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# INDIA NEEDS A PULSES REVOLUTION

The demand for pulses in India is estimated at 18.29 million tonnes in 2009-10, while the production has been stagnant at around 13.6 million tonnes.



**P**ulses have been cultivated since time immemorial in rain-fed conditions which are characterised by poor soil fertility and moisture stress environments. These are the seeds of leguminous plants and belong to the Fabaceae family. For vegetarians, they provide a major portion of their protein requirements. They also maintain soil fertility, through biological nitrogen fixation with the help of bacteria found in their root

nodules. They thus play an important role in ushering sustainable agriculture.

## No happy situation

The per capita availability of pulses has declined sharply from 61 grams per day in 1951-56 to less than 40 grams in recent years. The figure recommended by World Health Organisation (WHO) is 80 grams. This shortfall has serious nutritional implications.

India is home to around 40 per cent of the world's malnourished children. Over 53 per cent of children under the age of four are malnourished and under-weight, while 30 per cent children of this group are stunted. About 17 per cent of them have relatively low weight in relation to their height.

This is despite the fact that India produces a variety of pulses including chickpea (39 per cent), pigeonpea (21 per cent), mungbean (11 per cent), urdbean (10 per cent), lentil (7 per cent), fieldpea (5 per cent) and others to the tune of around 14 million tonnes annually from an area of around 23 million hectares; with an average yield of around 650 kg per hectare.

The major pulses producing states are Madhya Pradesh (23 per cent), Uttar Pradesh (18 per cent), Maharashtra (14 per cent), Rajasthan (11 per cent), Andhra Pradesh (9 per cent) and Karnataka (6 per cent), where pulses are predominantly grown as rainfed crops.

India's population would reach a figure of 1350 million by 2020. The country would then require a minimum of 30.3 million tonnes of pulses.

The demand for pulses is estimated at 18.29 million tonnes in 2009-10, up from 16.77 million tonnes

in 2007-08. Production is stagnant at around 13.6 million tonnes. The gap between demand and supply is being met through imports.

India imports pulses from various countries, including tur from Tanzania and Kabuli chana, urad and yellow peas from Turkey. Neighbouring country Myanmar also supplies various types of pulses. There are more than 5000 importers of pulses in India.

**Some problems**

The main problem relates to wide fluctuations in production. After reaching a peak of 14.94 million tonnes in 2003-04, the production fell to 13.38 million tonnes in 2004-05, and to 13.4 million tonnes in 2005-06. This is attributed to adverse climate conditions in major production zones.

The widening gap between demand and supply has led to soaring prices in recent years. The situation has worsened because of failure trading and limited availability in the international market.

About 530 improved varieties having resistance to key diseases have been developed for different states but inadequate supply of quality seeds remains a major stumbling block in their widespread adoption. Also, the efforts have been still inadequate in meeting the seed requirement mainly due to poor conversion of breeder seeds into foundation and certified seeds.

Pulses production has remained largely unattractive to our farmers due to low productivity, lack of adequate government support and a poor procurement policy.

The average productivity of pulses is around 600 kg per hectare while the experimental station yields are 2

**Area, Production and Productivity of Pulses in India**

Year	Gross area (million ha)	Production (million tonnes)	Productivity (kg/ha)
1960-61	23.6	12.7	539
1970-71	22.6	11.8	524
1980-81	22.5	10.6	473
1990-91	24.7	14.3	578
1999-2000	21.1	13.4	635
2000-01	20.3	11.0	544
2001-02	22.0	13.3	607
2005-06	22.4	13.4	598
2006-07	23.2	14.2	612
2007-08	23.6	14.8	625
2008-09*	22.4	14.7	655

\*Estimates

to 5 tonnes per hectare. India occupies first position in the world both in area and production of pulses. But, in productivity, it ranks 118th in the world. France has the maximum productivity of 4769 kg per hectare.

Currently, only 15 per cent of the total area under pulses is irrigated as compared to an average of 46 per cent for all foodgrains. Providing scheduled and controlled irrigation can lead to increase in yields. Also, irrigation requirements for pulses are much lower than for other crops and could be provided through sprinklers, etc.

The minimum support price (MSP) for pulses has failed to deliver the goods. The farmers have refused to sell pulses to the government agency at a measly MSP of Rs 2300 a quintal when *mandis* are offering them more than double that rate. Middlemen make their work easy by paying more than the MSP and by lifting the stock from their doorstep itself.

On October 20, 2010, the Cabinet cleared higher MSP for *rabi* crops. The MSPs for different crops are Rs 780 per quintal for barley (as compared to Rs 750 per quintal for 2009-

10 season), Rs 2100 per quintal of gram (Rs 1760), Rs 2250 per quintal of masur/lentil (Rs 1870), Rs 1850 per quintal of rapeseed/mustard (Rs 1830) and Rs 1800 per quintal of sunflower (Rs 1680).

The prices of all pulses (excluding *chana* and yellow peas) that were ranging between Rs 20 to Rs 40 per kg in 2006-07 peaked to Rs 70 to Rs 90 per kg at the retail level in 2009.

**Measures initiated**

The government has taken many initiatives to step up production of pulses. The setting up of the Indian Institute of Pulses Research at Kanpur is a step in the right direction. It acts as a national centre for basic and applied research on pulse crops. It has also developed a host of high-yielding varieties.

To promote pulses cultivation, enhance productivity and reduce production cost, post-harvest losses and handling charges are urgently required.

In May 2007, the government extended the zero duty on import of pulses by yet another year till March 31, 2009, which otherwise was to expire a year before. The measure is meant to ensure smooth supply of pulses. The country imports around two million tonnes of pulses every year.

In 2007, the government refused to extend 15 per cent subsidy provided to traders for importing pulses as given to state-owned agencies, stating that it has no mechanism to check overbilling. Private importers felt that if the government was serious about checking price rise, it should allow them the subsidy as the state agencies would not be able to contract at a price that could have

## MARKET SURVEY

the stabilising effect in the domestic markets.

Some states like Madhya Pradesh have contemplated to impose pulse stock limit on traders in view of steep rise in prices in recent years. During the four-month period June to September 2009, prices surged by 50 per cent.

Investment in research is made by the government and through growers' levy collected from pulses producers. High-yielding varieties and short-duration crops suitable for local conditions are being developed and popularised.

Pulses need to be stored in optimal humidity conditions. This prevents post-harvest losses due to attack of pulse beetles. These insects mainly attack whole grains, not split

pulses. Hence we have to shorten the time taken from harvesting to milling. Pulses have to be stored in split form. These measures help to reduce losses.

We have to enhance productivity and production of pulses. Equally important is quality. We have to adopt advanced scientific technology as well as research strategies for pulses improvement. Innovative techniques, particularly mutation breeding research techniques, are needed. We require breeding varieties resistant to major biotic stresses like diseases and insect pests and nematodes for stabilising the yield potential of existing varieties.

There is need for developing suitable early maturing varieties

for multiple cropping systems to increase the overall production. We have to encourage basic research on physiological and nutritional aspects for increasing photosynthetic efficiencies. Priority should be given to development of integrated pest and disease management schedules.

Pulses cultivation is generally perceived by farmers as a risky area. Hence crop insurance needs to be extended to pulses farmers. The farmers require efficient sourcing mechanisms for better security on assured off-take. Experts say India has the potential to produce over 37 million tonnes of pulses. ■

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*The author is a regular contributor to FFY*