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From Editor's Desk

This issue of 'Agricultural Situation in India' highlights the farm sector initiatives and efforts on the part of the government to make agriculture more viable; two academic research articles, one on assessing Pradhan Mantri Kisan Samman Nidhi Yojna; & second on cost-return analysis of dry chilli production in Guntur district of Andhra Pradesh and an agro-economic research study on relevance and distribution efficiency of seed minikits of pulses in Madhya Pradesh.

The major farm sector news covered in this publication are: Agricultural Produce Marketing Committees (APMCs) to get access to Agriculture Infrastructure Fund; National Agriculture Market (e-NAM) being expanded to ease farmers; MSP Operations during Kharif Marketing Season 2020-21; Micro Irrigation Fund (MIF) with a corpus of ₹ 5,000 crores created under NABARD; efforts to link all farmers to institutional credit; allocation of ₹ 16000 crore for Pradhan Mantri Fasal Bima Yojana (PMFBY) for 2021-22; reduced import of pulses; National Beekeeping & Honey Mission (NBHM) goal of 'Sweet Revolution' as a part of AtmaNirbhar Bharat Abhiyaan; assistance to farmers affected by floods and Covid-19 pandemic; India accounted for 23.62% of world's total pulses production in 2019-20; compensation to farmers for crop loss due to unseasonal climate; awards distributed to top-performing states and districts under the PM-KISAN scheme; record foodgrain production of 303.34 million tonnes; Ministry of Agriculture and Farmers' Welfare finalizes products for One District One Focus Product; National Bamboo Mission organizes a national conference on opportunities and challenges for bamboo in India.

As far as the agricultural prices are concerned, the Wholesale Price Index (WPI) of pulses and fruits increased by 7.92 percent and 3.08 percent, respectively, and WPI of foodgrains, cereals, vegetables, paddy and wheat decreased by 4.73 percent, 7.34 percent, 20.82 percent, 0.12 percent and 11.62 percent, respectively, in January, 2021 as compared to that in January, 2020. The 2021 cumulative winter season rainfall in the country has been 30 percent lower than the long period average during 1st January, 2021 to 24th February, 2021. Current live storage in 130 major water reservoirs in the country was 93.54 BCM as against 75.76 BCM of normal storage based on the average storage of last 10 years.

In the academic column's first article, the authors attempt to evaluate the present day status of the Pradhan Mantri Kisan Samman Nidhi Yojna initiated by the Government of India. Based on the data available in the public domain, an effort has been made to understand the impact which this scheme has been able to make on the ground level. The major findings revel that the scheme still needs more refinement at different levels so as to include eligible 'farmers' and a better system at place so as to make sure that the intended money reaches the right hands. There is a need to update and digitize the land records, Aadhar data and the bank details of the beneficiaries so that the real and needful family is not left out of its coverage.

The second article examines the cost and return parameters in dry chilli production. The data used is primary one, collected from chilli growers in Guntur district of Andhra Pradesh. The study concludes that chilli production is a profitable venture though the profits vary with the size of land holdings with large farmers getting more profit in comparison to small and marginal ones. But the high cost of seeds and fertilizers diminishes their profits. If quality seeds and fertilizers can be provided, it will help in increasing the productivity of chilli and this in turn lower price at consumer level.

Agro-economic research section tries to ascertain the ground level effectiveness of seed minikit programme of pulses in Madhya Pradesh. The research carried out by Agro Economic Research Centre, Madhya Pradesh, used primary level data collected from 300 seed kit beneficiaries across all farmer categories like marginal, small, medium and large. The study tries to examine the requirement of seed minikits and to compare the productivity of users and non-users. The study shows that the use of minikits has resulted in reduction of production cost of major pulses. Also, the net return was more for seed kit beneficiaries in comparison to non-users and better seeds were available at affordable prices. The study proposes to increase the effectiveness of the programme, such as seeds may be made available on time, field demonstrations may be done in villages, information on latest varieties available may be provided, etc. Also the seed produced through minikits may be distributed among non-users at affordable prices so as to bring more farmers under its coverage.

Promodita Sathish

Farm Sector News*

Cabinet Decisions and Announcements

Agricultural Produce Marketing Committees (APMCs) to get access to Agriculture Infrastructure Fund

In the Union Budget 2021-22, Finance Minister Nirmala Sitharaman, announced that Agricultural Produce Marketing Committees (APMCs) will become eligible beneficiaries to utilize the 1 lakh crore financing facility under Agriculture Infrastructure Fund (AIF) to enhance infrastructure at regulated markets, commonly known as Mandis.

APMCs are state controlled markets that are setup to provide market linkages to farmers. Market yards or Mandis provide space for auction to ensure that farmers obtain best possible price for their produce. However, these markets continue to require upgradation and set up of more modern infrastructure. With access to low cost credit under AIF, they can setup post-harvest infrastructure such as sorting and grading units, assaying units, drying yards, cold storages and warehouses for the benefit of farmers for better price realization of quality produce, ability to store and sell at a better price and minimize post of harvest losses.

Availability of post-harvest infrastructure will help the farmers to enhance their income through effective value chain. Availability of warehouses with financing facilities will help the farmers to store the agriculture produce and sell at optimal prices. Perishables such as fruits, vegetables and flowers require low temperatures throughout the value chain to enhance shelf life and preserve quality. Hence, availability of cold storages at markets will result in direct benefit to the farmers on premium farm produce. The suitable infrastructure will help to reduce the post-harvest losses, which can be as high as 5-10% of the produce. Hence, upgradation of infrastructure at regulated markets has the potential to enhance farm income and also support other stakeholders across the value chain, which also have the access to this infrastructure.

The AIF is a medium - long term debt financing facility for investment in viable projects for post-harvest management infrastructure and community farming assets through interest subvention and credit guarantee. The duration of the scheme is from FY 2020 to FY 2029. Under the scheme, ₹ 1 Lakh Crore will be provided by banks and financial institutions as loans with interest subvention of 3% per annum and credit guarantee coverage under CGTMSE for loans up to ₹ 2 crore. The beneficiaries include farmers, FPOs, PACS, Marketing Cooperative Societies, SHGs, Joint Liability Groups (JLG), Multipurpose cooperative societies, agri-entrepreneurs, start-ups, and central/ state agency or local body sponsored Public-Private Partnership projects, and now APMC mandis.

Assistance to farmers affected by floods and Covid-19 pandemic

The Central Government, by keeping in view the spread of COVID-19 virus in India and the declaration of COVID-19 as pandemic by the World Health Organization, by way of a special onetime dispensation, has decided to treat it as a notified disaster for the purpose of providing assistance under State Disaster Response Fund (SDRF) for 2019-20 and 2020-21. Accordingly, government released the 1st installment of central share of ₹ 11,092.00 crore in advance under SDRMF to all the states on 03.04.2020. Subsequently, the 2nd installment of central share has also been released to 17 states amounting to ₹ 7866.00 crore. Further, states have been allowed to spend 50% of the amount allocated during the year 2020-21 under SDRMF on COVID-19 management.

As per norms, assistance is inter-alia provided to the farmers in the wake of natural calamities, including floods, in the form of agriculture input subsidy.

Further, during COVID-19 pandemic, the agriculture sector functioned smoothly. All necessary measures were taken to ensure smooth operation of agriculture related activities. Many schemes/ programmes were also launched to assist the farmers of the country during the lockdown period, such as:

(i) From 24.03.2020 to 02.02.2021, funds amounting

*Source: www.pib.nic.in

to ₹ 62,301.22 crore have been transferred to the bank accounts of PM-KISAN beneficiaries.

(ii) Kisan Rails were operated for the first time from July, 2020 to facilitate movement of perishable Agri-Horticulture commodities.

(iii) Central sector scheme of financing facility under Agri Infrastructure Fund. This scheme is operational from the year 2020-21 to 2029-30. The aim is creation of infrastructure at the farm gate.

(iv) The National Bee and Honey Mission (NBHM) - ₹ 500 crore from 2020-2021 to 2022-2023 is allocated for the sector.

(v) Concessional credit boost to 2.5 crore farmers through Kisan Credit Card. So far 174.96 lakh Kisan Credit Cards have been issued as part of the KCC saturation drive since February, 2020 to 03.02.2021.

(vi) Under Pradhan Mantri Fasal Bima Yojana (PMFBY), total claims of ₹ 30802.02 crore have been settled for 256.29 lakh farmers during the COVID-19 pandemic from March, 2020 to January, 2021.

(vii) Central sector scheme "Supporting Dairy Cooperatives and Farmer Producer Organizations engaged in dairy activities" is operational from 2016-17 with a corpus of ₹ 300 crore to be used for providing soft loans for working capital to enable State Dairy Cooperative Federations to provide a stable market access to farmers. An amount of ₹ 203 crore has been released to National Dairy Development Board till December, 2020 for implementation of the scheme during 2020-21. The "interest subvention on working capital loan" with a total outlay of ₹ 100 crore for supporting the dairy cooperatives to overcome problems being faced due to COVID 19 has been approved by Government of India for FY 2020-21. The budget for 2021-22 is ₹ 100 Cr. Under this provision, 2% per annum interest subvention on secured working capital loan shall be provided. For prompt and timely repayment, additional 2% interest subvention will be payable at the end of the loan repayment period.

Meetings and Events

Union Agriculture Minister virtually addresses event organized in Rome to celebrate World Pulses Day

Union Minister for Agriculture and Farmers Welfare, Rural Development, Panchayat Raj and Food Processing Industries, Shri Narendra Singh Tomar said that India is the biggest producer and consumer of pulses in the world and it has almost achieved self-sufficiency in pulses. In the last five-six years, India has increased pulses production from 140 lakh tonnes to more than 240 lakh tonnes. In the year 2019-20, India produced 23.15 million tonnes of pulses, which is 23.62% of the world. The Minister was speaking at the international event held in Rome to celebrate World Pulses Day which he attended virtually.

Speaking about the importance of pulses, Shri Tomar said that as pulses are nutritious and rich in protein, they are important for the food basket, especially in a country like India which is predominantly vegetarian. Pulses have low water consumption and can be grown in dry and rain-fed areas. It improves soil fertility by conserving nitrogen in the soil, reducing the need for fertilizers and therefore reducing the emission of greenhouse gases.

Shri Tomar said that the present initiative of the Government of India to increase the production of pulses is an attempt to bridge the demand and supply gap. Since pulses fulfill the protein requirement of a large section of Indians, it will continue to be a major component of Indian agriculture. He also said, "Pulses will continue to find a place in our National Food Security Mission and other programs as a major crop. Pulses production has increased on a large scale by targeting rice fallow areas and combining innovative technological activities and provision of essential agricultural inputs."

While speaking about agriculture initiatives, Shri Tomar informed that India has 86% small and marginal farmers and FPOs are being promoted for all kind of assistance to them. Government of India is going to build 10,000 new FPOs in the country with the outlay of ₹ 6,850 crore in 5 years. The step will collectively enable farmers for seed production, purchase and access to better technologies. Along with soil health, the Government of India is also giving high priority to increase water use efficiency

in agriculture by promoting Per Drop-More Crop, the initiative of Prime Minister Shri Narendra Modi.

Lauding the work done by the Indian Council of Agricultural Research (ICAR), the Minister said that through its research and development activities, ICAR has played an important role in increasing pulses production. Pulse crops research has received new direction and unprecedented work has been done towards developing new and improved species. More than 100 improved and high yielding species have been developed in 5 years. The government is focusing on improving varieties of seeds, bringing new areas under pulses cultivation and market, which will help in increasing the profit of the farmers.

Stressing upon the importance of pulses, Shri Tomar said that in India, pulses are also distributed in about 1.25 crore Anganwadi centers under the National Nutrition Mission. During the lockdown, the government has supplied pulses-whole pulses to 80 crore people. The Minister said that despite difficulties during COVID, India has emerged as a global exporter/supplier of food items in the world. In comparison to the same period of the previous year, from April to December-2020, India recorded an increase in export of agricultural commodities including pulses with a 26% increase in pulses production. There has been a substantial increase in the export of medicinal plants such as ginger, black pepper, cardamom, turmeric, etc. which are considered immunity boosters in Ayurveda. The government is promoting farming with high priority. Therefore, the agricultural budget of the country has been increased by more than five times, which is now about ₹ 1.25 lakh crore.

The Minister said that the government is taking all-round measures for the development of agriculture sector. Under PM Kisan Samman Nidhi Yojana, ₹ 1.15 lakh crores have been transferred to the bank accounts of more than 10.5 crore farmers. Under AatmaNirbhar Bharat Abhiyaan, Agriculture Infrastructure Fund of ₹ 1 lakh crore has been setup to provide infrastructure like warehouse, cold storage, food processing units to farmers. The fund will also benefit APMCs in the states as per the new budget provision.

Union Minister Shri Narendra Singh Tomar distributes awards to top-performing states and districts under the PM-KISAN scheme

Union Minister for Agriculture and Farmers' Welfare, Rural Development, Panchayat Raj and Food Processing Industries, Shri Narendra Singh Tomar awarded the top-performing states and districts for their exemplary work with respect to the implementation of the Pradhan Mantri Kisan Samman Nidhi scheme on 24th February, 2021. The Minister distributed the awards during an event in New Delhi organized to celebrate the 2nd year completion of the PM-KISAN scheme. The states/ UTs were awarded based on the criteria such as correction of data, addressing farmer grievances, timely physical verification exercise, etc.

Describing the PM-KISAN as a historic scheme, Shri Tomar said as on 24-02-2021, benefits amounting to ₹ 1,15,638.87 crore have been transferred to more than 10.75 crore beneficiaries since the inception of the scheme. The future generations will remember the initiative as a milestone in the agriculture sector, he added. Praising the hard work of the farmers, the Minister recalled the contribution of the farmers during COVID times. He said regardless of the adversity, the hard work of farmers has the potential to get the country out of any crisis.

During the event, the following categories of awards were given:

Awards to states/ UTs

Parameter	Category	State	Explanation
Highest % of Aadhar authenticated beneficiaries.	Other States	Karnataka	97% Aadhar authenticated data. More than 90% beneficiaries.in Karnataka are being paid benefits via Aadhar based payment mode.
Good Performance in Physical verification and Grievance Redressal.		Maharashtra	Physical Verification Completed – 99%Grievance Redressal – 60%
Fastest Take off		Uttar Pradesh	Nearly 1.53 crore farmers were registered during the period of Dec, 18 to Mar, 19.

Parameter	Category	State	Explanation
Highest % of Aadhar authenticated beneficiaries.	NE states & hilly terrain	Arunachal Pradesh	Aadhar Authentication is 98%
Good Performance in Physical verification and Grievance Redressal		Himachal Pradesh	Himachal PradeshPhysical Verification Completed – 75 %Grievance Redressal – 56%

Awards to Districts

Parameter	Category	District
Aadhar Authenticated and Farmers Paid (Weighted Average)	Other states	1. Rupnagar (Punjab) 2. Kurukshetra (Haryana) 3. Bilaspur (Chhattisgarh)
	North East/ Hilly Areas	1. Lahaul & Spiti (Himachal Pradesh) 2. Udham Singh Nagar (Uttarakhand)
Grievance Redressal	Other states	1. Pune (Maharashtra)2. Dohad (Gujarat) 3. SPSR Nellore (Andhra Pradesh)
	North-East/ Hilly Areas	1. Nainital (Uttarakhand) 2. Sirmaur (Himachal Pradesh)
Physical Verification	Other States	1. Ahmednagar (Maharashtra) 2. Anantapur (Andhra Pradesh) 3. Aurangabad (Bihar)
	North East/ Hilly Areas	1. Kangra (Himachal Pradesh) 2. Dehradun (Uttarakhand)

Union Minister addresses inaugural session of 'National Consultation on Opportunities and Challenges for Bamboo in India'

Union Minister for Agriculture and Farmers' Welfare, Shri Narendra Singh Tomar virtually addressed the inaugural session of 'National Consultation on Opportunities and Challenges for Bamboo in India' on 25th February, 2021. The 2-day long manthan on bamboo sector was jointly organized by National Bamboo Mission, NITI Aayog and Invest India.

Addressing the gathering, Shri Tomar said that the Union government is putting in due diligence in developing the bamboo sector since it is evident that it can be a key crop to double farmers' income, increase employment opportunities and improve the livelihood of the people, especially in the North East region.

Shri Tomar also emphasized the formation of FPOs to encourage small and marginal farmers for taking up bamboo plantation as it will ensure hand-holding of the groups for providing correct procedures for raising nurseries and plantations. He urged the states to send proposals for the formation of FPOs for the bamboo sector.

As it is very difficult to identify the species and quality of bamboo at the seedling stage, the Minister appreciated 'National Bamboo Mission' for preparing the guidelines for accreditation of nurseries and certification of planting material. He said that the states are now in the process of accrediting nurseries and details are available in the public domain to guide farmers and industry as to where they can get good planting material.

Talking about the achievements in the bamboo sector, the Minister said that commercially important bamboos have been planted in an area of 15000 hectares in the last 3 years. To ensure quality planting materials supply to the farmers, 329 nurseries were set up under the mission. The National Bamboo Mission has set up 79 bamboo markets. These activities can be seen as pilot projects to establish

a model of the bamboo-based local economy. He said that the synergy of interventions of the mission, public sector and private entrepreneurs will accelerate the efforts of the government to improve the status of farmers and the local economy.

The Minister revealed that bamboo plays an important role in the Indian agarbatti industry. This section of business has been growing every year. Around 60% of the bamboo sticks in the Indian agarbatti industry were imported. Union Government including National Bamboo Mission and KVIC is giving a thrust to augment domestic incense stick production to cut down dependence on imports. He said that in the bamboo-based industries, the increased use of domestic raw material would support PM's call for 'Vocal for Local'.

The Agriculture Minister emphasized that the government will promote the use of bamboo in premium eco-tourism destinations, modern buildings and resorts. He also said that the use of bamboo will be encouraged in the Pradhan Mantri Awas Yojana-Rural for which the Ministry of Rural Development has prepared the necessary models.

Speaking about the importance of the 2-day long national consultation, the Minister said a multi-sectoral approach is required to develop the sector in which resources and expertise from various ministries, departments, national institutes, entrepreneurs and farmers have to be dovetailed in a harmonized manner. The two days of discussion will be a good opportunity to evaluate the achievements and potential of all the stakeholders for augmenting the scientific, technical and most importantly the commercial approach to set up Indian bamboo products in their rightful place in global markets.

National Bamboo Mission organizes a national conference on Opportunities and Challenges for Bamboo in India

The National Bamboo Mission anchored at the Department of Agriculture Cooperation & Farmers' Welfare organized a two day conference 'National Consultation on Opportunities and Challenges for Bamboo in India' through the virtual platform on 25th and 26th of February, 2021. NITI Aayog and Invest India also joined hands with the National Bamboo Mission to conduct the event. The aim of the brainstorming session was to deliberate on the bamboo ecosystem for promoting the holistic growth of the sector across the entire value chain. The deliberations of experts and stakeholders from various fields would further accelerate the efforts of the National Bamboo Mission to pin point solutions to issues facing the sector.

The conference benefitted from the participation of eminent professionals from various aspects related to bamboo farming, research, innovation, entrepreneurs and industry and attendees from research institutes, state officials, farmers and entrepreneurs. It witnessed discussions on all subjects related to the end to end progression of the bamboo industry from planting material to high end engineered products and marketing. The topics discussed were Bamboo for AatmaNirbhar Bharat, Promoting Exports and Global Branding, Success Stories, Availability of Feedstock & Plantations, Innovations, Research & Development, Skill Development, Access to Institutional Credit and International Cooperation, etc.

Some important ideas/challenges that emerge from the discussions were as follows:

Adoption of agro-forestry models by the farmers, especially to tide over the initial 3-4 years of gestation of bamboo plantation; Intercropping with ginger, pulses, lemon grass, etc. were suggested as a viable option. Use of good credible planting material and improved agronomic practices to increase yields were considered to be absolutely vital for the sector. Plantations on culturable wastelands should be encouraged on a large scale to provide feed stock to industry. Integrated primary processing units for the complete utilization of bamboo *i.e.* a zero waste policy would lead to optimum use of bamboo in the country. To overcome the issue of high transport cost especially from the North Eastern region, use of waterways and transport subsidy options need to be explored. Incentives available across sectors for bamboo need to be compiled for use by potential entrepreneurs. Steps need to be taken to encourage startups, entrepreneurship in the bamboo sector. The GeM portal will create a dedicated window for registration of bamboo products to add visibility of bamboo products in the electronic market space for government procurement. The need for mass production related to bamboo in areas such as

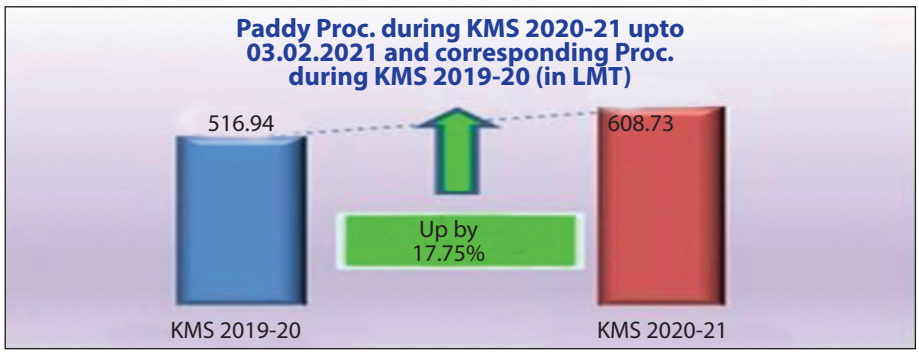
construction, bio CNG, ethanol, etc. would provide a real fillip to the sector and add to the income of farmers. Import substitution should be an important aim such as for agarbatti and engineered wood. R&D and technological upgradation by linking clusters with scientific and technological institutions was stressed. The government has introduced several new schemes such as the Agriculture Infrastructure Fund and formation of 10000 FPO's. These schemes will be dovetailed with the bamboo sector for improving credit and economies of scale for small, marginal farmers, respectively. Skill training development in agriculture, handicrafts, construction, furniture, beauty wellness through Qualification Packs of the Ministry of Skill Development and Entrepreneurship is being undertaken by National Bamboo Mission. Requirement of credit was considered to be one of the major challenges facing the sector. Appropriate credit products, credit guarantee and interest subvention were flagged in the discussion as the need of the hour. International best practices and collaborations can be encouraged with other countries such as Japan, Vietnam, etc.

Government Intervention

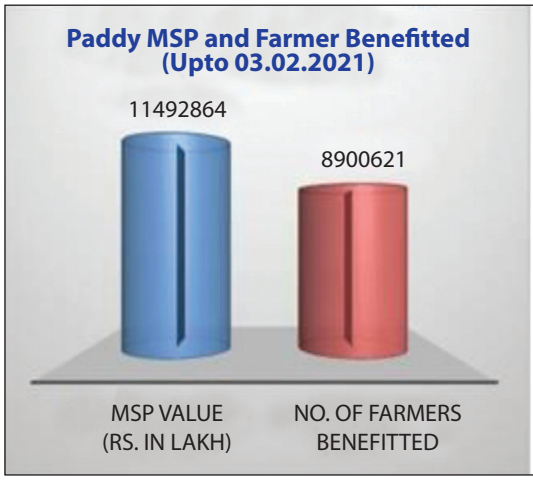
MSP Operations during Kharif Marketing Season 2020-21

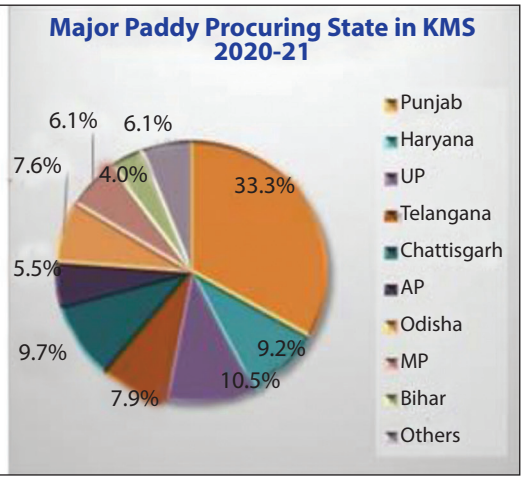
In the ongoing Kharif Marketing Season (KMS) 2020-21, government continues to procure kharif 2020-21 crops at MSP from farmers as per existing MSP schemes.

Paddy procurement for kharif 2020-21 is continuing smoothly in the procuring states & UTs of Punjab, Haryana, Uttar Pradesh, Telangana, Uttarakhand, Tamil Nadu, Chandigarh, Jammu & Kashmir, Kerala, Gujarat, Andhra Pradesh, Chhattisgarh, Odisha, Madhya Pradesh, Maharashtra, Bihar, Jharkhand, Assam, Karnataka and West Bengal with purchase of over 608.73 LMTs of paddy up to 03.02.2021.This is an increase of 17.75 % against the last year corresponding purchase of 516.94 LMT. Out of the total purchase of 608.73 LMT, Punjab alone has contributed 202.77 LMT which is 33.31 % of total procurement.



About 89.00 lakh farmers have already been benefitted from the ongoing KMS procurement operations with MSP value of ₹ 114928.64 crore.

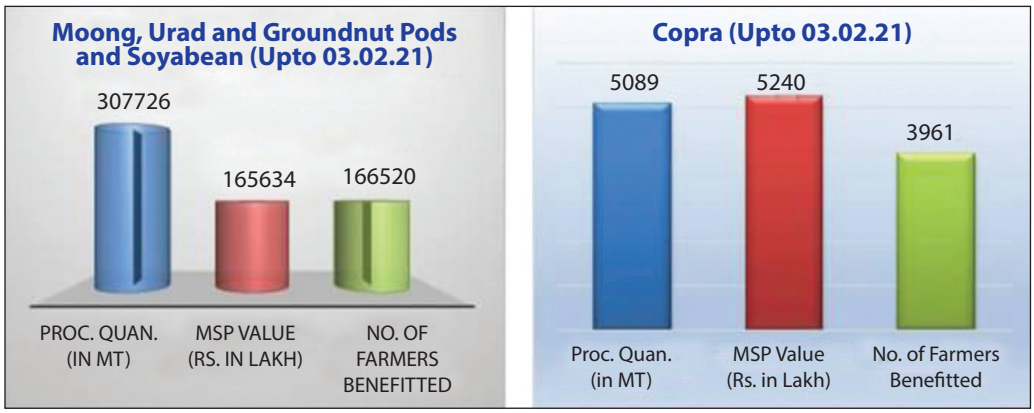




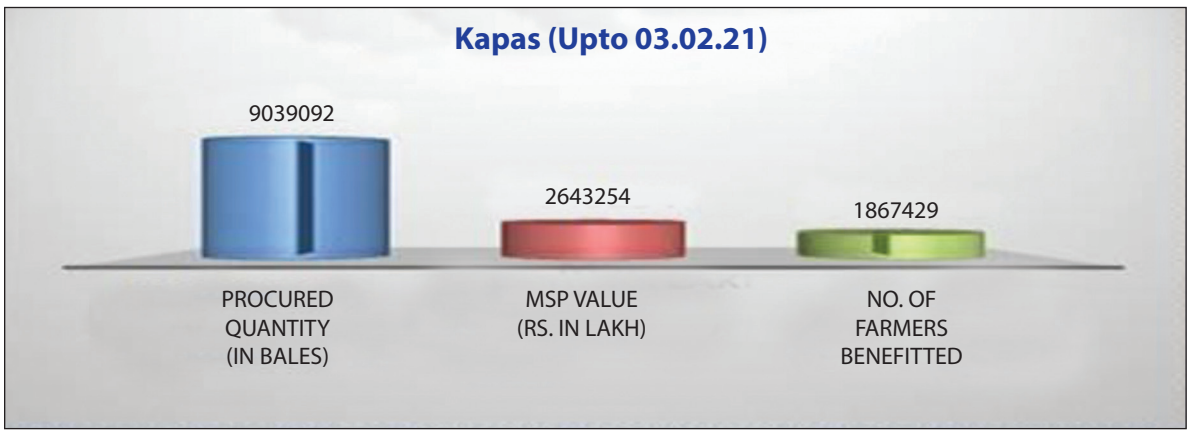
Further, based on the proposal from the states, approval was accorded for procurement of 51.92 LMT of pulse and oilseeds of Kharif Marketing Season, 2020 for the states of Tamil Nadu, Karnataka, Maharashtra, Telangana, Gujarat, Haryana, Uttar Pradesh, Odisha, Rajasthan and Andhra Pradesh under Price Support Scheme (PSS). The sanction for procurement of 1.23 LMT of copra (the perennial crop) for the states of Andhra Pradesh, Karnataka, Tamil Nadu and Kerala was also given. Further, based on the concerned state government proposals, the sanction for procurement of 8.70 LMT of pulse and oilseeds of Rabi Marketing Season 2020-2021 for the states of Gujarat, Madhya Pradesh and Tamil Nadu, was also given. For other states/UTs, approval will also be accorded on receipt of proposals for procurement of pulses, oilseeds and copra under PSS so that procurement of FAQ grade of these crops can be made at notified MSP for the year 2020-21 directly from the registered farmers, if the market rate goes below MSP during the notified harvesting period in the respective states/UTs by the central nodal agencies through state nominated procuring agencies.

Upto 03.02.2021, the government through its nodal agencies has procured 307726.76 MT of moong, urad, toor, groundnut pods and soyabean having MSP value of ₹ 1656.34 crores benefitting 166520 farmers in Tamil Nadu, Karnataka, Maharashtra, Gujarat, Haryana and Rajasthan.

Similarly, 5089 MT of copra (the perennial crop) having MSP value of ₹ 52.40 crore has been procured benefitting 3961 farmers in Karnataka and Tamil Nadu upto 03.02.2021. At present, in respect of copra and urad, rates are ruling above MSP in most of the major producing states. The respective state/UTs governments are making necessary arrangements for commencement of procurement from the date as decided by the respective states based on the arrivals of pulses and oilseeds.



Procurement operations of seed cotton (kapas) under MSP are going on smoothly in the states of Punjab, Haryana, Rajasthan, Madhya Pradesh, Maharashtra, Gujarat, Telangana, Andhra Pradesh, Odisha and Karnataka. Till 03.02.2021, a quantity of 9039092 cotton bales valuing ₹ 26432.54 crore has been procured benefitting 1867429 farmers.



Linking all Farmers to Institutional Credit

"To provide adequate credit to our farmers, I have enhanced the agricultural credit target to 16.5 lakh crore in FY22. We will focus on ensuring increased credit flows to animal husbandry, dairy, and fisheries."- **Finance Minister**

Government has been making efforts to link all farmers to institutional credit to ensure timely, hassle free and affordable credit to farmers. As the institutional credit is more affordable in comparison to informal credit system, it has direct bearing on cost of production of farmers.

Ground level credit (GLC) to agriculture has shown an impressive growth in the last few years and has always remained higher than the overall targets. GLC has nearly doubled from ₹ 7.30 lakh crore to ₹ 13.92 lakh crore during the period 2013–14 to 2019–20. The share of term loan in the total GLC has increased from 24.95 percent in 2013–14 to 40.5 percent in 2019-20. A continuous increase in the share of term loan would lead to the much-needed increase in capital formation in agriculture, and the consequent increase in agricultural productivity.

The target for ground level credit has increased from 7 lakh crore to 13.50 lakh crore from 2013-14 to 2019-20. During these years, agriculture credit disbursement has surpassed the overall targets. The target for ground level credit for agriculture for the year 2020-21 was fixed at ₹ 15.00 lakh crore and going by the trend, it is likely that the target would be surpassed. Despite COVID-19 pandemic during the current year, the progress till January, 2021 has been encouraging with 76% of annual target achieved.

Indian agriculture is characterized by prevalence of small and marginal farmers which has increased from 491 lakh (1970-71) to 1,260 lakh (2015-16), registering a whopping growth of 156%. During 2010-11 to 2019-20 growth in GLC to small and marginal farmers was around 17.8%. Share of GLC to small and marginal farmers to total GLC has also increased from 35% to 52% during 2010-11 to 2019-20.

Government is providing interest subvention to farmers through Interest Subvention Scheme (ISS), through which short term crop loans of upto ₹ 3 lakh are provided to farmers at an effective interest rate of 4% per annum. Initially, the crop loan is provided at 7% to farmers and additional 3% subvention is given on prompt repayment which brings down the effective rate of interest to 4%.

Government has launched KCC saturation drive w.e.f 10 February, 2020 in the first phase upto April, 2020, and further continued in the second phase from June 2020 onwards. Under this drive, a total number of 1.87 crore new KCC have been issued with a sanctioned credit limit of ₹ 1.76 lakh crore to eligible farmers. Government has also extended facility of KCC to animal husbandry and fisheries farmers, along with benefit of interest subvention. This will go a long way in meeting their working capital needs.

The enhancement of Ground Level Credit target to ₹ 16.5 lakh crore will further boost the efforts of concessional institutional credit to farmers and is bound to act as an enabler in doubling farmers' income by reducing the cost of credit. With affordable bank credit, these farmers may also make investments to further expand and modernise their farming operations. The impact of sustainable growth in agriculture credit is one of the major factors which helped agriculture sector emerge as a bright spot even during pandemic times.

Government of India allocates ₹ 16000 crore for Pradhan Mantri Fasal Bima Yojana (PMFBY) for 2021-22

To boost the safety of farmers' crops and to ensure that maximum benefit of crop insurance reaches the farmers, the Government of India has allocated ₹ 16000 crores for Pradhan Mantri Fasal Bima Yojana (PMFBY) for the fiscal year 2021-22. This is a budgetary increase of around ₹ 305 crore as against the previous fiscal year 2020-21, which reiterates the government's commitment towards growth of agriculture sector in the country. The scheme extends coverage for the entire cropping cycle from pre-sowing to post-harvest including coverage for losses arising out of prevented sowing and mid-season adversities.

Today, PMFBY is globally the largest crop insurance scheme in terms of farmer participation and third largest in terms of premium. Over 5.5 crore farmer applications are received on year-on-year basis. Over the past five years, the Ministry of Agriculture and Farmers' Welfare has worked extensively towards revamping the Pradhan Mantri Fasal Bima Yojana (PMFBY) scheme by relooking at the structural, logistical and other challenges. The

scheme was made voluntary for farmers post its revamp in 2020.

The scheme has made it easier for the farmer to report crop loss within 72 hours of occurrence of any event through the Crop Insurance App, CSC Centre or the nearest agriculture officer. Claim benefit is then provided electronically into the bank accounts of eligible farmer.

Integration of land records with the PMFBY portal, Crop Insurance mobile-app for easy enrollment of farmers and usage of technology such as satellite imagery, remote-sensing technology, drones, artificial intelligence and machine learning to assess crop losses are some of the key features of the scheme. .

As of now, out of total farmers enrolled under PMFBY, 84% are small and marginal farmers. Thus, financial assistance is provided to most vulnerable farmers.

National Beekeeping & Honey Mission (NBHM) aims to achieve the goal of 'Sweet Revolution' as part of Atmanirbhar Bharat Abhiyaan

Keeping in view the importance of beekeeping as part of the Integrated Farming System in the country, Government approved the allocation for ₹ 500 crore for National Beekeeping & Honey Mission (NBHM) for three years (2020-21 to 2022-23). The mission was announced as part of the AtmaNirbhar Bharat scheme. NBHM aims for the overall promotion & development of scientific beekeeping in the country to achieve the goal of 'Sweet Revolution' which is being implemented through National Bee Board (NBB).

The main objective of NBHM is to promote holistic growth of beekeeping industry for income & employment generation for farm and non-farm households, to enhance agriculture/ horticulture production, developing infrastructural facilities, including setting up of Integrated Beekeeping Development Centre (IBDC)/CoE, honey testing labs, bee disease diagnostic labs, custom hiring centres, Api-therapy centres, nucleus stock, bee breeders, etc. and empowerment of women through beekeeping.

Besides, the scheme also aims to create awareness about scientific bee keeping under Mini Mission-I, post-harvest management of beekeeping, beehive products, including collection, processing, storage, marketing, value addition, etc. under Mini Mission-II and Research & Technology generation in beekeeping under Mini Mission-III. ₹ 150.00 crores has been allotted to NBHM for 2020-21.

11 projects of ₹ 2560 lakhs have been sanctioned under NBHM for Awareness & Capacity building in scientific beekeeping, empowerment of women through beekeeping, technology demonstrations on impact of honeybees on yield enhancement & quality improvements of agriculture/horticulture produce. It also aims to make farmers aware about the distribution of specialized beekeeping equipments for production of high value products, *viz.* royal jelly, bee venom, comb honey, etc., and also about the studies on exploring potential of High Altitude Honey, production of special honey in Kannauj & Hathrus districts of Uttar Pradesh and use of mustard honey to cure colon cancer during the year 2020-21.

Main achievements:

i. Two world class state of the art honey testing labs, one at NDDB, Anand, Gujarat & one IIHR, Bengaluru, Karnataka, have been approved/ set up. Lab at Anand has been accredited by NABL and has been inaugurated by Union Minister of Agriculture & Famers Welfare, Govt. of India on 24th July, 2020. Now lab has started testing of honey samples for all the parameters notified by FSSAI;

ii. 10,000 beekeepers/Beekeeping & Honey societies/firms/companies with 16 lakh honeybee colonies have been registered with NBB.

iii. Proposal for developing traceability source of honey and other beehive products approved and work initiated/ started. This will help in controlling the adulteration in honey & other beehive products.

iv. Farmers/ beekeepers have been trained in scientific beekeeping including production of high value beehive products, *viz.*; bee pollen, propolis, royal jelly, bee venom, etc.

v. 5 FPOs of beekeeper/honey producers in the states of Bihar, Uttar Pradesh, Madhya Pradesh, Rajasthan and West Bengal have been formed and launched by Minister of Agriculture & FW on 26.11.2020.

vi. Honey production has increased from 76,150 MTs (2013-14) to 1,20,000 MTs (2019-20) which is 57.58 % increase.

vii. Export of honey has increased from 28,378.42 MTs (2013-14) to 59536.74MTs (2019-20) which is 109.80 % increase.

viii. 16 Integrated Beekeeping Development Centres (IBDCs) as role model of beekeeping have been commissioned, one each in the states of Haryana, Delhi, Bihar, Punjab, Madhya Pradesh, Uttar Pradesh, Manipur, Uttarakhand, Jammu & Kashmir, Tamil Nadu, Karnataka, Himachal Pradesh, West Bengal, Tripura, Andhra Pradesh and Arunachal Pradesh.

ix. Awareness created about role of honeybees/ beekeeping in pollination support of various crops and adoption of scientific beekeeping.

Beekeeping is an agro-based activity which is being undertaken by farmers/ landless labourers in rural area as a part of Integrated Farming System (IFS). Beekeeping has been useful in pollination of crops, thereby, increasing income of the farmers/ beekeepers by way of increasing crop yield and providing honey and other high value beehive products, *viz*.; bees wax, bee pollen, propolis, royal jelly, bee venom, etc. Diversified agro climatic conditions of India provide great potential and opportunities for beekeeping/ honey production and export of honey.

Measures to reduce loss to crops

Government has assessed the damage caused to crops in the wake of natural calamities, pest attack, cold wave/frost, diseases, etc. in widespread manner in specific states/locations, as and when required.

Government has constituted Inter-Ministerial Central Teams during the year 2020-21 to assess crop damage in Madhya Pradesh due to pest/insect attack and Rajasthan in wake of drought (kharif). It has also reviewed and updated the Crisis Management Plan, during 2020, involving various agencies to deal with crisis and media management during drought.

During 2020-21, due to locust attack, Haryana, Madhya Pradesh, Maharashtra, Uttar Pradesh and Uttarakhand have reported crop damage in 6520 hectares (ha.), 4400 ha., 806 ha., 488 ha., and 267 ha., respectively.

- During 2019-20, locusts caused damage to 1,79,584 ha. in eight districts of Rajasthan and 19,313 ha. in two districts of Gujarat. Rajasthan had locust attack in 2235, 140 and 1027 ha. area in Bikaner, Hanumangarh and Sri Ganganagar, respectively.

- Fall armyworm had infested 5.00 and 7.00 lakh ha. in 2018-19 and 2019-20, respectively. An area of 263,000 ha. in Karnataka and 8.60 lakh ha. in Maharashtra in 2019-20 was infested by the pest.

Some of the major schemes implemented by government to deal with the damage caused to crops and to reduce its extent are the following:

(i) Implementation of Pradhan Mantri Fasal Bima Yojana for insurance coverage to farmers against crop losses on account of natural calamities.

(ii) Restructured Weather Based Crop Insurance Scheme to provide insurance protection against adverse weather incidences and has the advantage to settle claims within the shortest possible time.

(iii) Interest Subvention Scheme to farmers for availing short term crop loans upto ₹ 3.00 lakh up to one year.

(iv) Other important schemes inter-alia includes, Strengthening and Modernization of Plant Quarantine Facilities, District Drought Proofing Plan, central level monitoring meeting on weekly basis and issuance of Crop Weather Watch Group Report to states/UTs and Monitoring & Pest Management by Indian Council of Agricultural Research.

Funds released under Pradhan Mantri Fasal Bima Yojana & Restructured Weather Based Crop Insurance scheme:

Plan/ Year	Expenditure (₹ crore)
2018-19	11945.38
2019-20	12638.32
2020-21*	9799.86

* as on 31.12.2020.

General Agriculture Sector News

National Agriculture Market (e-NAM) is expanding to ease farmers

National Agriculture Market popularly known as e-NAM is an innovative initiative in agricultural marketing to enhance farmer's accessibility digitally to multiple numbers of markets & buyers and to bring transparency in trade transactions with the intent to improve price discovery mechanism, quality commensurate price realization and also to develop the concept of "One Nation One Market" for agriculture produce.

Better market linkage was provided under e-NAM by integrating 1000 markets across 18 states and 3 UT's. So far, more than 1.69 crore farmers & 1.55 lakh traders have registered on e-NAM platform. The online and transparent bidding system is encouraging farmers to increasingly trade on e-NAM platform. Total trade volume of 4.13 crore MT of bulk commodities & 3.68 crore numbers of coconut & bamboo worth approximately ₹ 1.22 lakh crore has been recorded on e-NAM platform. Direct payment to farmers was enabled in this platform.

Looking to the success of e-NAM in its 1000 mandis, it is now on a path of expansion as announced by Finance Minister Smt. Nirmala Sitharaman in the Union Budget released on 1st February, 2021, *i.e* to further integrate 1000 more mandis with e-NAM, this will further strengthen the mandis.

During COVID-19, e-NAM platform /mobile app. has been further strengthened by launching FPO trading module in e-NAM where FPOs can trade their produce from their collection center without bringing the produce to APMC. So far, 1844 FPOs have been on board on e-NAM platform. Additionally, warehouse based trading module was also launched in e-NAM to facilitate trade from warehouses based on e-NWR. To facilitate inter-mandi and inter-state trade at this juncture, enhanced version of logistic module has been released where aggregators of transport logistic platform have on boarded which helps users to avail trackable transport facilities for transporting their produce. Further, the e-NAM platform is made interoperable with ReMS platform of Government of Karnataka which will facilitate famers of either platforms were can sell their produce in other platform thereby increasing their market access.

e-NAM is now developing as "Platforms of Platform" to create a digital ecosystem that leverage the expertise of individual platforms across various segments of agriculture value chain *viz*. developing and integrating service platform with e-NAM (QC services, transportation & delivery services, sorting/ grading services, packaging services, insurance, trade finance, warehouses, etc.), enabling the farmers to add value to their produce and facilitate them with ease of agri marketing.

"e-NAM is not just a scheme but it's a journey which aims to benefit the last mile farmer and transform the way they sell their agri produce. This intervention brings immense benefits to our farmers in augmenting their income by enabling them to realize competitive & remunerative prices in a transparent manner without incurring additional costs."

The Micro Irrigation Fund (MIF), with a corpus of ₹ 5,000 crores has been created under NABARD

The Department of Agriculture, Cooperation & Farmers' Welfare (DAC&FW) is implementing a centrally sponsored scheme of 'Per Drop More Crop' component of 'Pradhan Mantri Krishi Sinchayee Yojana (PMKSY-PDMC)' from 2015-16 in all the states of the country which focuses on enhancing water use efficiency at farm level through micro irrigation *viz*. drip and sprinkler irrigation systems. Besides promoting micro irrigation, this component also supports micro level water storage or water conservation/management activities to supplement source creation for micro irrigation. An area of 52.93 lakh ha has been covered under micro irrigation in the country from 2015-16 to till date. Further, 4.84 lakh micro level water harvesting/secondary storage structures have been created under the scheme to supplement the micro irrigation.

Recent evaluation studies of the scheme indicate that the coverage of micro irrigation is relevant in achieving national priorities such as substantially improving on-farm water use efficiency, enhancing crop productivity, ensuring better returns to farmers, generating employment opportunities, etc. Further, the scheme has been effective in terms of ensuring benefits for farmers' e.g. higher productivity; reduction in labour cost, water consumption, power utilization, fertilizer use, etc.

Efforts are being made to converge 'Per Drop More Crop' Scheme with Atal Bhujal Yojana (ABHY), Namami Gange Districts, Pradhan Mantri Kisan Urja Surakshaevem Utthan Mahabhiyan (PM-KUSUM), Water Harvesting Structures through Watershed Development component of PMKSY to propagate micro irrigation intensively to contribute in achieving the desired targets to enhance the water use efficiency in agriculture.

With a view to provide impetus to the micro irrigation in the country, MIF with a corpus of ₹ 5000 crore was created with NABARD during 2018-19. The major objective of the fund is to facilitate the states in mobilizing the resources to provide top up/additional incentives to farmers for incentivising micro irrigation beyond the provisions available under PMKSY-PDMC. States may also access MIF exclusively for innovative integrated projects (like high water duty crops like sugarcane/solar linked systems/micro irrigation in command area, etc.) including projects in PPP mode depending on state specific requirements. The Government of India provides 3% interest subvention on loans extended to State Government under MIF.

Under the ongoing MIF fund, projects for ₹ 3970.17 crore have been approved for loan under MIF to the states of Andhra Pradesh, Gujarat, Tamil Nadu, Haryana, West Bengal, Punjab & Uttarakhand which would be facilitating bringing of 12.83 lakh ha of area under micro irrigation. Besides, proposals from Rajasthan, West Bengal Maharashtra, Tamil Nadu and J&K are in pipeline at state levels. More and more states are showing interest in availing assistance from Micro Irrigation Fund considering the potential for micro irrigation and its significance.

To further strengthen & expand the adoption of micro irrigation systems by the farmers in the county for enhancing water use efficiency at farm level, a budget announcement has been made to double the initial corpus of Micro Irrigation Fund of ₹ 5000 created under NABARD, by augmenting it by another ₹ 5,000 crores.

The enhancement of corpus by additional ₹ 5000 crores will give further boost to the efforts of more states/UTs in promoting judicious use of water, enhancing water use efficiency as well as improving production and productivity which ultimately increase the income of the farming community.

Central Sector Scheme on 'Promotion of Agricultural Mechanization for In-Situ Management of Crop Residue in the States of Punjab, Haryana, Uttar Pradesh and NCT of Delhi'

In pursuance to Budget 2018 announcement regarding a special scheme to support the efforts of the governments of Haryana, Punjab, Uttar Pradesh and the NCT of Delhi to address air pollution and to subsidize machinery required for in-situ management of crop residue, a central sector scheme on 'Promotion of Agricultural Mechanization for In-Situ Management of Crop Residue in the States of Punjab, Haryana, Uttar Pradesh and NCT of Delhi' was implemented during 2018-19 and 2019-20 with the objectives of protecting environment from air pollution and preventing loss of nutrients and soil micro-organisms caused by burning of crop residue; promoting in-situ management of crop residue by retention and incorporation into the soil through the use of appropriate mechanization inputs and creating awareness among stakeholders through demonstration, capacity building activities and differentiated information, education and communication strategies for effective utilization and management of crop residue. This scheme was further extended for the year 2020-21. During the years 2018-19 to 2020-21, ₹ 1726.67 crore have been provided to these states. Out of these funds, the states have supplied more than 1.58 lakh machines to the individual farmers and to 30,961 Custom Hiring Centres. The residue burning events in 2020 in Punjab, Haryana and UP together have reduced by 30% as compared to 2016. In Punjab the reduction is 22.7%, Haryana 63.8% and UP 52.01%.

Import of pulses minimum after the Prime Minister's call, over ₹ 15,000 crores annual savings on import: Shri Narendra Singh Tomar

Union Minister for Agriculture and Farmers' Welfare, Rural Development, Panchayat Raj and Food Processing Industries, Shri Narendra Singh Tomar said that India is moving towards the goal of self-sufficiency in pulses production. "*In the last five-six years, due to the tireless hard work of farmers, scientists and farmer-friendly policies of the central government, the country has increased its pulses production from 140 lakh tonnes to 240 lakh tonnes. Now we also have to pay attention to future requirements.*", the Minister stated. Shri Tomar further said that according to an estimate, by the year 2050, about 320 lakh tonnes of pulses will be required. After Prime Minister Narendra

Modi's call, the dependence on imports of pulses has reduced and the country is saving more than ₹ 15000 crores per year. Shri Tomar was speaking as the Chief Guest at the event on World Pulses Day organized by Indian Pulses Research Institute (IIPR).

Shri Tomar said that the World Food and Agriculture Organization has decided to celebrate World Pulses Day in view of the good impact of pulses on people health. With this, the world will focus on the promotion of pulse crops. The Minister said that in six years, the MSP of pulses has been increased from 40% to 73%, which is definitely benefiting the farmers. He said that more work needs to be done on pulses to eradicate malnutrition. Indian Council of Agricultural Research should play the main role to ensure this, he added. Agricultural scientists are providing many varieties to the country, which will help in increasing both production and productivity.

Speaking about doubling farmers' income by 2022, the Union Minister said that the central government, state governments, the ICAR and farmers are working with full diligence towards achieving this goal. Pradhan Mantri Fasal Bima Yojana has been implemented in a modified form so that the farmers can get safety cover and they can be free from risk. In four years, farmers paid ₹ 17 thousand crores as premiumin Pradhan Mantri Fasal Bima Yojana, while they were paid more than 5 times, *i.e* more than ₹ 90 thousand crores as the claim amount. This has provided a big relief to the farmers.

Mission Organic Value Chain Development for North Eastern Region (MOVCDNER)

Emerging demand for safe and healthy organic food with added flavour of being grown in pristine environment and virgin soils of India's North Eastern states is fast emerging as unique opportunity to the farmers of the region. The disadvantage of not being able to pick up green revolution is now proving a boon and region with its renewed vigour on modern organic agriculture is poised to become hub for organic production of its unique heritage crops. Realizing the potential, the Prime Minister initiated a scheme for development of commercial organic farming in the region during 2015 which later became to be known as "Mission Organic Value Chain Development for North Eastern Region" (MOVCDNER).

The scheme started with an average annual allocation of ₹ 134 crore during last five years and has so far covered 74,880 ha. area. To double the impact, the allocation has now increased to ₹ 200 crore per year with a target to cover additional 1.00 lakh ha. area under 200 new FPOs over a period of 3 years. Taking a step ahead, the scheme besides growing and value adding the traditional crops is also aiming to bring in high-value crops under contract farming models.

MOVCDNER is instrumental in bringing a definitive change in the lives of the organic growers in the region. The scheme provides end to end support to the farmers from farm to fork including quality production, effective post-harvest management, value addition through processing and direct market linkages to national and international markets. Transformation of farmer clusters into Farmer Producer Companies (FPCs) empowers the growers with institutional mechanisms, collective production and processing strength for quality and quantity and ensures emergence of new breed of organic agri-enterprises. Through the FPCs, farmers are achieving economies of scale, engaging bulk buyers and breaking off their dependencies on the traders/ middlemen for market linkages. Under MOVCDNER, the FPCs get access to shared infrastructure including collection centres, custom hiring centres, processing infrastructure and packhouses, allowing them to add value to their produce and market them well.

Through sustained market linkage interventions, many FPOs now sell to modern retail, food processors, nutraceutical extractors and exporters. Multiple FPOs under MOVCDNER scheme have registered as vendors with leading companies like Big Basket, Big Bazaar, Parvata Foods and have supplied to organic brands like Revanta Foods and Reliance Fresh, resulting in better returns and lower post-harvest losses. With this experience in their pocket, farmers of NE now have a better understanding of the market demand and grading-sorting-packaging standards prevalent in the market.

The farmer-industry connect facilitated through professional project management team under the scheme has also witnessed a remarkable turnaround in the last five years. From a time when NE was considered a 'difficult' place to do business transaction, many companies now connect directly with FPCs for procurement. Taking it a step

further, as many as 5 FPCs under MOVCDNER have engaged in contract cultivation of calendula flowers, turmeric and ginger with leading export houses and nutraceutical companies in 2021, with each successful transaction serving as a template for other FPCs.

MOVCDNER has also played a pivotal role in entrepreneurship development and has supported both FPCs and local entrepreneurs in establishing food business. Through technical and monetary support (75% subsidy to FPOs and 50% subsidy to private entrepreneurs for establishing food processing/post-harvest units), more than 7 brands have come up in the region dealing in diverse products like kiwi wine, pickles, fruit candies, herbal tea, packaged spices, black rice products, sauces, fruit juices, etc. Few of these brands like Meira Foods, Cold Mountain Tea, Naga Herbs and Spices have gone to export their products in highly competitive European and American markets.

While roping in 83,075 farmers and 169 FPCs covering 74,889 ha area is substantial number unto itself, the real impact of MOVCDNER scheme is captured in the empowerment and transformation of farmer from a mere producer to an aggregator, processor and marketer of the North Eastern region. The MOVCD farmers as Board of Directors, CEOs and Chairman of their own enterprise of FPCs, is also giving a sense of pride and belongingness to the road of development for the region and the nation.

Research undertaken by Agricultural Institutions

There are a total of 722 Krishi Vigyan Kendras (KVKs), 3 Central Agricultural Universities, 4 Deemed Universities (DUs) besides 99 Research Institutions and 11 Agricultural Technology Application Research Institutes (ATARIs) under DARE/ICAR in the country. Besides, ICAR supports 63 State Agricultural Universities and 4 traditional universities with agricultural faculty.

The total expenditure incurred by DARE/ICAR during the last three years (2017-18 to 2019-20) is ₹ 21,859.84 crores (6590.64, 7615.71 and 7653.49, respectively).

ICAR has established a mechanism to review the research output of the institutes. Research Advisory Committees (RAC) and Quinquennial Review Teams (QRT) are setup by ICAR to assess the quality of research undertaken by the institutes. Besides, all the ICAR Research Institutes are ISO certified and are accredited research bodies. Outcome review and third-party evaluation is also undertaken in respect of ICAR research schemes.

Implementation of National Food Security Mission

Government of India launched the Pradhan Mantri Krishi Sinchayee Yojana (PMKSY) on 1st July, 2015 with the motto of "Har Khet Ko Paani" for providing end-to-end solutions in irrigation supply chain *viz.* water sources, distribution network and farm level applications. The components of PMKSY are; Accelerated Irrigation Benefit Programme (AIBP), PMKSY - Har Khet Ko Paani, PMKSY - Per Drop More Crop (PMKSY – PDMC) and PMKSY (Watershed). The Department of Agriculture, Cooperation & Farmers Welfare (DAC&FW) is implementing the centrally sponsored scheme of PMKSY-PDMC from 2015-16 in all the states of the country which focuses on enhancing water use efficiency at farm level through micro irrigation *viz.,* drip and sprinkler irrigation systems. Besides promoting micro irrigation, this component also supports micro level water storage or water conservation/management activities to supplement source creation for Micro Irrigation.

National Food Security Mission (NFSM) provides assistance to the farmers for purchase of pumps sets, water carrying pipes, sprinkler sets and mobile rain gun through the state governments/UTs. Bringing Green Revolution to Eastern India (BGREI), a sub scheme of Rashtriya Krishi Vikas Yojana (RKVY) is being implemented in 7 eastern states including Odisha under which assistance for construction of minor irrigation tanks, check dams, water harvesting structures, shallow tube wells, dug wells, bore wells, pump sets and water carrying pipes is also provided to the farmers through state governments.

These schemes promoting irrigation for crops supports for enhancing production and productivity of crops to achieve the objective of NFSM.

The Indian Council of Agricultural Research (ICAR) through its various research institutes, All India Coordinated Research Projects (AICRPs), network projects and State Agriculture Universities develop high yielding varieties(HYV)/hybrids of various crops in the country. In order to promote the latest high yielding varieties/hybrids of rice,

wheat, pulses, coarse cereals, nutri-cereals, cotton, jute, sugarcane and oilseeds, assistance is given to farmers on certified seeds under NFSM. Priority is given for distribution of seeds of less than 10 years old varieties for quick spread of new varieties for enhancing production and productivity. In addition, minikits of newly released varieties of pulses and oilseeds are also provided free of cost to farmers.

Farm Mechanisation in the Country

To boost the farm mechanization in the country, a special dedicated scheme Sub Mission on Agriculture Mechanization (SMAM) has been introduced by the Government under which the subsidy is provided for purchase of various types of agricultural equipments and machinery to the extent of 40-50% for states other than NER states and for NER states, it is 100% limited to ₹ 1.25 lakhs per beneficiary.

The objective of Agriculture Infrastructure Fund (AIF) is to mobilize a medium – long term debt finances facility for investment in viable projects for post-harvest management infrastructure and community farming assets through incentives and financial support in order to improve agriculture infrastructure in the country. The scheme will facilitate setting up and modernization of key elements of the value chain.

National e-Governance Plan in Agriculture (NeGPA): Towards the Mission of Digital Agriculture

A centrally sponsored scheme namely National e-Governance Plan in Agriculture (NeGPA) was initially launched in 2010-11 in 7 pilot states, which aims to achieve rapid development in India through use of Information & Communication Technology (ICT) for timely access to agriculture related information to the farmers. In 2014-15, the scheme was further extended for all the remaining states and 2 UTs. The scheme has been extended up to 31.03.2021.

Under Phase-II of the scheme, funds were released to states for carrying out the activities *viz*. site preparation of offices for installation of hardware and establishment of computer training labs, procurement, installation and accounting of hardware/system software. The back-up power arrangements, wherever required, setting-up of State Project Management Unit (SPMUs) and hiring of manpower on contract basis, connectivity for the locations for installation of hardware and Data Digitization Customization of applications as per state/UT's specific requirements.

Realizing the significance of new digital & emerging technologies, the Committee on Doubling Farmers' Income (DFI) has recommended further expanding and augmenting of the digital agriculture initiatives of Government of India. The report focused on modern management of agriculture *viz*. remote sensing; Geographical Information System; data analytics and cloud computing; Artificial Intelligence & Machine Learning; Internet of Things; robotics, drones & sensors and block-chain.

In order to infuse modern information technologies in the farm sector, the NeGPA guidelines were amended in 2020-21 and funds were released for sanctioning projects for customization / shifting of web & mobile applications already developed by the states, to the platform to be developed using digital/emerging technologies. Several states have come forward to utilize this amended policy and accordingly pilot projects have been sanctioned in various states to make use of emerging technologies. Besides, the new initiatives of creating farmers' database, Unified Farmers Service Platform (UFSP), etc. would bring a paradigm change in accessing the data relating to farmers and can be used to develop customised solutions, make better plans and monitor their implementation.

Unified Farmer Service Platform (UFSP):

UFSP is a combination of core infrastructure, data, applications and tools that enable seamless interoperability of various public and private IT systems in the agriculture ecosystem across the country. UFSP is envisaged to play the following role:

- Act as a central agency in the agri ecosystem (like UPI in the e Payments).
- Enables registration of the service providers, public and private.
- Enables registration of the farmer services G2F, G2B, B2F and B2B.
- Enforces various rules and validations required during the service delivery process.

- Acts as a repository of all the applicable standards, API's and formats.
- It shall also act as a medium of data exchange amongst various schemes and services to enable comprehensive delivery of services to the farmer.

Farmers Database:

For better planning, monitoring, policy making, strategy formulation and smooth implementation of schemes for the farmers a nationwide farmers database linked with land records is being created with the following objective:

- Develop nationwide database of farmers
- Keep a record of unique farmers.
- Unique farmer ID (FID) to uniquely identify a farmer.
- To know benefits availed by a farmer under various schemes.

This centralized farmers database shall be useful for various activities like issuing soil health cards, dissemination of crop advisories to the farmers, precision farming, smart cards for farmers to facilitate e-governance, crop insurance, settlement of compensation- claims, grant of agricultural subsidies, community/village resource centres, etc. The data of 4.3 crore farmers linked with land records have already been verified and the database would be unveiled shortly.

Allocation of Funds for PMFBY and PMKSY

Budgetary allocation for implementing various programmes/schemes of the government are made on the basis of available resources and priorities with the approval of Parliament. There has been unprecedented increase in budgetary allocation to this Department during the last few years are given below:

(₹ in crore)

Name of Department	2018-19	2019-20	2020-21
DAC&FW	46700.00	130485.21	134399.77

S. No.	Year	Per Drop More Crop component of PMKSY (₹ crore)	Pradhan Mantri Fasal Bima Yojana (PMFBY) (₹ crore)
1.	2016-17	2340.00	5501.15
2.	2017-18	3400.00	9000.75
3.	2018-19	4000.00	13014.15
4.	2019-20	3500.00	14000.00

Compensation to farmers for crop loss due to unseasonal climate.

The State Governments undertake relief measures in the wake of natural disasters from the State Disaster Response Fund (SDRF) already placed at their disposal in accordance with Government of India's approved items and norms. Additional assistance is extended from the National Disaster Response Fund (NDRF) as per established procedure. The assistance approved under SDRF/NDRF norms is provided in the form of relief.

Unseasonal climate change is not a calamity notified by the Ministry of Home Affairs. However, the state governments are empowered to utilize up to 10 percent of the funds available under SDRF for providing immediate relief to the victims of natural disasters that they consider to be 'disasters' within the local context in the state and which are not included in the notified list of disasters of the Ministry of Home Affairs, Government of India. The states can incur expenditure as per the SDRF/NDRF guidelines, issued by Government of India (Ministry of Home Affairs) on 08.04.2015.

The Government of India has introduced yield based Pradhan Mantri Fasal Bima Yojana (PMFBY) and weather based Restructured Weather Based Crop Insurance Scheme (WBCIS) from Kharif 2016 to provide financial support to farmers suffering crop loss/damage arising out of natural calamities, adverse weather incidence and to stabilize income of farmers. Comprehensive risk insurance is provided under the scheme from pre-harvesting to post-harvest losses.

State-wise details of claims paid and farmers benefitted (who got claims) under PMFBY from 2018-19 to 2020-21 **(**As on 25.01.2021**)**

Name of States/UTs	2018-19		2019-20		2020-21	
	Claims Paid (₹ in crore)	Farmer Applications Benefitted (In lakh)	Claims Paid (₹ in crore)	Farmer Applications Benefitted (In lakh)	Claims Paid (₹ in crore)	Farmer Applications Benefitted (In lakh)
A & N Islands	-	-	-	-	-	-
Andhra Pradesh	1,887.4	16.2	1,225.0	14.3	-	-
Assam	2.8	0.1	-	-	-	-
Bihar	-	-	-	-	-	-
Chhattisgarh	1,087.3	6.6	1,285.5	14.8	0.3	0.0
Goa	0.1	0.0	0.0	0.0	-	-
Gujarat	2,777.5	13.8	111.7	0.9	-	-
Haryana	939.7	4.2	918.8	5.3	11.6	0.1
Himachal Pradesh	55.0	1.3	14.5	0.9	0.1	0.0
Jammu & Kashmir	26.2	0.2	-	-	-	-
Jharkhand	21.1	0.6	-	-	-	-
Karnataka	2,912.2	13.7	617.7	5.1	13.8	0.2
Kerala	25.8	0.4	52.8	0.2	-	-
Madhya Pradesh	3,776.0	22.6	5,597.0	25.9	-	-
Maharashtra	6,059.7	80.0	6,585.9	87.3	276.0	3.4
Manipur	0.0	0.0	1.1	0.0	-	-
Meghalaya	0.1	0.0	0.2	0.0	-	-
Odisha	1,170.0	6.6	1,129.1	11.9	7.8	1.4
Puducherry	0.5	0.0	-	-	-	-
Rajasthan	3,349.5	20.6	3,936.0	23.3	-	-
Sikkim	0.0	0.0	-	-	-	-
Tamil Nadu	2,624.7	18.5	1,002.6	11.3	-	-
Telangana	148.9	0.6	-	-	-	-
Tripura	0.0	0.0	0.7	0.1	-	-
Uttar Pradesh	465.2	6.2	1,062.9	9.5	2.4	0.0
Uttarakhand	72.4	0.8	103.2	0.9	-	-
West Bengal	532.1	7.1	-	-	-	-
GRAND TOTAL	**27,934**	**219.9**	**23,645**	**211.6**	**312**	**5.1**

Sub-Mission on Seeds & Planting Materials: To produce and supply quality seeds to farmers

The Department of Agriculture, Cooperation and Farmers' Welfare is implementing farmer's welfare scheme **'Sub-Mission on Seeds & Planting Materials'** to produce and supply quality seeds to farmers to enhance production and productivity in the country through various components namely Seed Village Programme, Establishment of Seed Processing- cum- Seed Storage Godowns at gram panchyat level, National Seed Reserve**,** Boosting Seed Production in Private Sector and Strengthening of Quality Control Infrastructure Facilities.

Major achievements under the scheme from 2014-15 to 2020-21 are as under:

- Under Seed Village Programme, 4.29 lakh Seed Villages have been created wherein 38.01 lakh qtls. of foundation/certified seeds were distributed at concessional rates to 170.86 lakh farmers.

- To encourage farmers to take up seed production of pulses, oilseeds, fodder and green manure crops locally and make available required certified seeds at village itself, 1.05 lakh qtls. of foundation /certified seeds have been distributed at 75% subsidised rates to 2.61 lakh farmers.

- Financial support provided to the states to establish 517 Seed Processing-cum-Storage Godown units each of 500 Mt. capacity at gram panchayat level, for creating 25.85 LQ more capacity each for Seed Processing and for Seed storage, to make available required crop variety seeds locally to farmers to make them self-sufficient.

- Financial assistance provided for movement of 10.37 lakh qtls. of seeds for making timely availability at affordable price of certified/ quality seeds to the farmers of North-Eastern states, UT of J&K, Ladakh, H.P., Uttrakhand and hilly/remote areas of West Bengal.

- Under National Seed Reserve, 17.01 lakh qtls seeds of short and medium crop varieties kept to meet the requirement of farmers for re-sowing during natural calamities and unforeseen conditions *i.e.* drought, cyclone, flood, etc.

- Subsequent to flood damaging paddy crop in Kerala in August, 2018, 3900 MT seeds kept under National Seed Reserve made available to the farmers for re-sowing, so that farmers of the state do not face seed scarcity.

- In order to alleviate malnutrition in the country, 71 bio-fortified varieties (nutritionally enriched with protein, iron, zinc, amino acids, pro vitamin-A & vitamin-C, etc.,) of different crops (rice, wheat, maize, pearl millet, lentil, mustard, soybean, cauliflower, sweet potato pomegranate, etc.) developed.

- The breeder seeds of bio-fortified varieties have been allotted to the states for further multiplication for enhancing availability of seeds to the farmers in the country.

- 3436 registration certificates for plant varieties issued by PPVFR Authority for intellectual proprietary rights purpose. These include under Farmers' Variety, the varieties which are traditionally cultivated and evolved by the farmers in their fields, and the wild relative or landrace of a variety about which the farmers possess common knowledge.

- PPVFR Authority has notified 78 crop species for registration as new varieties that will ensure the availability of more varieties of seeds and planting material to the farmers.

- Besides, the DAC&FW has notified 1405 number of varieties of different crops, to ensure the availability of high quality seeds and planting material to the farmers.

- To encourage farmers and communities of farmers, particularly the tribal and rural communities engaged in conversion, improvement and preservation of genetic resources of economic plants and their wild relatives, particularly in areas identified as agro-biodiversity hotspots from National Gene Fund, the Protection of Plant Varieties and Farmers' Right Authority has given 15 Plant Genome Saviour Community Awards (a memento and cash of ₹ 10 lakh) and 16 Plant Genome Saviour Farmers Awards (a memento and cash of ₹ 1.5 lakh), besides, 37

Plant Genome Saviour Farmers Recognition (a memento and cash of ₹ 1 lakh), during the last five years.

- The National Seed Research and Testing Centre received & analysed 697 court referred seed samples. It also received & analysed 1,36,532 samples under 5% re-testing samples. Besides, analysed 78 seeds samples received under ISTA Proficiency Test Programme, Switzerland.

Sub Mission on Plant Protection and Plant Quarantine (SMPPQ)

The Department of Agriculture and Farmers' Welfare performs regulatory, monitoring, surveillance and Human Resource Development functions through a scheme "Sub Mission on Plant Protection and Plant Quarantine (SMPPQ)" with the aim of minimizing loss to quality and yield of agricultural crops from the ravages of insect pests, diseases, weeds, nematodes, rodents, etc. and to shield our bio-security from the incursion and spread of alien species. Revalidation of more than 1200 pack houses, rice mills, processing units, treatment facilities, fumigation agencies, post entry quarantine facilities, etc. to facilitate agri export has been done. To promote Integrated Pest Management and judicious use of pesticides, 14 crop specific and pest specific Package of Practices have been issued to the states during the lockdown period. To promote Make in India, 6788 Certificates of Registration (CR) have been issued to indigenous manufacturers of pesticides and 1011 CRs issued for export of pesticides. The Destructive Insect and Pests Act, 1914 and the Insecticides Act, 1968 provide the legal framework for the regulatory function.

During 2020-21, India became the first country in the world to control locusts by using drones after finalizing protocols and Standard Operating Procedures (SOPs). The largest locust control operation in Indian history has been conducted by the Central Government in collaboration with the states. Locust attack was controlled in more than 5.70 lakh hectare area of 10 states. Control capabilities of Locust Circle Offices (LCOs) have been strengthened by deploying helicopters for aerial spraying of pesticides for locust control. Till now, control operations against locusts were carried out in an area of 2,87,986 hectares by LCOs and 2,83,268 hectares by state governments.

Ministry of Agriculture and Farmers' Welfare relaxed the conditions for import of onions into India during 2020 in order to stabilize the price and availability of onion in the local market. Market access was obtained for carrot seeds from Iran, wheat flour, basmati rice and pomegranate seeds from Uzbekistan, pomegranate from Australia, mango, basmati rice and sesame seeds from Argentina and peanuts from Peru during 2020-21.

Record Foodgrain production of 303.34 million tonnes

The second advance estimates of production of principal crops for year 2020-21 have been released. The second advance estimates of production of major crops reveal a record production of 303.34 million tonnes of food grains, which clearly outlines the tireless hard work of farmers, research by agricultural scientists and farmer-friendly policies of the Central Government. All-round agricultural reforms will also benefit the country in the long run.

In 2nd Advance Estimates of production of principal crops released by Union Ministry of Agriculture and Farmers' Welfare, the assessment of production of different crops is based on the data received from states and validated with information available from other sources. The comparative estimate of production of principal crops since 2005-06 is enclosed. As per 2nd Advance Estimates, the estimated production of major crops during 2020-21 is as under:

- Foodgrains – 303.34 million tonnes. (record)
- Rice – 120.32 million tonnes. (record)
- Wheat – 109.24 million tonnes. (record)
- Nutri / Coarse Cereals – 49.36 million tonnes.
- Maize – 30.16 million tonnes. (record)
- Pulses – 24.42 million tonnes.
- Tur – 3.88 million tonnes.
- Gram – 11.62 million tonnes. (record)
- Oilseeds – 37.31 million tonnes.
- Groundnut - 10.15 million tonnes (record)
- Soyabean – 13.71 million tonnes

- Rapeseed and Mustard – 10.43 million tonnes (record)
- Sugarcane – 397.66 million tonnes
- Cotton – 36.54 million bales (of 170 kg each)
- Jute & Mesta – 9.78 million bales (of 180 kg each)

The cumulative rainfall during this year's southwest monsoon season upto 30th September, 2020 has been 9% higher than Long Period Average (LPA). Accordingly, most of the major crops producing states have witnessed normal rainfall. The production of most of the crops for the agricultural year 2020-21 has been estimated higher than their normal production. However, these estimates would undergo revision based on further feedback from the states.

As per Second Advance Estimates for 2020-21, total foodgrain production in the country is estimated at record 303.34 million tonnes which is higher by 5.84 million tonnes than the production of foodgrain of 297.50 million tonnes achieved during 2019-20. Further, the production during 2020-21 is higher by 24.47 million tonnes than the previous five years' (2015-16 to 2019-20) average production of foodgrain.

Total production of rice during 2020-21 is estimated at record 120.32 million tonnes. It is higher by 7.88 million tonnes than the last five years' average production of 112.44 million tonnes.

Production of wheat during 2020-21 is estimated at record 109.24 million tonnes. It is higher by 8.81 million tonnes than the average wheat production of 100.42 million tonnes.

Production of nutri / coarse cereals estimated at 49.36 million tonnes, which is higher by 1.62 million tonnes than the production of 47.75 million tonnes achieved during 2019-20. Further, it is also higher by 5.35 million tonnes than the average production.

Total pulses production during 2020-21 is estimated at 24.42 million tonnes which is higher by 2.43 million tonnes than the last five years' average production of 21.99 million tonnes.

Total oilseeds production in the country during 2020-21 is estimated at record 37.31 million tonnes which is higher by 4.09 million tonnes than the production of 33.22 million tonnes during 2019-20. Further, the production of oilseeds during 2020-21 is higher by 6.77 million tonnes than the average oilseeds production.

Total production of sugarcane in the country during 2020-21 is estimated at 397.66 million tonnes. The production of sugarcane during 2020-21 is higher by 35.59 million tonnes than the average sugarcane production of 362.07 million tonnes.

Production of cotton is estimated at 36.54 million bales (of 170 kg each) is higher by 4.65 million bales than the average cotton production. Production of jute & mesta is estimated at 9.78 million bales (of 180 kg each).

Ministry of Agriculture and Farmers' Welfare finalizes products for One District One Focus Product

The Ministry of Agriculture and Farmers' Welfare in consultation with the Ministry of Food Processing Industries has finalized the products for One District One Focus Product (ODOFP). The products have been identified from agricultural, horticultural, animal, poultry, milk, fisheries and aquaculture, marine sectors for 728 districts across the country. The list of products have been finalized after taking inputs from the states/UTs and Indian Council of Agricultural Research (ICAR). These products will be promoted in a cluster approach through convergence of the Government of India schemes, to increase the value of the products and with the ultimate aim of increasing the income of the farmers. These identified products will be supported under the PM-FME scheme of the Ministry of Food Processing Industries which provides incentives to promoter and micro-enterprises. Many products also include convergence of resources and approach from the other departments. The Ministry of Agriculture and Farmers' Welfare will support ODOFP from its ongoing centrally sponsored schemes such as MIDH, NFSM, RKVY, PKVY. The implementation of ODOFP by State Governments will benefit farmers and provide support for realizing the expectations of value addition and subsequently enhancing agricultural exports.

The products for various districts are:

(i) Paddy - 40 districts

(ii) Wheat - 5 districts

(iii) Coarse cum Nutri Cereals- 25 districts

(iv) Pulses - 16 districts

(v) Commercial crops - 22 districts

(vi) Oilseeds - 41 districts

(vii) Vegetables - 107 districts

(viii) Spices - 105 districts

(ix) Plantation - 28 districts

(x) Fruits - 226 districts

(xi) Floriculture - 2 districts

(xii) Honey - 9 districts

(xi) Animal husbandry/Dairy products - 40 districts

(xi) Aquaculture/Marine fisheries - 29 districts

(xii) Processed Products - 33 districts

General Survey of Agriculture

Trend in Food Prices

The rate of inflation, based on monthly WPI, stood at 2.03% (Provisional) for the month of January, 2021 over January, 2020 as compared to 3.52% during the corresponding month of the previous year.

Based on Wholesale Price Index (WPI) (2011-12=100), WPI in case of foodgrains decreased by 4.73 percent in January, 2021 over January, 2020.

Among foodgrains, WPI of pulses and fruits increased by 7.92 percent and 3.08 percent, respectively and cereals and vegetables decreased by 7.34 percent and 20.82 percent in January, 2021 over January, 2020.

Among cereals, WPI for paddy and wheat decreased by 0.12 percent and 11.62 percent in January, 2021 over January, 2020.

Similarly, WPI in case of foodgrains decreased by 0.19 percent in January, 2021 over December, 2020.

Among foodgrains, WPI of fruits and cereals increased by 1.55 percent and 0.13 percent, respectively, WPI of vegetables and pulses decreased by 18.95 percent and 1.36 percent in January, 2021 over December, 2020.

Among cereals, WPI for paddy decreased by 0.06 percent and WPI for wheat increased by 1.22 percent in January, 2021 over December, 2020.

WPI Food Index (Weight 24.38%)

The Food Index consisting of 'Food Articles' from Primary Articles group and 'Food Product' from manufactured Products group have decreased from 154.4 in December, 2020 to 151.8 in January, 2021. The rate of inflation based on WPI Food Index decreased from 0.92% in December, 2020 to -0.26% in January, 2021.

Food-vs.-Non-Food Inflation

The Inflation rate for non-food items increased by 2.11% (from 1.53% in December, 2020 to 3.64% in January, 2021) while the inflation rate of food items decreased by 1.18% (from 0.92% in December, 2020 to -0.26% in January, 2021) resulting a decrease in WPI based inflation rate for all commodities from 1.22% in December, 2020 to 2.03% in January, 2021.

The Consumer Price Index (CPI) based inflation rate has decreased to 4.06% in January, 2021 on point to point basis (i.e. January, 2021 over January, 2020) as it was a month ago 4.59%, according to data released by the Central Statistics Office (CSO) on 12th February, 2021. The Consumer Food Price Index (CFPI) for All-India Combined has decreased to 1.89% in January, 2021 from 3.41% in December, 2020.

Rainfall and Reservoir Situation, Water Storage in Major Reservoirs

Cumulative winter season (January – February), 2021 rainfall for the country as a whole during the period 1st January, 2021 to 24th February, 2021 has been 30% lower than the Long Period Average (LPA). Rainfall in the four broad geographical divisions of the country during the above period has been higher than LPA by 270% in South Peninsula, but lower than LPA by 78% in East & North East India, by 53% in North-West India and by 38% in Central India.

Out of 36 meteorological sub-divisions, 13 meteorological sub-divisions received large excess/ excess rainfall, 02 meteorological sub-divisions received normal rainfall, 20 meteorological sub-divisions received deficient/large deficient rainfall and 01 meteorological sub-division received no rainfall.

Current live storage in 130 reservoirs (as on 25th February, 2021) monitored by Central Water Commission having Total Live Capacity of 174.23 BCM was 93.54 BCM as against 104.29 BCM on 25.02.2020 (last year) and 75.76 BCM of normal storage (average storage of last 10 years). Current year's storage is 90% of last year's storage and 123% of the normal storage.

As per 2nd Advance Estimates 2020-21, around 104.6% of the normal area under Rabi crops has been sown. During 2020-21, total area sown under Rabi crops in the country has been reported to be 648.41 lakh hectares as compared to 646.74 lakh hectares during 2019-20 (4th Adv. Estimates).

A statement indicating comparative position of area coverage under major crops during current Rabi season *vis-a-vis* the coverage during the corresponding period of last year is given in the Annexure-I.

ANNEXURE I: All India Progressive Rabi Crop Sowing - 2020-21 (2nd Adv. Est.) *vis-à-vis* 2019-20 (4th Adv. Est.)

(In lakh ha.)

Crop Name	Normal Area for whole Rabi Season	Area sown reported			Absolute Change
		This Year 2020	% of Normal for whole season	Last Year 2019	
Wheat	303.28	315.77	104.1	314.51	1.26
Rice	41.78	45.32	108.5	47.62	-2.29
Jowar	33.40	25.55	76.5	30.05	-4.50
Maize	17.37	16.75	96.5	20.39	-3.64
Barley	6.38	6.92	108.5	6.02	0.90
Total Coarse Cereals	**57.14**	**49.22**	**86.1**	**56.45**	**-7.23**
Total Cereals	**402.20**	**410.31**	**102.0**	**418.57**	**-8.26**
Gram	92.77	107.15	115.5	101.74	5.41
Urad	8.93	9.06	101.4	8.48	0.58
Moong	9.86	9.29	94.3	10.40	-1.11
Lentil	14.24	14.98	105.2	13.16	1.82
Others	19.09	17.61	92.2	15.58	2.03
Total Pulses	**144.88**	**158.09**	**109.1**	**149.35**	**8.73**
Total Foodgrains	**547.07**	**568.40**	**103.9**	**567.93**	**0.47**
Rapeseed& Mustard	59.44	68.53	115.3	67.76	0.77
Groundnut	7.24	7.34	101.4	7.59	-0.25
Safflower	1.15	0.49	42.4	0.44	0.05
Sunflower	2.37	1.32	55.7	1.15	0.17
Linseed	2.74	2.34	85.2	1.88	0.46
Total Oilseeds	**72.94**	**80.01**	**109.7**	**78.82**	**1.20**
All- Crops	**620.01**	**648.41**	**104.6**	**646.74**	**1.67**

Source: Crops Divisions, DAC&FW

Articles

Assessing Pradhan Mantri Kisan Samman Nidhi Yojna

SIRAJ HUSSAIN* AND FIZZA SUHEL#

Abstract

In this study, we look at certain aspects of the Pradhan Mantri Kisan Samman Nidhi, a cash transfer scheme for farmers. Since its inception in 2019, the number of beneficiaries, who get Rs 6,000 per year in three installments, has increased to about 11.5 crore farmers. We explore the past trends in disbursement of installments, allocation in the union budget and implementation of the scheme. For this, the primary source of data is the scheme portal. Looking at the past trends, seven cash installments have been paid. While a majority of beneficiaries have been paid 4 installments, 33 percent and 46 percent beneficiaries did not receive the 5th and 6th installment, respectively. Based on the experience of previous years, in 2021-22, the budget allocation for the scheme has been reduced to Rs 65,000 crore from Rs 75,000 crore previously. It is also observed that the previous years' budget allocations were not fully utilized. As per the scheme, all landowning farmers are eligible and the data on landholdings in the Agriculture Census shows that 78 percent have registered so far. Some states like Bihar and Kerala have shown low rates of registration. We believe the definition of a farmer is highly important for such cash transfer schemes hence, a comparison is done on how various surveys and commissions have defined a farmer. The paper also looks at the challenges in implementation of the scheme. Fake beneficiary registration was observed in some states and the poor quality of land records in some states makes it even more difficult to identify correct beneficiaries. Through these aspects, we aim to understand the scheme and its impact better.

Keywords: *PM KISAN, agriculture, cash transfer, direct benefit transfer*

1. Introduction

The last few years have seen a rise in Direct Benefit Transfer (DBT) schemes for delivering various benefits to eligible persons.[1] In agriculture sector, the largest scheme of DBT is the Pradhan Mantri Kisan Samman Nidhi Scheme or PM-KISAN. The scheme was announced in the interim budget in February, 2019. It was to be effective retrospectively from December, 2018. It aims to provide Rs 6,000 per year in three installments of Rs 2000 each, subject to certain exclusion criteria, to landowning farmer families.

The condition of Indian farmers is quite worrisome, with 22.5 percent of farmers living below the official poverty line.[2] Around 85 percent of operational landholdings are small and medium in size, but they cover only 47 percent of the area (Agriculture Census 2015-16). The average annual income of a cultivator is Rs 78,000 a year, while an agricultural labourer earns half of this.[3] Disparities between farm and non-farm income are significant. A non-agriculture worker earns three times and eight times more[4] than a cultivator and an agricultural labourer, respectively.

Under such circumstances, the government thought that it has become imperative to provide direct assistance to farmers. This was not linked to any specific purpose, but the idea was to help remove financial barriers in procuring various inputs for crop health and appropriate yields as well as assist in domestic needs.[5]

Intending to stabilize farmers' income, arguments favouring the DBT schemes are not new in the Indian context. Subramanian *et al*. (2008) pointed

[1]Examples of DBT scheme include Scholarships, pension schemes, MGNREGS, PM Fasal Bima Yojana and PM SWANidhi etc
[2]Doubling of Farmers' Income Volume 1, Foreword Page ii
[3]Doubling of Farmers' Income Volume 1 Page 39.
[4]Table 1.11 Doubling of Farmers' Income Volume 1 Page 21.
[5] Operational Guidelines, Paragraph 2.

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out that in centrally sponsored schemes (CSS), only a small portion of resources reach the poor due to high fiscal costs, inefficient targeting, and leakages to non-poor and high participation costs involved. A direct cash transfer can imply the possibility of "misspending" by the poor. Still, they argue that the policymakers must move beyond their paternalistic attitude and put more trust in the beneficiaries. DBT not only relieved financial constraints but also removed the inherent interstate inequities of certain subsidies. Arguments against DBT (see, for example, Shah, 2008) focus on the difficulty of translation of this money into assets. Shah refutes Subramanian's claims by arguing that for creating a self-dependent, sustainable livelihood, the policymakers have to move beyond cash transfer and work on skills, markets, technology, infrastructure and institutes. In the absence of public goods and markets, the poor will be unable to translate this cash into tangible outcomes. In India, examples of DBT schemes include subsidy on LPG, kerosene and the Janani Suraksha Yojana, among others.

In this paper, we analyze the PM KISAN scheme and its operation since its launch in 2019. The next section gives a brief background of PM KISAN and other similar schemes run by the State Governments. Following this, we highlight the past trends seen in the scheme's implementation as well as look at the budget and fund used for it. Since the scheme is only for landowning farmers, a discussion on the definition of a farmer becomes relevant. We also compare the reach of the scheme with the Agriculture Census. In the end, we bring out the difficulties faced in the implementation and finally conclude.

1.1 Objectives of the Study

- To look at past trends and budget of PM KISAN scheme.
- To compare the coverage of the scheme with the data on farmers in the Agriculture Census.
- To explore the definition of a farmer.
- To understand the implementation issues in the scheme.

2. Discussion

2.1 Background

In the interim budget of February 2019, PM KISAN scheme was announced. Under this scheme, each landholding farmer family (subject to certain exclusion criteria) is entitled to Rs 6,000 every year in three installments of Rs 2,000 each. Although the scheme was announced in February, 2019; it was to come into effect retrospectively from 1st December, 2018. When it was first announced, it was limited to small and marginal farmer families having land up to two hectares.[6] On 31st May, 2019, after the general elections, the Government announced the extension of the scheme to include all landowning farmer families, subject to certain exclusion criteria, and not just small and marginal farmer families. A farmer family comprises husband, wife and minor children who own cultivable land as per records of States and Union Territories. The installments are divided into three periods in a year: April to July, August to November and December to March. The amount gets transferred to the farmers' bank account directly in these periods. Until February, 2021, seven installments have been made. The registration for the scheme is an ongoing process and a farmer is entitled to payments from the period right after his registration.

Many State Governments had started similar direct cash transfer schemes. The Rythu Bandhu Scheme (RBS) was launched during the 2018-19 kharif season in Telangana, wherein a grant of Rs 5,000 per acre per landowning farmer is given twice a year, before the kharif and rabi seasons. RBS relies on the Land Record Updation Program (LRUP), which not only updated land records but also distributed, corrected, updated and secure title deeds to the landowner. It helped the State Government in identifying beneficiaries for such schemes. The scheme provided direct investment to 54,20,102 beneficiaries in 2019-20 in the state. However, it has been criticized for not having a cap on the acres of land a beneficiary can hold. In an RTI filed by Scroll[7], it was found that in Adilabad district alone, 313 farmers having land more than 20 acres received Rs 3.19 crore in the 2018 kharif season. The scheme also leaves behind tenet farmers and agricultural

[6]Pre revised operational guidelines, paragraph 2.3
[7]"Income transfers are hottest trend in agricultural policy. But how do states identify beneficiaries?" by Mridula Chari in Scroll.in (March 2019)

labourers by making land ownership eligibility for beneficiaries.

Krushak Assistance for Livelihood and Income Augmentation (KALIA) was launched in 2018 in Odisha. Under this, the State Government provided benefits to both landowning and landless farmers under different heads. First, Rs 10,000 is given to all cultivators in a year. For landowning cultivators, KALIA was merged with PM KISAN. Second, the Assistance for Livelihood provided Rs 12,500 to landless agricultural households for allied activities like animal rearing, fishing, beekeeping, etc., in a year. Third, assistance to vulnerable agricultural households and cultivators is given in the form of Rs 10,000 per year for their subsistence. In addition to these, life insurance and interest-free crop loans are provided. KALIA has been considered as an improvement over the Rythu Bandhu Scheme since it solves the issue of exclusion of tenant farmers. While in Rythu Bandhu, the amount of transfer increases with an increase in land ownership, KALIA makes standard payments to all. Hence, it aims to solve the two major issues which arise in Rythu Bandhu.

West Bengal announced the Krishak Bandhu scheme on 1st January, 2019, after the launch of PM KISAN. Under this, landowning farmers get Rs 5,000 per acre per annum in two installments. It also provides a death benefit of Rs 2 lakhs per farmer family. Similarly, the Andhra Pradesh government distributes Rs 13,500 annually in three installments of Rs 7,500, Rs 4,000 and Rs 2,000. In the third installment of 2020, Rs 1,115 crore has been given to 5 million farmers.

TABLE 1: DIRECT BENEFIT TRANSFER SCHEMES

	Telangana	Andhra Pradesh	West Bengal	Odisha	Centre
Scheme	Rythu Bandhu	Rythu Bharosa	Krishak Bandhu	KALIA	PM KISAN
Start Year	2018	2019	2018	2018	2018
Annual amount (in Rs)	10,000	13,500*	5,000	10,000*/cultivator 12,500/landless worker	6,000
Installments in a year	2	3	2	2	3
Beneficiaries	Landowners	Landowners and Tenets	Landowners	Landowners and Tenets	Landowners
Budget Allocated in 2020-21 (crore)	14,000	8,,750	3,000	5,611	75,000
Total Beneficiaries (in Lakhs)	57	66	37	75	1,400

Source: Guidelines and Official Websites of respective schemes.
*Including PM KISAN amount

2.2 Past Trends

The first phase of the scheme right before the Lok Sabha elections (in April and May 2019), from December 2018-March 2019, recorded the highest number of registrations at 4.7 crore. These make up forty percent of the total number of beneficiaries (11.5 crore) who have been registered so far (as of February, 2021). Since then, the pace of implementation has slowed down, and the subsequent periods recorded 3 crore and 1.1 crore registrations.

TABLE 2: PM KISAN REGISTRATION TILL NOVEMBER 2019

Period	Number of Registrations
December 2018 – March 2019	4,74,41,257
April – July 2019	3,08,24,111
August – November 2019	1,19,00,484

Source: Lok Sabha Unstarred Question 3625

By the end of 2020, 11.5 crore beneficiaries had registered, out of which 1.2 crore were Scheduled Castes (SC), around 1 crore were Scheduled Tribes (ST) and 2.6 crore were women. Uttar Pradesh has the highest share of beneficiaries (24 percent); followed by Maharashtra (10 percent) and Madhya Pradesh (7 percent). Uttar Pradesh did very well in getting farmers registered in the initial phase of the scheme. Out of 2.3 crore operational holdings in the Agriculture Census, 1.5 crore farmer families registered in the first phase of registration (Dec 2018 - March 2019) itself. This happened despite the authorities and the Government being involved in the 2019 elections.

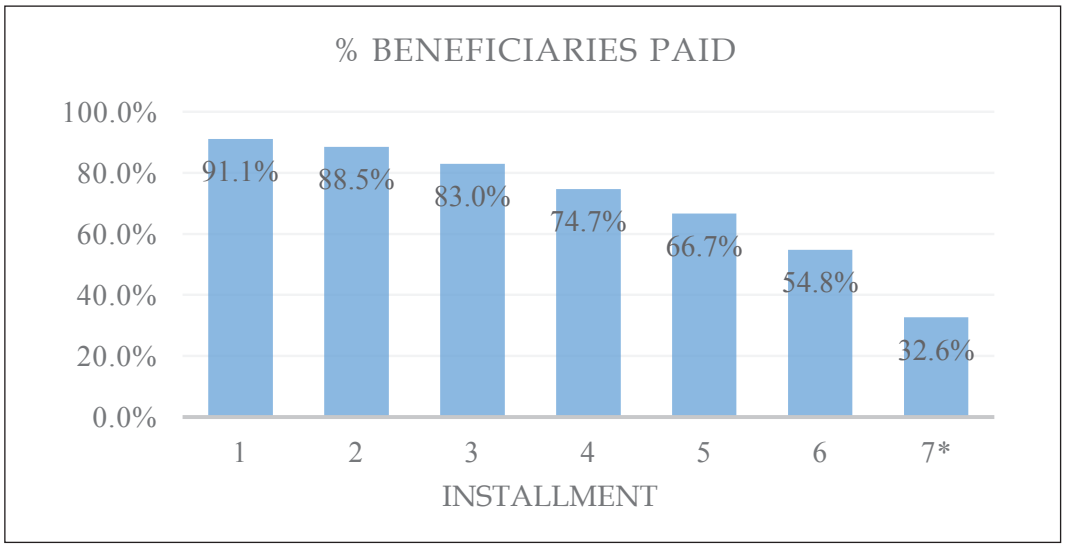
A report by The Wire[8] stated that after the end of the first year of implementation of the scheme, only 26.6 percent of intended beneficiaries received all three installments. While 44 percent received two installments, 52 percent received only one installment. Up to February 2021, although a significant number of beneficiaries have received 4 installments, 33 percent did not receive 5th, and 46 percent did not receive 6th installment. As we write this, 7th installment period is still going on.

If we look at category wise distribution, the proportion of Scheduled Caste in total beneficiaries has decreased from 14 percent in 2018-19 to 11.4 percent at the end of 2020. The proportion of Scheduled Tribes, on the other hand, has increased from 6.8 percent to 9.4 percent in the same period. The proportion of women beneficiaries increased as well, from 19.8 percent to 25 percent. However, it is important to note that the transfers are made to landowners and not landless workers or tenets, which excludes a significant number of farmers from marginalized communities and women.

2.3 Budget

In the Budget for the year 2021-2022, the allocation to the Department of Agriculture, Cooperation and Farmers' Welfare has been reduced by 8.5 percent. PM KISAN allocation has been reduced from Rs 75,000 crore to Rs 65,000 crore. In 2020-21 PM KISAN accounted for 53 percent of the total budget allocated

Figure 1: Percentage of Beneficiaries paid per Installment



Source: PM KISAN Dashboard

[8]"Almost 75% Farmers Did Not Get All 3 PM Kisan Installments, a Year After Implementation" by Kabir Agarwal in The Wire (January 2020).

to the Department of Agriculture, Cooperation and Farmers' Welfare. It was allocated Rs 1,42,762 crores in 2020-21 out of which Rs 75,000 crore were for PM KISAN. The Revised estimates show that Rs 65,000 crore is projected to be spent on the scheme in that year. In 2019-20 the Budget estimate was Rs 75,000 crore, and Revised estimate was Rs 54,370 crore. However, around 35 percent of it went unutilized with an actual expenditure of Rs 48,714 crore. This shows that the scheme is not being implemented to its full potential. Along with problems in registration and verification, the unavailability of West Bengal's registrations has been stated as a major reason hindering the full implementation of the scheme. In the first phase of the scheme (December 2018- March 2019) Rs 20,000 crore was allocated, but only 30 percent of this could be spent by March, 2019.During this time, 4.74 crore registrations out of the targeted 14.5 crore beneficiaries took place. Although this was the highest number of registration in a single period, it was three times smaller than the target. In the presence of these gaps in coverage of beneficiaries, this reduction in the allocation of budget this year is questionable.

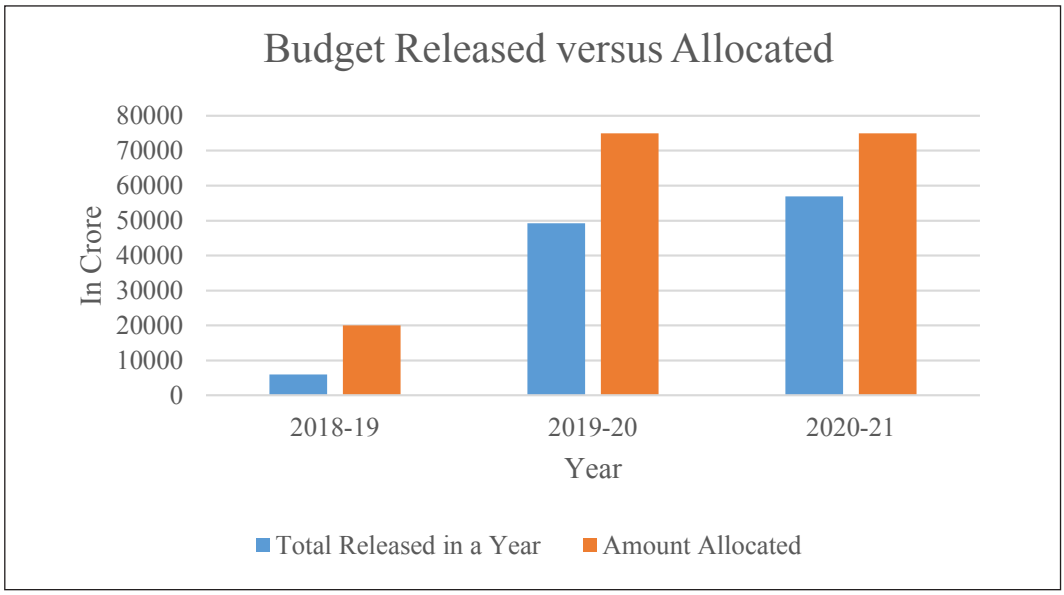
2.4 Who is a Farmer?

Since 2004, a number of schemes and programmes have been launched for the agriculture sector both by the Centre and the States. At times, these schemes have a variation in the definition of the beneficiary farmers. For instance, PM KISAN and Rythu Bandhu provide benefits to landowning farmers while KALIA provides benefits to tenant farmers as well. To ensure uniformity and inclusiveness, it becomes important to understand who a farmer is. Understanding the definition of a farmer can help in giving recognition to a number of female agriculture workers whose work goes unnoticed as they are not considered as farmers. It can also help in improving the records on farmer suicides in the country.

The most comprehensive definition of a farmer is given by the National Commission of Farmers in 2007, headed by Dr M.S. Swaminathan. The definition included all "agricultural operational holders, cultivators, agricultural labourers, sharecroppers, tenants, poultry and livestock rearers, fishers, beekeepers, gardeners, pastoralists, non-corporate planters and planting labourers". It also included other farming-related occupations like sericulture, vermiculture and agro-forestry. Additionally, tribal families were included in the term as well.

The National Sample Survey Office (NSSO) for its Situational Assessment Survey of Agricultural Households (SAS), broadened its approach by changing the nomenclature from farmer households in the 59th round in 2003 to agricultural households in the 70th round in 2014. It looks at an agricultural

Figure 2: Budget Released versus Allocated (in Crore)



Source: India Stat and PM KISAN Dashboard

household as a household that receives more than Rs 4,000 as value of produce in a year by undertaking agricultural activities. These activities include but are not limited to cultivation of field crops, horticulture crops, fodder crops, plantation, animal husbandry, poultry, fishery, piggery, beekeeping, sericulture and vermiculture. However, for the SAS, households comprising agricultural labourers entirely, dependent fully on the free collection of agriculture goods, rural artisans and those involved in agricultural services were not considered. Interestingly, the definition of farmer included a necessary condition of 'land possession' in the 59th round of NSS, which was later removed in the 70th round.

Similarly, the 70th round of NSS defined agricultural labourer as a person performing wage paid manual labour in the following activities: farming, dairy farming, horticulture, livestock, bees, poultry and any other activity performed on-farm. They went one step ahead and included those involved in preparation for market and delivery. In the Census, within the industrial category, agriculture is divided into three categories: cultivators, agricultural labourer and those in allied fields. A cultivator is a person engaged in cultivation on his/her own land or land held from government or land of another person/institution held for monetary or in-kind payment, *i.e.*, as a tenant. Agricultural labourer is one who works on another person's land for wages and shares no risk of uncertainty. He/she does not have any contract on the land on which they work. According to the 2011 Census, there are 11.8 crore cultivators, 14.4 crore agricultural labourers and 1.1 crore in allied activities like livestock, forestry, fishing, hunting, etc. which makes 27.3 crore workers (main + marginal) in agriculture.

In the Doubling of Farmer's Income Report (DFI)[9], the term farmer corresponds to the definition of agriculture households given in the 70th round of NSS. However, the NABARD All India Rural Financial Inclusion Survey 2016-17 (NAFIS) breaks away from Situational Assessment Survey by taking a higher income threshold level of households for survey of Rs 5,000 from agriculture activities in a year. It also included Tier 3 and Tier 4 centres.[10] It does not include the condition of land possession.

An interesting aspect of these definitions is that none of them considers land ownership to qualify as a farmer or agricultural worker. Although the 59th round of NSS had the condition of land possession, it was later removed. The changes in the definition of farmers show that that there is a significant number of the population depending on agriculture for income and yet does not own land, like the tenant farmers. However, the PM KISAN scheme provides cash transfer to only those farmers who hold land. It used the Agriculture Census data on landholdings to estimate the number of beneficiaries. The result is that those tenant farmers and those involved in allied activities do not get the benefit of this scheme. The official estimate of beneficiaries targeted was 14.5 crore for the scheme, but the Census data shows that there are, in fact, 27.3 crore persons in agriculture (included 11.8 crore cultivators, 14.4 crore agricultural labourers and 1.1 crore involved in allied activities). Similarly, for the Rythu Bandhu scheme, the cash transfer is made to the landholders. The Chief Minister clarified in the Assembly that for government policy, those having 'cultivable Patta landholdings' will be recognized as farmers and will get any benefit meant for the farming community.[11]

Within landowning farmers, there are several variations in terms of weather conditions and access to irrigation. Certain farmers can be in more favourable conditions with support from MSP or FRP. But under PM KISAN they get the same benefit as the farmers who do not get MSP support. Similarly, the scheme fails to make a distinction between small and large landholdings. Farmer families owning large acres of land are also given the benefit under the scheme as the exclusion criteria are not based on land size.

2.5 Comparison with Agriculture Census

The Agriculture Census of 2015 defines operational holdings as the land used for agricultural production and operated as one technical unit by one or more person without regard to title, legal form, size or location. The Census data reporting 14.6 crore operational holdings in the country was used for estimating PM KISAN beneficiaries. This means that 78% of the estimated beneficiaries have been enrolled in the scheme up to February, 2021. Similarly, out of

[9]Volume 2, Page 8.
[10]A Centre is a revenue unit classified as a revenue village/ city/ town/ municipality/ municipal corporation, etc. Tier 3 population: 20,000 to 49,999. Tier 4 population: 10,000 to 19,999.
[11]https://www.thehindu.com/news/national/telangana/farmers-defined-as-those-having-patta-for-cultivable-land/article26355910.ece

the 1.7 crore Scheduled Caste landholdings estimated in Agriculture Census, 1.2 crore (70 percent) have been enrolled and out of the 1.2 crore Scheduled Tribe landholdings, 1 crore (80 percent) have been enrolled up to February, 2021. State variations are significant, and in few states, number of registrations is more than the number of operational landholdings.

TABLE 3: STATES WITH HIGHEST % OF BENEFICIARIES REGISTERED TO LANDHOLDINGS AS OF FEB 2021

State	% registered versus landholdings
Manipur	391.50%
Punjab	217.28%
Mizoram	189.97%
Haryana	119.22%
Gujarat	116.84%
Uttar Pradesh	115.36%
Assam	113.85%
Nagaland	108.39%
Jharkhand	107.10%

Source: Compiled using data from Agricultural Census 2015-16 and PM KISAN Dashboard

Manipur followed by Punjab and Mizoram reported the highest percentage of registration over the number of operational holdings. This could be because of the difference in definitions used by the Census and the scheme. If more than one family or individual is working on a piece of land, it is still considered to be one operational holding under the Census, but in case of PM KISAN, each family working on the same land is entitled to the benefits. This shows that the possibility of the number of farmer families exceeding the number of operational holdings exists. The Standing Committee on Agriculture's (2019) report on demand for grants acknowledges the point that the Census does not take into account joint holdings which may result in an increase in the number of beneficiaries; however, it is the responsibility of the State Governments to identify beneficiaries.

On the other hand, in Bihar and Kerala, only 48 percent of estimated beneficiaries have registered

TABLE 4: STATES WITH LOWEST % OF BENEFICIARIES REGISTERED TO LANDHOLDINGS AS OF FEB 2021

State	% registered versus landholdings
Goa	14.61%
Sikkim	27.29%
Tripura	40.80%
Kerala	48.74%
Bihar	48.99%

Source: Compiled using data from Agricultural Census 2015-16 and PM KISAN Dashboard

and in Sikkim, the percentage is just 18 percent. This brings into picture the issues arising in registration and verification, which could possibly lead to less penetration of the scheme.

2.6 Implementation Issues

The Standing Committee on Agriculture (2019) in its report highlights five major problems that arise in the process of implementation of PM-KISAN. First and most important is the lack of correct land records which prevent State Governments from properly identifying beneficiaries. According to the National Council of Applied Economic Research (NCAER) Land Records and Services Index[12], Sikkim, Kerala, Assam, Manipur and Bihar are the bottom five states in digitization and quality of land records. Madhya Pradesh, Odisha and Maharashtra are the top states. The Land Record Updation Program of Telangana shows the level of preparedness before the implementation of Rythu Bandhu. The second major problem is due to the demographic authentication of Aadhar data, since in a number of cases, the data in the PM KISAN database does not match with that in the Aadhar Card. For Assam, Jammu and Kashmir and Meghalaya, Aadhar details are exempted due to low penetration of Aadhar. According to an RTI filed, 28 lakh Aadhar cards were found to be invalid (as of January, 2020) and 1.3 crore were rejected. The third issue is the problem of incorrect bank account data for crediting the installments. As of January 2020, 3.75 lakh beneficiaries were rejected on the grounds of invalid bank accounts. There have been cases of mismatch between bank account data and beneficiaries names, which resulted in payment

[12]"The NCAER Land Records and Services Index", February 2020.

reversal. By July 2019, 2.7 lakh reversals were initiated out of which 1.2 lakh reversals successful, most of these were happening in Uttar Pradesh.

TABLE 5: CASES OF REVERSAL OF PAYMENT MADE UNDER PM KISAN

State	Cases of Reversal (Till July 2019)
Assam	2
Haryana	55
Himachal Pradesh	346
Jammu and Kashmir	29
Jharkhand	22
Maharashtra	32,897
Uttar Pradesh	86,314
Uttarakhand	78
Total	1,19,743

Source: Lok Sabha Unstarred Question No. 1631

The problem of low internet connectivity affects the ability to conveniently apply to the scheme on PM-KISAN portal as well. The report also highlights that the progress of the scheme depends on the State Government's swiftness in providing and validating data on beneficiaries. West Bengal, has time and again, been called out for not providing the Government of India with the data required for implementing the scheme in the state. However, it is important to note that in most Lok Sabha questions regarding complaints (for example unstarred question 135, 360, 1479), the Ministry has put the entire onus of monitoring and implementation on the State Governments thereby shifting the entire responsibility on them.

2.6 Fake Accounts

The JAM trinity comprises three elements: Jan Dhan Bank Account, AADHAAR unique id and Mobile phones. These three together are considered major prerequisites for proper implementation of direct transfer schemes. The Economic Survey 2016-17 highlights the importance of JAM for the purpose of distribution. In case of PM KISAN, Rs 1,12,103 crore released till December, 2020[13] has been done with the help of JAM. However, a significant problem with respect to implementation is the occurrence of fake accounts and ineligible beneficiaries receiving benefits. In Tamil Nadu, reports of misuse of login ID and password of district officials resulted in a scam of Rs 110 crore being transferred to ineligible beneficiaries. Out of 5.95 lakh beneficiaries accounts verified till 15th September, 2020, 5.38 lakh were found ineligible (Rajya Sabha unstarred question 1455). The officials involved were later suspended and the authorities initiated recovery of funds. This issue is not limited to Tamil Nadu. Around Rs 2,300 crore has been transferred to 33 lakh ineligible beneficiaries. Out of this, Rs 231 crore has been recovered upto February, 2021. Tamil Nadu has the highest number of ineligible beneficiaries followed by Assam and Maharashtra.

3. Improvements and Suggestions

The way forward to improve this scheme is to focus on keeping the land records updated. For Rythu Bandhu scheme, Telangana developed the 'Land Record Updation Programme' so that landowning beneficiaries could be better identified. A similar exercise needs to be undertaken in other states as well. This will not only help the objective of PM KISAN, but also help in the implementation of other central and state schemes for farming. Another point to consider is that the coverage of the scheme is limited to only the landowning farmers and not the landless agriculture workers and tenants. Thus a large number of people actually engaged in farming and other related agricultural operations like dairying, animal husbandry, poultry, fisheries, etc. are left out. Odisha's KALIA scheme has included landless workers and tenants by paying cultivators Rs 10,000 per year and landless workers Rs 12,500 per year. The Central scheme should also consider expanding the scope of PM Kisan to include them. In addition to this, attempts should be made to understand why registration is low in states like Kerala and Bihar.

4. Conclusion

From the above discussion, it becomes clear that despite very high allocation of funds from the union budget, the scheme is far from perfect. A critical question still remains as to who should qualify as farmer to receive assistance under such

[13]According to data from India Stat (accessed on 28th December, 2020)

schemes of income support which is crop neutral. Expert Committees constituted by the Government like Swaminathan Commission (2007) and Dalwai Committee (2016) take a broader perspective in the definition of farmers to include landless farmers and those working in allied fields. In fact, even small landholders are somewhat better placed than landless farmers who are engaged in cultivation of crops as labourers or are working in allied sectors. Another dimension is that PM Kisan treats all landholders equally, irrespective of whether they own land in irrigated areas or rainfed areas. Also, it does not show any preference to farmers who are not able to sell their crop at MSP. Thus, the wheat, paddy and sugar cane farmers, whose lands are mostly irrigated, are treated at par with farmers owning unirrigated or degraded land. It is clear that a lot more refinement is needed in the PM Kisan scheme.

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Cost- Return Analysis of Dry Chilli Production in Guntur District of Andhra Pradesh

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Abstract

The present study is based on primary data collected on cost and returns parameters from randomly selected 99 dry chilli growers of three villages namely Sirigiripadu, Phanidam and Gummanampadu selected from Veldurthi, Sattenapallli and Bollapalli mandals, respectively, from Guntur district of Andhra Pradesh. The results revealed that cost of cultivation of dry chilli was ₹ 300788.06/ha and cost of production was ₹ 4852.18/ q at Cost C3. The cost of production at Cost C2 + imputed value of family labour was ₹ 3731.33 /q and this is about to half of the price received by the farmers for dry chilli (₹ 7976.50/q). On an average, the yield of dry chilli was 62.00 q/ha. The net income, family labour income, farm investment income, farm business income and income at Cost A2 + Imputed value of family labour were ₹ 193911.98, ₹ 228241.50, ₹ 236070.79, ₹ 270400.32 and ₹ 263415.16 per hectare, respectively. The cost-benefit ratio was 1.64 and it shows increasing trend with increase in size of holding. The overall results show that dry chilli production is profitable in the study area with present level of input use and product-factor prices.

Keywords: *Cost, Returns, Dry chilli, Cost-benefit ratio*

1. Introduction

Chilli is considered as one of the commercial spice crop. It is the most widely used universal spice and named as wonder spice. Different varieties are cultivated for varied uses like vegetables, pickles, spice and condiments. Chillies are believed to have originated from the warm northern regions of South America. During the 16th century, the Portuguese introduced the chilli to India. It belongs to the genus Capsicum, under Solanaceae family. Chilli is cultivated in tropical and subtropical climates up to 2,000 m altitude. The crop is available throughout the year in many parts of India. The major harvest season is between December-March with supply reaching peak level in February–April. Planting is done mainly during August-October. India, the 'land of spices' is the largest producer, consumer and exporter of chillies in the world. India's share in global production is 50 to 60 percent. In India, chilli occupies an area of 844 thousand hectares with an annual production of 2106 thousand metric tons (Spices Board of India- www.indianspices.com).

The production of chilli in India is dominated by Andhra Pradesh which occupies an area of 119 thousand hectares with an annual production of 618 thousand tons (Agricultural Statistics at Glance-A.P 2017-18) which accounts for nearly 30 percent to the total production. The major chilli growing districts in Andhra Pradesh are Guntur, Krishna and Prakasham. Guntur is the biggest chilli producing region with an area of 60 thousand hectares and production of 351 thousand tons (Agricultural Statistics at a Glance-A.P 2017-18) contributing 50 percent to the total production of Andhra Pradesh. Area and production of chilli in this area decides the prices at national level. Therefore, it is desirable to study cost and return structure of dry chilli production in this particular area which gives price signals for dry chillies at global level.

1.1 Objectives

The major objectives of the study are:

- To examine the present cost structure, estimated cost of cultivation and cost of production of dry chillies under different size group of holdings in Guntur district of Andhra Pradesh.
- To assess the profitability from production of dry chillies under different size group of holdings in Guntur district of Andhra Pradesh.

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2. Methodology

For the present study, Guntur district was selected purposively. From the district, three mandals namely Veldurthi, Sattenapallli and Bollapalli were selected on the basis of maximum area under dry chilli production and from each mandal, one village was selected for selection of sample farmers. The selected villages were Sirigiripadu, Phanidam and Gummanampadu.Thirty three farmers from each selected village (11 from each size group) were selected randomly. Thus, sample frame is composed of 99 farmers (33 from each size group). Primary data from the dry chilli growing farmers were collected through survey method using personal interview schedule. The household survey was conducted for the agricultural year 2017-2018. Standard cost and profitability concepts were used for analysis and presentation of data in tabular form.

3. Results and Discussion

The profitability of any enterprise depends upon costs and returns. Generally, costs in any business enterprises are discussed under two major heads *viz*., variable and fixed costs. In general, variable costs alone are reckoned as the cost of cultivation by the farmers and profit and loss are worked out by ignoring the fixed cost. But in the economic analysis of any business enterprise, the fixed costs are also taken in to account to arrive at total cost and profitability over long period of time. The particulars of cost of cultivation of chilli and share of different operational cost and fixed costs per hectare for small, medium and large farms are presented in the Table 1. The overall average cost of cultivation was ₹ 273443.69 per hectare. Total variable cost was 84.23 percent and the share of material input cost was maximum with 43.60 percent followed by human labour cost at 29.56 percent. Power use cost (6.64%), interest on working capital (2.26%), rent paid for leased in land (2.03%) and irrigation cess (0.14%) are the minor items of operational cost. Fixed cost was 15.77 percent to the total cost. The major components of fixed cost are depreciation (0.17%), land revenue (0.21%), rental value of land (15.22%) and interest on fixed capital (0.17%). Irrespective to the size of holding, the total cost of cultivation of chilli was minimum ₹ 261217.58/ha on small holdings and maximum ₹ 280114.66/ha on medium size of group. The major variation in material cost was observed in different size groups.

TABLE 1: PARTICULARS OF COST OF CULTIVATION OF DRY CHILLI ON SAMPLE FARMS (₹ /HA)

S.No.	Particulars	Size group			Overall Average
		Small	Medium	Large	
	A Labour cost				
1	Family labour	10674.88 (4.09)	6212.22 (2.22)	4068.37 (1.46)	6985.16 (2.59)
2	Hired labour	70401.34 (26.95)	74441.56 (26.58)	76437.88 (27.40)	73760.26 (26.97)
A	Total labour	81076.22 (31.04)	80653.78 (28.79)	80506.25 (28.86)	80745.42 (29.56)
	B Power use				
1	Bullock power	9897.98 (3.79)	9951.66 (3.55)	9982.05 (3.58)	9943.90 (3.64)
2	Machine power	7912.23 (3.03)	8196.55 (2.93)	8515.75 (3.05)	8208.18 (3.00)
B	Total power use	17810.21 (6.82)	18148.21(6.48)	18497.80 (6.63)	18152.07 (6.64)
A+B	Total operational cost	98886.43 (37.86)	98801.99 (35.27)	99004.05 (35.49)	98897.49 (36.20)
	C Material cost				
1	Seed	8584.08 (3.29)	9498.89 (3.39)	9375.62 (3.36)	9152.86 (3.35)
2	Nursery management	2452.91 (0.94)	3082.41 (1.10)	3409.65 (1.22)	2981.66 (1.09)
3	Fertilizer and manure	51753.36 (19.81)	55385.30 (19.77)	55173.58 (19.78)	54104.08 (19.79)

TABLE 1: PARTICULARS OF COST OF CULTIVATION OF DRY CHILLI ON SAMPLE FARMS (₹ /HA) *Contd.*

S.No.	Particulars	Size group			Overall Average
		Small	Medium	Large	
4	Plant protection chemicals	29867.45 (11.43)	34907.11 (12.46)	34181.19 (12.25)	32985.25 (12.05)
5	Irrigation	19470.19 (7.45)	19982.99 (7.13)	20666.66 (7.41)	20039.95 (7.33)
C	Total material cost	112128.00 (42.93)	122856.70 (43.86)	122806.69 (44.02)	119263.79 (43.60)
	D Variable cost				
A	Human labour	81076.22 (31.04)	80653.78 (28.79)	80506.25 (28.86)	80745.42 (29.56)
B	Power use	17810.21 (6.82)	18148.21 (6.48)	18497.80 (6.63)	18152.07 (6.64)
C	Material cost	112128.00 (42.93)	122856.70 (43.86)	122806.69 (44.02)	119263.79 (43.60)
1	Rent paid for leased in land	5717.48 (2.19)	6458.79 (2.31)	4418.31 (1.58)	5531.53 (2.03)
2	Interest on working capital	6180.40 (2.37)	6175.12 (2.20)	6187.75 (2.22)	6181.09 (2.26)
3	Irrigation cess	471.97 (0.18)	322.93 (0.12)	313.73 (0.11)	369.54 (0.14)
D	Total variable cost	223384.28 (85.52)	234615.53 (83.76)	232730.54 (83.42)	230243.45 (84.23)
	E Fixed cost				
1	Depreciation	329.00 (0.13)	501.67 (0.18)	582.38 (0.21)	471.02 (0.17)
2	Land revenue	567.26 (0.22)	551.78 (0.20)	592.20 (0.21)	570.41 (0.21)
3	Rental value of land	36608.04 (14.01)	43944.02 (15.69)	44511.33 (15.95)	41687.80 (15.22)
4	Interest on fixed capital	329.00 (0.13)	501.67 (0.18)	582.38 (0.21)	471.02 (0.17)
E	Total fixed cost	37833.31 (14.48)	45499.13 (16.24)	46268.30 (16.58)	43200.25 (15.77)
F	Total cost	261217.58 (100)	280114.66 (100)	278998.83 (100)	273443.69 (100)

Source: From primary data (Figure in parenthesis show percentage to total cost)

The cost of cultivation of chilli on sample farms in the study area has been also worked out on the basis of prescribed cost concepts and presented in Table 2**.** From the given data it was observed that cost A1, that is the paid out cost in dry chilli cultivation was ₹ 218768.20 per ha. In the cultivation of chilli, cost A1 has shown an increasing trend with increase in land holding revealing that operational cost increases with increase in size of holding mainly due to increased expenditure on seed and fertilizer. Cost A2 was found to be ₹ 224299.72 per ha which includes rent paid for leased in land of ₹ 5531.53 per ha. Normally, farmers were cultivating the crop in their own land but it has an imputed rental value of ₹ 41687.80 per ha and thus cost B2 was ₹ 266458.54. The cost C1 was higher on medium size group of holdings compared to small and large size group, which includes imputed value of family labour. The cost C2 was ₹ 273443.69 per ha which includes the cost B2 and imputed value of family labour. The cost C3 was ₹ 300788.06 per ha, with imputed value of managerial allowances at 10 percent of cost C2. The cost at Cost A2 + imputed value of family labour is also workout and this was ₹ 231284.88 per ha.

The cost of production of dry chilli in rupees per quintal is presented in the Table 3. On overall average basis, the cost A1, A2, B1, B2, C1, C2 and

TABLE 2: COST OF CULTIVATION OF DRY CHILLI ON SAMPLE FARMS (₹ /HA)

S. No.	Particulars	Size group			Overall average
		Small	Medium	Large	
1	Cost A1	207888.18	222997.97	225418.44	218768.20
2	Cost A2	213605.66	229456.76	229836.75	224299.72
3	CostA2 + family labour	224280.54	235668.98	233905.12	231284.88
4	Cost B1	213934.66	229958.42	230419.13	224770.74
5	Cost B2	250542.70	273902.44	274930.46	266458.54
6	Cost C1	224609.54	236170.64	234487.50	231755.90
7	Cost C2	261217.58	280114.66	278998.83	273443.69
8	Cost C3	287339.34	308126.13	306898.71	300788.06

Source: Author's own computation

C3 were found to be ₹ 3528.75, ₹ 3618.16, ₹ 3625.74, ₹ 4297.89, ₹ 3738.91, ₹ 4411.07 and ₹ 4852.18 per q, respectively. Further, it is noticed that there is no definite trend with respect to cost per quintal and size of holding. The cost of production at cost A2 + imputed value of family labour was ₹ 3731.16 per q and it is just half of the price received by the farmers for dry chilli in the study area.

TABLE 3: COST OF PRODUCTION OF CHILLI ON SAMPLE HOLDING (₹ /Q)

S.No.	Particulars	Size group			Overall average
		Small	Medium	Large	
1	Cost A1	3391.32	3621.86	3573.08	3528.75
2	Cost A2	3484.59	3726.76	3643.11	3618.16
3	Cost A2 + Imputed value of family labour	3658.74	3827.66	3707.60	3731.33
4	Cost B1	3489.96	3734.91	3652.34	3625.74
5	Cost B2	4087.16	4448.63	4357.89	4297.89
6	Cost C1	3664.10	3835.81	3716.83	3738.91
7	Cost C2	4261.30	4549.53	4422.38	4411.07
8	Cost C3	4687.43	5004.48	4864.61	4852.18

Source: Author's own computation

The aggregate data on profitability of chilli with productivity is presented in Table 4. From the data given in the table, it is observed that the overall productivity was 61.99 q per ha. The productivity was higher on large farms followed by medium and small group of holding, respectively, and thus productivity of dry chilli shows increasing trend with increase in size of holding. This was mainly due to higher level of expenditure on seed and fertilizer with increase in size of holding. The economics of chilli cultivation have been understood by taking the economic parameters which includes the yield of chilli, cost of cultivation, gross return, net return, family labour income, farm investment

income, farm business income and income at cost A2 + imputed value of family labour. The data on the same are presented in the Table 4. Overall gross return was found to be ₹ 494700.04 and net income was ₹ 193911.98 per ha. The overall family labour income was observed to be ₹ 228241.50 per ha, farm investment income was ₹ 263415.16 per ha and farm business income found to be ₹ 270400.32 per ha. Overall input output ratio was 1.64. Thus, it can be concluded that in chilli production, large farmers are getting more profit than small and medium groups. It was also confirmed with the higher rate of return 1.72 in large farmer group, followed by medium group and small group of farmers. Income at different income parameters also shows increasing trend with increase in size of holding and this was mainly due to scale economy as well as variation in productivity level on different size of holdings.

TABLE 4: PROFITABILITY FROM CHILLI ON SAMPLE HOLDING (₹ /HA)

S.No.	Particulars	Size group			Overall average
		Small	Medium	Large	
1	Yield q/ha	61.30	61.57	63.09	61.99
2	Price of chilli	7274.86	8273.59	8381.04	7976.50
3	Cost of cultivation	287339.34	308126.13	306898.71	300788.06
4	Gross income	445952.16	509406.04	528741.92	494700.04
5	Net income	158612.82	201279.91	221843.20	193911.98
6	Family labour income	195409.46	235503.60	253811.46	228241.50
7	Farm investment income	195549.86	245725.60	266936.92	236070.79
8	Farm business income	232346.50	279949.29	298905.17	270400.32
9	Income at cost A2 + family labour	221671.62	273737.07	294836.80	263415.16
10	Cost-Benefit ratio	1.55	1.65	1.72	1.64

Source: Author's own computation

4. Conclusion

The chilli production in the study area is a profitable venture. At present input use and factor-product prices, the cost-benefit ratio was higher than 1 which indicates that the investment in this venture is profitable. The high proportion of expenditure on seed and fertilizer among the other materials shows that the farmers need quality seed and fertilizers recommended content of NPK. This will help in enhancing yield of dry chillies in the area. The high variation in prices received by small and large farmers for dry chilli reflects towards carrying capacity of produce by large farmers to fetch higher prices. It is recommended that there may be some mechanism to arrest price fluctuations so that stable returns can be assured. Also good storage facilities in the area should be provided for dry chilli.

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Agro-Economic Research

Relevance and Distribution Efficiency of Seed Mini-Kits of Pulses in Madhya Pradesh*

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1. Introduction

In India, pulses can be produced with a minimum use of resources and hence, it becomes less costly even than animal protein. In comparison to other vegetables, pulses are rich in protein, are less expensive and can be cultivated as an inter-crop as well as mixed crop. Pulses are mostly cultivated under rainfed conditions and do not require intensive irrigation facility. This is reason why pulses are grown in the areas left after satisfying the demand for cereals/cash crops. Even in such conditions, pulses give better returns. Pulses improve soil fertility and physical structure of the soil, fit in mixed/inter-cropping system, crop rotations and dry farming and provide green pods for vegetable and nutritious fodder for cattle as well.

The pulses are normally grown in all the ecological situation of India, *i.e.* from J&K to Kerala. Performance of pulses on two important points, *i.e.* the area occupied and contribution in production is better in Central India as compared to other parts of the country. The Government is implementing seed minikit programme under various schemes of the Ministry of Agriculture. Seed minikits of different field and fodder crops are given to farmers including those belonging to low poverty line in order to introduce new varieties/hybrids and to encourage farmers for seed multiplication of various crops at grass root level. The seed minikits of oilseeds and maize are provided under Integrated Scheme of Oilseeds, Pulses, Oil Palm and Maize (ISOPOM). National Food Security Mission (NFSM) provides seed minikits of rice, wheat and pulses in identified districts of the country. Macro Management of Agriculture (MMA) and Rashtriya Krishi Vikas Yojana (RKVY) also provide support for crop development, including supply of seed minikits as per priorities of the states in their work plan.

Seed minikits are meant for introduction and popularization of latest released/pre-released varieties and their propagation among the farmers. The Government has fixed a limit up to 10 year old varieties/hybrids to qualify for financial assistance under this programme. **(i)** In case of released varieties, only certified seed will be supplied in minikits. **(ii)** Hybrids of oilseed, pulse and maize crops are allowed for distribution under minikits. **(iii)** Though NSC (National Seeds Corporation Ltd.) will continue to be the nodal agency for production, procurement of seeds of varieties/hybrids identified for distribution in minikits, SFCI (State Farms Corporation of India Ltd) will also be producing and supplying minikits as per indents placed/allocation made directly by TMOP&M (Technology Mission on Oilseeds, pulses and Maize). The Committee will be meeting before the commencement of each crop season, *i.e.* in April for kharif and in August for rabi/ summer season programmes to: a) Review the requirements of the states, seed availability of identified varieties. b) Review performance of varieties/hybrids distributed in the states in the previous seasons/years under seed minikits distribution programmes. c) Formulate minikit distribution programme for the season. d) Review availability and production programmes of breeder's foundation and certificate seed of newly released varieties and hybrids. e) Review the programmes of the states for production of seeds of the varieties/hybrids found most promising under minikit programmes for general distribution to farmers. f) Identify the agencies amongst the SSCs, OILFEDS, KVKs, NGOs, private sector, cooperative and public sector agencies having necessary technological and infrastructure base to widen the seed production programmes. NSC will coordinate the progamme with these agencies. **iv)** Seed minikits will also contain seed treating chemicals, Rhizobium culture (for legumes) and recommended package of practices for the variety or hybrid. Keeping to the above facts in mind the present study has been formulated with following specific objectives.

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1.1 Objectives of the Study

The objectives of the study are as follows:

1. To assess the relevance and the requirement of seed minikits of pulses among the respondents.

2. To compare the productivity of pulse seed minikits beneficiaries with the control respondents/non users.

3. To suggest policy measures to address the efficient implementation of seed minikits.

2. Data and Methodology

The study is confined to a prominent pulses growing state of India *viz.* Madhya Pradesh. All the major pulses *viz.* chickpea, lentil and black gram were taken into consideration for the study. A district under rainfed and a district under irrigated condition were selected for the study having maximum area under the districts and number of seed minikits of pulses distributed by state agriculture department. Hence, Datia and Sagor districts were selected under rainfed and irrigated conditions, respectively. A list of seed minikits beneficiaries of pulses in various villages of the selected districts was prepared and top 100 beneficiaries from each district were selected for the study. To draw relevant results, 50 controls (non-beneficiaries) were considered from the same village each having same size of land holding. These selected respondents were further categorized into marginal (<2.5 acres), small (2.5–5 acres), medium (5-10 acres) and large (>10 acres) land holding categories.

3. Results and Discussion

1. Madhya Pradesh had 23 percent share of total pulses in gross cropped area (GCA). The share of total pulses to GCA was varying from to 9.6 percent (Khargone) to 42 (Panna) percent in Madhya Pradesh.

2. The area under rice and coarse cereals was found to have decreased by 3.9 percent and 30.9 percent with annual average growth rate of 0.39 percent and 3.03 percent, respectively. The area of wheat, total pulses, total food grain and other pulses, was found to have increased by 21.1 percent with the annual average growth rate of 2.11 percent, 17.6 percent, 4.5 percent & 2.3 percent during the period 2001-10. The production of rice, wheat, total pulses and total food grain was found to have increased by 11.30 percent, 31.22 percent, 25.34 percent & 21.31 percent with the annual average growth rate of 1.13 percent, 3.12 percent, 2.53 percent & 2.13 percent per year, respectively, during the period 2001-10. The production of total coarse cereals was found to have decreased by 15.93 percent with the annual average growth rate of -1.59 percent per year. Amongst different pulses *viz.* chickpea, blackgram, lentil, arhar and green gram, the area was found to have increased by 23.1 percent, 15.4 percent, 9.4 percent, 5.9 percent and 4.2 percent per year during the period with the annual average growth of -2.31 percent, -1.54 percent, -0.94 percent, - 0.59 percent & -0.42 percent per year, respectively, during the period 2001 -10. The production of all the pulses *viz.* chickpea, black gram, lentil, green gram, other pulses and arhar was found to have increased with the annual average growth rate of 2.86 percent, 2.86 percent, 1.83 percent, 1.65 percent, 0.91 percent and 0.05 percent per year, respectively, during 2001-2010 in Madhya Pradesh. The yield of different pulses in Madhya Pradesh was also found to have increased with the annual average growth of 1.23 percent (chickpea), 1.08 percent (lentil), 1.76 percent (black gram), 1.32 percent (green gram) & 0.69 percent (other pulses) except -0.55 (arhar) percent per year during period 2001-10.

3. During the period 2010-17, the area of all the food grains, *i.e.* rice, wheat, coarse cereals, total pulses and food grains was found to have increased by 23.4 percent, 15.2 percent, 4.6 percent, 13.2 percent & 14.2 percent with annual average growth rate of 4.67 percent, 3.05 percent, 0.91 percent, 2.64 percent & 2.83 percent per year, respectively, in Madhya Pradesh. The production of all the food grains was also found to have increased in this period (2010-17) in the state. The production of rice, coarse cereal, wheat, pulses, and total food grain was found to have increased by 55.45 percent, 27.20 percent, 30.50 percent, 27.95 percent & 32.32 percent with annual average growth rate of 11.09 percent, 5.44 percent, 6.10 percent, 5.59 percent and 6.46 percent per year, respectively, in this particular period in Madhya Pradesh. The yield of food grains was found to have increased with annual average growth of 9.01 percent (rice), 3.22 percent (wheat), 5.47

percent (coarse cereal), 3.69 percent (pulses) and 4.55 (food grain) percent.

4. Amongst different pulses cultivated by the farmers of Madhya Pradesh, the area of chickpea, black gram, arhar, green gram and other pulses was found to have increased with annual average growth rate of 1.39 percent, 10.22 percent, 23.91 percent, 0.22 percent & 7.50 percent per year, while the area of lentil was found to have decreased by the annual average growth rate of -2.20 percent, respectively. The production of all the pulses *viz.* chickpea, lentil, black gram, green gram, arhar and other pulses was also found to have increased by 11.20 percent, 51.98 percent, 55.24 percent, 57.89 percent, 50.21 percent & 63.36 percent, respectively, with the annual average growth rate of 2.24 percent, 10.40 percent, 11.05 percent, 11.58 percent, 10.04 percent & 12.67 percent, respectively, during the period from 2010-17. The yield of different pulses *viz.* chickpea, lentil, black gram, green gram, arhar and other pulses was also increased with annual average growth of 1.01 percent, 11.45 percent, 6.47 percent, 1.51 percent, 9.93 percent and 9.92 percent per year, respectively, during this period.

5. The area of total pulses was found to have increased by 87.07 percent from 22782 thousand ha to 25976 thousand ha in the country during 2016-17 as compared 2006-07. Amongst different states, the area of pulses was found to have increased maximum in Madhya Pradesh (19-23%) followed by Rajasthan (15-16%), Karnataka (9-10%) and other states (7-11%) to total area of the country in the year 2016-17 as compared to 2006-07. The production of pulses was found to have increased by 39.05 percent from 13570 thousand tonnes to 18870 thousand tonnes in the country in the period 2016-17 as compared to 2006-07. The production of pulses was found to have increased from 24 percent to 29 percent in Madhya Pradesh, 9 percent to 13 percent in Rajasthan, 7 percent to 8 percent Karnataka, 3 percent to 4 percent in Chattisgarh and 7 percent to 12 percent in Uttar Pradesh. The yield of total pulses was found to have increased in all the pulses growing states of the country during 2016-17 as compared to 2006-07. There was an increment from 764 kg/ha to 910 kg/ha in Madhya Pradesh, from 561 kg/ha to 651 kg/ha in Maharashtra, from 364 kg/ha to 570 kg/ha in Rajasthan, from 410 kg/ha to 527 kg/ha in Karnataka, from 795 kg/ha to 710 kg/ha in Uttar Pradesh, from 672 kg/ha to 796 kg/ha in Andhra Pradesh, from 471 kg/ha to 765 kg/ha in Chhattisgarh, 651 kg/ha to 914 kg/ha in Gujarat, 418 kg/ha to 529 kg/ha in Orissa, 726 kg/ha to 879 kg/ha in Bihar and 607 kg/ha to 809 kg/ha in other states. The yield of total pulses was found to have increased from 596 kg/ha to 727 kg/ha in India in the year 2016-17 as compared 2006-07.

6. The area of total pulses was found to have increased by 26.17 percent from 4368 thousand ha (2006-07) to 5511(2016-17) thousand ha in Madhya Pradesh. The percentage share of area of black gram and green gram to total area of pulses was found to have increased from 11 percent to 16 percent, 2 percent to 3 percent and 7 percent to 10 percent, respectively, while percentage share of chickpea and lentil was found to have decreased from 60 percent to 53 percent & 12 percent to 10 percent, respectively.

7. The production of total pulses was also found to have increased by 659.77 percent from 4437 thousand tonnes (2006-07) to 5151 thousand tonnes (2016-17) in Madhya Pradesh. The contribution of all the pulses *viz.* lentil, black gram, arhar and other pulses to total production of pulses was found to have increased from 8 percent to 10 percent, 5 percent to 9 percent, 7 percent to 11 percent and 5 percent to 7 percent, respectively, except chickpea, which was decreased from 74 percent to 62 percent in Madhya Pradesh. The production of green gram was found to have stagnated at 1 percent to total area of pulses in both the period.

8. The productivity of all the pulses was found to have increased in 2016-17 as compared to 2006-07. The productivity of all the pulses grown by the farmers, *viz.* chickpea, lentil, black gram, green gram, arhar, other pulses and total pulses was found to have increased from 842 kg/ha to 1077 kg/ha, 422 kg/ha to 930 kg/ha, 319 kg/ha to 525 kg/ha, 297 kg/ha to 364 kg/ha, 613 kg/ha to 1043 kg/ha, 510 kg/ha to 906 kg/ha and 763 kg/ha to 935 kg/ha, respectively, in 2016-17 as compared to 2006-07.

9. The area, production and yield of total pulses were found to have increased by 26.2 percent,

54.5 percent & 22.4 percent in 2016-17 over the year 2006-07 in Madhya Pradesh. The area of total pulses was found to have increased in all the districts of Madhya Pradesh except Jhabua (-60.5%), Shajapur (-21.9%), Bhind (-20.7%), Narsinghpur (-19.8%), Sagar (-19.3%), Sidhi (-12.4%), Jabalpur (-10.9%), Raisen (-9.5%) and Chhatarpur (-3.5%) in the year 2016-17 as compared to the year 2006-07.

10. The study confined to the Datia and Sagar districts of Madhya Pradesh and related to 116 marginal, 126 small, 41 medium and 17 large HHs reveals that the average size of these all HHs (300) comprised of 6 members, out of which 3 were found to have engaged in farming. The majority of HHs were found to be between 30 to 60 years (77.67%) and an average HH was having 34 years of experience in farming. The majority of HHs were belonging to OBC (40.00%) followed by SC (28.67%), general (23.67%) and ST (7.67%) categories and were primarily dependent on agriculture and allied activities for their livelihood. As far as secondary occupation of the HHs is concerned, the majority of the HHs were found to have engaged as agricultural labourers (46.85%) followed by non-agricultural labourers (16.08%), salaried persons (13.29%), self business (13.29%), self services (5.59%) and agricultural and allied activities (2.80%). The annual income of an average HH from agriculture and allied activities (77.83%) was found to more when compared to non-agriculture activities (22.17%). The annual income of an average HH was found to have ₹ 144857/year, in which share of agriculture and allied activity (₹ 112740/year) was found to have more as compared to non agriculture sources (₹ 32117/year).

11. An average household used leased in land of 2.41 acres. Leased-out land was not found in practice by the HHs in the area under study. An average HH was found to have leased in a land with a rent of ₹ 7431/season, which was found to vary from ₹ 6250 (marginal) to ₹ 6594 (small) per season. The cropping intensity of 198 percent per year indicates that an average household used to cultivate crops in both the seasons in their net operated area as 90 percent area was found to be under irrigation.

12. Out of total net operational holding; 91.11 percent, 92.39 percent, 93.09 percent and 87.94 percent of area was found to be irrigated under marginal, small, medium and large farmers in the area under study. Canal (37.09%) followed by bore-well (31.49%) and dug well (14.92%) were found to be major sources of irrigation. An average HH was found to invest ₹ 1738.13 per acre per year as water charges for irrigation through canal which found to have vary from ₹ 1676.83 (medium) to ₹ 1822.35 (large) farmers. Out of total irrigated area, 45.67 percent and 45.85 percent of Gross Cropped Area (GCA) was found to be cultivated in kharif and rabi season, respectively, and out of total rainfed area, only 4.23 percent and 4.24 percent of GCA was found to be cultivated in kharif and rabi season, respectively.

13. Black gram (15.15%), soybean (13.3%) and paddy (9.42%) were found to be major kharif crops, while wheat (25.84%) and chickpea (14.07%) were found to be major rabi crops in irrigated condition. Soybean (2.04%) and black gram (1.24%) in kharif and chickpea (1.99%) in rabi season were found to have major crops grown under rain fed condition. An average HH had ₹ 176027/year as a gross farm income from cultivation of crops. He received ₹ 35112/year net income over cost of production (₹ 4004/year) and labour cost (₹ 3850/acre) in a year. Amongst different categories of farms, large farmers (₹ 44748 /year) were found to have received more value of output as compared to marginal (₹ 42898/year), small (₹ 41600/year) and medium (₹ 43589/year) farmers. It was also observed that an average HH received 7.71 q/acre of production of grains in a year which ranged between 7.30 q/year (marginal) to 8.16 q/year (large). As the size of holding increased, the value of output as well as production of crops were found to increase in the area under study.

14. Seed minikits were found to be distributed to all the respondents. The maximum number of seed minikit were distributed to small farmers (43.5%) followed by marginal (42.5%), medium (9%) and large (5%) respondents in the area under study. The majority of them cultivated pulses through line sowing followed by broadcasting method of sowing. The broadcasting method of sowing was found be adopted by more number of marginal (31.03%)

as compared to large (11.76%) farmers, while line sowing method was adopted by more number of large (88.24%) farmers as compared to marginal (68.97%) ones. The agricultural officers (89.66%) followed by farmer facilitator (6.47%) and fellow farmers (3.87%) played a key role in making respondents aware with regard to distribution of seed minikits. Aadhar card and copy of land records were found to have major documents to avail facility of seed minikits in the area under study.

15. The cost of production of chickpea, lentil and black gram were found to have reduced from 18.67 percent (lentil) to 35.35 percent (chickpea) after availing facilities of seed minikit programme. The net return also increased by 39.22 percent (chickpea), 35.60 percent (lentil) and 81.72 percent (black gram) after availing seed minikit facilities by the average beneficiaries farmers as compared to non-beneficiaries farmers. The net obtained price was also found to have increased by 2.45 percent (chickpea), 5.55 percent (lentil) and 31.80 percent (black gram) in average beneficiaries farmers as compared to non-beneficiaries farm.

16. In Madhya Pradesh, all the seed minikits of pulses were found to be distributed by the officers of Agriculture Department (Department of Farmer's Welfare and Agriculture Development) among different size of respondents. No other agency has been found to have involved in distribution of seed minikits of pulses in the state. The majority of respondents opined that the seed supplied in seed minikits were of short duration varieties (100%) having a remarkable yield difference (74%), better quality (73%) and it fetches more price (64%) as compared to their local varieties. The majority of respondents reported that non availability of seed minikit on time (73%) was a major problem. They wanted short duration varieties of pulses (44.39%) and arrangement of field demonstration in the villages (24.16%) for more effectiveness of seed minikit programme. The majority of respondents suggested that the seed minikits should be supplied at minimum rate (25.78%) for betterment of the programme. Also the information regarding the latest available varieties of pulses and their sources of availability (21.68%) should be provided to them. The respondents also suggested that there should be proper monitoring and supervision of cultivation of crops under seed minikits programme after sowing (20.08%). More publicity is required among the farmers of the villages (17.74%) and produce under seed minikit programme should be distributed among other farmers of the villages (14.72%).

17. Among the different types of pulses; 68.5 percent, 10.0 percent and 21.5 percent of seed minikits of pulses were found to be related to chickpea, lentil and black gram, respectively, in which total transportation cost was found to be ₹ 1.27 (chickpea), ₹ 2.46 (lentil) & ₹ 5.00 (black gram) per kg incurred in transportation of seed from agriculture office to the farm. An average respondent was found to cover approximate 12 km. distance to avail the facility. He purchased 55 Kg., 25 Kg. and 16 Kg. of chickpea, lentil and black gram seed, respectively, at price of ₹ 62, ₹ 51 & ₹ 95 from other sources for cultivation of pulses in their field. He was found to use more of their owned seed as compared to purchased seed from private dealers. To purchase seed from private dealer, an average distance of 8 to 10 km was covered in which ₹ 0.58 to ₹ 1.39 per kg seed was involved as transportation cost.

18. Out of total cost of cultivation incurred in production of chickpea, the maximum cost was found to have incurred in the field preparation (25.14%) followed by fertilizer and its application (17.77%), harvesting and threshing (13.97%), farm yard manure (13.52%), seed and sowing (11.35%), bagging & transportation (6.60%), weeding (5.98%), irrigation (4.57%) and plant protection measure (1.11%). In the total cost of cultivation of lentil and black gram, the maximum expenditure was found to have incurred in the field preparation followed by harvesting & threshing, seed/sowing, farm yard manure and others operations. Regarding to labour used, an average respondent was found to have used maximum in harvesting & threshing followed by bagging & transport, irrigation, farm yard manure application, plant protection chemical, interculture, seed & sowing and land preparation. Overall labourers engaged in different operations of chickpea, lentil and black gram were found to have increased by 12.82 percent, 16.13 percent and 10.00 percent, respectively, under farms

of seed minikits beneficiaries as compared to non-beneficiaries in the area under study.

19. None of respondent was found to impose financial liability to avail seed minikits facility in the area under study. The 16 Kg., 8 Kg. and 4 Kg. seeds of chickpea, lentil and black gram, respectively, were found to be provided to cultivate 0.5 acres of area in seed minikits programme during 2018-19 in the area under study. The 31.02 percent, 49.71 percent and 51.89 percent of chickpea, lentil and black gram seed out of 2.45 q/HH, 1.71 q/HH and 2.12 q/HH seed produced was used by the chickpea, lentil and black gram growers, respectively, in the next year for the cultivation of crops.

20. JG-14 (92.70%) was found to be major variety of chickpea distributed among chickpea growers in the area under study. The other varieties of chickpea which were distributed among the respondents were JG-64(5.11%), JG-16(1.46%) and JG-73 (0.73%). IPL-316 (70.00%) was found to be major variety of lentil distributed among lentil growers, while other varieties distributed were JL-4(20.00%), JL-3(5.00%) and JL-316 (5.00%). In case of black gram, PU-31 (44.19%) was found to be major variety distributed, while Shekhar (18.60%), P-1 (18.60%), Azad (13.95%) and PU-1(4.65%) were found to be the other others varieties distributed among the respondents.

21. Most prominent channel followed by the beneficiaries for disposal of chickpea produce under seed minikit of pulses programme was found to be village farmers (52.55%). They were also found to dispose off their 34.31 percent and 13.14 percent of chickpea produce obtained under seed minikit of pulses programme to hat market and APMC, respectively. In case of lentil, it was found that the maximum quantity of lentil was disposed off through village farmers (50%) followed by village traders (30%), hat market (10%) and APMC (10%). In case of black gram, the highest quantity found to be disposed off through APMC (37.21%) followed by village farmers (3.23%), hat market (30.23%) and village traders (2.33%). No remarkable difference was found in different size of respondents. Although, large size of respondents were found to sell 100 percent production of blackgram in APMC, these findings were found to similar for all size of respondents.

4. Policy Implication

1. Seed is considered to have the major input in cultivation of crops. Before distribution of seed minikits, result demonstrations are required to have laid down on the farmers' field to transfer the technology in totality and major inputs other than seed should be clubbed and distributed among farming communities with seed minikits to generate real impact of the technology.

2. The farmers should be exposed to crop cafeteria grown by the KVKs where different popular/improved varieties were found to have grown, so that farmers should be able to recognise different varieties of a particular crop with its peculiar characteristics and adopt varietal diversification for enhancing the efficiency of the resources being used on one hand and increasing the productivity on the other, which leads to doubling the income of the farmers.

3. As of now, there is no mechanism for collection of seed produced through seed minikits by government agencies and its distributions among non-beneficiaries farming community at affordable prices. As a result of it, farmers are bound/forced to sell it in the local/APMC markets as grain instead of seed in the absence of proper supply/ value chain for the marketing of the seed causing reduced income. This not only leads to wastage of precious input on the one hand and without its distribution, it slows down the pace of penetration (horizontal/vertical) of the improved technology among farming community on time and thereby increasing the time-lag for adoption of technology. Sometimes the technology becomes old and loses its identity before its proper maturity due to introduction of new technology and in the absence of proper mechanism.

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**Complete reference can been seen in the detailed report available at the website of respective AERC.

Commodity Reviews

Foodgrains

Procurement of Rice

The total procurement of rice during kharif marketing season 2020-21 up to 26.02.2021 is 44.48 million tonnes as against 38.14 million tonnes during the corresponding period of last year. The details are given in Table 1. A comparative analysis of procurement of rice for the period of marketing season 2020-21 (up to 26.02.2021) and the corresponding period of last year is given in figure 1. The percentage share of different states in procurement of rice has been given in figure 2.

TABLE 1: PROCUREMENT OF RICE

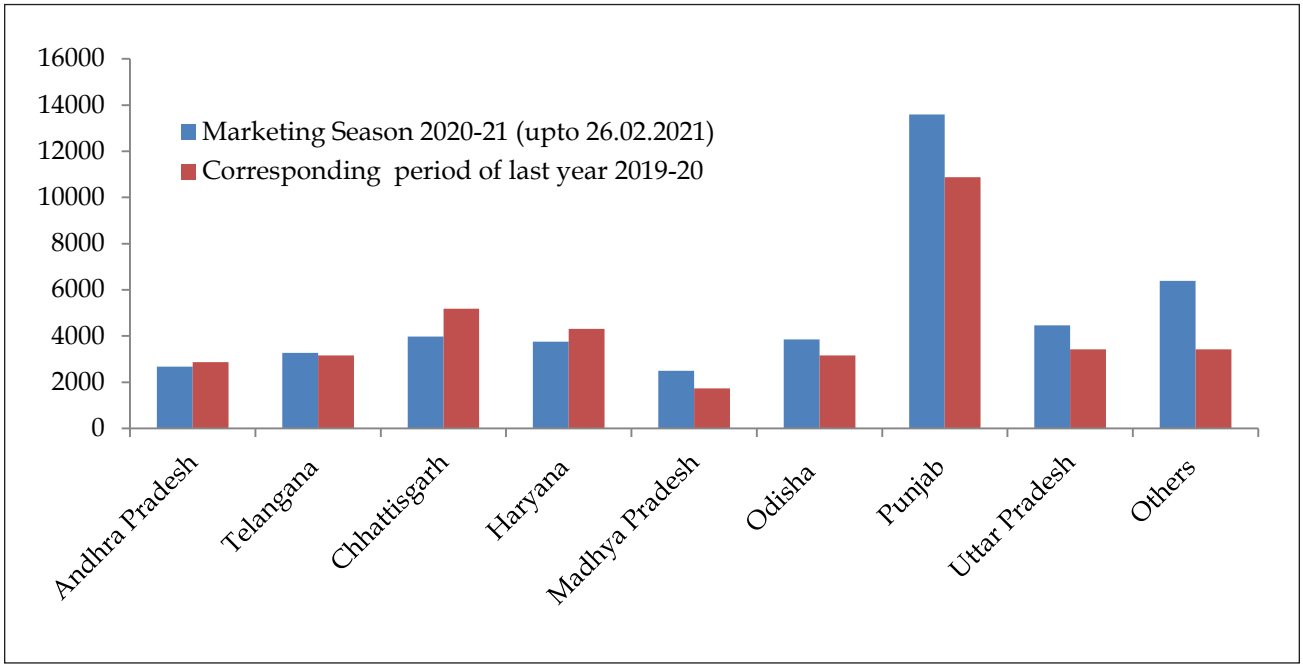
(In thousand tonnes)

State	Marketing Season 2020-21 (upto 26.02.2021)		Corresponding Period of last Year 2019-20	
	Procurement	Percentage to Total	Procurement	Percentage to Total
1	2	3	4	5
Andhra Pradesh	2683	6.0	2869	7.5
Telangana	3267	7.3	3155	8.3
Chhattisgarh	3976	8.9	5185	13.6
Haryana	3760	8.5	4307	11.3
Madhya Pradesh	2497	5.6	1740	4.6
Odisha	3854	8.7	3163	8.3
Punjab	13589	30.6	10876	28.5
Uttar Pradesh	4463	10.0	3422	9.0
Others	6387	14.4	3423	9.0
All India Total	44476	100.0	38140	100.0

Source: Department of Food & Public Distribution.

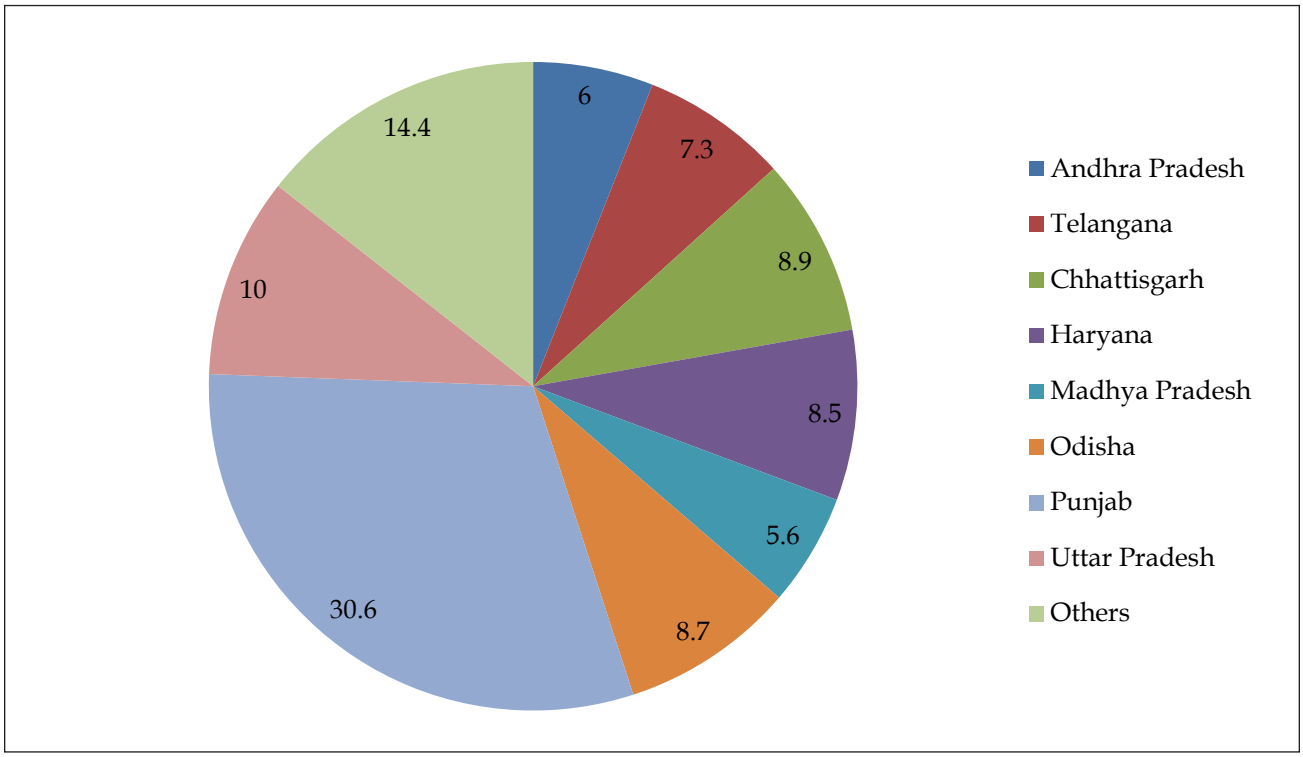
Figure 1: State-wise Procurement of Rice

(In thousand tonnes)



Source: Department of Food & Public Distribution.

Figure 2: Percentage Share of Different States in Procurement of Rice during Marketing Season 2020-21(up to 26.02.2021)



Source: Department of Food & Public Distribution.

Procurement of Wheat

The total procurement of wheat during rabi marketing season 2020-21 up to 29.09.2020 is 38.99 million tonnes as against 34.79 million tonnes during the corresponding period of last year. The details are given in Table 2. The figure 3 depicts the comparison of procurement of wheat during the marketing season 2020-21 (up to 29.09.2020) with the corresponding period of last year. The percentage share of different states in procurement of wheat has been given in figure 4.

TABLE 2: PROCUREMENT OF WHEAT

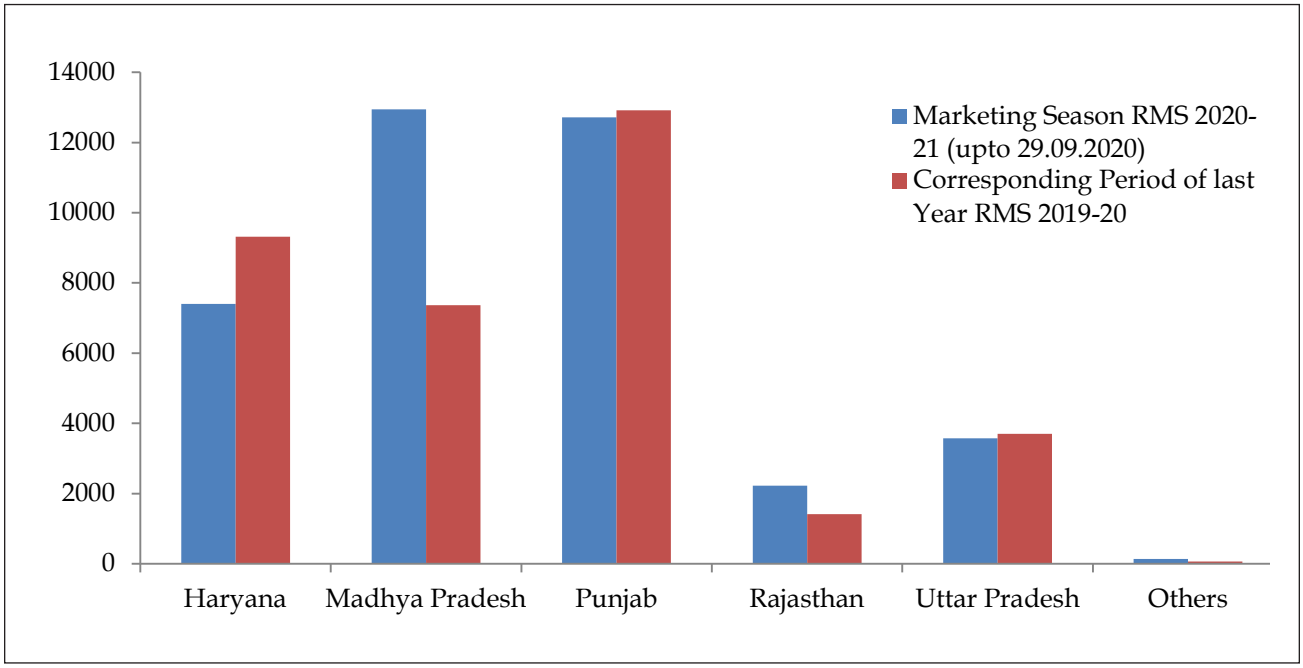
(In thousand tonnes)

State	Marketing Season RMS 2020-21 (upto 29.09.2020)		Corresponding Period of last Year RMS 2019-20	
	Procurement	Percentage to Total	Procurement	Percentage to Total
1	2	3	4	5
Haryana	7400	19.0	9321	26.8
Madhya Pradesh	12942	33.2	7370	21.2
Punjab	12714	32.6	12921	37.1
Rajasthan	2225	5.7	1411	4.1
Uttar Pradesh	3577	9.2	3704	10.6
Others	135	0.3	63	0.2
Total	38993	100.0	34790	100.0

Source: Department of Food & Public Distribution.

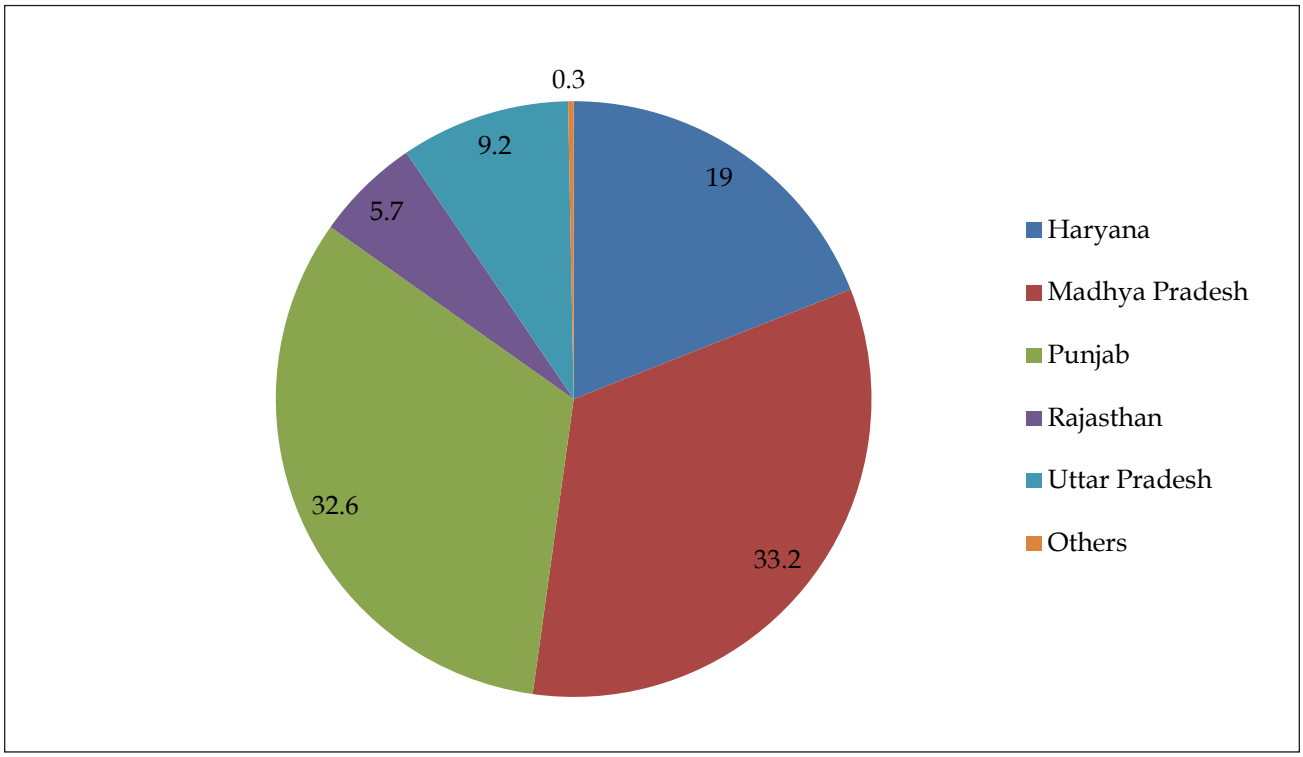
Figure 3: State-wise Procurement of Wheat

(In thousand tonnes)



Source: Department of Food & Public Distribution.

Figure 4: Percentage Share of Different States in Procurement of Wheat during Marketing Season 2020-21 (up to 29.09.2020)



Source: Department of Food & Public Distribution.

Commercial Crops

Oilseeds

The Wholesale Price Index (WPI) of nine major oilseeds as a group stood at 175.3 in February, 2021 showing an increase of 2.51 percent over the previous month and increased by 14.05 percent over the corresponding months of the previous year.

The WPI of all individual oilseeds showed a mixed trend. The WPI of groundnut seed (3.64 percent), rape and mustard seed (0.79 percent), copra (1.84 percent), gingelly seed (sesamum) (0.64 percent), safflower (1.32 percent), sunflower (13.33 percent) and soyabean (3.40 percent) increased over the previous month. However, the WPI of cotton seed (0.13 percent) and niger seed (1.11 percent) decreased over the previous month.

Manufacture of Vegetable and Animal Oils and Fats

The WPI of vegetable and animal oils and fats as a group stood at 163.7 in February, 2021 which shows an increase of 3.41 percent over the previous month. Moreover, it also increased by 26.60 percent over the corresponding months of the previous year. The WPI of mustard oil (3.70 percent), soybean oil (2.06 percent), sunflower oil (4.39 percent), groundnut oil (4.28 percent), copra oil (1.77 percent) and cotton seed oil (3.24 percent) increased over the previous month. However, the WPI of rapeseed oil (1.12 percent) decreased over the previous month.

Fruits & Vegetable

The WPI of fruits & vegetable as a group stood at 160.7 in February, 2021 showing an increase of 1.32 percent over previous month and an increase of 2.23 percent over the corresponding month of the previous year.

Potato

The WPI of potato stood at 148.3 in February, 2021 showing a decrease of 27.48 percent over the previous month. Moreover, it also decreased by 29.78 percent over the corresponding months of the previous year.

Onion

The WPI of onion stood at 362.6 in February, 2021 showing an increase of 14.75 percent over the previous month and an increase of 31.28 percent over the corresponding months of the previous year.

Condiments & Spices

The WPI of condiments & spices (group) stood at 151.5 in February, 2021 showing an increase of 0.07 percent over the previous month and an increase of 1.00 percent over the corresponding months of the previous year. The WPI of turmeric increased by 4.31 percent over the previous month whereas that of black pepper decreased by 0.57 percent and chillies (dry) decreased by 1.97 percent.

Raw Cotton

The WPI of raw cotton stood at 113.9 in February, 2021 showing an increase of 3.73 percent over the previous month and an increase of 5.95 percent over the corresponding months of the previous year.

Raw Jute

The WPI of raw jute stood at 263 in February, 2021 showing an increase of 3.62 percent over the previous month and an increase of 23.82 percent over the corresponding months of the previous year.

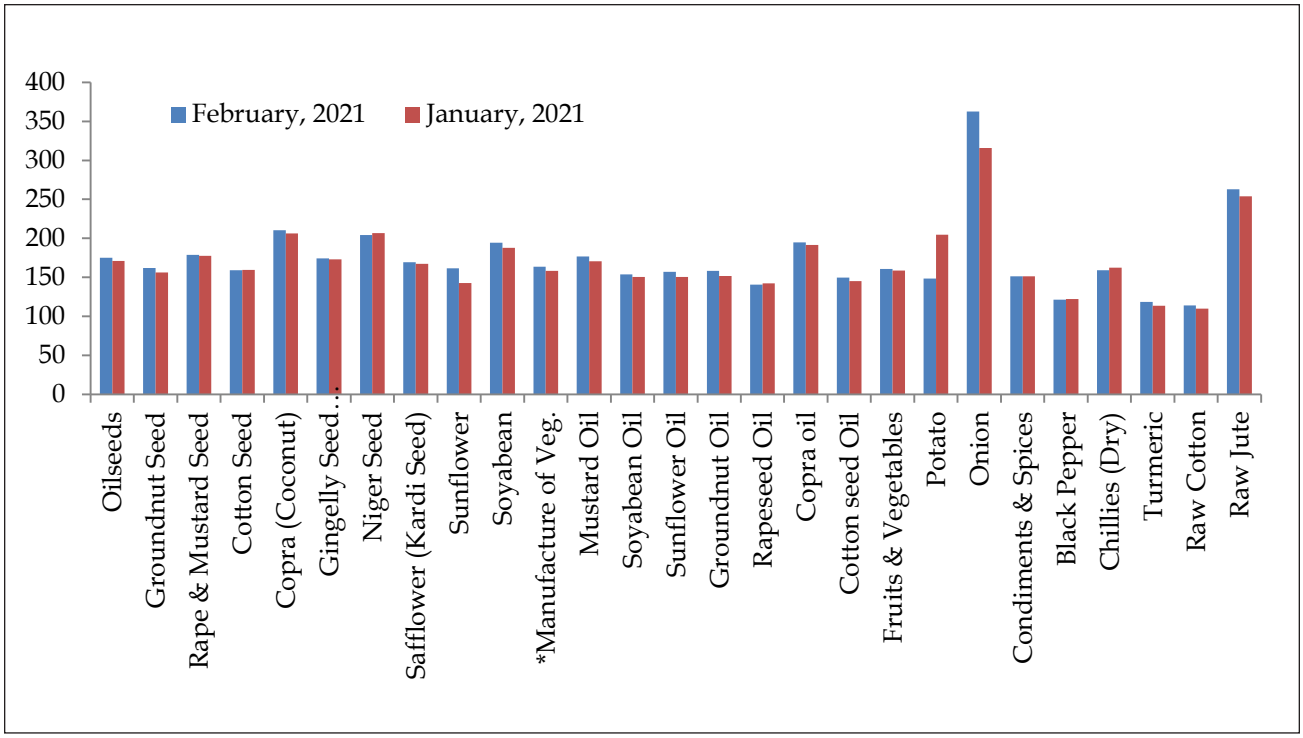
Wholesale Price Index of Commercial Crops is given in Table 3. A graphical comparison of WPI for the period of February, 2021 and January, 2021 is given in figure 5 and the comparison of WPI during the February, 2021 with the corresponding month of last year has been given in figure 6.

TABLE 3: WHOLESALE PRICE INDEX OF COMMERCIAL CROPS

(Base Year: 2011-12=100)

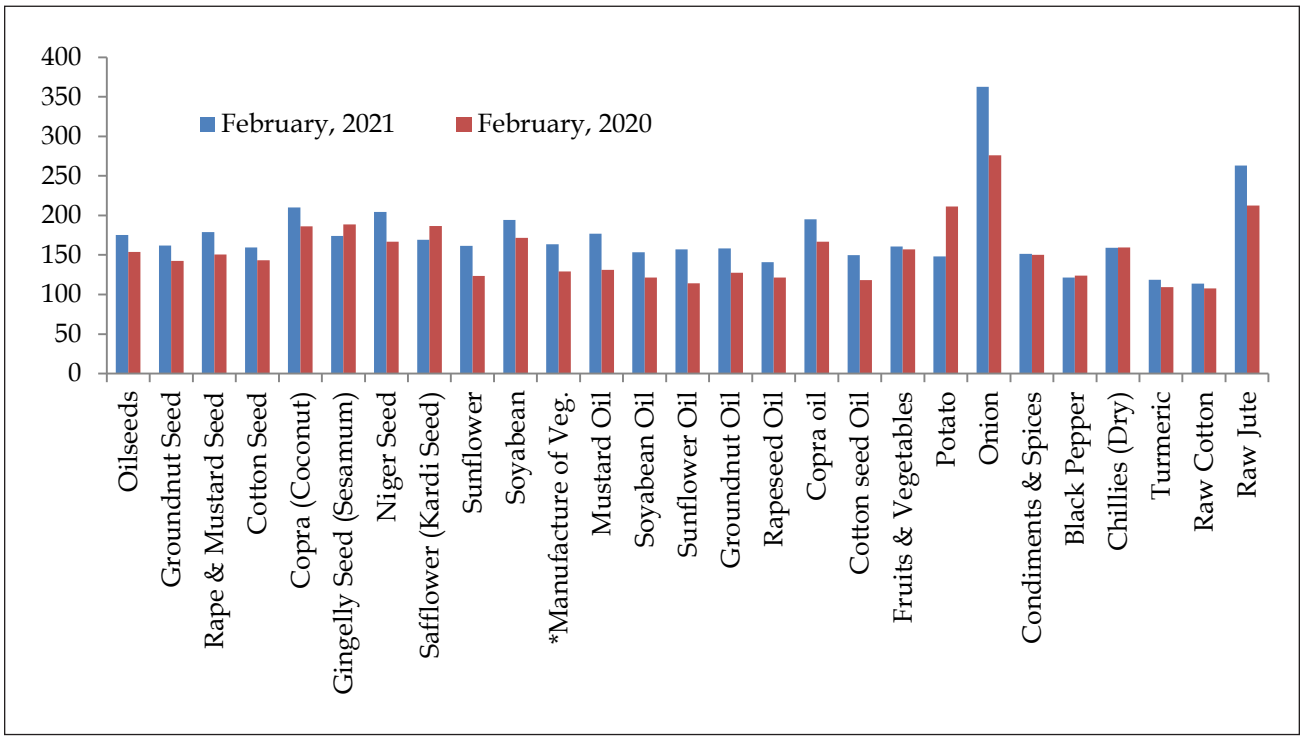
Commodity	Latest February, 2021	Month January, 2021	Year February, 2020	Percentage variation over the	
				Month	year
Oilseeds	175.3	171	153.7	2.51	14.05
Groundnut Seed	162.1	156.4	142.7	3.64	13.59
Rape & Mustard Seed	178.9	177.5	150.5	0.79	18.87
Cotton Seed	159.3	159.5	143.5	-0.13	11.01
Copra (Coconut)	210.2	206.4	186.3	1.84	12.83
Gingelly Seed (Sesamum)	174.1	173	188.7	0.64	-7.74
Niger Seed	204.4	206.7	166.9	-1.11	22.47
Safflower (Kardi Seed)	169.4	167.2	186.7	1.32	-9.27
Sunflower	161.5	142.5	123.6	13.33	30.66
Soyabean	194.4	188	171.6	3.4	13.29
Manufacture of Vegetable and Animal Oils and Fats	163.7	158.3	129.3	3.41	26.6
Mustard Oil	176.7	170.4	131.3	3.7	34.58
Soyabean Oil	153.6	150.5	121.3	2.06	26.63
Sunflower Oil	157	150.4	114.1	4.39	37.6
Groundnut Oil	158.3	151.8	127.7	4.28	23.96
Rapeseed Oil	140.8	142.4	121.3	-1.12	16.08
Copra oil	195	191.6	166.6	1.77	17.05
Cotton seed Oil	149.7	145	118.4	3.24	26.44
Fruits & Vegetables	160.7	158.6	157.2	1.32	2.23
Potato	148.3	204.5	211.2	-27.48	-29.78
Onion	362.6	316	276.2	14.75	31.28
Condiments & Spices	151.5	151.4	150	0.07	1
Black Pepper	121.5	122.2	123.8	-0.57	-1.86
Chillies (Dry)	159.2	162.4	159.4	-1.97	-0.13
Turmeric	118.6	113.7	109.3	4.31	8.51
Raw Cotton	113.9	109.8	107.5	3.73	5.95
Raw Jute	263	253.8	212.4	3.62	23.82

Figure 5: WPI of commercial crops during February, 2021 and January, 2021



*Manufacture of Vegetable, Animal Oils and Fats

Figure 6: WPI of commercial crops during February, 2021 and February, 2020



*Manufacture of Vegetable, Animal Oils and Fats

Statistical Tables

Wages

1. STATE-WISE AVERAGE DAILY WAGES OF FIELD LABOURERS

(Value in ₹)

State	Month & Year	Normal Working Hours	Field Labour								Other Agri. Labour		Herdsman		* Field Labour		Skilled Rural Occupation		
			1.Plogling		2.Sowing		3.Weeding		4. Reaping & Harvesting								Carpenter	Blacksmith	Cobbler
			M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	M	M
KARNATAKA	Mar, 20	8	NA	NA	NA	NA	NA	NA	NA	NA	362	334	383	325	364	268	404	363	389
HIMACHAL PRADESH	Dec, 20	8	436	-	319	319	315	315	319	319	315	315	315	315	NA	NA	494	488	494
GUJARAT	Apr, 20	8	278	259	276	239	220	217	229	232	230	219	199	188	NA	NA	432	373	321
MAHARASHTRA	Dec,20	8	NA	NA	NA	NA	NA	NA	NA	NA	408	242	350	200	288	192	437	367	238
ASSAM	June, 20	8	325	-	317	285	303	231	335	252	303	243	272	-	NA	NA	403	369	335
BIHAR	Dec, 20	8	325	-	311	283	308	267	313	279	312	291	433	228	NA	NA	484	478	-
KERALA	June, 20	8	1017		630	-	-	514	680	533	843	557			NA	NA	903	-	-
TELANGANA	June, 20	8	NA	NA	NA	NA	NA	NA	NA	NA	449	300	328	350	445	272	433	411	300
UTTARAKHAND	July, 20	8	473	-	379	353	357	358	347	323	357	328	300	300	NA	NA	586	625	-
WEST BENGAL	June, 20	8	346	-	289	262	277	254	300	271	307	277	275	264	NA	NA	-	-	-
HARYANA	July, 20	8	490	-	469	317	436	397	436	395	421	373	-	-	NA	NA	607	560	-
JHARKHAND	Aug, 20	8	NA	NA	NA	NA	NA	NA	NA	NA	226	186	185	135	227	212	376	342	267
ODISHA	Aug, 20	8	341	-	322	271	312	265	326	273	253	283	286	242	NA	NA	502	444	400
UTTAR PRADESH	Nov, 20	8	296	-	277	256	271	251	274	256	285	266	241	250	NA	NA	540	-	-
RAJASTHAN	Jan, 21	8	403	323	388	290	309	339	339	308	-	-	327	272	NA	NA	517	456	398
ANDHRA PRADESH	Jan, 21	8	NA	NA	NA	NA	NA	NA	NA	NA	486	339	327	272	469	295	464	360	300
CHHATTISGARH	Dec, 20	8	384	-	247	184	176	162	193	174	227	184	232	190	NA	NA	369	268	257
MADHYA PRADESH	Jan, 21	8	299	-	262	223	259	233	269	244	276	248	247	233	NA	NA	408	395	338
PUNJAB	Jan, 21	8	447	-	438	365	405	356	438	368	418	353	-	-	NA	NA	526	517	-
TAMIL NADU	Jan, 21	8	300	-	404	209	414	208	442	228	483	212	-	-	NA	NA	616	509	-
TRIPURA	Dec, 20	8	315	-	263	180	338	243	263	180	233	173	400	300	NA	NA	340	-	-

Source: **State Government**

Note: 1 Other agricultural labour include field waterping,carrying load, well diggers, cleaning silt from waterways and embankment, etc

2. *States of Andhra Pradesh, Jharkhand, Karnataka, Maharashtra and Telangana do not give operation–wise details as they furnish data for the group

NA: Not Applicable

Prices

2. WHOLESALE PRICES OF CERTAIN AGRICULTURAL COMMODITIES AND ANIMAL HUSBANDRY PRODUCTS AT SELECTED CENTRES IN INDIA

Commodity	Variety	Unit	State	Centre	Dec-20	Nov-20	Dec-19
Wheat	PBW 343	Quintal	Punjab	Amritsar	1770	1750	2200
Wheat	Dara	Quintal	Uttar Pradesh	Chandausi	1680	1730	2025
Wheat	Lokvan	Quintal	Madhya Pradesh	Bhopal	1865	1751	2145
Jowar	-	Quintal	Maharashtra	Mumbai	3200	3200	4000
Gram	No III	Quintal	Madhya Pradesh	Sehore	4300	4370	4102
Maize	Yellow	Quintal	Uttar Pradesh	Kanpur	1750	1650	1850
Gram Split	-	Quintal	Bihar	Patna	6250	6250	6050
Gram Split	-	Quintal	Maharashtra	Mumbai	6500	6300	5800
Arhar Split	-	Quintal	Bihar	Patna	9360	9440	8350
Arhar Split	-	Quintal	Maharashtra	Mumbai	9200	9000	8400
Arhar Split	-	Quintal	NCT of Delhi	Delhi	9400	8300	8200
Arhar Split	Sort II	Quintal	Tamil Nadu	Chennai	8400	9200	8500
Gur	-	Quintal	Maharashtra	Mumbai	4350	4500	4900
Gur	Sort II	Quintal	Tamil Nadu	Coimbatore	4500	4500	4500
Gur	Balti	Quintal	Uttar Pradesh	Hapur	2500	2650	2500
Mustard Seed	Black (S)	Quintal	Uttar Pradesh	Kanpur	5320	5300	4100
Mustard Seed	Black	Quintal	West Bengal	Raniganj	4800	NA	4300
Mustard Seed	-	Quintal	West Bengal	Kolkata	6000	6100	4900
Linseed	Bada Dana	Quintal	Uttar Pradesh	Kanpur	5160	4950	5150
Linseed	Small	Quintal	Uttar Pradesh	Varanasi	5300	5000	4780
Cotton Seed	Mixed	Quintal	Tamil Nadu	Virudhunagar	2200	2200	2300

2. WHOLESALE PRICES OF CERTAIN AGRICULTURAL COMMODITIES AND ANIMAL HUSBANDRY PRODUCTS AT SELECTED CENTRES IN INDIA-*Contd.*

Commodity	Variety	Unit	State	Centre	Dec-20	Nov-20	Dec-19
Cotton Seed	MCU 5	Quintal	Tamil Nadu	Coimbatore	3000	3000	3000
Castor Seed	-	Quintal	Telangana	Hyderabad	NT	NA	3900
Sesamum Seed	White	Quintal	Uttar Pradesh	Varanasi	9200	8600	9650
Copra	FAQ	Quintal	Kerala	Alleppey	12950	12750	10400
Groundnut	Pods	Quintal	Tamil Nadu	Coimbatore	5000	5100	4800
Groundnut	-	Quintal	Maharashtra	Mumbai	8200	8400	8000
Mustard Oil	-	15 Kg.	Uttar Pradesh	Kanpur	1700	1585	1365
Mustard Oil	Ordinary	15 Kg.	West Bengal	Kolkata	2025	2100	1552
Groundnut Oil	-	15 Kg.	Maharashtra	Mumbai	2150	2150	1750
Groundnut Oil	Ordinary	15 Kg.	Tamil Nadu	Chennai	2400	2300	2050
Linseed Oil	-	15 Kg.	Uttar Pradesh	Kanpur	1625	1575	1400
Castor Oil	-	15 Kg.	Telangana	Hyderabad	1890	1890	1290
Sesamum Oil	-	15 Kg.	NCT of Delhi	Delhi	2000	2000	1830
Sesamum Oil	Ordinary	15 Kg.	Tamil Nadu	Chennai	3450	3400	2800
Coconut Oil	-	15 Kg.	Kerala	Cochin	2888	2700	2220
Mustard Cake	-	Quintal	Uttar Pradesh	Kanpur	2250	2250	2020
Groundnut Cake	-	Quintal	Telangana	Hyderabad	NT	NA	4000
Cotton/Kapas	NH 44	Quintal	Andhra Pradesh	Nandyal	5100	5300	5000
Cotton/Kapas	LRA	Quintal	Tamil Nadu	Virudhunagar	4200	4200	3600
Jute Raw	TD 5	Quintal	West Bengal	Kolkata	6000	5750	4750
Jute Raw	W 5	Quintal	West Bengal	Kolkata	6300	6050	4800

2. WHOLESALE PRICES OF CERTAIN AGRICULTURAL COMMODITIES AND ANIMAL HUSBANDRY PRODUCTS AT SELECTED CENTRES IN INDIA-*Contd.*

Commodity	Variety	Unit	State	Centre	Dec-20	Nov-20	Dec-19
Oranges	-	100 No	NCT of Delhi	Delhi	NA	NA	708
Oranges	Big	100 No	Tamil Nadu	Chennai	280	400	500
Banana	-	100 No.	NCT of Delhi	Delhi	375	375	458
Banana	Medium	100 No.	Tamil Nadu	Kodaikkanal	600	600	700
Cashewnuts	Raw	Quintal	Maharashtra	Mumbai	85000	85000	94000
Almonds	-	Quintal	Maharashtra	Mumbai	55000	62000	73000
Walnuts	-	Quintal	Maharashtra	Mumbai	70000	65000	70000
Kishmish	-	Quintal	Maharashtra	Mumbai	22000	20000	20500
Peas Green	-	Quintal	Maharashtra	Mumbai	9000	8000	6100
Tomato	Ripe	Quintal	Uttar Pradesh	Kanpur	1350	2650	1280
Ladyfinger	-	Quintal	Tamil Nadu	Chennai	3000	2000	2500
Cauliflower	-	100 No.	Tamil Nadu	Chennai	2500	3000	2500
Potato	Red	Quintal	Bihar	Patna	1890	3650	1800
Potato	Desi	Quintal	West Bengal	Kolkata	1800	3660	2050
Potato	Sort I	Quintal	Tamil Nadu	Mettuppalayam	3470	3943	3557
Onion	Pole	Quintal	Maharashtra	Nashik	1950	2900	5500
Turmeric	Nadan	Quintal	Kerala	Cochin	11000	11000	11000
Turmeric	Salam	Quintal	Tamil Nadu	Chennai	10000	9800	11000
Chillies	-	Quintal	Bihar	Patna	14800	15200	11480
Black Pepper	Nadan	Quintal	Kerala	Kozhikode	31000	30000	30000
Ginger	Dry	Quintal	Kerala	Cochin	26500	27000	26500

2. WHOLESALE PRICES OF CERTAIN AGRICULTURAL COMMODITIES AND ANIMAL HUSBANDRY PRODUCTS AT SELECTED CENTRES IN INDIA-*Concld.*

Commodity	Variety	Unit	State	Centre	Dec-20	Nov-20	Dec-19
Cardamom	Major	Quintal	NCT of Delhi	Delhi	100000	100000	135000
Cardamom	Small	Quintal	West Bengal	Kolkata	220000	200000	350000
Milk	Buffalo	100 Liters	West Bengal	Kolkata	6000	6000	6200
Ghee Deshi	Deshi No 1	Quintal	NCT of Delhi	Delhi	60030	60030	70000
Ghee Deshi	-	Quintal	Maharashtra	Mumbai	41300	40000	42000
Ghee Deshi	Desi	Quintal	Uttar Pradesh	Kanpur	40750	40500	39600
Fish	Rohu	Quintal	NCT of Delhi	Delhi	10000	9000	17500
Fish	Pomphrets	Quintal	Tamil Nadu	Chennai	34000	NA	50000
Eggs	Madras	1000 No.	West Bengal	Kolkata	5620	5000	5300
Tea	-	Quintal	Bihar	Patna	25600	24800	21720
Tea	Atti Kunna	Quintal	Tamil Nadu	Coimbatore	NT	NT	NT
Coffee	Plant-A	Quintal	Tamil Nadu	Coimbatore	39500	39500	40000
Coffee	Rubusta	Quintal	Tamil Nadu	Coimbatore	28000	28000	29000
Tobacco	Kampila	Quintal	Uttar Pradesh	Farukhabad	8500	9850	7800
Tobacco	Raisa	Quintal	Uttar Pradesh	Farukhabad	4150	4400	4800
Tobacco	Bidi Tobacco	Quintal	West Bengal	Kolkata	13200	13200	13200
Rubber	-	Quintal	Kerala	Kottayam	11700	12300	11300
Arecanut	Pheton	Quintal	Tamil Nadu	Chennai	69000	66000	59000

Crop Production

Sowing and Harvesting Operations Normally in Progress during April, 2021

State	Sowing	Harvesting
(1)	(2)	(3)
Andhra Pradesh	Autumn Rice, Sugarcane.	Summer rice, Jowar (R), Ragi (R), Small Millets (R), Other Rabi Pulses, Sugarcane, Cotton.
Assam	Autumn Rice, Maize, Small Millets (R), Tur (R), Sugarcane, Cotton, Mesta.	Wheat, Tur (R), Sown during previous year.
Bihar	Jowar (K), Bajra, Jute.	Wheat, Barley, Gram, Tur (K), Castorseed, Linseed.
Gujarat	Sugarcane.	Castorseed, Onion.
Himachal Pradesh	Maize, Summer Potato (Hills), Sugarcane, Ginger Chillies (Dry), Sesamum, Cotton, Turmeric.	Wheat, Barley, Gram, Other Rabi Pulses, Rapeseed and Mustard, Linseed.
Jammu & Kashmir	Autumn Rice, Jowar (R), Maize, Ragi, Small Millets (K), Summer Potato, chillies (Dry), Tobacco, Sannhemp, Onion.	Wheat, Barley, Small Millets (R), Gram, Sesamum, Linseed, Onion.
Karnataka (Plains)	Maize, Urad (K), Mung (K), Summer Potato (Hills), Tobacco, Castorseed, Seasamu, Sweet Potato (Hills), Sannhemp, Onion (2nd Crop).	Summer Rice, Gram, Urad (R), Summer Potato, Cotton, Turmeric, Onion (1st Crop), Tapioca.
Kerala	Autumn Rice, Ragi, Ginger, Turmeric, Tapioca.	Summer Rice, Tur (R), Other Rabi Pulses, Sesamum.
Madhya Pradesh	Sugarcane, Onion.	Wheat, Barley, Tur (K), Winter Potato (Plains), Castorseed, Linseed, Onion.
Maharashtra	Sugarcane.	Maize (R), Wheat Gram, Other Rabi Pulses, Cotton, Onion.
Manipur	Maize, Turmeric.	Gram.
Orissa	Sugarcane, Chillies (Dry).	Wheat, Barley, Urad (R), Mung (R), Chillies (Dry).
Punjab and Haryana	Tur (K), Potato, Sugarcane, Ginger, Chillies (Dry), Sweet Potato, Turmeric.	Wheat, Barley, Small Millets (R), Gram, Tur (K), Other Rabi Pulses, Potato, Castorseed, Rapeseed and Mustard, Linseed, Onion.
Rajasthan	Sugarcane.	Wheat, Barley, Urad (R), Mung (R), Other Rabi Pulses, Tobacco, Castorseed, Rapeseed and Mustard, Linseed.

SOWING AND HARVESTING OPERATIONS NORMALLY IN PROGRESS DURING APRIL, 2021-*Contd.*

State	Sowing	Harvesting
(1)	(2)	(3)
Tamil Nadu	Summer Rice, Jowar (R), Summer Potato, Sugarcane, Pepper (Black), Chillies (Dry), Groundnut (Late), Sesamum Cotton, Onion Sannhemp.	Winter Rice, Jowar (R), Tur (R), Mung (K), Winter Potato (Hills), Sugarcane, Chillies, (Dry), Tobacco, Groundnut (Early), Cotton, Onion.
Tripura	Autumn Rice, Maize, Sugarcane, Ginger, Chillies, (Dry), Sesamum, Cotton, Jute.	Summer Rice, Chillies (Dry), Tobacco.
Uttar Pradesh	Sugarcane, Chillies (Dry), Cutton, Jute, Mesta.	Summer Rice, Wheat, Barley, Gram, Tur (K), Tobacco, Castorseed, Rapeseed and Mustard, Linseed, Onion, Sugarcane.
West Bengal	Autumn Rice, Maize, Tur (K), Sugarcane, Ginger Chillies (Dry), Sesamum, Jute, Mesta.	Summer Rice, Wheat, Barley, Gram, Tur (K), Urad (R), Other Rabi Pulses, Winter Potato (Plains), Chillies (Dry).
Delhi	Jowar (K), Sugarcane, Tobacco, Onion.	Wheat, Gram, Tur (K), Rapeseed and Mustard, Linseed.

(K) – Kharif (R) – Rabi

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N.A. — Not Available.
N.Q. — Not Quoted.
N.T. — No Transactions.
N.S.—No Supply/No Stock.
R. — Revised.
M.C. — Market Closed.
N.R.—Not Reported.
Neg. — Negligible.
Kg. — Kilogram.
Q. — Quintal.
(P) — Provisional.
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