



Indo-German Cooperation on Agricultural Market Development

Building sustainable partnerships

Turmeric

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Turmeric Global Trade – India’s Role

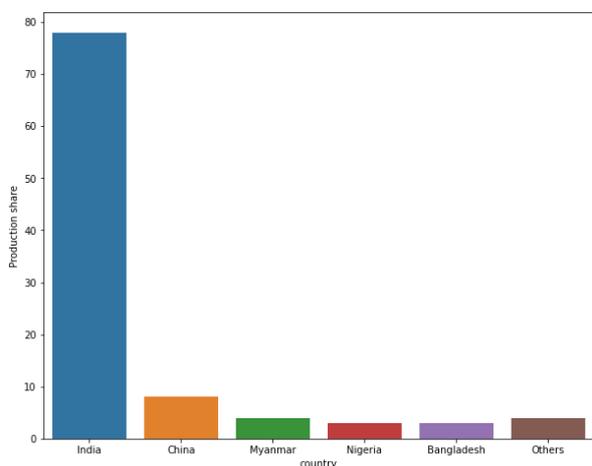


Figure 1. Global turmeric production (PJTSAU 2021ⁱ)

- The quality of curcumin plays a role in the global turmeric market. Turmeric (*Curcuma longa*), curcumin, has multiple therapeutic properties such as anti-inflammatory, antioxidant and cancer preventive.
- India is the largest producer, consumer and exporter of turmeric globally. It contributes 70-80 % of global production, followed by China (8%), Myanmar (4%) and Vietnam (3%).
- In 2020, the total global export turmeric value was US\$ 359 million. India is a lead exporter with a value of US\$ 233.1 million with a share of 64% globally.
- The USA is a lead importer with a 14.2% global share, followed by Bangladesh with 13% (Tridge 2021).

Table 1. Top five turmeric exporters in 2020 (Tridge 2021ⁱⁱ)

Country	Export Share 2020 (%)	Export Value in 2020 (US\$ million)	Export Growth Value from 2017-20 (%)
India	64.77	233.11	+27.46
Netherlands	3.75	13.51	+52.86
Myanmar	3.26	11.74	-11.26
Vietnam	2.89	10.39	+115.84
Indonesia	2.66	9.56	-15.65

Table 2. Top five turmeric importers in 2020 (Tridge 2021)

Country	Import Share 2020 (%)	Import Value in 2020 (US\$ million)	Import Growth Value from 2017-20 (%)
USA	14.2	47.64	+35.1
Bangladesh	13.04	43.37	+615.54
India	9.39	31.24	+15.22
United Kingdom	5.21	17.34	+48.86
Germany	4.63	15.41	+32.52

- The total exports of turmeric and turmeric products, which were 89321 tonnes in 2015-16, increased to 139184 tonnes in 2019-20, registering a growth rate of 11.73% per annum. The value of exports registered a growth rate of 10.52% per annum during the corresponding period.

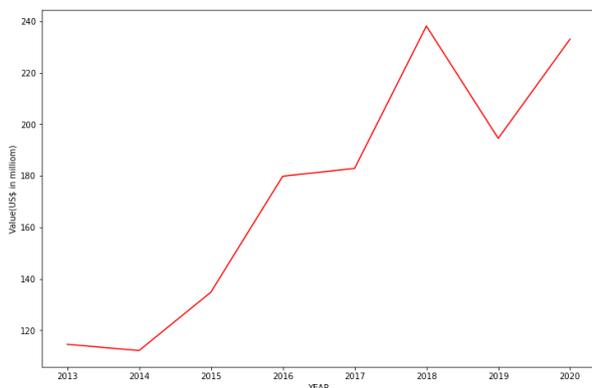


Figure 2. Indian turmeric export trend from 2013 to 2020 (Tridge 2021)

Table 3. Top five turmeric importing countries from India in 2020 (Tridge 2021)

Trade flow	Export Share in 2020 (%)	Import Value In 2020 (US\$ million)	Export Growth value 2019-20 (%)
India to USA	22.14	51.6	+26.75
India to Bangladesh	18.26	42.55	+211.37
India to Iran	5.63	13.12	-12.78
India to UAE	4.77	11.01	+22.15
India to Malaysia	3.85	8.96	+2.38

Turmeric Import Trends in European Union

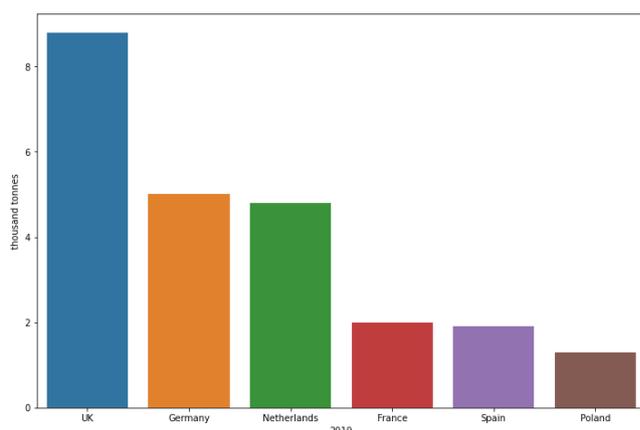


Figure 3. Largest turmeric EU importers in 2019 (CBI 2021ⁱⁱⁱ)

- From 2015 to 2019, European imports of turmeric increased in both volume and value. The importance of turmeric imports to Europe increased by over 69% and over 73 % in terms of value over this period (CBI, 2021).
- The UK is the lead importer. From 2015 to 2019, the value of turmeric imports increased by 89%, followed by the Netherlands (81%), Germany (72%), France (43%) and others (CBI 2021).

Table 4. EU turmeric imports from India

Country	Import Value in 2019 (US\$ million)	Exporters share (%) In 2019
UK	13.1	95.1 (India)
Germany	11.8	70.0 (India) 13.3 (Netherlands)
Netherlands	9.1	70.2 (India) 20.0 (Peru)
France	5.6	56.8 (India) 13.0 (Spain)
Spain	3.3	68.1 (India) 11.9 (Peru)
Poland	2.6	50.3 (India) 25.8 (Netherlands) 19.2 (Germany)

Turmeric Import Trends in Germany

- Germany is the second largest European importer of turmeric. In 2020, nearly 55% of German imports of turmeric came from India, with a value of US\$ 8 million (Tridge 2021).
- Turmeric demand in Germany is increasing steadily and Germany is expected to remain an important market for turmeric. Sales of dietary supplements in German pharmacies in 2019 amounted to € 2.2 billion. Important suppliers of turmeric supplements are Govinda, Nu3 and Nature Love. German importers and turmeric traders include Dr Behr GmbH and Bio Import Europa (CBI 2021).

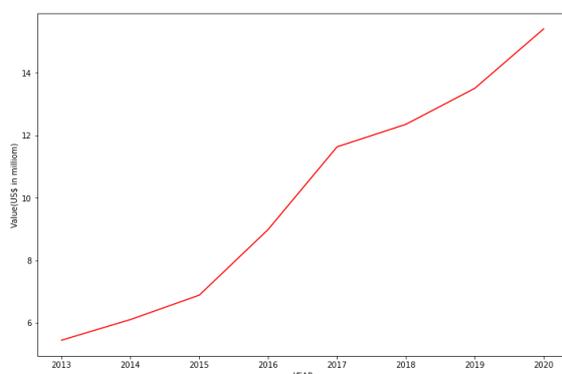


Figure 4. Turmeric import trends in Germany from 2013 to 2020 (Tridge 2021)

Table 5. Top five turmeric exporting countries to Germany in 2020 (Tridge 2021)

Partner	Import Share in 2020 (%)	Import Value In 2020 (US\$ million)	Export Growth value 2017-20 (%)
India	55.26	8.52	+26.25
Peru	15.72	2.42	+235.23
Netherlands	5.34	0.82	-13.91
Austria	4.20	0.64	+658.02
Madagascar	3.78	0.58	-27.84

Market Segmentation in Europe

- Turmeric is used in the pharmaceutical, nutraceutical and homoeopathic industries. However, in Europe, most turmeric is used by the food industry. Turmeric is increasingly used in the natural health product industry because it provides several benefits.
- There is a growing demand for nutritional supplements and vitamins in Europe. This trend is driven by rising consumer awareness. Consumers are looking for new ways to improve their health and immune system. The ageing population and the rise in chronic diseases within Europe raise interest in preventive health care.
- Turmeric is gaining popularity on the European market. It is used in nutritional supplements because of its numerous beneficial properties. Turmeric is also used in some other types of complementary and alternative medicine.



Figure 5. Examples of Turmeric supplements and consumer prices in German

- Europe dominates the retail and food-service segments for spices and herbs (often national) spice brands/companies, such as Ostmann, Fuchs in Germany, Versteegen and Euroma in the Netherlands, Santa Maria (Scandinavian countries) and multinational brands such as McCormick, Kraft Heinz, etc. For example, the Dutch spice specialist Silvo has been part of McCormick since 2004. Also, some strong brands are developing in South-East Europe, such as Prymat Group. These spice companies import spices worldwide and have in-house processing and R&D facilities (CBI 2021^{iv}).

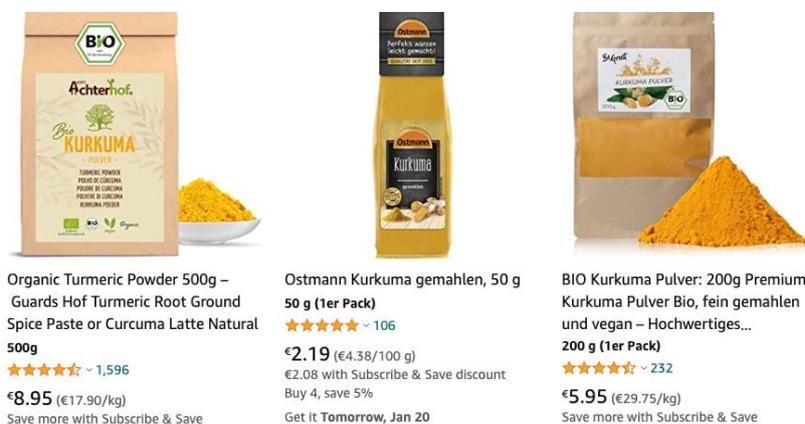


Figure 6. Consumer prices of various Turmeric brands in Germany

EU Regulatory Requirements

Turmeric as a food supplement must comply with:

- EU food supplement legislation
- European General Food Law
- Maximum Residue Levels (contaminants in food and microbiological contamination of food, food hygiene as outlined in the EU's Hazard Analysis and Critical Control Points)

Several registered food safety issues with turmeric in the EU's Rapid Alert System for Food and Feed resulted in action, including its seizure. Industry sources suggest adulteration is a crucial food safety issue for turmeric from India and Bangladesh, mainly when there is a low supply.

If turmeric is used in herbal medicinal products, it must comply with:

- EU Directive 2004/24/EC
- Rules governing medicinal products in the EU, including allowed marketing claims.

There are several other requirements for turmeric. It must also comply with:

- Good Agricultural and Collection Practices (GACP) for raw plant materials
- Good Manufacturing Practices (GMP) for extracts or active substances used as starting materials
- Medicinal use of turmeric as stated by the European Medicines Agency (EMA)

Turmeric Production in India

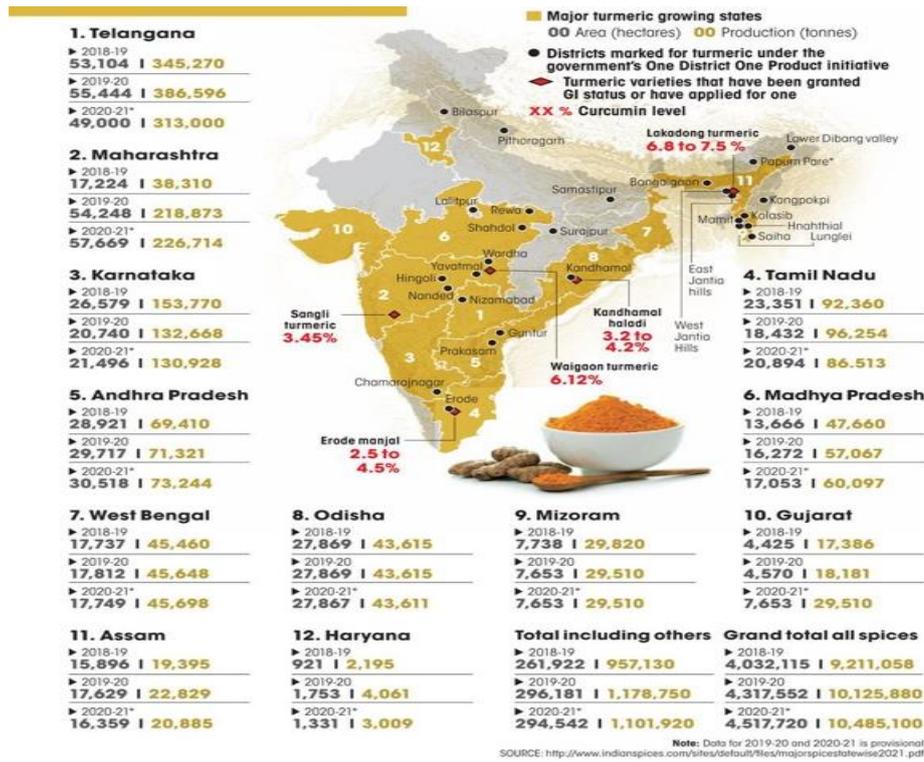


Figure 7. Central Turmeric growing states in India^v

- In 2019-20, the area under turmeric production was 0.2 million hectares with a production of 0.9 million tonnes. The average productivity was 3980 kilograms (kg) per hectare.
- The prominent turmeric producing states are Telangana with a share of 32%, followed by Maharashtra 15.8%, Karnataka 11.2%, Tamil Nadu 9.9%, West Bengal 8.2% and others in 2019-20.
- Despite being the biggest producer of turmeric, there is an increasing import trend. According to the Spices Board of India, the importance of turmeric has increased from 15,330 tonnes in 2015-16 to 28,580 tonnes in 2019-20.
- Most of the substance is from Vietnam. The extraction and food processing industries in India prefer to get turmeric from outside, since it is cheaper.

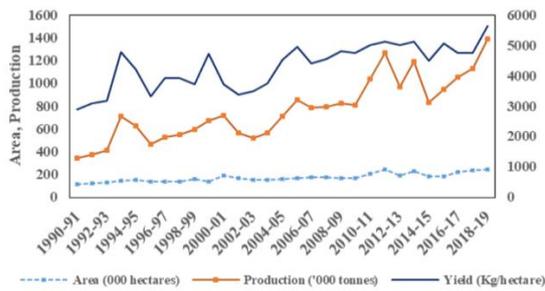


Figure 8. Trends in area, production and productivity in India from 1990-2019 (MOFPI 2021^{vi})

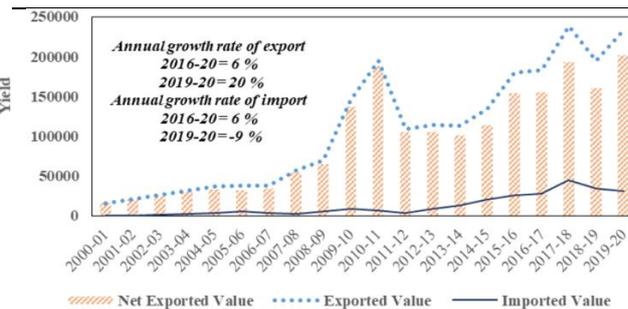


Figure 9. Export and import trends of Turmeric from 2000-2020 (MOFPI 2021)

- Turmeric is ready for harvest within 7 to 9 months of sowing, depending on the variety. The various types of turmeric that are traded in India are Allepey Finger (Kerala), Erode Turmeric (Tamil Nadu), Salem Turmeric (Tamil Nadu), Rajapore Turmeric (Maharashtra), Sangli Turmeric (Maharashtra), Nizamabad Bulb (Telangana).
- The major trading centres of turmeric are Nizamabad, Dugirala in Telangana, Sangli in Maharashtra and Salem, Erode, Dharmapuri and Coimbatore in Tamil Nadu.
- In 2017-2019, Figure 10 shows the typical example of price playing an essential role in the sowing operations. When farmers receive a high price in a season, they tend to increase the area under turmeric. However, this increased area increases supply and farmers then experience a crash in price.

- Fluctuation in most arrivals largely contributes to the instability of the produce arrivals at the local market as well the price of turmeric in international markets also influences domestic prices.

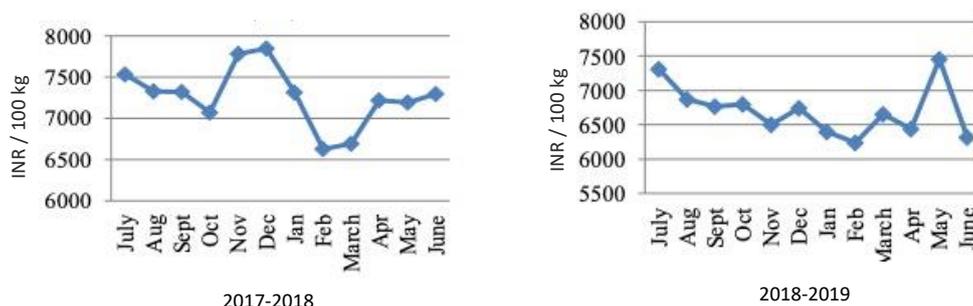


Figure 10. Average seasonal price of turmeric at APMC markets (Shroff 2021)

Turmeric Product and Market Segmentation

Turmeric powder:

- More than 80% of produce is converted into powder, which is used for culinary purposes. Turmeric is an integral part of almost every meal for an Indian household and its warm mild aroma and distinctive yellow colour is essential for curry powders and used to flavour almost all Indian dishes. Turmeric powder wholesale price is an average of INR 13000 to 15000 per 100 kg (Shroff 2020^{vii}).
- Retail market: Several traditional brands in the spice sector produce turmeric powder. Popular brands like TATA, MDH, Everest dominate in the retail sector with an average price of INR 20 to 40 per 100g pouch.



Table 6. Turmeric consumer price in India

Brand	Turmeric powder (INR)
TATA Sampann 200g	59
Aashirvaad 100g	20
MDH 100g	34
Patanjali 200g	62
Everst 200g	56

- Organic Turmeric powder: Organic turmeric demand is increasing in India; organic turmeric consumer price is three to four times more.



Table 7. Organic turmeric consumer price in India

Brand	Turmeric powder (INR)
Orgrain India USDA Certified Organic Turmeric Powder 150g	239
Geo-Fresh Organic Premium Quality 100g	285
Carmel Organics USDA Certified 1.2 kg	999

Curcumin:

- Curcumin is the main biologically active phytochemical compound of turmeric. It is one of the three curcuminoids of turmeric and is extracted, concentrated and standardized for usage in several products.
- 58% of curcumin is used in the pharmaceutical industry, followed by food sector 37%, cosmetics 4% and others.
- Major manufacturing curcumin industry players are Akay Flavours & Aromatics Private Limited, Arjuna Natural Extracts Limited, Naturite Agro Products, Boimax Life, etc.
- The price of the product ranges between INR 6000 - 8000 per kg.

Turmeric oil:

- Dried rhizomes yield about 5-6 % volatile oil, which is largely used in the pharmaceutical industry. However, in India the production of turmeric oils is negligible.

Turmeric oleoresin:

- Oleoresin has a great demand in the global food and pharmaceutical sector. It is a semi-viscous liquid that contains both volatile aromatic principles and non-volatile acrid fractions.
- Oleoresin is largely made from imported turmeric. Hence, barely 1 to 1.5 % of domestic production is utilized for manufacturing turmeric oleoresin.

Turmeric Organic Promotional Schemes in India

Spice Board India: The Spice Board offers the following subsidies which may be obtained:

- Organic spice cultivation: Subsidy towards 12.5 per cent cost of production subject to a maximum of INR 12500/- per ha. for identified spices.
 - ICS groups: 50 per cent cost of maintenance of ICS subject to a maximum of INR 75000/- as subsidy.
 - Organic certification: Assistance to the group of farmers, NGOs and Farmers Co-operative Societies/Associations in acquiring certification for their farms/processing units by meeting 50 per cent cost of the certification subject to a maximum of INR 1 lakh. Individuals are eligible for 50 per cent of the cost of certification subject to a maximum of INR 30000.
 - Vermicompost units: In order to enable the growers to establish the vermicompost units, INR 3000/- is offered as a subsidy towards 33.33% of the cost of setting up a unit.
 - Organic value addition units: 50 per cent of the cost of the equipment/machinery for setting up of primary processing unit for organic spices subject to a maximum of INR 5.00 lakh as subsidy.
- In addition, there are various schemes at the state level for the promotion of organic cultivation. These may also be accessed by the facilitating agency.

National Mission for Sustainable Agriculture (NMSA): The Ministry of Agriculture and Farmers Welfare launched Central Sector Scheme, Mission Organic Value Chain Development for North East Region (MOVCD-NER) to support the development of value chain starting from input supply, certification, to the creation of facilities for aggregation and processing of the product. There are 33 clusters in Manipur operating under MOVCD-NER, also Assam and Sikkim have better geographic coverage of FPOs (Farmer Producer Organizations). By promoting such practices in other North-Eastern states, they can exploit this niche market in the near future.

PM Formalisation of Micro food processing Enterprises Scheme (PMFME): “One District One Product”.

Turmeric is listed in the selected product in all of the North-Eastern states, this is an additional scope under which states can be encouraged to adopt cluster approach and group approaches such as FPOs, SHGs (Self Help Groups) and producer cooperatives. This will help to bring a win-win situation to both farmers and the microenterprises. Also, except for Assam, the spread of formal/organized food processing units are scanty, the innovation centre for developing value-added products from the traditional knowledge can be encouraged so that in the long run the product can be easily scaled up.

Paramparagat Krishi Vikas Yojana (PKVY): Under PKVY farmers taking up organic farming (minimum group size of 50 farmers) are provided grant assistance of INR 20000 per acre spread over a three-year period. Farmers could utilise these funds for purchasing seed, crop harvesting and transportation of produce.

What are significant constraints in the Turmeric supply chain?

Category	Constrains
Production	<p>Low productivity</p> <ul style="list-style-type: none"> - Insufficient availability of quality seed. - High rainfall in the country's North-Eastern region is one of the significant problems of turmeric cultivation. - The majority of farmers use their own seed which suffers from quality, and thus the crop suffers from diseases such as rhizome rot which lowers the yield. <p>Post-harvest losses:</p> <ul style="list-style-type: none"> - Lack of cold storage leads to substantial post-harvest losses. - Processing of turmeric is mainly in the form of sun drying. - Modern infrastructure, such as mechanical driers should be encouraged to expedite the drying process and produce high-quality clean produce
Market constraints	<p>High price fluctuation: The price largely depends upon the quality of the produce and if the moisture content is high, then the produce is sold at a price that is lower than ruling market price.</p>

Difficulties in organic certification

Organic turmeric is also produced in Erode in Tamil Nadu. While the cost of cultivating the produce was much higher, several farmers were reluctant from cultivating organic turmeric because they have to pay unaffordable fees for certification.

Comparative challenges in turmeric exports from India

- Vietnam has been emerging as a competitor. The export of turmeric from Vietnam grew from 4.5 million worth in 2017 to 22.8 million in 2018, without concomitant increase in import, which shows that the surge in export is not a temporary phenomenon based on importance and re-export but based on sustained capacity development.
- The key focus should be on two important factors – oleoresin or curcumin content of turmeric and turmeric yield i.e. production per area under cultivation. The adoption of scientific cultivation practices, GAP, IPM, etc., focus on the increasing area under cultivation with high curcumin content turmeric and devising a mechanism to control price fluctuation in annual spices' crops will go a long way in addressing the challenges faced by turmeric producers and exporters.

ⁱ <https://www.pjtsau.edu.in/files/AgriMkt/2021/june/Turmeric-june-2021.pdf>

ⁱⁱ <https://www.tridge.com/intelligences/turmeric1>

ⁱⁱⁱ <https://www.cbi.eu/market-information/natural-ingredients-health-products/turmeric/market-potential>

^{iv} <https://www.cbi.eu/market-information/natural-ingredients-health-products/turmeric/market-entry>

^v <https://www.civildaily.com/news/turmeric-cultivation-in-india/>

^{vi} <https://www.mofpi.gov.in/pmfme/enewsaugust9/markettrends1.html>

^{vii} Shroff, Sangeeta (2020). Assessment of ratio of different products / forms of spices being marketed: Study based on Ginger and Turmeric: AERC Report. Gokhale Institute of Politics and Economics (GIPE), Pune, India.