



Making Pulses Affordable Again: Policy Options from the Farm to Retail in India

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Pulses are an important source of complex carbohydrates and the main source of non-cereal protein for most Indian families. The frequency of pulse consumption is higher than of any other source of protein among Indian consumers. Around 89 percent of consumers in India have pulses at least once a week, while the corresponding number for consumption of fish, chicken, or meat is only 35.4 percent (IIPS and Macro International 2007). Pulses are also the cheapest source of non-cereal protein in India. Persistently high prices in the last few years have led to a significant decline in pulse consumption, from what was an already low level (Kumar and Joshi 2016). Rapidly rising prices of pulses have also contributed disproportionately to increases in relative prices of food (Sekhar and Bhatt 2016a). An average Indian household spends only 6–7 percent of its total food budget on pulses and pulse products, but pulses have accounted for more than 40 percent of the inflation in food prices in 2014–16 (Sekhar and Bhatt 2016a; Sekhar and Bhatt 2016b). Thus, high and rising pulse prices raise concerns for both nutrition and food price inflation.

We need special policy efforts to increase the production and availability of pulses in India and make them more affordable to consumers. The central government has set the target to increase the annual production of pulses to over 24 million tonnes by 2020–21. This policy brief outlines policy strategies that can help achieve this goal, and it also points out the limitations of some of the most common recommendations for making pulses affordable in India (Kishore, Joshi, and Roy 2016).

Stagnant production and productivity

Pulse production remained stagnant, at around

14 million tons annually, for decades from the 1950s to the early years of this century, before it increased to 17–18 million tons in 2013–14, where it has hovered since. The increase in production has been slow in other parts of the world, too (Joshi and Rao 2016). Thus, the availability of pulses in India, as well as in the global markets, has not kept pace with the rising demand.

Our research (Bhatnagar, Joshi, Kishore, and Roy 2016) shows that farmers increase the area under pulses and intensify its production only when they expect a big rise in prices, as in 2016–17. Small price increases get ignored because of high relative risks in pulse production. Since farmers face both production and marketing risks, they increase pulse area and intensify production only when there is a large increase in expected prices that covers the risk premium. The significant increase in pulse production to more than 21 million tons in 2016–17, in response to record high prices in preceding years, is an example.

Imports offer only a limited option

India imports nearly 5 million tons of pulses annually from other parts of the world, making it the world's largest importer. Importing pulses, however, does not cool down their prices (Negi and Roy 2015). At best, it helps arrest the rate of price rise. This is because the global supply of pulses is limited compared with India's needs, and the increase in production has been slow in other parts of the world, too (Joshi and Rao 2016). India is by far the largest consumer, as well as importer, of pulses in the world, and prices rise quickly in the world markets whenever there is a scarcity in India (Kishore, Joshi, and Roy 2016).

Consumer subsidies will not mitigate the problem of limited availability and low intake of pulses

There is an increasing demand to diversify the cereals-only public distribution system (PDS) food basket to make it more nutrition sensitive. States like Andhra Pradesh, Himachal Pradesh, Telangana, and Tamil Nadu have already added pulses to the basket of subsidized goods sold through the PDS. IFPRI research as part of the Technical Assistance and Research for Indian Nutrition and Agriculture (TARINA) consortium, however, shows that adding subsidized pulses to the PDS basket leads only to a small increase in household consumption and an almost negligible net nutritional impact (Chakrabarti, Kishore, and Roy 2016).

States that have added pulses to the PDS provide only 1–2 kg of subsidized pulses per month per family. In such a situation, the increase in pulse consumption from the PDS is offset by decreases in pulse consumption sourced from the market. Hence, the quantity of pulses provided will have to increase manifold to have any substantial impact on total consumption and nutrition. There are not enough pulses available in India or in the world to support such a policy. Unlike rice and wheat, we face a scarcity of pulses. So subsidizing pulses on a large scale does not seem to be a feasible option to increase their consumption.

Pulse consumption will increase sustainably only if its availability increases. When it comes to pulses, there is only one option, it seems, to increase total production in India and in the world.

Low substitution among pulses: The need to increase production of all the main pulses

An interesting aspect of the pulse consumption pattern in India is that there is very little substitution among different types of pulses. Nutritionally, pulses are similar to each other, but Indian consumers show strong preferences for specific pulses in different regions. For example, households in southern India would not switch from white lentils and pigeon peas to chickpeas, even if the latter were available at a much lower price. The elasticity of substitution among different pulses is near zero (Table 1). This implies that increasing the overall availability of pulses is not sufficient. We need research and support policies to increase the production and availability of all the main pulses.

Announcing minimum support prices (MSP) for pulses without procurement is ineffective and possibly counterproductive

Unlike that of rice and wheat, pulse production is less than the annual demand, and there is no procurement at the MSP level. Unlike edible oil, there is not much availability of pulses in the international markets either, certainly not at much cheaper prices. Furthermore, even when the MSP for pulses has been raised significantly, it has stayed below the market price of pulses in every single year since 2000.

We contend that when the support price of pulses is near or below the market price and the opportunities to import them cheaply from other countries are limited, the MSP helps traders more

| | Chickpeas | Pigeon peas | Mung beans | Black gram | Lentils |
|-------------|-----------|-------------|------------|------------|---------|
| Chickpeas | -0.922 | 0.07 | 0.02 | 0.02 | -0.19 |
| Pigeon peas | 0.06 | -0.86 | 0.05 | 0.04 | -0.28 |
| Mung beans | -0.08 | -0.097 | -1.05 | -0.03 | -0.04 |
| Black gram | -0.06 | -0.08 | -0.04 | -1.02 | 0.19 |
| Lentils | 0.025 | 0.05 | 0.01 | 0.02 | -1.10 |

Table 1. Elasticity of substitution among major pulses. Source: Kumar and Joshi 2016.

than the producers. The MSP provides a focal point for pulse traders to facilitate implicit collusion at prices below what the market price otherwise would be. Figure 1 shows clustering of farm gate prices around the MSP that is unlikely to occur without this sort of tacit collusion. It is possible that farmers could receive higher prices if the MSP were not announced and, hence, there were no anchors for traders to collude around.

Pulse growers will benefit from the MSP only if it is raised substantially from its current levels. The increase in farm gate prices due to a higher MSP will not necessarily lead to an increase in the retail price of pulses, because much of the wedge between farm gate prices and consumer prices is simply the traders' margin.

Aggregation through farmer producer organizations: Increasing farmers' price realization

Pulse farmers often receive only a small fraction (less than 50 percent) of what consumers pay in the market, even when there is very little processing or value addition as pulses travel from farms to plates. Small landholdings and low productivity of pulses mean that each farmer has a very small marketable surplus—a few bags. He or she faces high transaction costs and has very little

bargaining power in the market. Aggregation of the small surpluses through producer companies would help. For example, a recent case study in Tamil Nadu showed that farmers' realization of price increased from 47 percent to 63 percent of the retail price for white lentils once the growers organized into a producer company (Angles and Karunakaran 2016). A number of farmer producer organizations (FPOs) have been organized for pulse growers across different parts of India, but there is a large variation in their performance. We need more research to understand how to promote successful and viable FPOs that bring more benefits to their members. Toward this objective, we need to study both successful and not as successful FPOs in pulses to understand the factors behind their successes or failures.

Conclusions

Persistently high prices of pulses have led to high food price inflation and nutritional concerns. Since India is by far the largest producer, consumer, and importer of pulses, increasing domestic production is essential. Imports can help, but unlike edible oil, options to import pulses at cheaper prices are limited. Provision of lifesaving irrigation with water-harvesting structures may help to increase pulse production

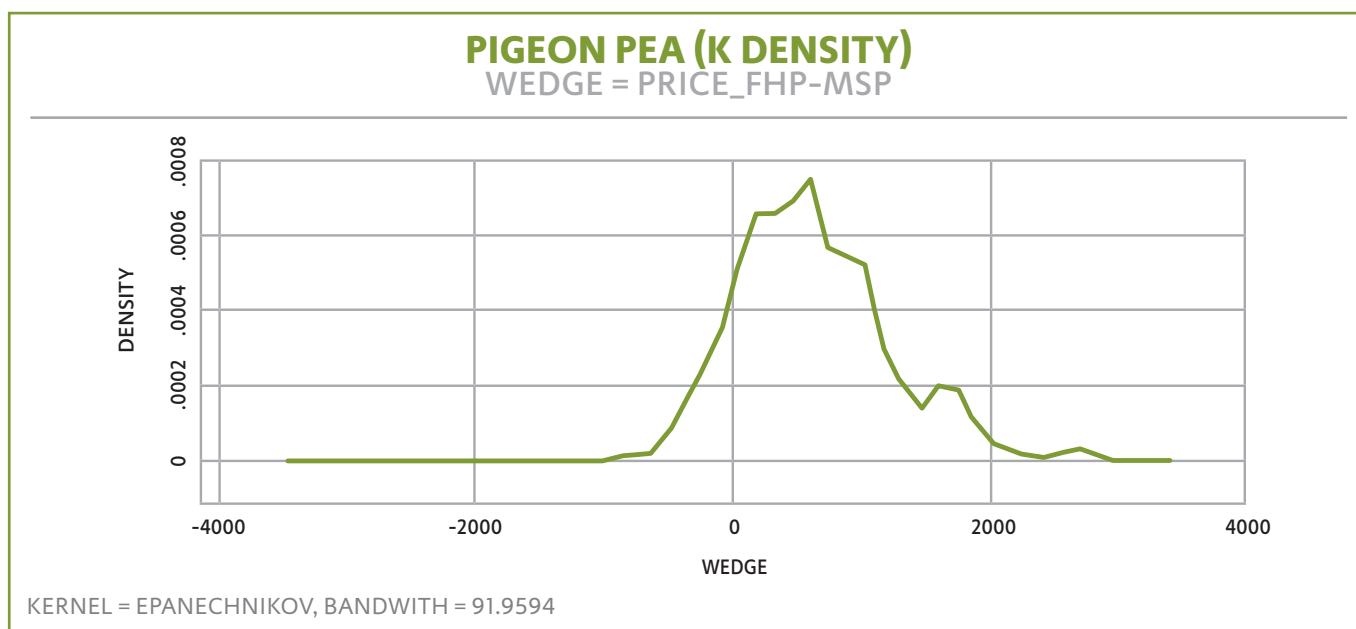


Figure 1. Distribution of farmgate prices of pigeon peas in 2012. Source: Commission of Agricultural Costs and Prices (CACP).

in India significantly. Therefore, we recommend that pulse-growing areas and rice-fallow areas with high potential to produce pulses should get priority under the Pradhan Mantri Krishi Sinchayee Yojana program. Promoting adoption of shorter-duration pulse varieties and varieties that are disease- and pest-resistant through intensive extension efforts can help increase pulse production to 24 million tons by 2021. Given the rising consumption of pulses and their increasing contribution to food price inflation, we need to

allocate more resources to research on pulses to increase their potential yields and resilience to weather fluctuations. The technology and resource push should be accompanied by policies and institutions that could help increase price realization for farmers. Promoting aggregation through farmer producer organizations (FPOs) can help increase price realization for growers. Insurance to reduce risk can incentivize farmers to grow more pulses and also make them more responsive to even small increases in pulse prices.

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- Angles, S., and K. R. Karunakaran. 2016. "Value-Chain Development for Blackgram in Tamil Nadu through Group Marketing." Paper presented at the Conference on Pulses for Sustainable Agriculture and Human Health, New Delhi, May 31–June 1.
- Bhat, S., and K. B. Umesh. 2016. "Estimating Positive Externalities of Nitrogen Fixation by Pulses." *Agricultural Economics Research Review* 29 (2): 201–209.
- Bhatnagar, A., P. K. Joshi, A. Kishore, and D. Roy. 2016. "Dynamic Supply Response of Pulses in India." Presentation No. 235776, 2016 Agricultural and Applied Economics Association Annual Meeting, Boston, Massachusetts, July 31–August 2.
- Chakrabarti, S., A. Kishore, and D. Roy. 2016. "Effectiveness of Food Subsidies in Raising Healthy Food Consumption: Public Distribution of Pulses in India." IFPRI Discussion Paper 1523, International Food Policy Research Institute, Washington, DC.
- IIPS (International Institute for Population Sciences) and Macro International. 2007. National Family Health Survey (NFHS-3), 2005–06: India: Volume I. Mumbai: IIPS. http://rchiips.org/nfhs/NFHS-3%20Data/VOL-1/India_volume_I_corrected_17oct08.pdf (last viewed on 5th May 2017)
- Joshi, P. K., and P. P. Rao. 2016. "Global and Regional Pulse Economies: Current Trends and Outlook." IFPRI Discussion Paper 1544, International Food Policy Research Institute, Washington, DC.
- Kishore, A., P. K. Joshi, and D. Roy. 2016. "Making Pulses Affordable Again: Policy Options from the Farm to Retail in India." IFPRI Discussion Paper 1555, International Food Policy Research Institute, Washington, DC.
- Kumar, P., and P. K. Joshi. 2016. "Changing Demand Patterns of Pulses and the Projections to 2030." Paper presented at the Conference on Pulses for Sustainable Agriculture and Human Health, New Delhi, May 31–June 1.
- Negi, A., and D. Roy. 2015. "The Cooling Effect of Pulse Imports on Price: The Case of the Pigeon Pea in India." IFPRI Discussion Paper 1439, International Food Policy Research Institute, Washington, DC.
- Reddy, A. A. 2004. "Consumption Pattern, Trade and Production Potential of Pulses." *Economic and Political Weekly* 39 (44): 4854–4860.
- Sekhar, C. S. C., and Y. Bhatt. 2016a. "Determinants of Pulses Production in India: An Empirical Analysis." Paper presented at the Conference on Pulses for Sustainable Agriculture and Human Health, New Delhi, May 31–June 1.
- Sekhar, C. S. C., and Y. Bhatt. 2016b. "Possibilities and Constraints of Increasing Pulse Production in India." Paper presented at the Conference on Pulses for Sustainable Agriculture and Human Health, New Delhi, May 31–June 1.

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