

AGRI STIMULUS

Increase in Kharif sowing – Will it be boon or bane for farmers?



This Kharif season has escaped the impact of the COVID19 pandemic, largely due to enough rains and uninterrupted supply of seeds and fertilizers, which were exempted from the lockdown. Agriculture being backbone of Indian economy government took decisive proactive steps to ensure the agriculture value chain is not affected due to COVID19. The measures taken include relaxed movement of agri-input across borders, concessions on loans, finance package to protect farmers, income support under PM-KISAN scheme, regularization of agri markets, etc. Seed and other agri-input companies also anticipated the disruption in supply chain and have put extra efforts to ensure seed

reaches the farmer on time by ensuring last mile delivery. These moves ensured farmers receive seeds and agri-inputs well in time before the start of the Kharif season and the results are already showing on the farms. The government too has set a target to raise the annual food grain production by 2% at 298.3 million tons, comprising 149.92 million tons in Kharif season and 148.4 million tons during Rabi, for the 2020-21 crop year (July-June).

Kharif sowing for this year has a massive increase of nearly 21% as per the corresponding period last year. The area sown is about **70 million ha** as on 17th July 2020 against 57 million ha last year at the same time. Major increase is in oilseeds and pulses area which is suggestive for crop diversification and a move towards high value crops.

Crop	Area sown in FY 21 (million ha)	Change over FY 20
Rice	16.8	18.59%
Pulses	8.2	32.35%
Coarse cereals	11.6	12.23%
Oilseeds	15.5	40.75%
Sugarcane	5.1	0.92%
Cotton	11.3	17.28%
Jute & Mesta	0.7	0.70%

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News

This increase in sowing is majorly due to favorable and timely monsoons this year which was not the case last year. The monsoon has positively impacted majority of the farms but for some farmers it has left negative impact as they are unable to sow the farms because of continuous rains. The other reason for increased sowing is the steps taken by the Ministry of Agriculture after the forecast of good south-west monsoon. Agri-input companies with the support of the ministry arranged timely distribution of fertilizers in all the states and Union Territories to speed-up the Kharif sowing. This has also resulted in increased sales of fertilizers which has jumped by 83% in April-June. Fertilizer sales were recorded at 4 million tons in May 2020 which is twice as compared to May 2019.

The exodus of labour to their villages due to the nation-wide lockdown for COVID-19, resulted timely availability of farm labour which has accelerated the sowing and increased the area under sowing. The other reason could also be increased Rabi procurement due to bumper harvest of oilseeds, pulses and wheat that benefitted farmers through increased farm incomes before start of Kharif! The crops harvest is also expected to be higher as the water in major reservoirs across the country are around 50% more than last year in addition to increased sown area.

Although things look bright for agriculture at this moment, the recent outbreak of locusts in some states has become a cause of concern as the swarm of locusts have the capability to completely wipe off the Kharif production in these states. As per United Nations' Food and Agriculture Organization (FAO), more locusts' swarms are expected to reach India in August all the way from Africa. Government has taken some measures with deploying control teams and use of drones and sprayers to ward off this

danger. There are chances of harvest getting affected by other unforeseen vagaries of weather. The crop harvest operations could also be affected by shortage of labour during the harvest period if labour decides to return to cities!

Excess production if not properly managed, may result in loss in different ways – like farmers unable to sell, lack of storage, MSP not remunerative, glut in the market and will lead to the fall in market prices. To ensure that the increase in crop production results in increase in the income for the farmers and kick-start the rural economy, government has come up with some policy level measures. The central government has approved the increase in Minimum Support Price (MSP) for 14 Kharif crops. This dramatic rise in sowing area needs to be met either with an equal increase in government procurement of the commodities or through efficient farmgate infrastructure. These can be addressed by proper implementation of recently announced government initiatives on creation of new Farmer



Producer Organization, integration of mandis with e-NAM, amendment in Essential Commodities Act, agricultural marketing reforms, crop insurance, agri and food processing infrastructure etc. Some export promoting incentives for agriculture-based industries like yarn, textiles, dairy, sugar and soybean processing can spur exports as domestic demand is likely to be subdued. Plentiful harvests are key to rural incomes that can push up rural demand for goods and services in the larger economy; this keeps the manufacturing going and can result in economic revival!!

Farmgate Infrastructure Development a prelude to Enhance Economic Profile of farmers

Agriculture constitutes an important part of Indian economy and is the primary source of income in rural areas, both directly through crop production and indirectly through on- and off-farm employment in agriculture-allied industries. The importance of improving rural infrastructure cannot be overemphasized and has long been at the center of development policies across the world. The investments for development of rural infrastructure has positive effects

on agricultural production and [marketing](#).

Small and marginal farmers in India have two basic decisions to make when it comes to marketing of their crop produce – (a) sale at farmgate at low prices or (b) travelling to a market center (mandis/APMCs etc.) where higher prices are offered but transaction and transportation costs reduce their profit.



It has been generally agreed that the way forward for small and marginal farmers in agriculture-focused economies like India is better market access and participation of key stakeholders in farmgate marketing. It is also important that the orientation of policies towards improved access to market as a means of raising the economic profile of farmers need to be well defined and implemented across the country. On the other hand, the infrastructure at the farmgate need to be strengthened to include facilities for collection, storage, cold-chain, post-harvest management/processing, value addition etc., for farming to be profitable.

With this background, the creation of ₹ 1 lakh crore **Agri-Infrastructure Fund (AIF)** for farm-gate infrastructure development is expected to reap benefits to small and medium farmers. This fund aims to provide financing facility of ₹ 1 lakh crore for funding Agriculture Infrastructure Projects at farm-gate and aggregation points that will include primary agricultural co-operative societies, farmer producer organizations, agricultural entrepreneurs and start-ups. Though, the agricultural value chain in India is in different stages of evolution across the states, the lack of adequate cold chain and post-harvest management in the vicinity of farm-gate is a critical gap in the value chains. The focus of government till now has been on short-term crop loans and the investment in long-term agriculture infrastructure which has not been enough, hence creating AIF is a welcome shift in the policy framework.

This also gives an opportunity to private investors and venture capital firms to invest in farmgate infrastructure

development either directly or through Agtech firms that will play critical roles in bridging the gaps in agri-food value chains. Though the investment in Agtech space is growing, the funding at farmgate stage has been non-existent due to lack of proper policy framework and perceived poor return on investment. The creation of AIF provides an opportunity to VCs/private investors to play an important role in strengthening the supply chain by investing in farmgate infrastructure development especially in cold-chain, post-harvest processing, value addition etc.

The strengthening of farmgate infrastructure will provide impetus to the agri-food value chains. AIF is aimed at providing small and marginal farmers with better marketing facilities closer to farmgate and improve farmer-market linkages. The fund will also help in development and upgrade of approximately 22,000 rural haats into Gramin Agricultural Markets (GrAMs) where physical infrastructure will be strengthened. Further, agricultural marketing infrastructure will also be developed and upgraded in the existing GrAMs and 585 Agriculture Produce Market Committee (APMC) Markets. The GrAMs will also be linked to electronic National Agricultural Market (e-NAM) making it easier for farmers to cater to the nationwide market for their crop produce at better prices.

The fund is also very critical in the current situation that has been forced upon humanity due to COVID-19 pandemic. This will help create shorter distances for farmers to enable them in marketing



their crop produce at better prices and also reduce wastage that happen due to transportation improving their economic profile. On the consumer front, there will be better supply and it is expected that there will be a continuous supply chain due to improved infrastructure over the long-term that will bring down the prices of agricultural commodities.

This will benefit private agriculture entrepreneurs and startups aimed at procuring crop produce/value-added products from farmers and reach national and global markets but lack the infrastructure. Further, this will lead to waste reduction and generate rural employment. A strong infrastructure at farmgate will facilitate timely harvesting, storage, processing, packaging, and sales. The states need to simplify the processes for implementation of the AIF to meet the needs of the country in general and small and marginal farmers in particular. This will not only help farmers reap the benefit but also will strengthen the agri-food value chains in the country over a period of time reducing losses.

Farming as a Service- A promising model to explore!

Indian agricultural sector is characterized by presence of large number of small & marginal farmers and plays an important role in India's economy. While India has become surplus in most agri-commodities, farmers have been unable to get better prices due to lack of investment in cold storage, warehouses, processing and export. The agriculture sector is also riddled with issues like low grade farming equipment and irrigation facilities. Towards the development of farmers, the Government of India has recently announced three ordinances (i) amendment to Essential Commodities Act (ii) barrier free trade (iii) Farmers (Empowerment & Protection) Agreement on Price Assurance & Farm Services Ordinance, 2020' that can possibly transform the agriculture sector and unlock opportunities for investments.

Promoting new technologies to strengthen India's agricultural research and productivity is one of the most important needs for agricultural growth. Farm mechanization is one aspect to give focus on to increase production and productivity. The overall farm mechanization in India has been lower at 40-45 % compared to other countries such as USA (95 %), Brazil (75 %) and China (57%). Income from farm can be multiplied if mechanization is in place and it helps in improving the farmer's economic condition. However, farm mechanization in agriculture requires large scale availability of machines. Factors such as high initial investment, lack of awareness and low understanding pertaining to new technology are standing against the smart farming technologies to penetrate well in the country.

Moreover, small and marginal farmers are sceptical about returns from investments and are reluctant to show interests in these new techniques. This scenario has provided plethora of opportunities for services to set its roots in the country. Farming as a Service (FaaS) is one such idea that is gaining a lot of traction in the industry. FaaS model is the beginning of change where agriculture can be viewed positively and can be a profitable business for all. With the advent of FaaS and enabling government policies, India has witnessed an increase in the number of start-ups and an influx of funds to the sector. Venture Capitalists and investors have become more confident in the viability of these business models and the returns. FaaS can support to address the problems like inefficiencies across the agricultural supply chain, such as low productivity, lack of farm mechanization and access to markets. It converts fixed upfront costs into variable ongoing costs, thus making the approaches affordable for a majority of small and marginal farmers.

Solutions offered by this model are a mix of organized and efficient re-inventions of existing practices, combined with tech-driven innovations. The government is also actively pushing FaaS-based services through customer hiring centres (CHCs). The launch of CHC farm Machinery and Krishi Kisan App for Geo tagging by Union Minister for Agriculture and farmers welfare in September 2019, is an example of government initiatives which helps to reduce capital expenditure on farmers. However, such CHC centers would require huge investments to purchase machines, trainings and other related activities to provide ample services to the farmers. Currently, FaaS services can be made available on a subscription or pay-



per-use basis under three broad categories. 1) Farm management solutions 2) Production assistance 3) Access to markets. Coordination between all the direct stakeholders (start-ups, investors, governments and corporations) and indirect stakeholders (local entrepreneurs, equipment suppliers, agronomists and IT vendors) is critical for the success of FaaS. Addressing the key structural challenges, such as the lack of infrastructure, technology and financing, is crucial to realize the concept's full potential. FaaS based services can also increase adoption of digital technology since these services will be available through mobile, apps and web. This can help in the creation of large scale database of farmers, collection of data from farmers' fields over a period of time and enables the stakeholders to make data driven and precise decisions to boost productivity and efficiency. Private sector also plays an important role in redefining the agri sector through innovative solutions such as Big Data and FaaS and make it more efficient through improved access to technology, capital and entrepreneurial skills. To summarize, FaaS hopes to drive much-needed process and product innovations in Indian agriculture. Increased investments in custom hiring centers for farm equipment, technology driven solutions, improving infrastructure such as cold storage areas and promoting digital transactions will make the FaaS model more successful in India.

NEWS

Collaboration of BASF with PowerPollen promises improved hybrid wheat

PowerPollen has the potential to collect, preserve and apply wheat pollen at commercial scale, which will significantly increase pollination efficiency of hybrid wheat seed. The pollen preservation technology of PowerPollen will provide leverage to BASF for expanding the potential of the use of their hybrid wheat and improve productivity and profitability of farmers.

[Read more](#)

Analyzing factors impeding incorporation of biofuels in fuel sector in India using AI

A framework was designed by scientists at IIT, Hyderabad to study the multi layered supply chain network to capture the different parameters in the supply chain and their effect on design and operational decisions and the uncertainties in forecasting. The model takes into consideration both revenue generation and carbon credits in terms of saving greenhouse gas emissions.

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Reniform nematode has the potential to reduce half the yields in cotton fields

Scientists at Auburn University confirm through a study carried out for two years that Reniform nematode can reduce cotton yields by 50%. Nematicide Velum was found to be effective against this nematode and the use of it increased the yield by 55% in favorable weather conditions.

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Can ICRISAT discovery help to revive Pigeon pea breeding and improve affordability?

Recent findings on the key role of temperature and a plant growth hormone in regulating male sterility and fertility of crop may revive research to develop hybrid varieties and improve the yield of pigeon pea. When male sterility is temperature regulated, hybrid seeds can be produced with just two lines. An improvement in yield can reduce the price of pigeon pea and make it affordable to consumers.

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Corteva Agriscience is leveraging drone technology to help farmers manage their crops

Powered by DroneDeploy's Live Map technology, Corteva's agricultural drone fleet is enabling the company's agronomy and strategic account management teams to transform the way farmers manage their crops by providing real-time aerial views of their operation. For the current growing season, Corteva Agriscience currently has over 1,000+ pilots across the organization

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Weed killing robots to disrupt Herbicide industry

AI-powered weed hunters could soon reduce the need for herbicides. Killer robots are designed to move through the fields at a walking pace, identify each weed seedling based on prior mapping data, thus creating a chemical free alternative for use in the field. The robots see and follow the depth of the rows, know how much space should be between each row, and follow a pre-programmed precision map.

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Tropic Biosciences, BASF partner to use GEiGS technology for crop development

Tropic Biosciences partners with BASF to utilize Tropic's GEiGS™ (Gene Editing induced Gene Silencing) technology to develop traits to address growers' most critical challenges in protecting crops. As per the agreement, Tropic Biosciences will generate GEiGS candidates that have the possibility to enter the BASF discovery pipeline for development of disease and pest control traits.

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Fertilizer sales soar 83% higher than previous year despite lockdown hurdles

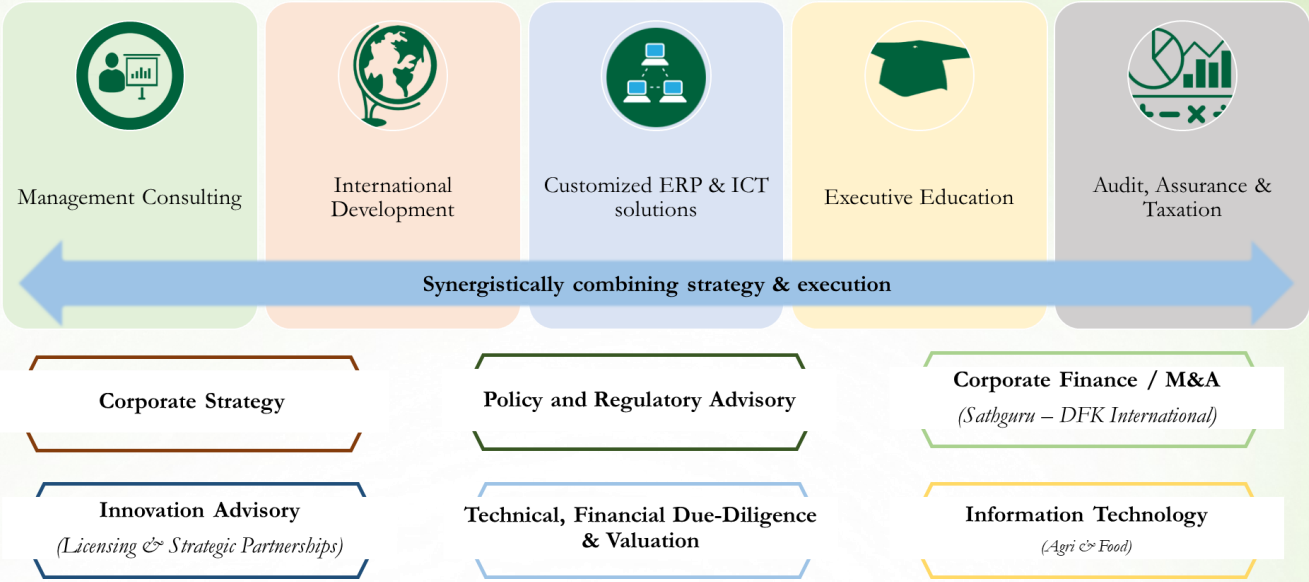
111.61 lakh tons of fertilizer sales to farmers were recorded at Point of Sale (POS) from April to June compared to 61.05 lakh tons recorded during the same period last year. This 82.8% year on year increase was met despite the lockdown. Sales of urea zoomed up to 67%, whereas that of complex fertilizers more than doubled. DAP sales increased 2-fold to 22.46 lakh tons.

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