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THE MARKET FOR TURMERIC

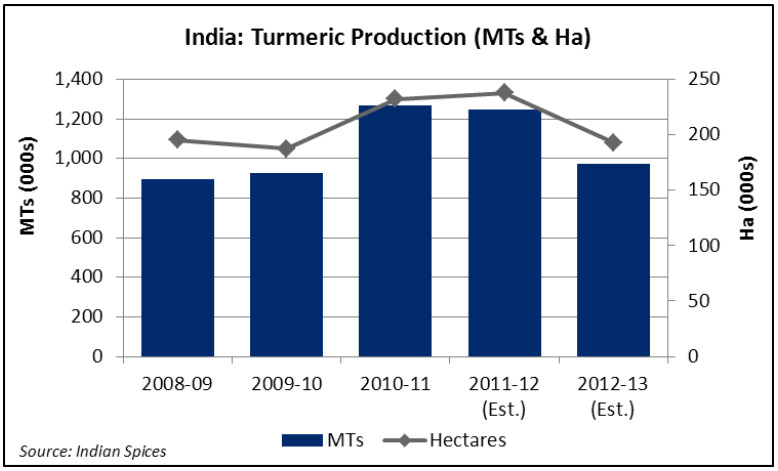
Market Brief #08

INTRODUCTION

Native to southern India, turmeric (*Curcuma longa*) is a rhizome or rootstalk of a plant used as both a food spice and a dye. Nicknamed the "golden spice" for its distinctive bright orange-yellow coloration, there are approximately 30 varieties of turmeric, with the majority categorized as dried cured varieties. The spice is primarily used in culinary dishes such as curries or as a coloring agent in mustards or other sauces. Medicinally, turmeric has been found to have anti-inflammatory and anti-oxidant properties, facts that have driven sales in the US and Europe in recent years.

PRODUCTION

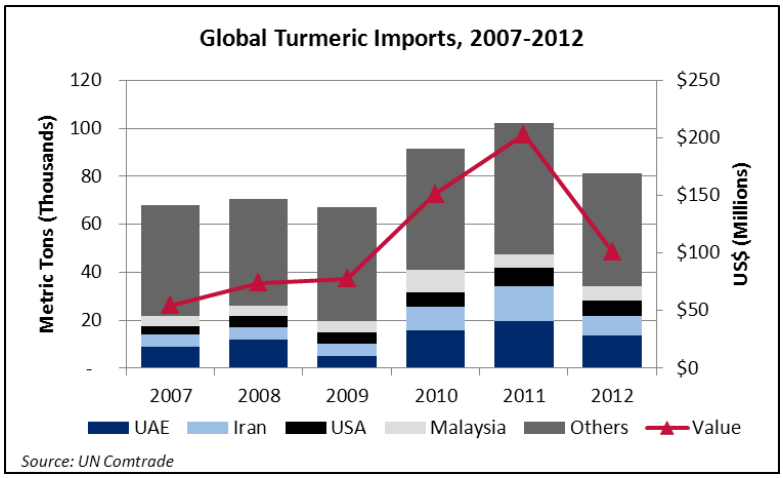
According to India's Ministry of Commerce, 30 to 40 countries produce turmeric, with output ranging from approximately 1 million MTs to 1.4 million MTs per year. This fluctuation is primarily due to **India** and the monsoons that affect its production. On average, **India comprises 80-85 percent of global output** and production. According to the government of India, turmeric production increased by nine percent between 2008 and 2012, from 894,590 MTs (2008-2009 season) to an estimated 973,098 MTs (2012-2013 season). During this same period, average yields were just over five MTs per hectare. Within India, the southeastern state of Andhra Pradesh is the dominant regional producer (~60% of India's output), while the states of Tamil Nadu, Orissa, Karnataka, West Bengal, Gujarat and Kerala are also producers of significance.



China is the second largest producer and generally accounts for about eight percent (~80,000 MTs) of global output. According to industry experts, in 2009 and 2011, China competed with India for the Japanese and Malaysian turmeric markets owing to tight supplies from India. China was able to take advantage of high prices in these Asian markets. However, these gains were erased in 2012 as Indian supplies reemerged and turmeric prices fell. After China, **Myanmar** (~4% of global output), **Nigeria** (3%), and **Bangladesh** (3%) are the next largest producers.

MARKETS

From 2007 to 2012, global turmeric imports increased 20 percent, from 67,902 MTs to 81,175 MTs; equivalent values increased 85 percent, from US$54.5 million to US$101 million. Imports peaked in 2011 when over 102,000 MTs (US$202 million) were imported. The import spikes in 2010 and 2011 were primarily due to increased availability (e.g. good harvests) in India.

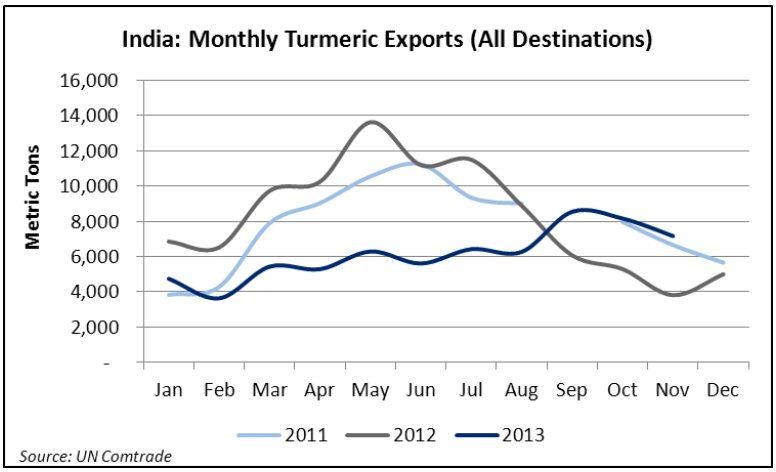


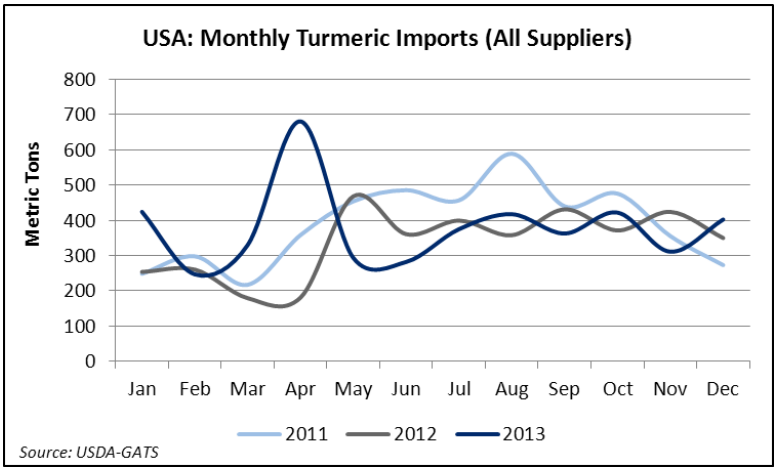
India is the largest producer, consumer and exporter of turmeric, exporting more than 77,000 MTs per year between 2007 and 2012. India's supply has dominated the market, increasing from 79 percent of global imports in 2007 to 91 percent of global imports by 2012 (by volume). This rise was primarily due to increased production during the 2011 and 2012 seasons. However, by mid-2012, with ample supply on the market, prices began to plummet, pushing farmers to switch to other crops. By 2013, the acreage dedicated to turmeric production dropped by almost 30 percent.

The **United Arab Emirates** (UAE) is by far the largest importer of turmeric owing to Dubai's status as a major trading hub and its large South Asian expatriate community. On average, the UAE re-exports roughly half of its imports to secondary markets. From 2007 to 2012, UAE imports increased from 8,907 MTs to 13,483 MTs (or by 51 percent), while imports reached a peak of 19,751 MTs in 2011. **Iran** was the next largest buyer and saw their imports increase from 5,031 MTs to 8,306 MTs (or by 65 percent) over the same period.

The **United States** was the third largest purchaser overall and recorded a 75 percent increase, from 3,703 MTs to 6,468 MTs, over the same period. From 2007 to 2013, India's import share of the US market increased from 86 to 90 percent, dominating other small suppliers such as Fiji, Jamaica, and Vietnam[1].

Other importers of note include **Malaysia**, which saw its imports rise from 4,251 MTs to 6,109 MTs from 2007 to 2012. Following Malaysia is **Bangladesh** (~4,800 MTs per year), **Japan** (~4,400 MTs per year), and **Sri Lanka** (~4,000 MTs per year) – see Table 1.





SEASONALITY

In India, turmeric is a *Kharif* or rain-fed (monsoon) crop that is generally sown during the summer months and harvested from late winter on through spring. As seen in Table 2 below, the primary harvest season in India runs from February to April, but can extend to January to June. Owing to its seasonality, turmeric competes with chili, cardamom and ginger for farmland.

Table 1: Global Imports of Turmeric

Suppliers	2007		2008		2009		2010		2011		2012	
	MTs	US$ 000s	MTs	US$ 000s	MTs	US$ 000s	MTs	US$ 000s	MTs	US$ 000s	MTs	US$ 000s
UAE	8,907	$4,595	11,967	$8,997	5,247	$6,717	15,974	$21,510	19,751	$34,662	13,483	$12,097
Iran	5,031	$3,011	5,133	$4,532	5,049	$6,732	9,712	$8,748	14,209	$12,936	8,306	$7,597
USA	3,703	$3,190	4,601	$4,189	4,440	$4,280	5,759	$7,755	7,818	$15,463	6,468	$9,505
Malaysia	4,251	$3,048	4,203	$4,420	4,936	$6,521	9,431	$12,700	5,486	$12,832	6,109	$6,810
Others	46,011	$40,733	44,540	$51,718	47,354	$53,520	50,794	$100,335	55,117	$126,975	46,809	$65,055
Total	**67,902**	**$54,576**	**70,445**	**$73,856**	**67,026**	**$77,771**	**91,670**	**$151,048**	**102,381**	**$202,868**	**81,175**	**$101,063**

Source: UN Comtrade, HS Code 091030

[1] According to the Director and Chief Executive of AVT McCormick Ingredients, among other types of turmeric, the US imports *Alleppey finger* turmeric of 5 to 5.5% curcumin content for use as a coloring agent in mustard sauce.

From January 2011 to November 2013, India's monthly turmeric exports (all buyers) ranged from a high of 13,623 MTs in May 2012 to a low of 3,633 MTs in February 2013. In general, Indian exports dip during the winter months (November to February) and rise during the summer months (May to July) in line with growth and harvest period of the crop.

Table 2: Turmeric Crop Calendar - India

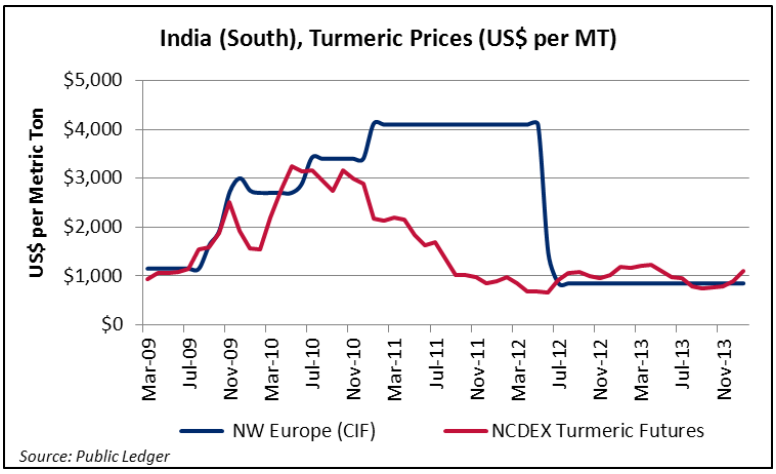
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
GROWTH	HARVEST				SOWING			GROWTH			

Source: NCDEX

In general, US imports tend to dip during late winter (January-February) and rise in late summer (July-August). This variation roughly coincides with the production season of India.

PRICES

Indian turmeric prices are available from the Public Ledger as both CIF[2] (Cost-Insurance-Freight) Northwestern Europe and from the National Commodity & Derivatives Exchange Limited (NCDEX)[3]. The NCDEX is an on-line commodity exchange that is headquartered in Mumbai, India. According to the NCDEX, from March 2009 to February 2014, turmeric futures fluctuated from a high of US$3,100-US$3,200 per MT from May-July 2010, to a low of US$680 per MT from April to June 2012. Since 2013, turmeric futures have averaged just over US$1,000 per MT.



Source: Public Ledger

From March 2009 to January 2014, the price of turmeric shipped to Northwestern Europe (CIF) from southern India ranged from a high of US$4,100 per MT (January 2011 to May 2012) to a low of US$850 per MT (July 2012 to January 2014). A Public Ledger article noted that during that the high prices in early 2012 were due to purchases booked by Malaysian and Japanese buyers.

STANDARDS, LAWS AND REGULATIONS

Grades and Standards

The American Spice Trade Association (ASTA) adopted the original Cleanliness Specifications for spices, seeds and herbs in 1969 and they have been revised numerous times, the latest occurring in 2007. The ASTA Cleanliness Specifications were designed to meet or exceed the United States Food and Drug Administration (FDA) Defect Action Levels (DAL[4]).

Table 3: US Cleanliness Specifications for Turmeric

Whole insects dead	Excreta Mammalian	Excreta other	Mold	Insect defiled/ infested	Extraneous foreign matter
By count	By mg./lb	By mg./lb	% by wgt.	% by wgt.	% by wgt.
3	5	5	3	2.5	0.5

Source: American Spice Trade Association, Revised 2007

[2] CIF: "Cost, Insurance and Freight" means that the seller delivers when the goods pass the ship's rail in the port of shipment. IFB Group http://www.ifbgroup.net/inco/term_CIF.htm

[3] NCDEX – Turmeric: http://www.ncdex.com/GlobalSearch/Search.aspx?SearchText=TMCFGRNZM&SearchTitle=TURMERIC

[4] The DAL refers to Title 21, Code of Federal Regulations, Part 110.110 that allows the Food and Drug Administration (FDA) to establish maximum levels of natural or unavoidable defects in foods for human use that present no health hazard. The FDA set these action levels because it is economically impractical to grow, harvest, or process raw products that are totally free of non-hazardous, naturally occurring, unavoidable defects.

It should be noted that in October 2013, the U.S. Food and Drug Administration (FDA) announced a voluntary recall of turmeric powder from Bangladesh ("Pran" brand) due to lead contamination. Although the FDA has not set quality standards for lead in spices, the agency has advised that natural food color additives, similar to turmeric, should not have more than 10 parts-per-million (ppm) of lead. The recalled turmeric was found to have 48 ppm.

India has published its own international standards under the classification of IS 3576 (2010): Spices and Condiments--Turmeric, Whole and Ground, and IS 10925 (1984): Specification for Turmeric Oleoresin[5]. These standards should be met or exceeded when exporting to international markets given India's near complete control over the global market in recent years.

According to US importers, important determining factors for purchasing turmeric (both whole and powdered) were coloration, quality certification, price, and supply from India. Importers prefer a bright yellow/orange product as darker colored turmeric is not preferred. One buyer noted that this has been an issue in the past and that bright colored turmeric is better suited for use as food additive and dye. Another buyer stated that their principal requirements is that the turmeric must be NOP certified organic[6] (e.g. USDA Organic) and IMO (Institute for Marketecology) Fair for Life Social and Fair Trade certified[7].

OUTLOOK

As the largest producer (80-85 percent of world output), consumer, and exporter of turmeric (~77,000 MTs per year), India drives global supply and prices. On the whole, India's turmeric production cycle and monsoonal weather are the primary determinants of global supply and prices. Demand is primarily driven by price and product quality. In 2011 and 2012, India produced over 1.2 million MTs annually of high quality turmeric, leading to a drop in international prices by mid-2012. Farmers reacted to this price drop by shifting to more profitable crops such as chili, cardamom and ginger; as a result, the area under turmeric cultivation declined by almost 30 percent in 2013. New market entrants need to manage against this "boom and bust" business cycle.

New entrants to the market need to focus on cultivating a high quality crop that not only has the desired bright yellow/orange coloration, but also has a curcumin content in excess of five percent (powdered turmeric on average has just over a three percent curcumin content by weight). Suppliers other than India are not likely to fill more than a niche in the market given India's dominance. Strategies to differentiate based on certification, or varietal may help solidify a niche supplier status. In the future, Honduras and other small producers should monitor Indian production trends in order to take advantage of potential new market windows and corresponding higher prices. All suppliers will have to work hard to break into the market, and this can only be achieved by showing that they can supply a marketable product on a consistent basis.

[5] IS 3576 (Whole/Ground Turmeric): http://archive.org/stream/gov.law.is.3576.2010/is.3576.2010_djvu.txt and IS 10925 (Turmeric Oil) https://archive.org/stream/gov.in.is.10925.1984/is.10925.1984_djvu.txt

[6] USDA's National Organic Program: http://www.ams.usda.gov/AMSv1.0/nop

[7] Fair for Life: http://www.fairforlife.org/pmws/indexDOM.php?client_id=fairforlife&page_id=home

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