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PATTERN OF MARKETING AND TRADE IN PULSES: NATIONAL AND INTERNATIONAL SCENARIO

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ABSTRACT

The growth of Indian agriculture over last few decades has helped the country in achieving food security at National level. The next big challenge faced by the country in general and Indian agriculture in particular is to sustain this growth and achieve nutritional security as well. Pulses, which are an environmentally friendly major source of protein and complement cereals both in production and consumption, will play a vital role. In the production process, pulses improve soil fertility, requires less water than cereals and their rotation with cereals help in controlling diseases and pests. On the consumption side, pulses are relatively cheaper source of protein. Pulses will form a major source of protein for a huge section of India particularly for the poor, backward classes and most of the traditionally vegetarian population (Reddy, 2004). Pulses have double the protein content of wheat and three times that of rice and are valuable for the cropping system in maintaining and improving the productivity of soil due to the nitrogen fixation ability (CACP).

No other country produces and consumes as varied an array of pulses as India. Desi Chick peas, Pigeon pea, Lentils, Mung beans. Black matpe. Horse gram. Moth beans, kidney beans and several minor pulses are produced. Desi chick peas constitute the biggest share of India's pulse production. Pulses are an integral part of Indian agriculture, an important source of protein for its people and a significant source of nitrogen for the soil. India is the largest producer of pulses in the world with nearly 24% of share in the global production. In domestic food grains sector too, pulses occupy a prominent place with 7% share in global production. India is also a leading consumer of pulses, but its domestic production in recent years has remained stagnant and is short of demand.

Introduction

Agriculture has been affected by the dominance of cereals over the past several decades, as pulses are among the crops that have been adversely affected. Naturally, the cost of food is significant to India's poorest population, and in recent years the country has suffered a persistent problem of food price inflation. Many basic foods exhibit a higher average rate of inflation than the overall Wholesale Price Index (WPI); Sonna *et al*. (2014) observe that cereals, pulses, milk, fruits and vegetables, meat-fish-eggs (MFE), and sugar all exhibited higher average rates of inflation. At the same time, the relative price increases have been driven largely by protein-rich foods (Gokarn, 2011), whose cost has been rising uniformly at a faster rate than the cost of other foods. The most common contributors to this inflation are milk and fish (Mishra and Roy, 2011); since 2005, the average inflation rates for pulses and MFE have been higher than the rates for the composite food WPI. Taken together, pulses, MFE, milk, and milk products constituted around 30 percent of the total food expenditure according to the 66th Round (2009–2010) of the national survey by the National Sample Survey Office (NSSO), but they were responsible for approximately 42 percent of food inflation since 2005 (Sonna *et al*., 2014; Mishra and Roy, 2011). It is important to note that although the cost of pulses has been an important driver of food price increases, pulses continue to be cheaper than several of the other sources of protein, including animal source food (ASF).

Several types of pulses are grown in India. Despite being the leading producer of pulses, India has been consistently unable to meet its own domestic demand for the food. For several reasons, pulse production has been increasingly disadvantaged over the years and has become relatively less profitable compared with cereal production in areas of reasonable fertility and access to irrigation:

1. The Green Revolution pushed pulse cultivation away from irrigated areas to rainfed areas, where nearly 87 percent are now grown. This reliance on rain, however, makes pulses a risky crop.
2. Technology development has been far more extensive and more yield-improving for cereals than for pulses.
3. In addition, being protein-rich also makes pulses more prone to different types of pests and diseases.

On the policy side, the system of a minimum support price (MSP) with procurement may make growing and selling pulses comparatively less risky for farmers. Where MSP is announced at the time of sowing and procurement occurs, the government agrees to buy all the grain (rice and wheat) that is offered for sale at that price, removing all the price risk. The announced MSP for pulses (with insignificant procurement) has risen consistently over time. Notwithstanding these increases, the MSP in pulses still serves only as a benchmark price and remains far below the market price; for pigeon pea, for example, in 2015 the MSP notional price was less than one-fourth of the market price. For this reason, pulse farmers must continue relying on traders for their sales rather than selling to government procurement. NSS data, however, show that in the case of wheat and rice, only 6 percent of farmers gain access to government procurement, casting doubts on how many pulse farmers would gain (and to what extent) from a larger pulse procurement program if one were enacted. The effectiveness of such a system remains in question and the issue certainly warrants further research. Pulse milling is almost a widespread industry in the Indian subcontinent, but it has not received the scientific and technological support from the government necessary to modernize it, unlike other food-processing industries, such as rice and wheat milling (Banerjee and Palke, 2010).

Supply and demand characteristics of different types of pulses in India

India is the world's largest producer and consumer of pulses. Major pulses grown in India include chickpea or Bengal gram, pigeon pea or red gram, lentil, black matpe, mung bean or green gram, lablab bean, moth bean, horse gram, pea, grass pea or khesari (*Lathyrus sativus*), cowpea (*Vigna unguiculata*), and broad bean or faba bean (*Vicia faba*). Popular pulses in India are chickpea, pigeon pea, green gram, black matpe, and lentil. Pulses are mostly grown in two seasons: (1) the warmer, rainy season or kharif (June–October), and (2) the cool, dry season or rabi (October–April) (Gowda *et al*., 2013). Chickpea, lentil, and dry peas are grown in the rabi season, while pigeon pea, black matpe, green gram, and cowpea are grown during kharif. Among the various pulses, chickpea dominates, claiming a more than 40 percent share in production of all pulses grown, followed by pigeon pea (18–20 percent), green gram (11 percent), black matpe (10–12 percent), lentil (8–9 percent), and other legumes (20 percent) (IIPR 2011).

The major pulses chickpea, pigeon pea, lentil, green gram, account for nearly 80 percent of total pulse production in India. India's total production, in turn, accounts for 33 percent of world production by area and 22 percent of world production by volume. By area, India's production makes up 90 percent of global production of pigeon pea, 65 percent of chickpea, and 37 percent of lentil; this corresponds to 93 percent, 68 percent, and 32 percent of the global production of these pulses, respectively, by volume (FAO 2011). Among all pulses, lentil is the most actively traded (about 25 percent of world production of lentil is internationally traded) (Reddy and Reddy 2010).

On the consumption side, the annual per capita consumption of pulses declined between 1993–1994 and 2004–2005 (from 9.44 kilograms to 8.82 kilograms) and then rose again by 2011–2012 (to 9.6 kilograms), a consumption pattern that has been mirrored by each of the major pulse crops: pigeon pea, gram (split), green gram, and black matpe. As a share of total food expenditure, pulses represent about 5 percent. Among pulses, pigeon pea is the most heavily consumed, making up more than 30 percent of total pulse expenditure, although the type of pulse most demanded varies significantly across states. The major chickpea-consuming states are Haryana, Punjab, and Rajasthan. The major pigeon pea–consuming states are Andhra Pradesh, Karnataka, and Maharashtra, while the major green gram– consuming state is Gujarat. In Assam, Bihar, and West Bengal, lentil is the pulse in greatest demand. Black gram is prominent in Tamil Nadu and Uttar Pradesh (Reddy 2004). In terms of prices, the wholesale price index has been higher for pulses compared with cereals and oilseeds in the past two decades. The variation in price has also been relatively higher for pulses, with green gram, and

pigeon pea experiencing the greatest increase in price over time.

The area allocation to pulses recovered to 26.3 million hectares in 2011–2012 (Gowda *et al*., 2013) and receded again to 25 million hectares in 2013–2014 (Mohanty and Satyasai, 2015). The decline of the pulses sector in India is reflected in three broad facts:

1. Per capita consumption. Consumption of pulses has fallen over time and currently stands at levels below those attained in the 1980s. Consumption fell continuously from the 1980s through the 2000s, although it has been improving again over the past few years (2012–2014), a period when production significantly increased to 17– 18 million metric tons.
2. Inflation. There has been a persistent increase in pulse prices, resulting in accessibility issues for the poor.
3. Imports. Imports of pulses have sharply increased and have been expanding on the extensive margin.

Demand supply Gap

The Working Group set up by the Planning Commission for lO"^ Five Year Plan has worked out the domestic demand and supply of pulses in the country. As per the normative approach, the demand for pulses in the terminal year of lO"^ plan i.e.2006-07 works out to be 17.7 million tonnes. An independent assessment of consumption demand projected on the basis of unit-wise data of 55'*^ Round NSS and consumption elasticity thereof for the year 2004-05 is pegged at 15.3 million tonnes. As against this, the present production level of pulses is 14.42 million tonnes. If we take the average production of 14 million tonnes, then estimated demand supply gap in pulses works out to be around 3 million tonnes. This gap is being met through the import of pulses under OGL. Table 1 represents the projected demand for pulses as well as the demand supply gap for the period 2000-2030.

Table 1: Demand and Supply Gap for Pulses in India (2000-2030) (Million Tonnes)

Year	Project Population (000)*	Demand Projection I 40grams/ day/person		Demand projection II 80 grams /day/ person		Supply projection	Demand and Supply Gap	
		Human Demand	Total Demand	Human Demand	Total Demand		Human Demand	Total Demand
2000	1001859	15.72	17.97	29.25	33.43	12.40	3.32	5.57
2005	1073725	16.85	19.26	31.35	35.83	12.89	3.96	8.37
2010	1137980	17.86	20.41	33.22	37.97	13.87	3.99	6.54
2015	1200467	18.84	21.53	35.05	40.06	14.36	4.48	7.17
2020	1262912	19.82	22.65	36.88	42.15	14.85	4.97	7.80
2025	1323317	20.77	23.74	38.64	44.17	15.34	5.43	8.40
2030	1379109	21.65	24.75	40.27	46.03	15.83	5.82	8.92

Source: * from My T.Vu, *et al* (1988) ** Government of India-e (1996): Ministry of Commerce and Industry, Office of the Economic Adviser, (http://eaindustrv.nic.in) A-Demand and supply gap is estimated based on demand projection I. Notes: 1. Demand projection I is based on ICMR's minimum physiological requirement. 2. Demand projection II is based on FAO and WHO min requirement. 3. Supply projection is based on data from 1964-65 to 1994-95 4.Total demand is human demand plus allowances for seed, feed and wastage which is considered as 12.5% for Pulses.

Indian pulses market structure

The intermediaries play a very important role in the marketing of pulses in India. The produce from the major producing areas and the imports coming into the country through the ports are channeled to other parts of the country. The producers sell their produce at various primary or secondary wholesale markets present in the producing states. Importers who are licensed to import pulses sell the consignment to a broker, commission agent and middlemen or directly to a secondary wholesaler, miller or processor. The brokers and commission agents sell to primary wholesalers who in turn sell to millers and processors of dal or to secondary wholesalers. The majority of this quantity moves from the primary wholesalers to millers and processors. A small portion of the whole pulse moves from the wholesaler to consumer via the retailer. The dal produced by the millers is sold to large mills or to secondary wholesalers. The major portion of dal from dal millers and primary wholesalers goes to secondary wholesalers and is then sold to consumers as dal through the retailer. The secondary wholesalers

also sell dal to flour mills or manufacturers of flour, which moves to consumers through retail markets. Whole pulses from secondary wholesalers are sold to frying mills to produce puffed or roasted chickpeas and reaches consumers through retail markets.

Holesale and retail marketing

Wholesale markets exist throughout India and channel domestic and imported pulses to retailers. Delhi's Naya Bazaar is the largest wholesale pulse market in India. Other major wholesale markets are located in Mumbai {Vashi), Kolkata {Postha) and Chennai (Govindappa Naiken Street). The major wholesale markets comprise numerous sellers-about 150 and 200 wholesale pulse traders in Naya Bazaar and Vashi, respectively. Wholesale trade is fragmented because each seller operates independently. Wholesalers typically sell to retailers a 90 minimum of one bag (50-100 kg). Retailers may add value by cleaning or sorting the product to remove foreign material (e.g. stones) and inferior quality pulses. Most pulses (split or whole) are sold lose to consumers. Sale in consumer packs (mostly 0.5-1 kg bag) are limited and confined mostly to cities. Some supermarket chains particularly in south India sell fast moving pulses as Urd dal and Tur dal in 2 and 5 kg packs with small discounts on larger sizes . The markets do not maintain formal sales records but sellers typically keep tallies of their own sales. Moreover, there is no official price reporting or regulation at any of the markets. Unlike at the retail level (particularly in urban areas), pulses are generally not branded. However, wholesalers pass original information on to buyers. Branded pulses are a very small fraction of the pulse trade. Unlike vegetable oils or wheat flour, no large companies are involved in the marketing of pulses and no national brands exist. Although national branding may be attractive to higher income consumers, low-income consumers are not interested in branded pulses, unless it means lower prices. Large companies are not interested in setting up vertically integrated pulse processing plants in India because of Government regulations and localized and variable raw material supplies. Government regulations comprise The Essential Commodities Act (which sets stock limits on pulses), credit restrictions on pulse trade established by Reserve Bank of India and the small scale of pulse milling.

Efficient marketing of pulses

An efficient marketing of pulses is essential for development of pulse crop sector. It provides not only outlets and incentives on increased production; the marketing system contributes greatly to commercialization by subsistence farmers. The ever-changing socio-economic environment leads to increasing production, use of latest technologies, increasing pressures for downsizing the distribution chain and reducing the margin between farmer and ultimate consumer. Challenges emerging out of liberalization and globalization in the post WTO period require a vibrant, dynamic and assimilative marketing structure and system. The different measures and strategies for efficient marketing of pulses are:

1. **Improved Quality standards**: The market is changing and overseas traders increasingly demand strict adherence to product specifications. In India, presently the demand for chickpeas from the affluent middle class is growing rapidly. The market can afford to pay for superior variety. This will ultimately benefit the farmers involved in getting access to high value markets through improved and increased farm efficiency. It will also allow the pulse industry to promote brand names.
2. **Value Addition**: Value addition is a term frequently used while discussing the future profitability of agriculture. Its popularity rose substantially during 1990's to the point that it has become one of the today's buzzwords. In general, value addition is the process of changing or transforming a product from its original state to a more valuable state. Many raw commodities have intrinsic value in their original state. But processing and marketing actions add value to it such as processing chickpea into besan. Processing and grading of pulses, innovative uses of pulses, semi-cooked, can also bring about value addition ready to eat pulses and fast food development
3. **Processing and Grading of Pulses**: The farmers generally sell pulses in an unprocessed form while they are consumed mostly in processed form. The most common type is dal. De-husking is necessary which makes it more palatable and digestive, besides avoiding some anti-nutritional factors. Processing of pulses makes them more valued than whole grains. For example, the chickpea grains are sold at a price much less than its flour called Basen. The farmers as well as processors may share the advantage by supplying the prescribed forms and variants of pulses.
4. **Packing and Branding of Pulses**: Realizing that packaging is an important element in the entire process of marketing, attention is focused on attaining high standards. Today the packaging of pulses has facilitated the extension of shelf life,

convenience to channel members and the consumer and 92 assurances of good quality. The packaging machinery manufacturers, packaging material producers and processed food manufacturers are integrating efforts to meet the future needs of domestic export markets of pulses. New frames of packaging should be developed. PVC shrink labels, leak proof composite container bag in boxes, laminated cartons and reportable pouches are packaging of the day. Branding is almost non-existent in domestic marketing of pulses. The product quality varies from bag to bag and from shop to shop. In rural markets, mostly the sale is in loose form. It is noteworthy that many of our potential and existing costumers abroad are unaware that Indian pulses are being imported there on a regular basis. Branding will help the pulse industry to attain a strong position as a competitor in overseas market.

5. **Innovative Uses of Pulses**: Pulse crops have a potential in snack food industry. Many varieties offer a good base for extended product as they produce a good flavor. It retains a very good crunch if treated and stored properly. These can be a valuable source of carbohydrates and proteins to a meal along with positive nutritional benefits. Such qualities may be promoted and publicized to make these products popular for new uses and preparations.

Scientific Marketing

The farmers can gain more if they follow the scientific marketing management practices. The commandments of scientific marketing management given as under:

Always bring the produce for sale after cleaning: The produce brought by the farmers for sale in the market must be clean and free from sand, dirt' and pebbles. Impurities when present, lower price is offered by the buyers in the market. Clean produce attracts more buyers who pay a higher price for it.

Sell different qualities of pulses separately: The produce of different varieties should be marketed separately. Farmers get a low price for the mixed lot. It has been observed that when different varieties of pulses are marketed separately, the farmers get a higher price because of the buyer's preference for specific varieties.

Sell the pulses after grading: It is always advantageous for the farmers to sell the pulses after grading it. Graded produce is sold of quickly at a higher price. The cost incurred on grading is negligible as compared to additional income generated by selling the graded produce.

Keep abreast of prevailing prices: The producers must keep in touch with the prevailing prices in different markets. It helps them to take decisions about when and where to sell the produce to enable them to receive a better price. Farmers should be aware about minimum/support prices announced by Govt, each year. In case, the farmers do not get prices of pulses at par or above the minimum prices in the market, they should sell their produce to Govt, agencies like Food Corporation of India, etc.

Avoid immediate post-harvest sales: Farmers should avoid sales immediately after the harvest of the crop. It is a general trend that the price of a crop is the lowest at the time of the harvest. Farmers can earn better prices by postponing the brisk sale of their produce immediately after harvest to later months of the year.

Sell the produce in the regulated markets: Farmers should try to sell their produce in the regulated markets. Many malpractices like deduction of unauthorized market charges, spurious deductions, unfair weights of the produce. unhealthy sale method, taking away a part of the produce as sample by bidders, bungling in accounts and arbitrary deductions for religious and charitable purposes are common in unregulated markets. Thus, farmers who sell their produce in unregulated markets receive low prices in comparison to their counterparts who sell their produce in regulated markets.

Sell the produce after value addition: The most prevalent use of pulses is in the form split cotyledons, commonly known as dal. For the preparation of dal, de-husking is necessary which makes them more palatable and digestive, besides, avoiding some anti-nutritional factors. Processing of pulses makes them more valued than whole grains. The farmers can get better prices for processed pulses.

Marketing of minor pulses through cooperative societies: In case of some pulses like Rajmash which are produced by few farmers and that too in small quantity, farmers do not get remunerative prices due to their low bargaining power. If these farmers form a cooperative marketing society to sell their produce, the members get better prices due to collective bargaining.

Changing consumption patterns and roles of pulses in nutrition, and future demand projections

The consumption of pulses per capita in India has been persistently below the recommended levels. The current average rate of consumption 47 grams per

capita per day is marginally higher than what is recommended for people with a sedentary lifestyle by the Indian Council of Medical Research (ICMR) (40 grams per capita per day), but it is much lower than the recommendation for working men and women (60 and 50 grams, respectively). Pulses are an important source of protein in Indian diets. Based on the latest round of NSS (National Sample Survey) data and nutrition charts from the Indian Council of Medical Research, pulses tend to be among the cheapest sources of protein, despite their persistently rising prices over the past decade. The animal source foods (ASF) are the most expensive sources of protein in India. In a famous study, Patwardhan (1962) elaborated on the role legumes play in the diets of populations in the tropics and subtropics in contexts where ASF consumption is less common. In these areas the use of comparatively protein-rich legumes is an essential strategy in people's attempt to balance their diets. The seeds of pulses contain two to three times more protein than cereals and root tubers. Depending on the species and variety, pulses have a protein content that ranges between 17 percent and 32 percent. Those most commonly consumed chickpea, pigeon pea, and black matpe are among the richest sources of proteins among vegetarian food items. Pulses can also improve the protein intake of meals in which cereals and root tubers are combined with them (Khushwaha, Rajawat, and Kushwah 2002). More than 40 years ago, Sukhatme (1970) showed that diets based on cereals and pulses normally consumed in India could meet the needs for protein at all ages provided that enough food is taken to satisfy energy needs.

Dynamics of pulses trade in India

India grows and consumes several types of pulses primarily because of heterogeneity in preference across regions. How the trade in pulses evolves has significant implications for their production, consumption, prices, and generally on the entire supply chain, including processing and retailing. Imports fill the gap between production and consumption and can help cool inflationary pressure (Gokarn 2011). Although pulses do not have a comparatively high weight (vis-à-vis commodities like cereals and some animal products) in the wholesale price index used to measure inflation in India, pulses have experienced high prices for a long time. TSince 2005, pulses have been among the commodities that have caused the relative price of food to increase. For example, when there was pressure on wheat prices in 2006, India quickly arranged imports of 6 million metric tons of wheat from Australia Chapter 6 179 (Murugkar, 2006).1 In addition, stop-gap imports of milk, sugar, and certain vegetables (such as onion) represent a common policy stance in response to rising prices. Adopting liberal trade policies for pulses since 2000 was probably done with the same principle in mind. As a result of these policies and the growing number of trading partners who perceive India's pulse market as a significant opportunity, pulse imports have increased by 36 percent in the previous decade beginning in 2001. Although the evolution of pulse imports has coincided with a parallel increase in their domestic prices, to the best of our knowledge, no rigorous study of pulse imports and the extent to which they cool the domestic pulse markets has been undertaken.

Import Policies Affecting Pulses During the 1970s and 1980s, India followed a protectionist trade policy with respect to agricultural commodities. Imports were restricted with the aim of safeguarding and promoting the interests of domestic agriculture. The Indian government tried to achieve this by imposing quantitative restrictions, quotas, tariffs, and a variety of other equally prohibitive trade mechanisms (Agbola, 2003). All potentially importable items in India were categorized under three heads: the prohibited list, the special list, and the free list. Earlier, pulses had been on the special list, meaning their import was permitted subject to licensing. In the 1990s, India undertook structural reforms and adopted a more liberal outlook on international trade, leading to significant reductions in tariff and nontariff barriers. This liberalization, however, was mostly for nonagricultural products, implying that domestic terms of trade improved for agriculture. Before liberalization, although the import of most agricultural commodities was subject to licensing and quantitative restrictions, India's import policy in pulses was comparatively liberal. In 1979 the import of pulses was placed under Open General License (OGL), which made it possible for any publicor private-sector entity to import without approval or any restriction. The import duties on pulses declined steadily during the 1980s and 1990s (Landes, Price and Govindan, 2003). From 1989 to 1994 the import duty on pulses was only 10 percent. This was further reduced to 5 percent in 1995, and it was eliminated entirely in 2000. In 2001, a duty of 5 percent was again placed on pulses, and in 2002–2003 that was increased further to 10 percent (Sathe and Agarwal 2004). From 2007 to 2012 imports of pulses were made duty free, and in 2013 the duty on imports was reduced to zero (India, Ministry of Agriculture 2013). However, from the point of view of importers and traders, it was understood that having a 0 percent (tax collected when imported) did not make sure of that the pulse market would remain liberal in the future. Farming-based trade policy in India has always been

changeable and so uncertain. As a result, even when there is near free trade in pulses, agents might not expect that situation to happen the future. It could be that the only reason imports are enjoying freer access to the market in India is because imports have not up until now reached levels that threaten the domestic area. It is understood that if such a situation came out visible, the government might respond by tightening import policy.

Over the decade studied, the import of pulses into India grew by 35 percent. There has been an overall increase in the quantity imported as well as a major shift across the types of pulses imported, in line with the shift in both production and consumption of different pulses in India. Pulse imports increased sharply, rising from 0.6 million tons in 2001 to around 4 million tons in 2012, notwithstanding the different government programs deployed to promote pulse production. The total pulse production (under different scenarios) was projected to be 15.6 million tons in 2015 (the actual output turned out to be more than 17 million tons) and it was projected to grow to 17.3 million tons by 2025, whereas the demand for pulses was projected to be 18.0 million tons in 2015 and could grow to 20.6 million tons by 2025 (Kumar *et al*., 2010). These projections show that the demand for pulses is likely to outweigh their supply in the coming years as well. The projected demand-supply gap is around 3 million tons each year, so import penetration, which is at 20 percent already, could rise further in the coming years. The observed trade patterns point toward the lack of comparative advantage in the case of pulses as compared with some other agricultural commodities. Looking at the projected supply-demand gap in pulses, their poor production performance, the shift in their area in favor of cereals, and their slow-growing yields, it is evident that pulse trade and imports are going to play a major role in meeting domestic pulse demand in the coming years. Trade policy needs to become compatible with this reality. At a minimum, policy needs to be consistent over time. Generically, trade policy in India, especially for agricultural commodities, has been quite inconsistent, with both import and export policies for pulses changing over time. Frequently changing trade policies bring uncertainty both in the market and among traders. A stable trade policy would ensure consistent supply in the domestic market and, possibly, better prices. India is among the world's top importers of pulses. Having such a large share means India's import demand can have a bearing on world prices. Furthermore, to ensure a consistent supply of pulses from the international market, diversification might be needed across trading partners and pulse varieties. The analysis shows that Myanmar, Canada, and Australia have been the most important sources of pulse supply to India. For each variety of pulses, there are just a few major exporting partners that cover more than 50 percent of the supply, and in some cases, a few countries account for more than 80 percent of the supply. This is problematic because countries with such big shares can easily alter the supply and the prices, and production shocks in these countries can affect the availability of pulses in India.

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