

FARM PRODUCTIVITY THROUGH INFORMATION FLOW

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As a New Year gift, the Modi government approved a satellite imaging based insurance scheme to empower farmers. The scheme 'Pradhan Mantri Fasal Bima Yojana' will have a uniform premium of only 2 per cent to be paid by farmers for all Kharif (summer) crops and 1.5 per cent for all Rabi (winter) crops. For the first time, emphasis has been accorded to satellite technology to facilitate accurate assessment and speedy settlement of claims.

India's farm dependent economy has been trying hard to increase productivity for a long time in an attempt to ensure food security to its huge population. An elevated status of a developed nation would be viable, only if farming activities become sustainable, to feed the country's growing population.

Agriculture, the primary sector that contributes 14-15 per cent to the nation's economy, holds the key to up gradation of the economy from a developing to a developed one. The main focus of the farm dependent economy has been to ensure food security to its population of 1.25 billion.

The developed status has to be based on a productive farming sector wherein farming activities become sustainable, and farmers are empowered with hosts of information channels to ensure them easy access to markets. The basic aim is to link the primary sector with markets so that farmers receive high returns for their produce by extensive use of technologies, integrating the rural economy with markets.

Application of information technologies via mobiles, sms alerts, portals can empower farmers to pick up a crop that promises higher returns in a particular climatic condition, soil texture suitable to a specific crop, efficient water use technique. Technology aided information flow empowers a farmer as to when to expect rainfall and also where to store produce after harvest.

Besides, a higher farm production can be ensured by developing a transparent price mechanism network through integration of nationwide scattered markets through various seamless communication channels.

India had witnessed the First Green Revolution in the sixties. One of the easing the hurdles of achieving the maiden revolution in the farm sector, was construction of roads, that connected remote villages with markets, leveraging movement of farm produce. First achieved in Punjab, this model was replicated later in the entire northwest India, making the nation self-reliant in grain output.

But after over four decades, the country now requires a second round of revolution in agriculture. In the government proposed scheme for a Second Green Revolution, the Northeast region has a key role to play in raising overall productivity levels in the farm sector. The region is hitherto lying untapped, because of its geographical bottleneck and difficult terrain. This can be erased by simultaneous thrust on promoting road and information connectivity of this part with the rest of the country.

Farm productivity has more or less stagnated over the years. To state that agricultural productivity, at present, is disproportionate to the population explosion, is not a hyperbole.

Apart from stagnant production and small land holding size, the country's farm output continues to be dependent on the erratic monsoon season. In a monsoon dependent economy, the farm sector is inherently crippled due to vagaries of nature.

The four-month long monsoon season rules the supply side dynamics of food inflation in the world's fastest growing large economy. If monsoon fails to spread to the grain bowl of Northwest region and rice areas of Eastern, Southern regions, then untold miseries thrust upon majority of the rural population who are dependent on agriculture, directly or indirectly.

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The monsoon rains are crucial for ensuring purchasing power in the hands of the country's majority of the population where demand for consumer goods from lipstick to refrigerator depends on a success or failure of the annual summer rain season.

Resilience has been developed after the First Green Revolution against excessive dependence on the seasonal rains. But a failure of the monsoon causes a drought, and the parched land in turn brings tears in the eyes of Indian farmers.

The Second Green Revolution is required to ensure perpetual growth in farm production by erasing supply side uncertainties. This can only be ensured through a deeper technological intervention in the farm sector, making modern information tools and services part and parcel of a farmer's daily life.

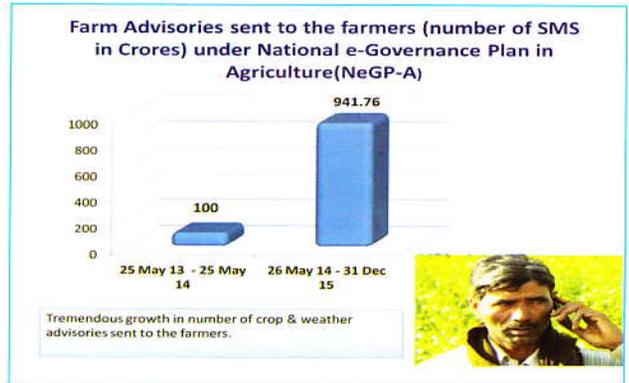
As arable land is limited and not the entire cultivated area can come under purview of an assured irrigation network, only technological intervention is left to ensure higher productivity levels. Higher farm produce is a must to ensure food security for all in the world's second biggest populous nation that runs a huge public distribution network to feed a sizeable population that fights hunger and malnutrition on a daily basis.

Farmers will have to be empowered through information communication technologies so that each and every aspect of farming - right from prices to optimal input mix should be made available at their door steps for initiating an informed decision. An integrated approach to bring farming related information, benefitting farmers, has already been visible with the government's keen focus on Soil Health Card scheme, monsoon advisories and developing a satellite based farm insurance model.

Prime Minister Narendra Modi is committed to promote "per drop, more crop" approach to farming to make better use of scarce water and extensive use of satellite crop monitoring system as part of overall strategy to raise productivity levels in the farm sector through technological interventions.

Experts put stress on use of remote analysis to assess soil moisture and crop development to cut input costs and raise yields in a country where half of workers make a living from agriculture.

Under the satellite intervention in the agriculture sector, farmers can access advisories on mobile phones, enabling them to choose high yielding seed varieties, apply fertilisers in a proportionate manner or decide the precise time of irrigation 'shots'.



Usually, a common farmer doesn't know how much to water his crops, the right fertiliser mix - or even the right crop to sow in accordance with soil texture. An analysis, based on satellite feeds, helps assess vegetation cover down to field level, and also track how a crop is maturing and whether it has been harmed by pests or needs more water. Satellite images can help in projection of a likely output of a crop field, erasing speculative component usually associated with supply side dynamics.

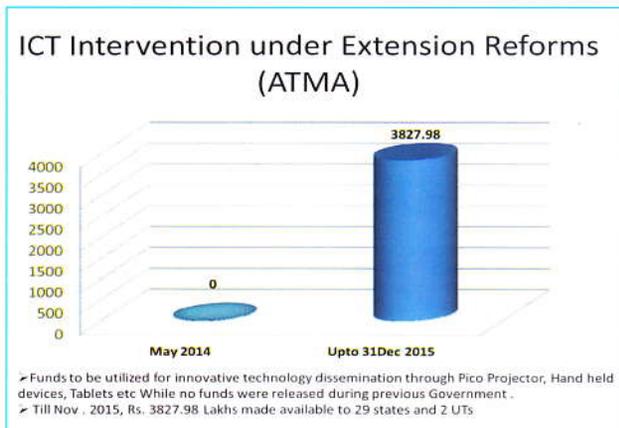
Technology Interventions

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Mobile Apps Launched – Crop Insurance & AgriMarket under NeGP-A

First time Present Government launched three mobile apps to help farmers.

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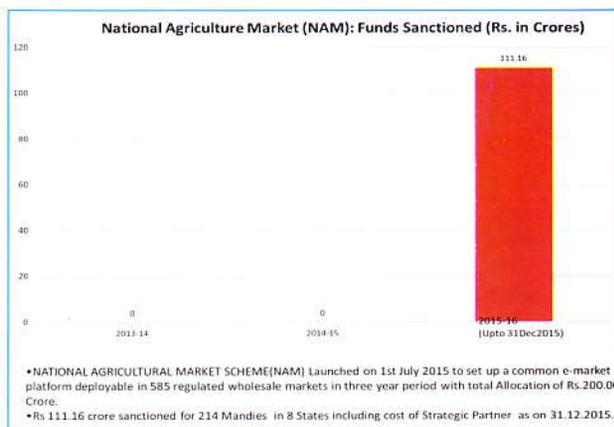
Use of technology has been encouraged in the approved farm insurance scheme, smart phones will be used to capture and upload data of crop to reduce delays in claim payment to farmers.

Indian farmers are also receiving customised weather based advisories on mobiles. Farm ministry runs dedicated weather information based services at various stages of farming. These services, including Kisan Portal, empower country's 11.34 million farmers covering 633 districts of 23 states.

Farmers' awareness programmes are run on regular basis through multi-media platforms, most popular being state-run All India Radio's dedicated programmes on farming in local languages.

Rural Development Ministry is also collaborating with the Ministry of Agriculture to distribute advisories and rain gauges for rainfall monitoring on a pilot basis involving around 25 village bodies (Panchayats).

The government's commitment to bring stability in price mechanism has been visible with its attempt to electronically integrate nearly 250 wholesale markets in the country by September 2016. An electronic integration will ensure free movement of farm produce from one market area



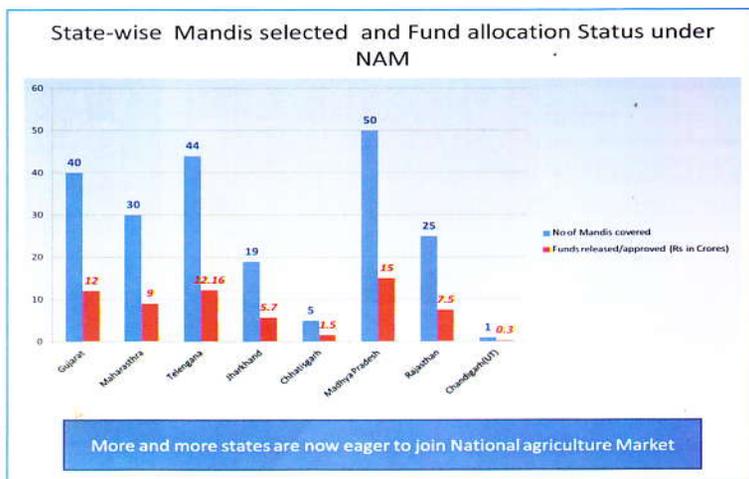
to another, minimising supply side uncertainties associated with price mechanism.

The proposed electronically integrated markets will offer a common market place by providing a platform for real-time prices at a national level for all stakeholders involved in the agricultural supply chain.

It will also offer a trading platform that will enable transaction between buyers and sellers from their existing locations. This will expand the existing market as well as facilitate transactions in places where markets do not physically exist.

Such an initiative would provide farm producers wider access to markets, save them from levies charged by multiple markets and ensure agricultural commodities to consumers at reasonable prices.

A national e-platform for market integration would cover 585 wholesale markets by March 2018, Agriculture Minister Radha Mohan Singh said recently at a meeting of the Parliamentary



Consultative Committee attached to his ministry.

The central government has urged states to introduce the e-market platform within their territories, so that farmers can sell harvest in any of the connected markets. The Department of Agriculture will provide free software and help in customisation of the software to suit the requirements of the states.

The Centre has set aside 1.75 billion rupees for providing software needed for the market integration project with each market receiving three million rupees. Markets from Gujarat, Maharashtra, Telangana, Jharkhand, and Chhattisgarh have already received the approval for the financial assistance in the first phase.

For promoting digital connectivity, the government is running two dedicated Portals to serve as a *One Stop Shop* for all the farmers to access information on agricultural activities. The portals provide information about package of practices, crop and seed varieties, common pests, dealer network for seeds, fertilisers and pesticides, machinery and tools, agro-met advisories, credit and insurance.

The Portals can easily be accessed from any part of the country free of cost by the farmers by

NAM : Almost 20 States/UTs have expressed interest in joining NAM.

State /UTs	Number of Mandies	Grant approved / Released (Rs in crore)
1. Gujarat	40	Rs. 12 crore released
2. Maharashtra	30	Rs. 9 crore approved
3. Telangana	44	Rs. 12.165 crore approved
4. Jharkhand	19	Rs. 5.7 crore approved
5. Chhattisgarh	05	Rs. 1.50 crore approved
6. M P	50	Rs. 15 crore approved
7. Rajasthan	25	Rs. 7.50 crore approved
8. Chandigarh (UT)	01	Rs. 0.30 crore approved

visiting the Agriculture Ministry's site at URL: www.farmer.gov.in and www.mkisan.gov.in.

Activities in the Portals are also highlighted through short discussion/interview on "DD Kisan Channel", a dedicated television channel for the Indian agriculture sector.

Two mobile apps were unveiled recently as part of the government's sustained focus to promote use of information technologies for benefit of farmers. Mobile app 'Crop Insurance' helps farmers find out details about insurance cover available in their area. This application helps to calculate the insurance premium for notified crops, coverage amount and loan amount in case of a loaned farmer. AgriMarket Mobile, the second app, can be used by farmers to get market prices of crops in wholesale markets within 50 km radius of the device.

Timeline for implementation of NAM

Timeline for Implementation of the Project:	Time Line		
Development and Hosting of Electronic trading Portal and Launch in Pilot Mandies	1-Apr-16		
Roll Out of Software in 200 Mandies	1-April-2016 to 30 Sept 2016		
Roll Out of Software in next 200 Mandies		1-oct-2016 to 31-March-2017	
Roll out of Software in remaining 185 Mandies			1-April-2016 to 31-March 2018

SOURCE: Ministry of Agriculture, GoI.

Through initiated technological interventions, farmers have been empowered to take informed decisions on various choices on the basis of real-time prices so as to trace out in which market they should sell their produce. All these technology based efforts are aimed to provide cushion to farmers against any chance of distress sale in absence of transparent market information.

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