

GLOBAL PULSE MARKET, PART I

FOOD OF THE PAST ... AND FOR THE FUTURE

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OBJECTIVES

This report has the following objectives:

- A. Analyze the world pulse market with a particular emphasis on those species of pulses that are primarily produced in North America to better understand its market structure, where value is created in the supply chain, key trends, and the sustainability of the North American producer's competitive advantages.
- B. Through this analysis, identify market inefficiencies and determine areas of risk and opportunity for a market participant with origination and supply chain expertise.
- C. Gain a thorough understanding of the full range of market participants in North America, as well as some key market participants in overseas markets.

FINDINGS

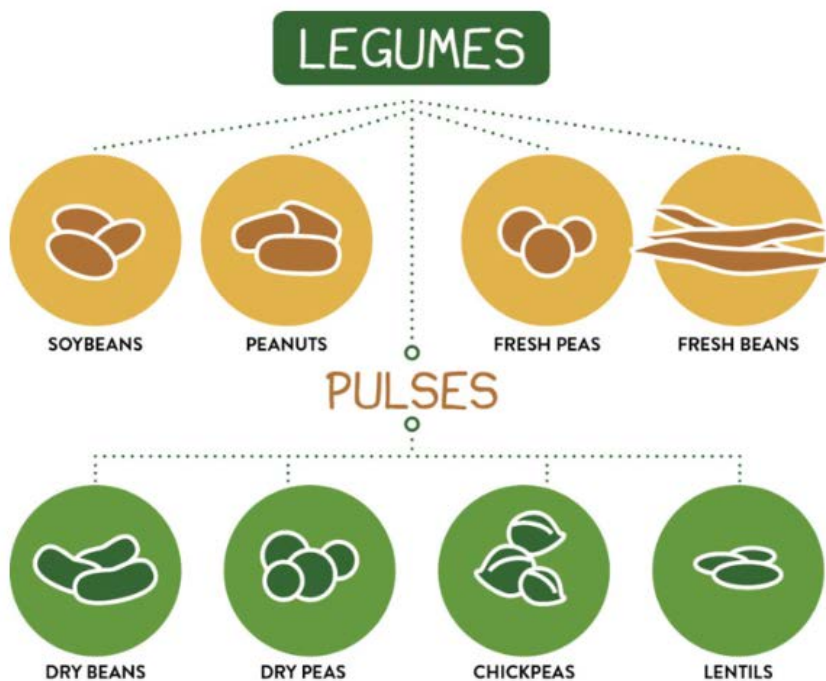
The Global Pulse Market has experienced material growth in the past decade, well in excess of population growth – particularly in the categories of dry peas, lentils and chickpeas. This market has also witnessed considerable investment during this past decade, with notable acquisitions and investments of companies involved in the global movement of pulses.

At the same time, the open global market that has facilitated international trade has come under duress in the past two years, affecting prices, causing losses, disrupting supply chains and creating uncertainty for many market participants who had become accustomed to consistent growth in the market. India's decision to implement trade policies to protect its domestic farmers in the face of significant growth in pulse production resulted from the bullishness that existed across the global following the 2016 trade year. Should those tariffs remain in place into 2019, there could be a re-ordering of the key players in the global trade markets. There will also be risks and opportunities for current market participants.

Although there are short-term disruptions in the market, the long-term growth trend in pulse consumption appears to be real and should be able to be sustained for the next decade.

OVERVIEW

Legumes are the family (*Fabaceae*) of plants, fruits, and seeds from which many of the most commonly consumed foods in the world come. There are thousands of varieties of legumes, including soybeans, peanuts, fresh beans, fresh peas and pulses.



Pulses are the edible seeds of plants in the legume family and include, among others, the following broad categories:

- dry beans
- dry peas
- lentils
- chickpeas (garbanzo beans)
- broad beans (fava beans)
- cowpeas (black-eyed peas)
- pigeon peas
- lupin beans

The worldwide pulse market is diverse and complex, with material regional differences in terms of agricultural productivity, consumption habits, end markets, processing capabilities and supply chain systems. South Asia, North Africa, Sub-Saharan Africa and the Middle East are the world's largest consumers of pulses, and pulses have been a central component of people's diets for thousands of years. South Asia, in particular, given the size and density of its population, drives significant segments of the pulse markets.

Farmers in North America primarily grow three types of pulses – dry peas, dry beans and lentils, as well as a small amount of acreage allocated to growing chickpeas and cowpeas (black-eyed peas).

This report seeks to provide a broad understanding of the worldwide pulse market – and Canada and United States' place in that market. To have a solid understanding of the market, this report explores the following topics, among others:

1. Common Varieties
2. Production & Trade
3. Consumption Trends
4. Production Costs, Yield and Volumes
5. Pricing
6. Value Chain Analysis
7. New Markets
8. Competitive Landscape

COMMON VARIETIES

Pulses are unique in nature because they provide high amounts of protein, help the soil in soil rotations, are environmentally sustainable by using less water, are relatively inexpensive to produce, and are a global crop consumed everywhere. Pulses contain very little fat, especially compared to crops such as soybeans and peanuts. Pulses may be prepared in different ways, whether ground, whole, split, or fractionated into fibers, starches, and proteins.

DRY EDIBLE BEANS

Beans have been grown domestically for over 7,000 years, most likely originating from Central and South America¹. Surging in popularity following WWII, beans are now a staple in Americans' and the world's diets.

1. Western Hemisphere. The largest producer nations of dry edible beans in the Western Hemisphere are (in order of production volume) Brazil, United States, Mexico and Argentina. Common types are pinto (*carioca*), black, navy, red kidney, and great northern. Each type of bean has slightly different characteristics, taste, texture, and appearance.



Light Red Kidney Beans



Dark Red Kidney Beans



Pinto Beans



Pink Beans



Black Beans



Navy Beans



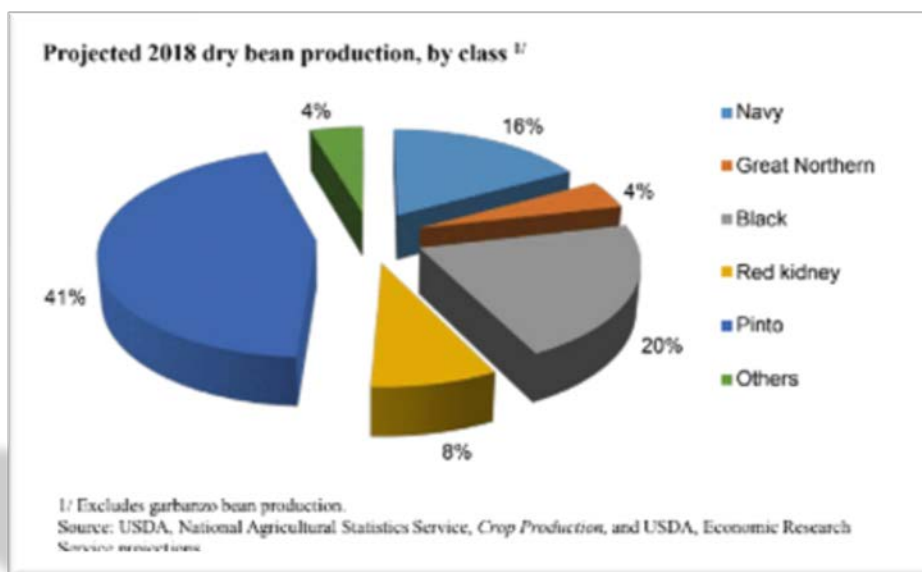
Cranberry (Romano) Beans



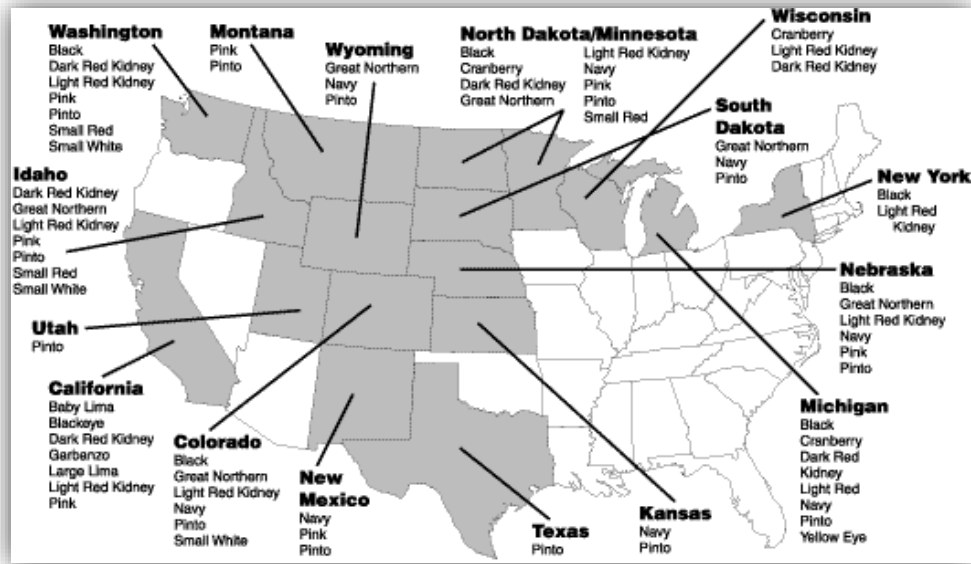
White Beans (Great Northern Beans)

While the most commonly grown beans in the Americas are black and pinto beans, there are hundreds of varieties grown in local communities, with significant regional variation and tastes². Geography alters the bean production and type of beans grown. For example, rainfall during the growing season can discolor light beans, so dark seeded beans tend to have better results in those climates.

Pinto beans represent between 40% and 50% of total dry edible bean production in the Americas, followed by black beans representing about 20% of total production. The below chart shows the projected dry edible bean production in the United States for 2018. USDA projections and production changes each year based on global demand, weather patterns, productivity, competition, and projected imports and exports.



Edible beans grown the U.S. are primarily grown in the northern states, particularly North Dakota, Michigan, Nebraska, Minnesota, Idaho, Colorado, Montana, and the northern region of California. The following map of the United States identifies common types of beans grown in the key producer states.



2. Eastern Hemisphere. Across the Eastern Hemisphere, farmers produce an array of bean varieties that are less commonly seen in the Americas – though they are imported. The most ubiquitous species produced are the following:

- **Adzuki bean** – small, (typically) red bean commonly grown in China and other east Asian nations.



- **Matpe bean** – also called black gram or urad, this is the largest single bean variety grown on the Indian subcontinent, excluding chickpeas (garbanzo beans) or Arhar/tur (pigeon peas), which are statistically broken out as separate categories of pulses.



- **Mung bean** – also called green gram, this is the second largest variety grown on the Indian subcontinent.



- **Moth bean** – this bean also is a popular variety grown in India and other arid climates across Africa and Asia.



DRY PEAS

Peas originate from the Mediterranean Basin and have been consumed there for thousands of years. Two main categories of peas exist – fresh (garden) peas and dry (field) peas. Within the dry pea family, two main varieties are grown throughout the world – dry green peas and dry yellow peas. When these peas are hulled and then split in half along the natural seam, they become split peas, which encourages faster cooking and eliminates the need to presoak. Green split peas are sweeter and less starchy than milder yellow split peas. There is heavy demand for yellow peas in South Asia because they serve as a substitute for chickpeas.



Dry pea crops are known for having the ability to withstand cool weather with minimal damage, thus allowing them to grow well in colder climates. Peas – as with most pulses – are also good for the soil, as roots harvested from a pea crop decay, they release nitrogen into the soil; thus, they are a common rotation crop. Dry peas do not handle excess water well but are strong crops for dry conditions and tolerate draught better than others. The ability to grow in cool, dry places allows them to be grown well throughout Canada and in the northern part of the U.S., as well as in colder European climates (e.g., Baltic States, Ukraine, Russia, France).

Dry peas are sold into the livestock feed market and the human food market. In Western Europe, peas are primarily destined for animal feed. In Asia, peas are mostly sold for human consumption. Dry peas have the ability to be turned into dry pea flour as well, which is used worldwide.

Peas have a high source of protein and energy, as well as dietary fibers. Dry peas have little fat and cholesterol and have the nutrient folate, which helps with pregnancy. Dry peas may also lower the risk of several health issues, such as various cancers, heart disease, and stroke. Peas also help with stabilizing blood sugars and fighting diseases.

LENTILS

Lentils may have been one of the first agricultural crops ever grown and are grown all over the world by small local farmers. Lentils are one of the more difficult pulse crops to grow on a large commercial scale, though, because they are low-growing, typically yield no more than two lentils in each short pod, and need a warm, dry autumn to ripen for harvest.

The first crop of lentils in the United States were grown in Washington state in 1916³. Lentils, like dry edible beans and dry peas, grow well in colder, northern climates. Thus, most lentil production in North America is in Saskatchewan, Alberta, North Dakota, Montana, Idaho, Oregon, and Washington. A strong rotation crop, lentils reduce the need for fertilization and need less water to grow than many other crops.

Lentils are typically described by reference to their color (red, yellow, green). Commercially, the common varieties of lentils include red split lentils, red football lentils, red whole lentils, Laird green lentils, Easton and richelea green lentils, and yellow split lentils.



Red Split Lentils



Red Football Lentils



Red Whole Lentils



Laird Green Lentils



Easton and Richelea
Green Lentils



Yellow Split Lentils

Lentils are commonly used in soups and stews. Lentils may also be used as substitutes in breakfast bars, muffins, and other types of food that typically use grains, such as animal feed and fish food.

Lentils also play a role in the pet food industry, replacing some of the grain typically used. Lentils have a high amount of protein, fiber, and other nutrients. Lentils help improve digestion, control diabetes, promote a healthy heart, and reduce cholesterol. Lentils have many of the same characteristics as dry beans and dry peas regarding health and crop production.

CHICKPEAS

Chickpeas originated in Mesopotamia and the eastern Mediterranean 7,500 years. Chickpeas are grown widely throughout Africa, South Asia, and the Middle East. Canada, Mexico and the United States all produce some chickpeas – enough to register as a top 10 worldwide producer – and yet, that production is a small fraction compared to India’s annual crop. Greater than 80% of all chickpeas harvested are consumed in India. Chickpeas grow best in areas with good drainage and cool temperatures. The crop typically takes 120 days to mature and can handle drought conditions.

There are two common types of chickpeas – Desi and Kabuli. These types differ in seed size, color, shape and thickness.



Desi



Kabuli

Chickpeas are consumed regularly by vegetarians as chickpeas are high in protein and versatile in nature. Consumers eat chickpeas in salads, stews, and made into flour. Consumers also turn chickpeas into falafel and hummus, common Middle Eastern dishes that have found their place on tables across the world.



Hummus



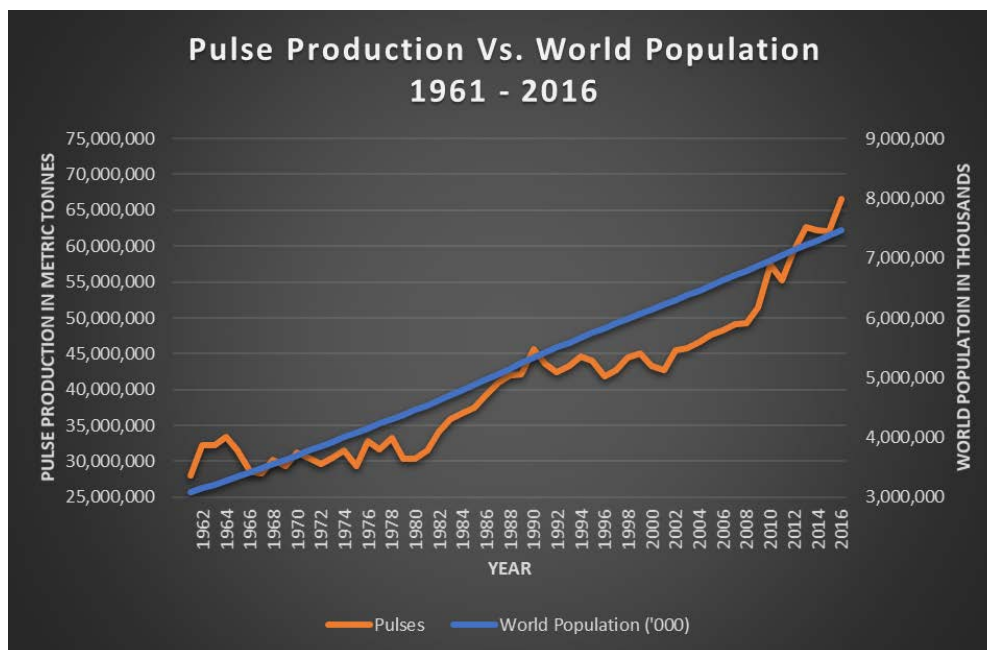
Falafel

PRODUCTION

Total world pulse production exceeded 81 million metric tons in 2016.¹

	2012	2013	2014	2015	2016
<i>Dry Beans</i>	24,463,977	24,629,130	26,866,057	27,656,949	26,846,134
<i>Dry Peas</i>	10,549,707	11,219,366	11,661,583	12,043,280	14,363,097
<i>Chickpeas</i>	11,521,016	13,288,172	13,399,970	11,036,229	12,092,948
<i>Cowpeas</i>	8,357,940	8,281,647	5,599,511	5,800,106	6,991,176
<i>Lentils</i>	4,491,057	5,192,561	4,701,544	5,484,857	6,315,858
<i>Other Pulses</i>	5,318,831	5,652,530	5,791,935	5,614,185	4,968,957
<i>Pigeon Peas</i>	3,972,236	4,466,653	4,755,080	4,406,650	4,489,873
<i>Broad Beans</i>	4,436,827	4,439,668	4,239,957	4,299,452	4,459,658
<i>Lupin Beans</i>	1,324,253	816,901	1,070,713	1,244,079	1,284,842
TOTAL:	74,435,844	77,986,628	78,086,350	77,585,787	81,812,543

Total annual pulse production grew approximately 10% over the five-year period ended 2016, reflecting a growth rate during that time frame that is at twice the rate of world population growth. Pulse production growth advanced again in the 2017 crop, though will likely see a retrenchment in the 2018 crop as a result of expected down production years in several key growing regions. This recent period of growth in pulse production actually reflects a stark reversal, following a 20-year period (1990 – 2010) where pulse production growth lagged world population growth. The below chart shows the growth in the five largest pulse categories (dry beans, dry peas, chickpeas, cowpeas and lentils) against population growth since 1961.



¹ The Food & Agriculture Organization of the United Nations (FAOSTAT) provides comprehensive data across the world and across commodities. The data gathered is presented on an annual basis, while country-specific data gathered by governments may cover different 12-month periods than are reflected in FAOSTAT’s data.

It is not entirely clear from the available data, however, whether the world is experiencing the early part of a medium to long-term growth trend in pulse consumption that will continue to push production northward at a pace faster than world population growth, or whether this past five years of growth is simply an upward bump as we enter into a period of slowing growth consistent with population growth. Our cautious view is that pulse consumption/production growth will continue to outpace population growth as a result of the below factors.

Factors that would suggest pulse growth rates will slow in the coming years:

- Continued decline in China of pulse consumption rates as the population increases consumption of animal proteins.
- African dietary changes to more traditional developed nation model as incomes rise and rural-to-urban migration accelerates, following slowing trends seen in Europe and more recently in China.

Factors that would suggest pulse growth rates will continue to accelerate:

- Faster population growth rates in high pulse consumption regions (i.e., India, Pakistan, Bangladesh, West Africa, East Africa) than in low pulse consumption regions (i.e., United States).
- Growth in European consumption as a result of a significant increase in immigrant populations from Middle Eastern and North African countries.
- Shift in North America and Europe towards healthy eating diets that emphasize plant-based protein sources.
- Growth of pulse-related value-added products (e.g., pulse-based snacks, pulse flour, etc.) that food manufacturers believe will accelerate in the developed world.
- Increasing addition of pulses as ingredients in pet foods.

The following chart provides a comprehensive view of pulse production of the largest producer nations in each major producing region of the world, using 2016 data.

The data reflects the regional diversity across the globe in terms of production and highlights why – even in the face of uneven trade policy with some of the largest market participants (India, China, U.S., EU) – the world market is inexorably connected together with the capacity to supply hundreds of different pulse varieties to every corner of the globe.

Pulse Production (By Commodity, By Country, in metric tons, 2016 data)										
	Dry Beans	Dry Peas	Chickpeas	Cowpeas	Lentils	Pigeon Peas	Broad Beans	Lupin Beans	Other Pulses	TOTAL
North America										
Canada	249,400	4,611,100	106,900	0	3,233,800	0	0	0	0	8,201,200
United States	1,269,916	782,388	107,542	25,945	255,061	0	0	0	0	2,440,852
Mexico	1,088,767	2,438	121,567	0	2,110	0	36,970	0	120,119	1,371,971
South Asia										
India	3,897,611	1,020,366	7,818,984	0	1,055,536	2,848,993	0	0	921,360	17,562,850
Myanmar	5,189,977	78,006	559,390	113,250	971	0	0	0	0	5,941,594
Nepal	19,659	0	10,914	0	253,041	16,415	5,580	0	60,048	365,657
Pakistan	111,770	32,118	517,107	0	8,610	4	0	0	139,397	809,006
Black Sea										
Russia	8,994	2,199,489	319,908	0	65,302	0	6,927	184,679	158,032	2,943,331
Ukraine	53,580	746,230	0	0	2,810	0	3,170	31,210	39,550	876,550
Turkey	235,000	2,919	455,000	0	365,000	0	14,489	0	7,248	1,079,656
Australasia										
Australia	37,958	311,793	874,593	0	181,638	0	423,527	651,946	42,095	2,523,550
China	1,139,866	1,194,131	14,339	13,762	142,991	0	1,608,903	0	128,080	4,242,072
Europe										
United Kingdom	0	188,800	0	0	0	0	288,955	0	208,503	686,258
France	7,443	538,690	0	0	21,534	0	198,246	16,519	5,695	788,127
Spain	10,704	201,219	26,552	0	18,093	0	69,569	2,453	100,750	429,340
Germany	0	290,200	0	0	0	0	153,700	50,000	16,828	510,728
Lithuania	209,779	400,509	0	0	0	0	2,189	4,564	25,177	642,218
East Africa										
Tanzania	1,158,039	144,321	104,980	187,464	0	271,882	0	0	137,682	2,004,368
Kenya	728,160	0	1,985	146,807	613	191,319	0	0	100,702	1,169,586
Ethiopia	483,923	348,145	444,146	0	166,274	0	878,010	0	412,900	2,733,398
Uganda	1,008,410	15,199	5,085	12,928	0	13,047	0	0	0	1,054,669
Malawi	157,769	41,540	67,498	29,266	1,035	371,114	0	0	0	668,222
West Africa										
Nigeria	0	0	0	3,027,596	0	0	0	0	65,011	3,092,607
Niger	19,614	1,314	234	1,987,100	0	0	0	0	46,861	2,055,123
Burkina Faso	0	0	0	603,635	0	0	0	0	72,296	675,931
South America										
Brazil	2,615,832	3,619	0	0	0	0	3,637	0	0	2,623,088
Argentina	366,588	57,101	69,788	0	2,187	0	16,416	166	0	512,246

As discussed below, pulse production in 2017 grew, particularly in India, where total production exceeded 24 million metric tons (an increase of more than 35%) and the Black Sea countries of Russia and Ukraine.

Given the diversity of pulse varieties, the long-term trend towards free and open trade (notwithstanding recent trade tightening efforts in India, the United States and elsewhere), the constant immigration of people out of the highest pulse consuming regions of the world to other regions of the world, and changing consumer preference for plant-based proteins, it is not surprising that the global trade in the pulse market continues to accelerate. Since 2012, the total volume of pulse products traded across borders has increased materially (other than dry edible beans, where trade volumes are flat):

- Dry Peas trade volume has increased 60% – from 4MMT in 2012 to more than 6.5MMT in 2016.
- Lentils trade volume has increased more than 50% – from 2MMT in 2012 to more than 3MMT in 2016.
- Chickpeas trade volume has increased more than 33% – from 1.5MMT in 2012 to more than 2MMT in 2016.
- Broad beans trade volume has nearly doubled from 500KMT in 2012 to nearly 1MMT in 2016.

In 2017, India – the largest importer of pulses – imposed import restrictions on dry peas, lentils and chickpeas in the face of a material growth in domestic production as a way to support the local price (called “minimum support prices”) that its farmers receive. As a consequence, trade volumes have fallen in 2017 and 2018.

Eventually, however, as soon as 2019, we expect this trend to reverse, and the inexorable growth in demand – discussed below under “Consumption” – to resume. We believe that annual trade volumes will show a similar growth trend in the next five years through 2023 as the world witnessed from 2012 to 2016.

The following charts show the top 10 import and export nations by volumes for dry beans, dry peas, lentils and chickpeas from 2012 through 2016, followed by some specific commentary regarding trade activity in 2017 and 2018.

Dry Beans - Imports (MTs) (FAOSTAT)					
Country	2012	2013	2014	2015	2016
India	788,811	885,754	840,831	778,797	727,583
Brazil	311,909	303,934	135,296	156,307	342,131
USA	167,542	135,233	161,819	176,743	172,681
Mexico	235,687	134,494	82,206	88,543	163,791
Italy	109,805	123,004	126,170	129,769	133,897
Pakistan	67,635	97,016	89,008	95,339	118,814
Vietnam			61,121	90,734	114,052
United Kingdom	115,253	111,011	120,071	119,963	110,813
Japan	128,302	110,044	112,381	105,003	107,796
China	80,407	65,451	72,100	99,576	84,387

Dry Beans - Exports (MTs) (FAOSTAT)					
Country	2012	2013	2014	2015	2016
Myanmar	1,285,000	1,370,000	867,866	721,602	604,713
China	944,106	800,872	507,059	464,486	590,564
USA	487,800	453,247	483,863	428,603	473,975
Argentina	346,864	104,114	255,260	380,973	436,055
Canada	264,600	294,371	297,190	315,259	336,154
Ethiopia	147,683	225,058	227,633	201,947	184,276
Australia	96,369	63,251	31,560	113,267	151,601
Tanzania	16,210	6,166	84,657	51,723	97,936
Kyrgyzstan	61,519	36,423	37,322	66,899	83,751
Madagascar	23,193	27,223	26,102	35,781	58,510

For two primary reasons, in recent years, the worldwide bean trade has been less volatile and more balanced than the trades in dry peas, lentils and chickpeas. First, while India is the largest importer of dry edible beans in the world, its overall import volumes of dry beans are far fewer than they are in other varieties of pulses. Second, the dry bean trade is a more regional trade, and net export nations have less reliance on any single import nation for sales activity.

There do not appear to be any notable trends based on available data. Activity in 2017 and 2018 appears consistent with the 2012 – 2016 timeframe, subject to the ordinary ebb and flow of supply and demand.

Dry Peas - Imports (MTs) (FAOSTAT)					
Country	2012	2013	2014	2015	2016
India	1,497,913	1,230,249	1,964,010	2,144,437	3,061,899
China	689,347	1,053,518	799,879	923,327	1,022,876
Pakistan	191,889	160,528	237,006	455,777	462,860
Bangladesh	177,819	390,657	538,348	311,331	350,874
USA	69,399	145,586	247,098	147,189	122,900
Belgium	116,277	140,615	125,633	86,309	90,410
Ethiopia	35,027	43,762	28,853	59,918	83,816
Cuba			95,649	65,678	81,470
Norway	33,610	55,892	67,846	63,231	72,991
Germany	62,320	94,735	113,952	90,185	70,065

Dry Peas - Exports (MTs) (FAOSTAT)					
Country	2012	2013	2014	2015	2016
Canada	1,925,620	2,833,437	3,270,147	2,835,780	3,136,682
Russia	592,911	336,090	311,795	587,687	702,002
USA	357,461	441,451	584,881	473,379	542,200
France	281,947	236,947	150,008	277,080	367,907
Lithuania	18,117	22,649	32,284	174,191	218,685
Ukraine	167,386	105,176	165,385	191,205	216,981
Austria	207,358	174,885	159,347	160,493	156,406
Mozambique	14,324	3,433	11,583	1,055	126,901
Argentina	128,998	42,188	58,350	69,930	94,460
Germany	21,512	17,549	20,188	29,031	74,935

India (and South Asia more broadly) and China have been the dominant world buyers of dry peas in recent years, though India’s purchasing has slowed to a trickle in 2017 and 2018 in the face of high domestic pulse production and the imposition of import tariffs by New Delhi. The import tariffs have resulted in severe disruptions in trade, causing worldwide dry pea prices to fall and losses by many market participants who had planned on sales to Indian customers over the last 12 months.

China appears to have increased its pea imports 1 MMT to more than 2 MMT in the 2017/18 season. While that increase has not been enough to offset the greater than 2 MMT drop in Indian dry pea imports, Chinese buyers have been stepped into the void to a degree ... albeit at lower prices.

Given that Canada is the world’s largest producer and exporter of dry peas, the trade restrictions on imports into India have disproportionately impacted Canadian suppliers. Canadian export volumes fell in 2017 in light of those restrictions as Canadian suppliers put pea stocks into storage in the face of lower prices. Those restrictions remain in place as the 2018 crop comes to market; prices remain low; competitive threats from Russian, Ukrainian, French and Lithuanian suppliers remain intact. Thus, the outlook for Canadian pea exports over the next 12 months remains uncertain.

Russia and Ukraine harvested bumper pea crops in 2017, increasing their total production by 1.1 MMT and 300 KMT, respectively, over 2016’s already substantial crop. Notwithstanding headwinds as a result of the pea import duty in India, Russian and Ukraine exports increased in 2017 over 2016. Ukraine dry pea exports exceeded 750 KMT in the 2017/18 season, up from the 500 KMT in the 2016/17 season (and less than 250 KMT in years prior). Over 40% of its 2017/18’s export volumes (more than 300 KMT) went to India, and 18% (130 KMT)

went to Turkey⁴. Russia's pea exports were approximately 1.2 MMT in the 2017/18 season, up from approximately 725 KMT in the 2016/17 season. Approximately 36% of Russian exports were to Turkey (425 KMT) and 21% were to India (250 KMT)⁵. Early expectations for the 2018/19 season are that the Black Sea region will continue increasing its role in the world pea market⁶.

France and Lithuania have persisted as competition for North American dry pea suppliers to the world market. France's exports in the 2017/18 season are down approximately 10% year-over-year, with drops to the Indian market partially made up by increased sales into China and Belgium⁷. Lithuania had been far more concentrated with sales to India than France, with 84% of its sales in the India market in 2016. Thus, notwithstanding Lithuania's bumper crop of 450 KMT in 2017 (up 13% over 2016), Lithuania exports fell nearly 200 KMT in the 2017/18 season after advancing to nearly 400KMT in the 2016/17 season. Lithuanian suppliers have not been as successful as French suppliers in finding new markets into which to sell its peas.

LENTILS

Lentils - Imports (MTs) (FAOSTAT)					
Country	2012	2013	2014	2015	2016
India	441,264	679,662	729,759	1,161,802	753,566
Turkey	168,806	199,476	303,155	313,162	337,500
Bangladesh	171,000	219,603	128,924	180,221	313,676
UAE	93,902	186,193	179,112	223,754	183,634
Sri Lanka	114,713	151,129	153,381	161,717	154,341
Pakistan	68,568	57,887	118,481	135,386	113,055
Egypt	78,416	78,818	133,663	126,177	110,019
Canada	11,083	7,302	12,602	16,319	71,830
Iran	6,018	17,428	44,934	50,964	70,622
Colombia	60,254	59,071	73,788	67,264	58,743

Lentils - Exports (MTs) (FAOSTAT)					
Country	2012	2013	2014	2015	2016
Canada	1,125,301	1,806,336	2,114,790	2,630,043	2,053,528
USA	181,441	210,816	256,285	255,196	299,280
Australia	377,657	316,740	291,140	240,214	284,106
Turkey	197,413	178,542	183,415	219,220	243,768
UAE	23,314	43,074	73,989	109,888	99,521
Kazakhstan	4,492	2,847	5,682	7,754	59,439
India	779	839	6,558	3,651	20,416
Sri Lanka	8,331	9,146	24,762	10,713	19,870
Russia	19,249	8,483	8,420	7,414	17,597
China	14,051	15,916	15,907	18,699	17,182

Canada has dominated the world lentil trade, representing more than 60% of total cross border activity in recent years. Australian suppliers, however, made a significant push into the lentil market in the 2016/17 season, exporting nearly 900 KMT, an approximate 700 KMT advance over the prior season.

With the imposition of India's tariffs on lentil imports, both Canada and Australia experienced severe retrenchment in overall trade volumes in the 2017/18 season over the prior two seasons. After its export flow

peaked above 2.5 MMT, Canada's export volumes have fallen to approximately 1.5 MMT in the 2017/18 season⁸. Australia's lentil exports have fallen back down to approximately 400 KMT in the 2017/18 season⁹.

As with Indian pea imports, India's lentil imports have shrunk considerably in 2017 and 2018 in light of import tariffs. We would expect that India was not the world's top lentils import nation in the 2017/18 season.

CHICKPEAS

Country	2012	2013	2014	2015	2016
India	471,974	538,329	381,314	688,125	873,542
Bangladesh	136,700	205,239	234,080	294,226	171,297
Pakistan	215,017	60,988	60,088	54,242	129,844
UAE	83,278	101,530	105,611	112,023	117,103
Algeria	64,475	108,956	61,089	58,666	65,189
USA	19,189	26,803	32,279	46,941	58,462
United Kingdom	36,841	34,435	40,317	41,165	45,511
Spain	55,335	75,781	48,152	49,896	43,927
Iran	4,653	11,561	9,511	23,864	41,070
Turkey	34,939	56,875	41,164	37,306	30,446

Country	2012	2013	2014	2015	2016
Australia	917,024	550,567	604,826	1,286,718	1,274,875
Russia	161,325	180,039	312,363	326,085	239,079
Canada	46,859	53,816	57,872	113,746	137,055
Argentina	85,864	66,200	43,734	64,448	127,653
India	143,712	400,562	209,138	187,726	121,201
USA	77,767	53,670	52,249	46,491	120,118
Mexico	212,454	113,577	181,636	130,747	110,043
Ethiopia	74,006	65,631	51,093	45,139	62,973
UAE	18,039	30,221	24,926	39,985	46,964
Tanzania	29,042	31,243	42,476	51,865	27,756

In the first half of 2017, India imported record quantities of chickpeas, pushing its total overseas purchases in the 2016/17 period to approximately 1.5 MMT. As with the import of peas and lentils, India's import of chickpeas – particularly from Australia – thereafter have fallen precipitously since as a result of the pulse import tariffs imposed by New Delhi. This has impacted Australian suppliers most significantly. Australia exported more than 2 MMT in 2017, 65% of which was sold into the Indian market. With the new tariffs in place, Australian exports have fallen more than 1 MMT in 2018 from 2017 volumes¹⁰. Australian chickpea exports fell below 700 KMT in the first three quarters of the 2017/18 season.

ENDNOTES

¹ www.agmrc.org

² Brazilian Dry Bean Production, 12/8/2010, USDA.

³ USA Pulses.

⁴ UrkAgroConsult, May 2018 Report

⁵ Ibid.

⁶ Ibid.

⁷ EuroStat

⁸ StatPub.

⁹ Ibid.

¹⁰ Australian Bureau of Statistics