.06 Million value of Electric Filament to India which rounds up to 67.65% of the total Electric Filament import into India.

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Table - 8

World Top 10 Importer of Electric Filament (HS Code :8539)

Rank	Countries	2018		2019		2020		2021	
		Value (million \$)	Share (%)	Value (million\$)	Share (%)	Value (million\$)	Share (%)	Value (million\$)	Share (%)
1.	USA	3244.19	20.19	3174.82	22.24	3046.35	22.97	3417.68	22.79
2.	Germany	1047.46	6.52	908.26	6.36	853.32	6.44	886.05	5.91
3.	France	844.82	5.26	825.67	5.78	694.66	5.24	711.88	4.75
4.	China	826.95	5.15	617.05	4.32	551.18	4.16	612.90	4.09
5.	Poland	526.95	3.28	213.74	1.50	460.77	3.47	561.58	3.74
6.	U K	490.15	3.05	446.99	3.13	411.96	3.11	503.77	3.36
7.	Japan	568.33	3.54	493.18	3.45	452.39	3.41	481.14	3.21
8.	Mexico	344.36	2.14	275.60	1.93	201.54	1.52	467.28	3.12
9.	Canada	386.68	2.41	367.08	2.57	386.78	2.92	463.68	3.09
10.	Netherlands	573.86	3.57	471.36	3.30	355.68	2.68	422.30	2.82
18.	India	212.62	1.32	182.41	1.28	136.09	1.03	168.19	1.12
	Others	7003.07	43.58	6298.82	44.12	5708.76	43.05	6302.93	42.02
	Total	16069.43	100	14274.99	100	13259.46	100	14999.38	100

Source :UNComtrade

Global Imports of Electric Filament, the top five importers of Electric Filament in 2021 were United States (US \$ 3.41 B), Germany (US \$ 886 M), France (US \$ 711.88 M), China (US \$ 612.90 M) and Poland (US \$ 561.58 M), accounted for 22.79%, 5.91%, 4.75%, 4.09 % and 3.74% respectively of world import value of Electric Filament. The import value of Electric Filament into India amounted to US \$ 168.91 million in the year 2021 and ranked in 18th position in the world with the share of 1.12% of total Global import value of Electric Filament. This was increase from the previous year.