



Prioritizing Agri-goods for Exports from India to European Union through Revealed Comparative Advantage

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Abstract:

India and the European Union (EU) share a strong trading relationship, where agricultural commodities play a very crucial role to develop two-way trade. The identification of agri-commodities of high potential would enhance trade efficiency and maximize economic rewards. This research uses Revealed Comparative Advantage (RCA) to quantify India's potential to export farm products to the EU market. Based on World Integrated Trade Solution (WITS) database figures, RCA is obtained at the HS 6-digit level for 664 agri-commodities. RCA assists to find out India's relative competitiveness in certain agri-goods by comparing its export performance with world trends. This study offers a general analysis of India's agricultural trade competitiveness within the European Union. The findings reveal significant products on which India has a significant comparative advantage and areas in which trade is not fully exploited. This study provides vital information to policymakers, exporters, and trade associations to design trade policies, enhance market access, and enhance competitiveness within the European Union market. The research findings can support the stakeholders in determining agricultural products that are compatible with India's export potential and the European Union's demand. Prioritizing products with potential, India can increase its presence in the EU market and support sustainable and profitable trade relations. Furthermore, the research points out that decision-making through data is an essential consideration in making global trade strategies and therefore is an important reference point in future trade negotiations and policymaking.

Keywords: Agricultural trade, India-EU trade, Revealed Comparative Advantage, Export Intensity Index, WITS database

Introduction:

According to the International Monetary Fund's (IMF) World Economic Outlook, the Indian economy can expect to reach a size of approximately 25 to 30 trillion USD by 2050. This projection is based on a sustained annual growth rate of 3.6%, driven by structural economic reforms, technological advancements, and a large working-age population. The demographic advantage, coupled with policy initiatives aimed at enhancing productivity and investment, is expected to position India as a key player in the global economic landscape. Whereas the primary sector (agricultural, forestry and fishing) contributes 18.3% to Indian economy in the fiscal year of 2024-25 as reported by Ministry of Statistics and Programme Implementation (MoSPI). India's agricultural exports increased significantly from USD 22.70 billion in 2013-2014 to USD 48.15 billion in the fiscal year 2023-2024. This expansion is a reflection of India's improved standing in the world's agricultural commerce, which has been bolstered by deliberate governmental initiatives and increased market accessibility (PIB, 26 Dec, 2024). Where exports of agriculture

and related products totaled USD 27.84 billion during April to October 2024, up from USD 26.90 billion during the same period the year before. This increasing trend highlights how resilient and competitive India's agriculture industry is (PIB, 1st Feb, 2025). Agricultural commodities exports are currently increasing significantly and aligning with the nation's economic and financial objectives (Dev et al., 2022). The sustained contribution of the primary sector underscores its vital role in the Indian economy, particularly in supporting rural livelihoods and ensuring food security. However, in the last decade the export of some agricultural commodities as cereals, guar gum, cotton, spices, and sugar have significantly increased (Suresh & Mathur, 2016). Increasing exports of agricultural commodities could assist reduce the current account deficit. Recently, India has taken steps towards various Regional Trade Agreements (RTAs) to expand the size of trade and global value chain (Aggarwal et al., 2023). However, India and EU entered FTA negotiations at 2007 and it were suspended in 2014 caused by slow progress. Surprisingly in 2022, EU relaunched FTA with India and these two nations became significant investment and commercial links (Sain & Singh, 2024).

As Indian agricultural sector has stronger trade creation effect than trade diversion effect in specific area as AIFTA, NAFTA and SAPTA (Jagdambe & Kannan, 2020). Similarly, India can also take benefit from EU to export labour intensive agri-product as tea and coffee (Kumar et al., 2024). The World Trade Organization (WTO) agreement permits all nations to benefit from gaining a comparative advantage in the global economy, and increased competition would encourage the effective use of resources that have been allocated and made available. The nation's comparative advantage has been impacted by its trade policy (Mirzaei et al., 2012). Commodity trade competitiveness has a special place in policymaking. A country with a comparative advantage can produce a commodity at a lower cost and export it, according to traditional trade models, while another country imports that same commodity because the importing country has a comparative disadvantage in producing it (Ahmad et al., 2017). However, many economists use Balassa's (1965) Revealed Comparative Advantage (RCA) to measure comparative advantage, because of understanding the competitive advantages of nations in specific agricultural commodities is crucial for formulating effective export strategies and maximizing trade benefits (Bojnec & Fertő, 2009). Revealed Comparative Advantage serves as a valuable tool for assessing a country's export competitiveness in specific sectors by comparing its export share of a particular product to its overall export share (Sharples, 1990). This method aids in determining the industries in which a country has a comparative advantage, directing the distribution of resources and the creation of policies to improve export performance. With its own intricate network of trade agreements and agricultural laws that influence import trends, the European Union is a sizable market for agricultural goods (Nowak & Kaminska, 2016).

In this study analyse India's RCA in agricultural products concerning the EU market can offer valuable insights into commodities with the highest export potential. Prioritizing agricultural products with a strong RCA can facilitate evidence-based strategic decision-making for Indian exporters and policymakers, enabling targeted trade expansion and market diversification efforts.

Methodology:

The current study examines the RCA of Indian agricultural products in the EU market and prioritizes export commodities based on their relatively high RCA. The research relies on secondary data obtained from the World Integrated Trade Solution (WITS) over the past 15 years, utilizing the set of 664 Harmonized System (HS) codes under H3 Non-nomenclature, Edition 2007 (World Customs Organization). For this study 6 digit or lower HS codes data has been taken

for analysis, aligning with international standardization (globally harmonized) under the World Customs Organization because beyond six digits incorporate country-specific extensions that may not be globally harmonized. The RCA index has been used to measure India’s export competitiveness with its EU countries. The RCA index can be defined as the ratio of the share of a country’s total exports of commodity j to its total exports and the share of world exports of the same commodity (commodity j) of the total world exports. The value of RCA lies between 0 and +∞. The RCA value is 0 indicates that country’s export share of the product is the same as the world average, indicating no particular advantage or disadvantage. However, less than 1 or greater than 1 indicating that the product’s share in the country’s total exports is higher than its share in global exports, has a comparative disadvantage and vice-versa. The formula for the RCA index of country ‘i’ for product ‘j’ is:

$$RCA_{ij} = \frac{(X_{ij}/X_{it})}{(X_{wj}/X_{wt})}$$

Where X_{ij} and X_{it} are the export of product j and total export of the country i ; X_{wj} and X_{wt} are refer to export of product j and total export of the world respectively.

Results and Discussion:

The research identifies trade inactivity in certain products, revealing that 10 HS 6-digit products recorded no exports from India to any country between 2009 and 2023 (Appendix1), while 54 HS 6-digit agricultural products registered no exports from India to the EU during the same period (Appendix2). In terms of competitiveness in the EU market, 146 HS 6-digit products demonstrated a strong global presence by maintaining an average RCA greater than 1 over 15 years from 2009 to 2023 (Appendix 3). Among these, following figure-1, illustrated top 10 high-performing agricultural products on the basis high average RCA value of last 15 years. It include castor oil (RCA: 48.13), cumin seeds (41.78), turmeric (39.64), opium (36.05), oil-cake from rape/colza seeds (33.88), essential oils of mints (32.50), unworked human hair (32.44), mucilages and thickeners derived from locust beans/guar seeds (31.67), preserved cucumbers and gherkins (29.80), and dried/crushed ground capsicum fruits (21.76).

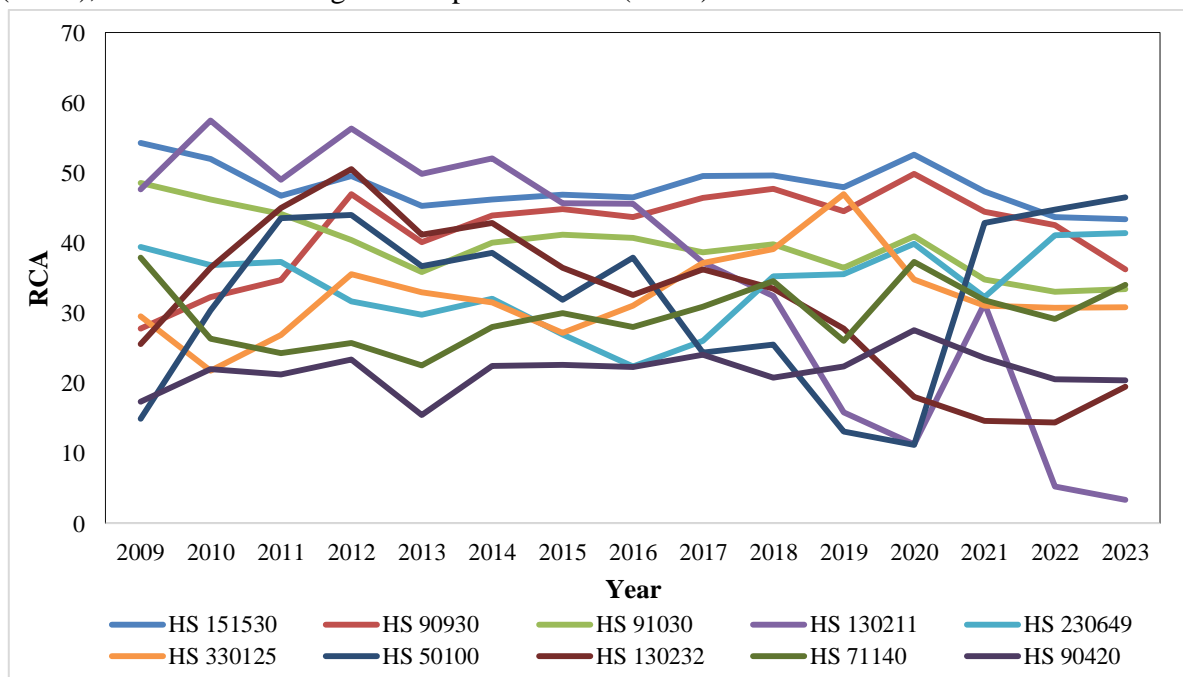


Figure-1: Top 10 High-Performing Agricultural Products Last 15 Years
(Source: World Integrated Trade Solution)

Furthermore, the study highlights India's consistent export performance over the past 15 years, with 230 HS 6-digit agricultural products recording continuous exports every year from 2009 to 2023 (Appendix4). Figure-2, depicted the top 10 consistently exported products, ranked by their 15-year average trade value (in thousand USD), include unroasted coffee (\$361,296.7), stemmed tobacco (\$263,689.6), castor oil (\$223,774.3), semi/wholly milled rice (\$168,961.9), shelled cashew nuts (\$150,606.8), oil-cake residues (\$148,364.4), mucilages and thickeners (\$105,012.9), fresh grapes (\$99,187.86), sesamum seeds (\$96,722.46), and black tea (\$81,260.92).

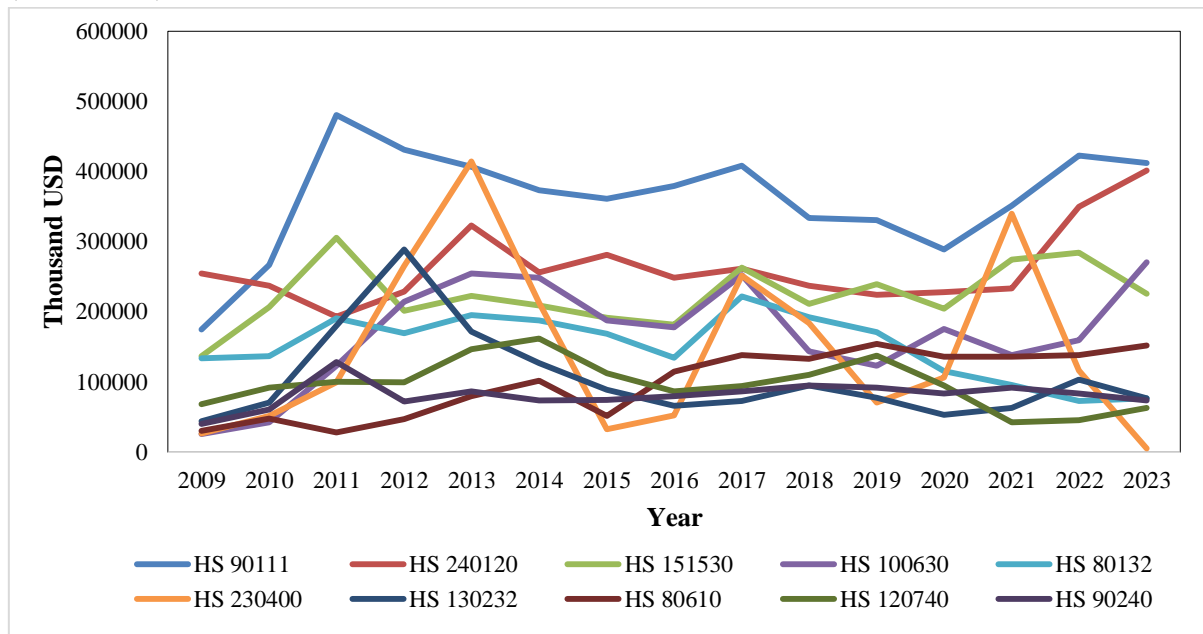


Figure-2: Top 10 Consistently Exported Products to EU
(Source: World Integrated Trade Solution)

Conclusion:

India's agricultural trade with the European Union (EU) demonstrates strong potential, particularly in commodities with high Revealed Comparative Advantage (RCA) and consistent export performance. With 146 HS 6-digit products maintaining an RCA above 1 over 15 years and 230 products recording uninterrupted exports, India has positioned itself as a reliable and competitive agricultural exporter. However, the study also identifies trade inactivity in certain agricultural products, with 10 HS 6-digit products not exported anywhere and 54 products recording no exports to the EU, indicating possible market barriers, supply chain inefficiencies, or regulatory challenges. Addressing these gaps presents an opportunity to expand India's export portfolio and strengthen its market share in the EU.

To maximize its export potential, India must focus on reducing trade barriers, enhancing regulatory compliance, and improving logistics infrastructure. Negotiating favourable trade agreements, investing in product quality improvement, certification, and branding, and aligning with EU market standards will be crucial in securing a competitive edge. Additionally, embracing sustainability initiatives—such as eco-friendly farming, organic certification, and ethical sourcing—can help Indian exporters meet evolving consumer preferences in the EU. Strengthening cold storage facilities, transportation networks, and digital trade platforms will further facilitate seamless exports and reduce logistical bottlenecks.

Looking ahead, India must adopt a strategic and adaptive approach to agricultural trade, leveraging its strengths in high-performing commodities while addressing gaps in underutilized

products. By investing in innovation, sustainable farming, and digital trade channels, India can diversify its agricultural exports, enhance global competitiveness, and secure a stronger foothold in the EU market. These efforts will not only drive long-term trade growth but also reinforce India's position as a key agricultural supplier to the European Union.

References:

1. Aggarwal, S., Chakraborty, D., & Banik, N. (2023). Does Difference in Environmental Standard Influence India's Bilateral IIT Flows? Evidence from GMM Results. *Journal of Emerging Market Finance*, 22(1), 7–30. <https://doi.org/10.1177/09726527221088412>
2. Ahmad, N., Qayum, A., & Iqbal, A. (2017). Evolving Patterns and Empirical Distribution of Normalized Revealed Comparative Advantage: A SAARC Countries Analysis. *Journal of Applied Economics and Business Research*, 7(1), 59–82.
3. Bojnec, Š., & Fertő, I. (2009). Agro-food trade competitiveness of Central European and Balkan countries. *Food Policy*, 34(5), 417–425. <https://doi.org/10.1016/j.foodpol.2009.01.003>
4. Dev, K., Raj, D., Sharma, R., & Guleria, A. (2022). Performance and Prospects of Agricultural Commodities in India: An Economic Analysis. *Indian Journal of Economics and Development*, 18(3), 655–663. <https://doi.org/10.35716/IJED/22005>
5. Jagdambe, S., & Kannan, E. (2020). Effects of ASEAN-India Free Trade Agreement on agricultural trade: The gravity model approach. *World Development Perspectives*, 19, 100212. <https://doi.org/10.1016/j.wdp.2020.100212>
6. Kumar, S., Yeligar, S. S., Venkatesh, P., Kingsly, I., Nain, M. S., Paul, R. K., Madhurima, U., & Mouzam, S. M. (2024). Impact Analysis of the India-EU Free Trade Agreement on Indian Horticulture. *THE INDIAN JOURNAL OF AGRICULTURAL ECONOMICS*, 79(3), 341–348. <https://doi.org/10.63040/25827510.2024.03.001>
7. Mirzaei, F., Mostafa Mostafavi, S., & Yazdani, S. (2012). Export Comparative Advantage Analysis of Iranian Hen Egg by RCA & RSCA and RC Criteria. *Modern Economy*, 03(05), 553–556. <https://doi.org/10.4236/me.2012.35072>
8. Nowak, A., & Kaminska, A. (2016). Agricultural competitiveness: The case of the European Union countries. *Agricultural Economics (Zemědělská Ekonomika)*, 62(11), 507–516. <https://doi.org/10.17221/133/2015-AGRICECON>
9. *Percentage Share of Gross Value Added by Different Economic Sector for 2011-12 to 2024-25 (FAE) (Base year: 2011-12) | Ministry of Statistics and Program Implementation | Government Of India.* (n.d.). Retrieved February 26, 2025, from <https://mospi.gov.in/percentage-share-gross-value-added-different-economic-sector-2011-12-2023-24-sae-base-year-2011-12-0>
10. *Press Release: Press Information Bureau.* (n.d.-a). Retrieved February 27, 2025, from <https://pib.gov.in/PressReleasePage.aspx?PRID=2088048>
11. *Press Release: Press Information Bureau.* (n.d.-b). Retrieved February 27, 2025, from <https://pib.gov.in/PressReleasePage.aspx?PRID=2098447>
12. Sain, N., & Singh, D. (2024). Trade Relationship Between India And The European Union. *Synergy: International Journal of Multidisciplinary Studies*, 1(3), 1–10.
13. *Select Report Options.* (n.d.). Retrieved February 26, 2025, from https://www.imf.org/en/Publications/WEO/weo-database/2024/April/select-date-range?a=1&c=510,&s=NGDP_RPCH,
14. Sharples, J. A. (1990). Cost of Production and Productivity in Analyzing Trade and Competitiveness. *American Journal of Agricultural Economics*, 72(5), 1278–1282. <https://doi.org/10.2307/1242548>

15. Suresh, A., & Mathur, V. C. (2016). Export of agricultural commodities from India: Performance and prospects. *The Indian Journal of Agricultural Sciences*, 86(7). <https://doi.org/10.56093/ijas.v86i7.59741>
16. *World Customs Organization*. (n.d.). Retrieved February 28, 2025, from https://www.wcoomd.org/en/topics/nomenclature/instrument-and-tools/hs_nomenclature_previous_editions/hs_nomenclature_table_2007.aspx
17. *World Integrated Trade Solution (WITS) | Data on Export, Import, Tariff, NTM*. (n.d.). Retrieved February 28, 2025, from <https://wits.worldbank.org/>

Appendix 1: 10 HS 6 digit Code not exported from India from 2009 to 2023	
Product Code	Product Description
10612	Live whales/dolphins & porpoises (order Cetacea)/manatees & dugongs (order Sirenia)
10631	Live birds of prey
20734	Fatty livers of ducks/geese/guinea fowls, fresh/chilled
20830	Meat & edible meat offal of primates, fresh/chilled/frozen
20840	Meat & edible offal of whales, dolphins & porpoises (order Cetacea); of manatees & dugongs (order Sirenia), fresh/chilled/frozen
20850	Meat & edible offal of reptiles, incl. snakes & turtles, fresh/chilled/frozen
21011	Hams, shoulders & cuts thereof, of swine, salted/in brine/dried/smoked, bone-in
21092	Meat & edible meat offal of whales/dolphins/porpoises (order Cetacea)/manatees & dugongs (order Sirenia), salted/in brine/dried/smoked, incl. edible flours/meals
21093	Meat & edible meat offal of reptiles, incl. snakes & turtles, salted/in brine/dried/smoked, incl. edible flours/meals
160242	Shoulders of swine & cuts thereof

Appendix 2: 54 HS 6 digit Product with no export to European Union from 2009-2023	
Product code	Product Description
10210	Live bovine animals: pure-bred breeding animals
10392	Live swine other than pure-bred breeding animals, weighing 50kg/more
10420	Live goats
10511	Live fowls of species <i>Gallus domesticus</i> , weighing not >185g
10512	Live turkeys, weighing not >185g
10612	Live whales/dolphins & porpoises (order Cetacea)/manatees & dugongs (order Sirenia)
10631	Live birds of prey
10632	Live birds (order Psittaciformes), incl. parrots/parakeets/macaws/cockatoos
20210	Carcasses/half-carcasses of bovine animals, frozen
20311	Carcasses/half-carcasses of swine, fresh/chilled
20321	Carcasses/half-carcasses of swine, frozen
20430	Carcasses/half-carcasses of lamb, frozen
20500	Meat of horses/asses/mules/hinnies, fresh/chilled/frozen
20621	Tongues of bovine animals, frozen
20622	Livers of bovine animals, frozen
20630	Edible offal of swine, fresh/chilled
20641	Livers of swine, frozen
20713	Cuts & edible offal of species <i>Gallus domesticus</i> , fresh/chilled
20724	Meat of turkeys, not cut in pieces, fresh/chilled
20725	Meat of turkeys, not cut in pieces, frozen
20726	Cuts & edible offal of turkey, fresh/chilled

20727	Cuts & edible offal of turkey, frozen
20732	Meat of ducks/geese/guinea fowls, not cut in pieces, fresh/chilled
20733	Meat of ducks/geese/guinea fowls, not cut in pieces, frozen
20734	Fatty livers of ducks/geese/guinea fowls, fresh/chilled
20735	Meat & edible meat offal of ducks/geese/guinea fowls (excl. of 0207.32-0207.34), fresh/chilled
20830	Meat & edible meat offal of primates, fresh/chilled/frozen
20840	Meat & edible offal of whales, dolphins & porpoises (order Cetacea); of manatees & dugongs (order Sirenia), fresh/chilled/frozen
20850	Meat & edible offal of reptiles, incl. snakes & turtles, fresh/chilled/frozen
21011	Hams, shoulders & cuts thereof, of swine, salted/in brine/dried/smoked, bone-in
21091	Meat & edible meat offal of primates, salted/in brine/dried/smoked, incl. edible flours/meals
21092	Meat & edible meat offal of whales/dolphins/porpoises (order Cetacea)/manatees & dugongs (order Sirenia), salted/in brine/dried/smoked, incl. edible flours/meals
21093	Meat & edible meat offal of reptiles, incl. snakes & turtles, salted/in brine/dried/smoked, incl. edible flours/meals
40520	Dairy spreads
40640	Blue-veined cheese
51110	Bovine semen
71232	Wood ears (<i>Auricularia</i> spp.), dried, whole/cut/sliced/broken/in powder but not further prepared
81210	Cherries, provisionally preserved but unsuit. in that state for immediate consumption
120924	Kentucky blue grass (<i>Poa pratensis</i> L.) seed, of a kind used for sowing
120925	Rye grass (<i>Lolium multiflorum</i> Lam./perenne L.) seed, of a kind used for sowing
121130	Coca leaf
151221	Cotton seed oil, crude, whether/not gossypol has been removed
160231	Prepared/preserved preparations of turkey (excl. homogenised preparations)
160242	Shoulders of swine & cuts thereof
200320	Truffles, prepared/preserved othw. than by vinegar/acetic acid
200560	Asparagus, preserved/preserved othw. than by vinegar/acetic acid, not frozen, other than products of 20.06
200912	Orange juice, not frozen, of a Brix value not >20, unfermented & not containing added spirit, whether/not containing added sugar/other sweetening matter
200971	Apple juice, of a Brix value not >20, unfermented & not containing added spirit, whether/not containing added sugar/other sweetening matter
230660	Oil-cake & other solid residues, whether/not ground/in pellets, from extraction of palm nuts/kernels
410320	Raw hides & skins of reptiles (fresh/salted/dried/limed/pickled/othw. preserved, but not tanned/parchment-dressed/further prepared), whether/not dehaired/split, other than those excld. by Note 1 (b)/1 (c) to this Ch.
410330	Raw hides & skins of swine(fresh/salted/dried/limed/pickled/othw. preserved, but not tanned/parchment-dressed/further prepared), whether/not dehaired/split, other than those excld. by Note 1 (b)/1 (c) to this Ch.
510111	Wool, not carded/combed, greasy, incl. fleece-washed wool, shorn
510121	Wool, not carded/combed, degreased, not carbonised, shorn
510130	Wool, not carded/combed, carbonised

Appendix 3: 146 HS 6 digit Product with Average 15 years RCA more than 1 2009-2023

Product Code	Product Description	Average RCA
151530	Castor oil & fractions thereof , whether/not refined but not chemically modified	48.13
90930	Seeds of cumin	41.78
91030	Turmeric (curcuma)	39.64
130211	Opium	36.05
230649	Oil-cake & other solid residues, whether/not ground/in pellets, from extraction of rape/colza seeds (excl. low erucic acid seeds)	33.88
330125	Essential oils of mints other than peppermint	32.50
50100	Human hair, unworked, whether/not washed/scoured; waste of human hair	32.44
130232	Mucilages & thickeners, whether/not modified, derived from locust beans/locust bean seeds/guar seeds	31.67
71140	Cucumbers & gherkins, provisionally preserved	29.80
90420	Fruits of the genera Capsicum/Pimenta, dried/crushed/ground	21.76
330190	Essential oils (terpeneless/not), including concretes & absolutes(excl. of 3301.12-3301.29);extracted oleoresins; concentrates of essential oils in fats, in fixed oils, in waxes/the like, obtained by enfleurage/maceration; terpenic by-products of the det	21.15
230690	Oil-cake & other solid residues, whether/not ground/in form of pellets, resulting from the extraction of vegetable fats/oils (excl. of 23.04, 23.05 & 2306.10-2306.60)	20.15
330124	Essential oils of peppermint (Mentha piperita)	19.57
90920	Seeds of coriander	18.15
50610	Ossein & bones treated with acid	18.04
100630	Semi-milled/wholly milled rice, whether/not polished/glazed	17.18
130190	Lac; Natural gums (excl. of 1301.20), resins, gum-resins & oleoresins (e.g., balsams)	15.40
120220	Ground-nuts, not roasted/othw. cooked, shelled, whether/not broken	15.11
110610	Flour, meal & powder of the dried leguminous vegetables of 07.13	14.61
71220	Onions, dried, whole/cut/sliced/broken/in powder but not further prepared	14.34
20421	Carcasses/half-carcasses of sheep (excl. lamb), fresh/chilled	13.47
230500	Oil-cake & other solid residues, whether/not ground/in pellets, from extraction of ground-nut oil	12.75
140420	Cotton linters	12.25
100820	Millet	11.94
520299	Cotton waste other than yarn waste (incl. thread waste) & garneted stock	11.33
120740	Sesamum seeds, whether/not broken	11.27
80132	Cashew nuts, shelled	11.24
500300	Silk waste (including cocoons unsuitable for reeling, yarn waste&garneted stock).	10.98
200110	Cucumbers & gherkins, prepared/preserved by vinegar/acetic acid	10.70
90240	Tea, black (fermented) & partly fermented tea, whether/not flavoured, in immediate packings of a content >3kg	10.60
120300	Copra	9.80
91099	Spices, n.e.s. in Ch. 9	9.78
100640	Broken rice	8.88
90810	Nutmeg	8.62
10420	Live goats	8.56
90830	Cardamoms	8.42
20230	Meat of bovine animals, frozen, boneless	8.39

520100	Cotton, not carded/combed	8.32
71320	Chickpeas (garbanzos), dried, shelled, whether/not skinned/split	7.98
170191	Cane/beet sugar & chemically pure sucrose, in solid form, containing added flavouring/colouring matter	7.96
91091	Mixtures of 2/more products of different headings of 09.04-09.10	7.74
90910	Seeds of anise/badian	7.72
80119	Cocunuts, other than desiccated	7.72
70310	Onions & shallots, fresh/chilled	7.24
520210	Yarn waste (incl. thread waste), of cotton	7.17
210130	Roasted chicory & other roasted coffee substitutes, & extracts, essences & concentrates thereof	7.10
290544	D-glucitol (sorbitol)	7.05
170310	Cane molasses	6.98
150810	Ground-nut oil, crude	6.92
90412	Pepper (genus Piper), crushed/ground	6.87
40811	Egg yolks, dried, whether/not containing added sugar/other sweetening matter	6.58
240399	Manufactured tobacco & manufactured tobacco substitutes, n.e.s. (excl. smoking tobacco & homogenised/reconstituted tobacco); tobacco extracts & essences	5.97
150890	Ground-nut oil, other than crude, & fractions thereof, whether/not refined but not chemically modified	5.90
130219	Vegetable saps & extracts (excl. of 1302.11-1302.13)	5.87
90950	Seeds of fennel; juniper berries	5.79
60499	Foliage, branches & other parts of plants, without flowers/flower buds/grasses (excl. of 0604.10), being goods of a kind suitable for bouquets/ornamental purposes, dried/dyed/bleached/impregnated/othw. prepared	5.74
121190	Plants & parts of plants, incl. seeds & fruits, of a kind (excl. of 1211.20 - 1211.40) used primarily in perfumery/pharmacy/for insecticidal/fungicidal/similar purposes, fresh/dried, whether/not cut/crushed/powdered	5.73
80450	Guavas, mangoes & mangosteens, fresh/dried	5.57
40891	Birds' eggs, not in shell (excl. yolks), dried, whether/not containing added sugar/other sweetening matter	5.40
170199	Cane/beet sugar & chemically pure sucrose, in solid form, not containing added flavouring/colouring matter	5.27
330130	Resinoids	5.19
110812	Maize (corn) starch	5.07
510310	Noils of wool/fine animal hair	4.86
100610	Rice in the husk (paddy/rough)	4.44
151550	Sesame oil & fractions thereof, whether/not refined but not chemically modified	4.43
240120	Tobacco, partly/wholly stemmed/stripped	4.22
120750	Mustard seeds, whether/not broken	4.20
230610	Oil-cake & other solid residues, whether/not ground/in pellets, from extraction of cotton seeds	3.91
71231	Mushrooms of the genus Agaricus, dried, whole/cut/sliced/broken/in powder but not further prepared	3.43
20629	Edible offal of bovine animals (excl. tongues & livers), frozen	3.37
91010	Ginger	3.28
50790	Tortoise-shell, whalebone & whalebone hair, horns, antlers, hooves, nails, claws & beaks, unworked/simply prepared but not cut to shape; powder & waste of these products	3.26
350211	Dried egg albumin	3.23
71390	Dried leguminous vegetables, n.e.s., shelled, whether/not skinned/split	3.21

210111	Extracts, essences & concentrates of coffee	3.00
90411	Pepper (genus Piper), neither crushed/ground	2.83
520300	Cotton, carded/combed	2.77
110630	Flour, meal & powder of the products of Ch.8	2.67
90230	Tea, black (fermented) & partly fermented tea, whether/not flavoured, in immediate packings of a content not >3kg	2.66
200799	Preparations of fruit (excl. citrus fruit; excl. homogenized), obt. by cooking, whether/not containing added sugar/other sweetening matter	2.64
140490	Vegetable products.(excl. of 1404.20), n.e.s.or incld.	2.60
40900	Natural honey	2.58
120210	Ground-nuts, not roasted/othw. cooked, in shell	2.58
330129	Essential oils other than those of citrus fruit (excl. of 3301.24 & 3301.25)	2.58
230400	Oil-cake & other solid residues, whether/not ground/in pellets, from extraction of soyabean oil	2.55
510320	Waste of wool/of fine animal hair, incl. yarn waste but excl. garnetted stock, other than noils of wool/fine animal hair	2.46
240130	Tobacco refuse	2.45
170230	Glucose & glucose syrup, not containing fructose/containing in the dry state < 20% by weight of fructose	2.42
530110	Flax, raw/retted	2.42
120999	Seeds, n.e.s., of a kind used for sowing	2.40
510220	Coarse animal hair, not carded/combed	2.28
110313	Groats/meal of maize (corn)	2.25
210120	Extracts, essences & concentrates of tea/matT, & preparations with a basis of these extracts/essences/concentrates/with a basis of tea/matT	2.25
170111	Cane sugar, raw, in solid form, not containing added flavouring/colouring matter	2.24
200190	Vegetables, fruit, nuts & other edible parts of plants (excl. cucumbers & gherkins), prepared/preserved by vinegar/acetic acid	2.20
350110	Casein	1.99
110290	Cereal flour other than of wheat/meslin/rye/maize(corn)	1.96
382370	Industrial fatty alcohols	1.93
120799	Oil seeds & oleaginous fruits (excl. of 1206.00 & 1207.20-1207.91), whether/not broken	1.91
240110	Tobacco, not stemmed/stripped	1.84
350300	Gelatin, incl. gelatin in rectangular (incl. square) sheets, whether/not surface-worked /coloured & gelatin derivatives; isinglass; other glues of animal origin (excl. casein glues of 35.01)	1.75
151590	Fixed vegetable fats & oils (excl. of 1515.11-1515.50, incl. jojoba oil) & their fractions, whether/not refined but not chemically modified	1.69
60390	Cut flowers & flower buds of a kind suit. for bouquets/ornamental purposes, dried/dyed/bleached/impregnated/othw. prepared	1.67
110510	Flour, meal & powder of potatoes	1.64
90111	Coffee, not roasted, not decaffeinated	1.62
510330	Waste of coarse animal hair	1.60
382319	Industrial monocarboxylic fatty acids other than stearic acid/oleic acid/tall oil fatty acids; acid oils from refining	1.54
80610	Grapes, fresh	1.52
500100	Silk-worm cocoons suit. for reeling	1.47
80590	Citrus fruit (excl. of 0805.10-0805.50), fresh/dried	1.46
40590	Fats & oils derived from milk, other than butter & dairy spreads	1.45
90940	Seeds of caraway	1.40

70990	Vegetables, n.e.s. in 07.01-07.09, fresh/chilled	1.40
20622	Livers of bovine animals, frozen	1.39
120810	Flours & meals of soya beans	1.37
190300	Tapioca & substitutes therefor prepared from starch, in the form of flakes/grains/pearls/siftings/similar forms	1.35
81090	Fresh fruit, n.e.s. in Ch. 8	1.34
330119	Essential oils of citrus fruit, other than of orange/lemon	1.33
110423	Corn (maize), worked othw. than into flour/groats/meal (e.g., hulled/pearled/sliced/kibbled)	1.32
170112	Beet sugar, raw, in solid form, not containing added flavouring/colouring matter	1.32
71040	Sweet corn, uncooked/cooked by steaming/boiling in water, frozen	1.31
71010	Potatoes, uncooked/cooked by steaming/boiling in water, frozen	1.30
90500	Vanilla	1.29
230240	Bran, sharps & other residues, whether/not in the form of pellets, derived from the sifting/milling/other working of cereals other than maize (corn)/wheat	1.27
200510	Homogenised vegetables, prepared/preserved othw. than by vinegar/acetic acid, not frozen, other than products of 20.06	1.26
80720	Papaws (papayas), fresh/dried	1.22
71190	Vegetables (excl. olives/cucumbers & gherkins/mushrooms & truffles)&mixtures of vegetables provisionally preserved, but unsuitable in that state for immediate consumption	1.22
50800	Coral & similar materials, unworked/simplely prepared but not othw. worked; shells of molluscs/crustaceans/echinoderms & cuttle-bone, unworked/simplely prepared but not cut to shape, powder & waste thereof	1.20
81340	Dried fruit (excl. of 08.01-08.06 & 0813.10-0813.30)	1.18
40229	Milk in powder/granules/other solid form, sweetened, fat content by weight >1.5%	1.17
200490	Vegetables & mixtures of vegetables, preserved/preserved othw. than by vinegar/acetic acid, frozen, other than potatoes & products of 20.06	1.16
80620	Grapes, dried	1.16
151319	Coconut (copra) oil, other than crude, & fractions thereof, whether/not refined but not chemically modified	1.15
51000	Ambergris, castoreum, civet & musk; cantharides; bile, whether/not dried; glands & other animal products used in the preparation of pharmaceutical products, fresh/chilled/frozen/othw. provisionally preserved	1.15
90620	Cinnamon & cinnamon-tree flowers, crushed/ground	1.14
190531	Sweet biscuits	1.13
110100	Wheat/meslin flour	1.13
151499	Rape/colza oil (excl. low erucic acid oil) & mustard oil, other than crude, & fractions thereof, whether/not refined but not chemically modified	1.09
200811	Ground-nuts, prepared/preserved, whether/not containing added/sugar/other sweetening matter/spirit, n.e.s.	1.08
90220	Tea, green (not fermented), whether/not flavoured, in immediate packings of a content >3kg	1.07
230250	Bran, sharps & other residues, whether/not in the form of pellets, derived from the sifting/milling/other working of leguminous plants	1.07
520291	Garnetted stock of cotton	1.06
100890	Cereals (excl. those which have been hulled/othw. worked), n.e.s.	1.04
100590	Maize (corn), other than seed	1.03
100110	Durum wheat	1.00
230230	Bran, sharps & other residues, whether/not in the form of pellets, derived from the sifting/milling/other working of wheat	1.00

Appendix 4: 230 HS 6-digit agricultural products recorded continuous exports every year from 2009 to 2023		
Product Code	Product Description	Average Export Value in 1000 USD
90111	Coffee, not roasted, not decaffeina	361296.7
240120	Tobacco, partly/wholly stemmed/stri	263689.6
151530	Castor oil & fractions thereof , wh	223774.3
100630	Semi-milled/wholly milled rice, whe	168961.9
80132	Cashew nuts, shelled	150606.8
230400	Oil-cake & other solid residues, wh	148364.4
130232	Mucilages & thickeners, whether/not	105012.9
80610	Grapes, fresh	99187.86
120740	Sesamum seeds, whether/not broken	96722.46
90240	Tea, black (fermented) & partly fer	81260.92
121190	Plants & parts of plants, incl. see	68124.34
330190	Essential oils (terpeneless/not), i	63605.37
210111	Extracts, essences & concentrates o	49086.23
200799	Preparations of fruit (excl. citrus	42452.27
71220	Onions, dried, whole/cut/sliced/bro	40128.83
200110	Cucumbers & gherkins, prepared/pres	37917.25
130219	Vegetable saps & extracts (excl. of	37159.15
382319	Industrial monocarboxylic fatty aci	34799.34
71140	Cucumbers & gherkins, provisionally	34799.1
170310	Cane molasses	32576.01
151620	Vegetable fats & oils & fractions t	31847.71
80450	Guavas, mangoes & mangosteens, fres	27854.22
330125	Essential oils of mints other than	27742.99
90411	Pepper (genus Piper), neither crush	27428.26
330129	Essential oils other than those of	26917.61
520299	Cotton waste other than yarn waste	24020.84
240110	Tobacco, not stemmed/stripped	19794.38
91030	Turmeric (curcuma)	19703.8
230910	Dog/cat food, put up for RS	18964.19
130190	Lac; Natural gums (excl. of 1301.20	18751.19
382370	Industrial fatty alcohols	16363.09
330124	Essential oils of peppermint (Menth	15977.8
90930	Seeds of cumin	14821.96
60499	Foliage, branches & other parts of	14185.57
91099	Spices, n.e.s. in Ch. 9	13795.02
120991	Vegetable seeds, of a kind used for	13778.53
210690	Food preparations, n.e.s.	13355.42
200190	Vegetables, fruit, nuts & other edi	12425.09
230990	Preparations of a kind used in anim	12069.84
110610	Flour, meal & powder of the dried l	11739.69
170199	Cane/beet sugar & chemically pure s	11610.07
151590	Fixed vegetable fats & oils (excl.	11581.82
210120	Extracts, essences & concentrates o	11538.36
350300	Gelatin, incl. gelatin in rectangul	10782.77
90420	Fruits of the genera Capsicum/Pimen	10513.7
200899	Edible parts of plants, prepared/pr	10172.87
80232	Walnuts, shelled	9826.751
180400	Cocoa butter, fat & oil	9727.642
120100	Soya beans, whether/not broken	9207.586
350110	Casein	8971.236
520100	Cotton, not carded/combed	8566.301
81190	Fruit & nuts, n.e.s., uncooked/cook	7862.959
120220	Ground-nuts, not roasted/othw. cook	7665.026
71320	Chickpeas (garbanzos), dried, shell	7161.189
60290	Live plants, n.e.s., incl. their ro	6826.839
220830	Whiskies	6801.944

81090	Fresh fruit, n.e.s. in Ch. 8	6438.252
60390	Cut flowers & flower buds of a kind	6436.691
151800	Animal/vegetable fats & oils & thei	6421.775
91010	Ginger	6055.65
90220	Tea, green (not fermented), whether	5997.182
40891	Birds' eggs, not in shell (excl. yo	5738.114
71290	Dried vegetables, n.e.s.; mixtures	5483.53
90230	Tea, black (fermented) & partly fer	5271.649
120400	Linseed, whether/not broken	5053.664
120799	Oil seeds & oleaginous fruits (excl	4560.169
80620	Grapes, dried	4515.804
200811	Ground-nuts, prepared/preserved, wh	4325.182
70310	Onions & shallots, fresh/chilled	4294.366
240130	Tobacco refuse	4091.176
510310	Noils of wool/fine animal hair	4089.273
40811	Egg yolks, dried, whether/not conta	4029.659
70990	Vegetables, n.e.s. in 07.01-07.09, f	3992.641
520210	Yarn waste (incl. thread waste), of	3842.937
240399	Manufactured tobacco & manufactured	3824.314
50790	Tortoise-shell, whalebone & whalebo	3768.643
100890	Cereals (excl. those which have bee	3362.388
90412	Pepper (genus Piper), crushed/groun	3355.217
71190	Vegetables (excl. olives/cucumbers	3307.468
170111	Cane sugar, raw, in solid form, not	3233.594
50690	Bones & horn-cores, unworked, defat	3218.798
190590	Bread, pastry, cakes, biscuits & ot	3003.924
50610	Ossein & bones treated with acid	3000.112
170490	Sugar confectionery other than chew	2772.657
220820	Spirits obt. by distilling grape wi	2665.208
91091	Mixtures of 2/more products of diff	2600.072
200980	Juice of any single fruit/vegetable	2534.452
210130	Roasted chicory & other roasted cof	2506.809
330119	Essential oils of citrus fruit, oth	2448.094
120999	Seeds, n.e.s., of a kind used for s	2289.297
140490	Vegetable products.(excl. of 1404.2	2284.129
71231	Mushrooms of the genus Agaricus, dr	2148.101
330130	Resinoids	2128.965
210390	Sauces & preparations therefor, n.e	2097.913
90500	Vanilla	2097.548
200819	Nuts (excl. ground-nuts), incl. mix	2052.746
110100	Wheat/meslin flour	1981.873
520300	Cotton, carded/combed	1979.762
151550	Sesame oil & fractions thereof, wh	1972.267
81110	Strawberries, uncooked/cooked by st	1879.783
230690	Oil-cake & other solid residues, wh	1703.912
130239	Mucilages & thickeners (excl. of 13	1626.143
100620	Husked (brown) rice	1617.459
120810	Flours & meals of soya beans	1512.763
220410	Sparkling wine of fresh grapes	1512.259
40900	Natural honey	1347.85
240310	Smoking tobacco, whether/not contai	1346.605
190531	Sweet biscuits	1345.379
80119	Cocunuts, other than desiccated	1345.374
121299	Locust beans&sugar cane(excl. of 12	1344.809
100820	Millet	1321.65
71080	Vegetables, n.e.s., uncooked/cooked	1296.823
90830	Cardamoms	1262.23
350400	Peptones&their derivatives; other p	1229.645
290545	Glycerol other than crude	1191.679
500300	Silk waste (including cocoons unsui	1126.334

90810	Nutmeg	1105.855
110630	Flour, meal & powder of the product	1040.26
200599	Vegetables & mixtures of vegetables	1033.147
220850	Gin & Geneva	1026.859
240220	Cigarettes containing tobacco	970.4213
50400	Guts, bladders & stomachs of animal	955.9806
200490	Vegetables & mixtures of vegetables	954.5063
530130	Flax tow & waste	928.8089
71390	Dried leguminous vegetables, n.e.s.	916.3885
90210	Tea, green (not fermented), whether	902.6353
120930	Seeds of herbaceous plants cultivat	895.3132
130211	Opium	858.8649
152110	Vegetable waxes, other than triglyc	837.8769
190190	Malt extract; food preparations of	777.0409
90920	Seeds of coriander	768.0669
120750	Mustard seeds, whether/not broken	762.0616
190120	Mixes & doughs for the preparation	755.4874
121220	Seaweeds & other algae, fresh/chill	738.3022
151319	Coconut (copra) oil, other than cru	640.9781
210610	Protein concentrates & textured pro	637.8215
170230	Glucose & glucose syrup, not contai	634.7083
151311	Coconut (copra) oil, crude	630.3954
90910	Seeds of anise/badian	614.8225
70960	Fruits of the genera Capsicum/Pimen	593.6308
50800	Coral & similar materials, unworked	592.1881
220840	Rum & tafia	579.5227
80720	Papaws (papayas), fresh/dried	577.4025
110290	Cereal flour other than of wheat/me	549.0789
60319	Cut flowers & flower buds of a kind	491.6726
190410	Prepared foods obt. by the swelling	487.5867
100700	Grain sorghum	473.5573
220710	Undenatured ethyl alcohol of an alc	453.2143
71040	Sweet corn, uncooked/cooked by stea	436.5601
180690	Chocolate & other food preparations	432.8728
190230	Pasta (excl. of 1902.11-1902.20)	407.9619
81340	Dried fruit (excl. of 08.01-08.06 &	389.1408
200600	Vegetables, fruit, nuts, fruit-peel	385.4215
130231	Agar-agar	373.9645
220421	Wine other than sparkling wine of f	371.7376
90620	Cinnamon & cinnamon-tree flowers, c	354.8085
151790	Edible mixtures/preparations of ani	348.8453
190420	Prepared foods obt. from unroasted	344.7673
100590	Maize (corn), other than seed	343.0437
91020	Saffron	338.8174
290544	D-glucitol (sorbitol)	314.1005
90121	Coffee, roasted, not decaffeinated	306.9699
330113	Essential oils of lemon	291.9019
80719	Melons (excl. watermelons), fresh	283.5691
80300	Bananas, incl. plantains, fresh/dri	269.2145
90700	Cloves (whole fruit, cloves & stems	258.4569
60311	Fresh roses	255.7699
120929	Seeds of forage plants (excl. of 12	250.2275
81290	Fruit (excl. cherries) & nuts, prov	244.1114
350510	Dextrins & other modified starches	233.3267
120600	Sunflower seeds, whether/not broken	215.1153
71339	Beans (Vigna spp., Phaseolus spp. (212.4483
110812	Maize (corn) starch	212.0234
80111	Coconuts, desiccated	210.1387
151219	Sunflower seed/safflower oil, other	208.6261
60120	Bulbs, tubers, tuberous roots, corm	203.8336

190490	Cereals other than maize (corn) in	199.3763
120890	Flours & meals of oil seeds/oleagin	198.2691
60110	Bulbs, tubers, tuberous roots, corm	182.0739
210220	Inactive yeasts; other single-cell	168.544
190532	Waffles & wafers	163.0003
152190	Beeswax, other insect waxes & sperm	153.8737
130120	Gum Arabic	152.8442
71090	Mixtures of vegetables, uncooked/co	141.2326
200510	Homogenised vegetables, prepared/pr	137.8671
220290	Non-alcoholic beverages other than	131.217
110819	Starches (excl. of 1108.11-1108.14)	126.8797
190219	Uncooked pasta, not stuffed/othw. p	123.7444
40590	Fats & oils derived from milk, othe	122.5853
220300	Beer made from malt	121.9083
120210	Ground-nuts, not roasted/othw. cook	118.032
170290	Sugars, incl. invert sugar & other	113.8407
71410	Manioc (cassava)	111.0329
140190	Vetegable materials other than bamb	108.2759
220210	Waters, incl. mineral waters & aera	108.091
90611	Cinnamon(Cinnamomum zeylanicum Blum	105.5335
190300	Tapioca & substitutes therefor prep	101.2535
90820	Mace	97.75113
110429	Other worked grains (e.g., hulled/p	89.0072
81400	Peel of citrus fruit/melons, incl.	80.748
80290	Nuts, n.e.s. in 08.01 & 08.02, fres	80.34793
200559	Beans (excl. Vigna spp., Phaseolus	79.23753
110620	Flour, meal & powder of sago/roots/	77.98193
190240	Couscous	77.40393
210320	Tomato ketchup & other tomato sauce	73.24973
190110	Preparations for infant use, put up	73.0992
210420	Homogenised composite food preparat	63.80347
80430	Pineapples, fresh/dried	63.03727
410190	Raw hides & skins of bovine (includ	57.08773
71490	Arrowroot, salep, Jerusalem articho	52.92627
210310	Soya sauce	50.8526
210210	Active yeasts	48.24633
220900	Vinegar & substitutes for vinegar o	37.44227
90619	Cinnamon(excl. of 0906.11) & cinna	34.82447
151329	Palm kernel/babassu oil, other than	28.63373
90190	Coffee husks & skins; coffee substi	26.7642
290543	Mannitol	20.4702
80590	Citrus fruit (excl. of 0805.10-0805	20.30647
71029	Leguminous vegetables (excl. of 071	20.05467
110813	Potato starch	18.813
170390	Molasses, other than cane molasses,	17.88173
80410	Dates, fresh/dried	17.6332
170211	Lactose & lactose syrup, containing	16.17547
70190	Potatoes other than seed potatoes,	16.04833
50590	Skins & other parts of birds with f	14.3156
210410	Soups & broths & preparations there	14.23033
140110	Bamboos	10.83853
110430	Germ of cereals, whole/rolled/flake	7.763267
220110	Mineral waters (natural/artificial)	5.855667
220190	Ice & snow	5.597133