

## Pulses Scenario in India

Rupa Dutta, Abhay Kumar, Venkat Hariharan Asha and Sachin Bansal

A major intervention by the Government to improve yield of pulses is the National Food Security Mission (NFSM). NFSM was launched in 2007-08 to increase the production of rice, wheat and pulses through area expansion and productivity enhancement; restoring soil fertility and productivity; creating employment opportunities; and enhancing farm level economy. NFSM-Pulses is being implemented in more than 600 districts of the country.



**P**ulses are a crucial element in the food basket of predominantly vegetarian population in our country to ensure nutritional security. These are the relatively most inexpensive source of proteins and bestow immense positive externalities to the environment enriching soil fertility and being a water efficient crop. Green revolution has significantly improved productivity and production of many crops. However, this increase has been comparatively lower in case of pulses. This may be inferred from stable prices of rice/wheat over the time compared to relative instability in pulses prices. Annual mismatch between demand and supply may not always be completely bridged by imports (both in short and long run).

In the backdrop of heightened policy attention towards pulses and impact of

recent reforms like amendment to Essential Commodities (EC) Act and introduction of the Farmers (Empowerment and Protection) Agreement on Price Assurance and Farm Services Act, 2020 and the Farmers' Produce Trade and Commerce (Promotion and Facilitation) Act, 2020 in liberalising the Agricultural Sector, the need to shape policy w.r.t. pulses in a more scientific and nuanced manner with a futuristic lens is only felt more.

### Production

Production of pulses reached record levels of 231.3 LMT and 254.2 LMT during 2016-17 and 2017-18, respectively. However, fluctuation in production levels is still witnessed. Positive growth rates in production are often followed by sharp contractions. This may have contributed

to adverse price movements implying not only uncertainty in expected and actual remunerations to the farmer but also widely varying retail prices for the consumer.

From Table 2 it is observed that while MSP has increased for all the pulses, the same has not necessarily accompanied by increase in production. Therefore, while MSP is one of the critical tools for promoting production and ensuring sustained availability, focus on productivity enhancement and strengthening other non-price interventions appears to be necessary.

The production of pulses in 1950-51 was 84.1 lakh MT with an average yield of 441 kg/hectare, increased to 192.7 lakh MT with the average yield almost doubling (764 kg/hectare) in 2013-14. However, for the aforesaid period, rice production has increased five-fold, with nearly four-fold increase in yield. Wheat production has increased 15-fold with four and a half times' enhancement in yield.

Differences in absolute levels of production between States understandably exist. However, there are marked differences in yield both

across time periods for a given State as well as across States for a given time period. For the time period 2015-16 to 2017-18, w.r.t. the yield of Tur (Kharif), the lowest was recorded by Karnataka in 2015-16 at 368 kg./ha and highest by Madhya Pradesh at 1297 Kg./ha. The average productivity of top 5 Tur producing States has increased, along with considerable reduction in the fluctuations in yield between them. Similar is also the case for Masur. For Urad, the average productivity of top 5 States has increased during the said period while for Moong the trend is mixed. However, degree of variability in yield among the top 5 States for both these pulses has not stabilized. Thus, there is scope for bridging the gap w.r.t. variability in yield which would also enhance absolute production levels. Best practices of growers should be shared across the country on a periodical and user-friendly basis to increase yields through indigenous methods. A 'Green Revolution' for pulses is needed to regain ground. This is more so given the fact that global yields are about 1.5 times that of India, whereas productivity in Myanmar, China and the US is about 2-3 times more than that of India.

**Table 1: Annual Growth Rate in Production of 5 Major Pulses**

Commodity	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20 (4th AE)
	Tur	16%	-7%	14%	5%	-11%	-9%	90%	-12%	-23%
Urad	42%	1%	11%	-14%	15%	-1%	45%	23%	-12%	-33%
Moong	161%	-9%	-27%	35%	-7%	6%	36%	-7%	22%	0%
Gram	10%	-6%	15%	8%	-23%	-4%	33%	21%	-13%	14%
Masur	-9%	13%	7%	-10%	2%	-6%	24%	33%	-24%	-4%
Total	24%	-6%	7%	5%	-11%	-5%	42%	10%	-13%	5%
Rice	8%	10%	0%	1%	-1%	-1%	5%	3%	3%	2%
Wheat	8%	9%	-1%	3%	-10%	7%	7%	1%	4%	4%

Source: Department of Agriculture, Cooperation and Farmers Welfare (DACFW) estimates of food grain production

**Table 2: Minimum Support Price (MSP) of Pulses during 2016-17 to 2020-21 (in ₹/quintal)**

Pulses	2016-17	2017-18	2018-19	2019-20	2020-21	% increase from 2016-17 to 2019-20	% change in production from 2016-17 to 2019-20
Tur	5,050	5,450	5,675	5,800	6,000	15%	-21%
Urad	5,000	5,400	5,600	5,700	6,000	14%	-28%
Moong	5,225	5,575	6,975	7,050	7,196	35%	13%
Gram	4,000	4,400	4,620	4,875	5,100	22%	21%
Masur	3,960	4,250	4,475	4,800	5,100	21%	-3%

Source: DACFW

**Table 3: Sowing, harvesting season of major pulses and major producing States**

Pulses	Season	Sowing	Harvesting	Major Producing States
<b>Tur</b>	Kharif	June- July	Nov - April	Karnataka, Maharashtra, Madhya Pradesh, Gujarat
<b>Urad</b>	Kharif (Main)	June - Jul	Sep - Oct	Madhya Pradesh, Rajasthan, Uttar Pradesh, Tamil Nadu
	Rabi	Oct -Nov	Jan - Feb	
	Summer	Feb - Mar	May - June	
<b>Chana</b>	Rabi	Oct - Nov	Mar - May	Madhya Pradesh, Rajasthan, Maharashtra, Uttar Pradesh
<b>Moong</b>	Kharif (Main)	June - Jul	Sep - Oct	Rajasthan, Madhya Pradesh, Maharashtra, Karnataka
	Rabi	Oct -Nov	Jan - Feb	
	Summer	Feb - Mar	May - June	
<b>Masoor</b>	Rabi	Oct -Nov	Mar - May	Madhya Pradesh, Uttar Pradesh, West Bengal, Bihar

Source: DACFW

A major intervention by the Government to improve yield of pulses is the National Food Security Mission (NFSM). NFSM was launched in 2007-08 to increase the production of rice, wheat and pulses through area expansion and productivity enhancement; restoring soil fertility and productivity; creating employment opportunities; and enhancing farm level economy. NFSM-Pulses is being implemented in more than 600 districts of the country. The interventions covered under NFSM-Pulses are frontline / cluster demonstrations on improved package of practices; demonstrations on cropping system; seed distribution/production of HYVs; farm machineries/resource conservation machineries/tools; efficient water application tools; plant protection measures; nutrients management/ soil ameliorants; cropping system based training to the farmers and; local initiatives etc. To reap benefits in full measure, participation of the major pulse-producing States/UTs needs to be robust with quantitative targets especially for States with significant land under rice fallows. Further, a greater push should also be given towards diversification of produce. Also, procurement of rice, wheat and sugarcane at MSP/Fair and Remunerative Prices (FRP) may be rationalized keeping in view stability in their prices, self-sufficiency in production, ample buffer stocks. This is essential to enable shift towards less-water intensive crops and aligning cropping pattern towards nutrition rich diets which is in line with the Sustainable Development Goals (SDGs) and ensuring their availability at affordable prices.

### Buffer of stock of pulses

Procurement of pulses at the MSP is undertaken in the Price Support Scheme (PSS) under the Umbrella Scheme of Pradhan Mantri Annadata Aay Sanrakshan Abhiyan (PM-AASHA).

The rationale is to provide a guaranteed price and assured market (i.e., procurement by Government agencies) to protect growers from adverse price fluctuations. Further, Price Stabilization Fund (PSF) scheme implemented by Department of Consumer Affairs is largely utilised towards creation and maintenance of buffer stock of pulses. These include 5 major pulses viz., Tur, Urad, Moong, Chana and Masur. Domestic procurement towards this helped to offer remunerative prices to farmers in the wake of record bumper production of pulses. Regulated release from Government stock of pulses has boosted availability in lean periods and helped moderate prices benefitting consumers. Also, it has a role in deterring hoarding and speculation activities.

### Imports of Pulses and Trade Policy

**Tur:** The import of Tur has generally hovered around 4-5 LMT during the period 2015-16 to 2019-20 with peak at 7 LMT in 2016-17. Bumper production of Tur in 2016-17 of record high of 48.7 LMT led to levy of 10 percent import duty on 28.03.2017 and 2 LMT restriction on quantity of import on 5.8.2017. It is pertinent to note that more than 95 percent imports have been from Least Developed Countries (LDCs) with Myanmar, Mozambique, Malawi, Tanzania and Sudan contributing 93-99 percent of total tur imports. The restriction on import of Tur was enhanced to 4 LMT on 3.7.2019. Also, a MoU has been signed with Mozambique to ensure assured supply of pulses.

**Moong and Urad:** The average import of Moong and Urad taken together has been around 5 LMT during the period 2015-16 to 2019-20. Restriction on quantity of import of 3 LMT was imposed on their imports on 21.8.2017. Subsequently, HS Code

for import was separated in 2017-18 and restriction for import of Moong and Urad was notified at 1.5 LMT each. The same is reviewed/amended from time to time to suit domestic requirement. It is noted that the ratio of imports is unequal i.e. import of Urad is at least 4-5 times that of Moong. For Urad, 97 percent imports are from Myanmar (LDC) during 2018-20. For Moong, the absolute volume of import has declined from 84,000 to 69,000 MT and share of LDC import has risen from 46 percent to 64 percent. Myanmar, Mozambique and Tanzania are the major exporting countries with the latter's share increasing significantly in 2019-20.

**Chana:** Import has reduced from around 10 LMT during 2015-16 to 2017-18 to 2-4 LMT during 2018-19 and 2019-20. However, the share of LDCs has witnessed a steady increasing trend from less than 10 percent during 2015-16 to 2017-18 to almost 80 percent in 2018-19 (Low base effect)

and 48 percent in 2019-20. This may largely be attributed to imposition of 30 percent import duty of Chana on 21.12.2017 and its increase to 40 percent and 60 percent on 6.2.2018 and 1.3.2018, respectively and the fact that import from LDCs are under India's Duty Free Tariff Preference (DFTP) Scheme to LDCs.

**Masur:** Average Masur imports during the period 2015-16 to 2019-20 have been around 8 LMT with peak of 12.6 LMT in 2015-16 and low of 2.49 LMT in 2018-19. This dip in Masur imports may be attributed to levy of 30 percent duty on import of Masur on 21.12.2017. The same has been temporarily reduced to 10 percent on until 31.12.2020.

As far as WTO is concerned, tariff imposition upto the bound rate is the preferred policy in agriculture products.

**Table 4: Availability<sup>§</sup>, Estimated Requirement (ER)<sup>#</sup> and Prices of pulses<sup>^</sup>**

Pulse	Particulars	2016-17	2017-18	2018-19	2019-20
Tur	Production	48.7	42.9	33.2	38.3
	Availability	55.6	46.9	38.4	42.7
	ER	78.8	80.9	82.9	84.9
	Price	121.19	78.66	71.17	84.9
Chana	Production	93.8	113.8	99.4	113.5
	Availability	103.7	122.3	99	115.9
	ER	47	48.2	49.4	50.6
	Price	98.21	80	65.11	65.92
Moong	Production	21.7	20.2	24.6	24.6
	Availability	22.4	20.6	25.3	25.2
	ER	34.2	35.1	36	36.8
	Price	89.14	76.24	74.03	86.27
Masoor	Production	12.2	16.2	12.3	11.8
	Availability	20.3	24.1	14.6	20.1
	ER	29.9	30.7	31.5	32.2
	Price	81.6	66.81	61.33	64.12
Urad	Production	28.3	34.9	30.6	20.4
	Availability	33.2	37.9	35.4	23.4
	ER	27.1	27.8	28.5	29.2
	Price	128.57	85.33	70.23	83.77
Total (incl. other pulses)	Production	231.3	254.2	220.8	231.5
	Availability	296	308.5	243.6	256.8
	ER	236.1	242.2	248.3	254.4
	Imports	66.1	56.1	25.7	29.4

<sup>§</sup>Availability = Production + Imports - Exports

<sup>#</sup>Projections of Estimated Requirement of total pulses based on demand estimates by NITI Aayog (Demand & Supply Projections Towards 2033); the same has been estimated pulse-wise based on relative Consumer Price Index (CPI) -weights for individual pulses.

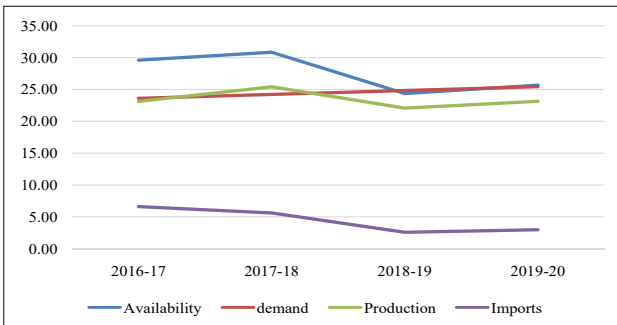
<sup>^</sup>Availability, Production and ER in Lakh MT; All India average retail prices in ₹/kg.

Production (2019-20): 4<sup>th</sup> Advance Estimates



Prices of all pulses witnessed sharp spike during 2015-16/2016-17 due to supply side shocks. Thereafter, bumper production of pulses was recorded in the subsequent year. Subsequently, prices of gram have stabilised around ₹70/kg. Prices of Tur have shown a steadily increasing trend. However, prices of Urad and Masur have witnessed considerable increase since November 2019. In the case of Moong, prices have increased beyond previous peaks and recorded new highs at around ₹110/kg and may be attributed to relatively higher increase in MSP compared to other pulses, inter-alia. As far as contribution of pulses to inflation is

Fig. 1: Total pulses availability, production, import and demand (in MMT)



concerned, pulses account for 2.38% of overall CPI basket.

- **Availability of pulses and extent of import substitution**

Fig.2: Availability of Tur (in LMT)

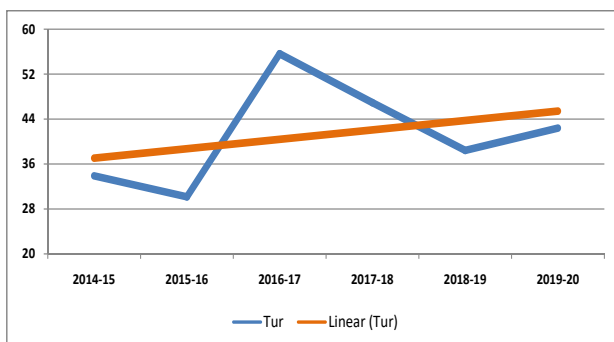


Fig.3: Trend in production and import of Tur

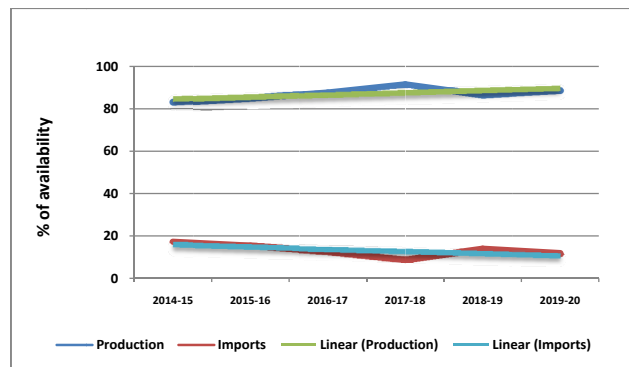


Fig.4: Availability of Urad (in LMT)

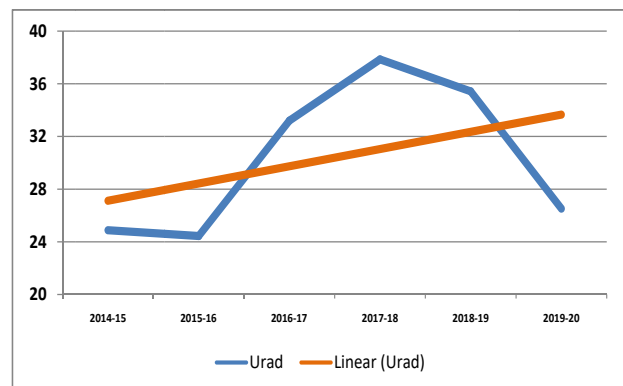


Fig.5: Trend in Production and import of Urad

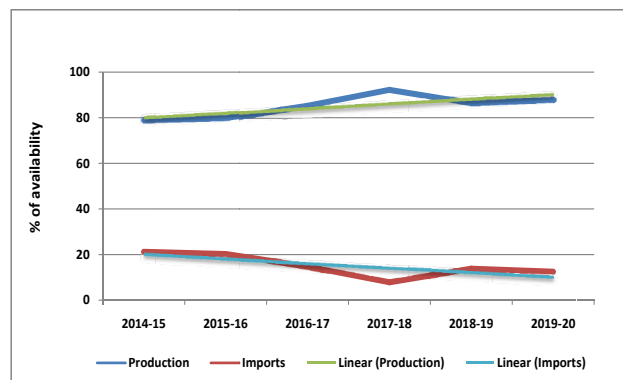


Fig.6: Availability of Chana (in LMT)

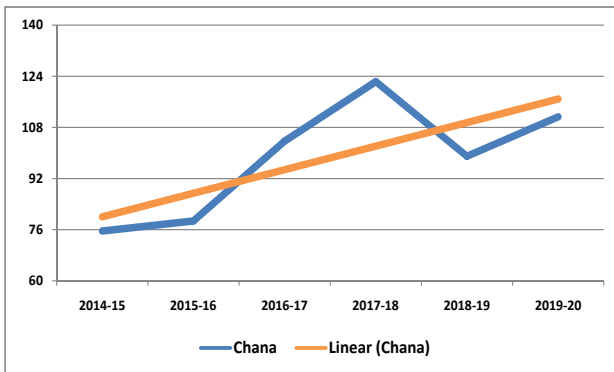


Fig.7: Trend in production and import of Chana

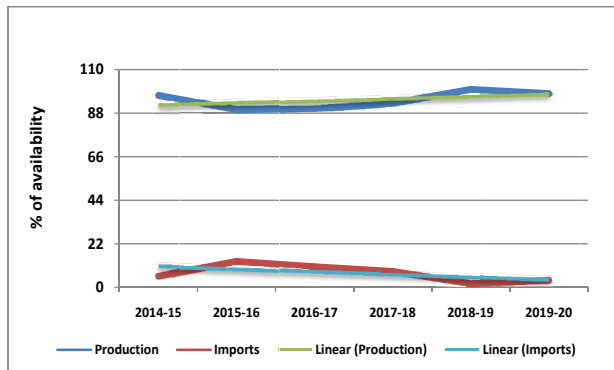


Fig.8: Availability of Moong (in LMT)

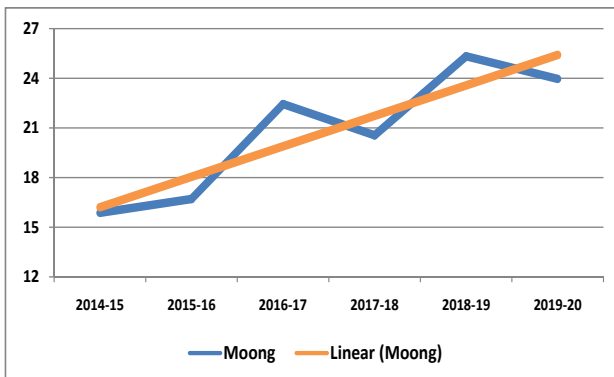


Fig.9: Trend in production and import of Moong

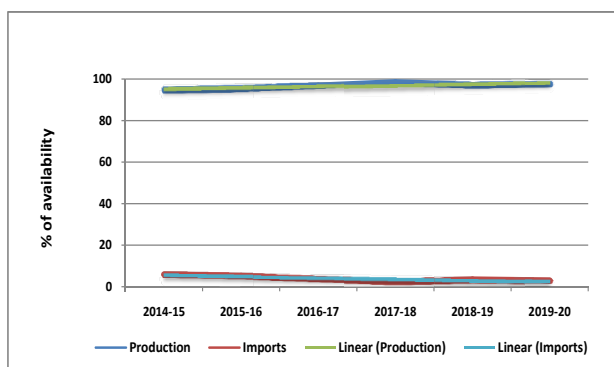


Fig. 10: Availability of Masoor (in LMT)

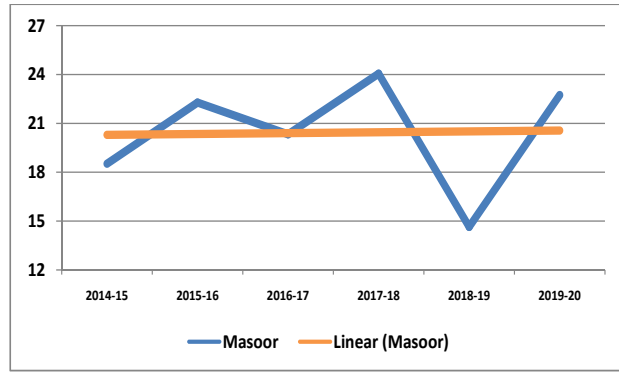
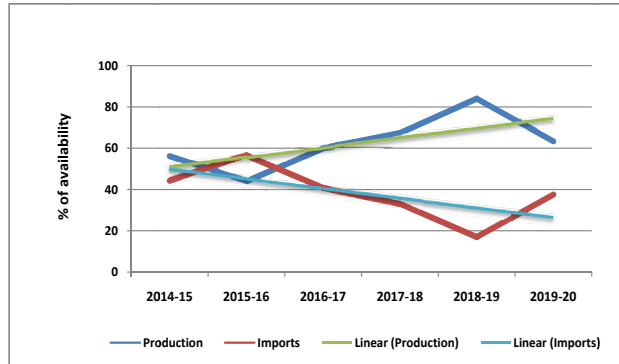


Fig.11: Trend in production and import of Masur



As noted, significant price variations in pulses are observed on a year-on-compare to relatively milder alternating movement between harvesting and lean season within a year. This may be attributed to the fact that lagged effect of both instances of bumper production as well as decline in production on prices are often observed to the extent of 'T+1'. Accordingly, the trade policy may also be aligned to suit adequate domestic availability. Key emphasis should be laid down in stabilising domestic production levels in a sustainable manner with a balance between price and non-price interventions ensuring adequate incentives to the farmer. Stable prices would also enable creation/expansion of export markets and processing supplies suited to consumer preferences which would inter-alia, create assured remunerative markets for growers by boosting the value chain. Scientific storage and its decentralisation is key infrastructure to ensure smooth availability round the year and stability in prices.

*(The authors are Senior Economic Adviser, Director, Assistant Director and Junior Statistical Officer in the Department of Consumer Affairs, Food and Public Distribution, Government of India. Email: venkat.ha@gov.in. Views expressed are personal)*