5 years ago, on 13th January 2016, the Government of India took a historic step towards strengthening risk coverage of crops for farmers of India and approved the flagship crop insurance scheme - the Pradhan Mantri Fasal Bima Yojana (PMFBY). The scheme was conceived as a milestone initiative to provide a comprehensive risk solution at the lowest uniform premium across the country for farmers. The Government of India is committed towards protecting the interests of the farmers. Premium cost over and above the farmer share is equally subsidized by States and GoI. However, GoI shares 90% of the premium subsidy for North Eastern States to promote the uptake in the region. The average sum insured per hectare has increased from ₹15,100 during the pre-PMFBY Schemes to ₹40,700 under PMFBY.
As an end to end risk mitigation mechanism for farmers, 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. Individual farm level losses arising out of localized calamities and post-harvest losses are also covered due to perils such as inundation, cloudburst and natural fire.

Some notable examples of these covers include prevented sowing claims over Rs 500 crore in Andhra Pradesh and Karnataka during the Kharif 2019 dry spell, localized calamity claims of over Rs 100 crore in Haryana during Kharif 2018 hailstorm, mid-season adversity claims of nearly Rs 30 crore in Rajasthan during Rabi 2019-20 locust attack, and claims to the tune of Rs 5000 crore in Maharashtra during the Kharif 2019 unseasonal rainfall.

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. The scheme makes 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. The Scheme covers over 5.5 crore farmer applications year on year. Till date, claims worth Rs 90,000 crores have already been paid out under the Scheme. Aadhar seeding has helped in speedy claim settlement directly into the farmer accounts. Even during COVID lock down period nearly 70 lakh farmers benefitted and claims worth Rs. 8741.30 crores were transferred to the beneficiaries.

**Initiatives of Government of India to increase Production and Productivity of food crops NFSM**

National Food Security Mission (NFSM) was launched in 2007-08 to increase the production of rice, wheat and pulses through area expansion and productivity enhancement; restoring soil fertility and productivity; creating employment opportunities; and enhancing farm level economy. Coarse cereals were included from 2014-15 under NFSM. The Mission was continued during 12th Five Year Plan with target of additional production of 25 million tonnes of food grains comprising of 10 million tonnes of rice, 8 million tonnes of wheat, 4 million tonnes of pulses and 3 million tonnes of coarse cereals by the end of XII Plan. Beyond the 12th Plan, the mission was continued with new additional targets of 13 million tonnes of food grains comprising 5 million tonnes of rice, 3 million tonnes of wheat, 3 million tonnes of pulses and 2 million tonnes of nutri-cum-coarse cereals from 2017-18 to 2019-20.

Assistance is being provided to the farmers for organizing cluster demonstrations on improved package of practices, demonstrations on cropping system. To spread the newer improved crop production technologies around 80.00 ha area has been covered under technology demonstrations of food grains crops such as rice, wheat, pulses & coarse cum nutri-cereals from 2014-15 to 2019-20. Under the Mission, Seed distribution of HYVs, farm machineries / resources conservation machineries / tools, efficient water application tools, plant protection, nutrient management, cropping system based trainings to the farmers etc. are provided. From the year, 2020-21, primary processing units/small storage bins/ flexibility interventions have been added as per local requirements with the aim of increasing the income of the farmers. Focused attention for improving the seed replacement rate and varietal replacement is given in the Mission. Mini kits of the latest varieties are distributed free of charge to farmer's doorstep through the central seed agencies. To increase the seed replacement rate (SRR) of improved varieties

<table>
<thead>
<tr>
<th>S.No</th>
<th>Season</th>
<th>Crops</th>
<th>Maximum Insurance charges payable by farmer (% of Sum Insured)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Kharif</td>
<td>Food &amp; Oilseeds crops (all cereals, millets, &amp; oilseeds, pulses)</td>
<td>2.0% of SI or Actuarial rate, whichever is less</td>
</tr>
<tr>
<td>2</td>
<td>Rabi</td>
<td>Food &amp; Oilseeds crops (all cereals, millets, &amp; oilseeds, pulses)</td>
<td>1.5% of SI or Actuarial rate, whichever is less</td>
</tr>
<tr>
<td>3</td>
<td>Kharif &amp; Rabi</td>
<td>Annual Commercial / Annual Horticultural crops</td>
<td>5% of SI or Actuarial rate, whichever is less</td>
</tr>
</tbody>
</table>
of food grains, about 74 lakh quintals of certified seed of high yielding varieties/ hybrids of rice, wheat, pulses & coarse cereals were distributed under NFSM from 2014-15 to 2019-20. To ensure the good quality seed of pulses & nutri-cereals at the farmer's doorstep about 16 lakh quintals of certified seed of pulses & nutri-cereals were produced from 2014-15 to 2019-20.

The Mission has been able to achieve around 110 lakh ha area to be treated with Micronutrients, Biofertilizers, soil ameliorants/ (Gypsum/Lime/others) from 2014-15 to 2019-2020. Around 120 lakh ha area under Integrated Pest Management (IPM) were achieved during from 2014-15 to 2019-20. To strengthen mechanization at farmer's field about 15 lakh improved farm implements were distributed under NFSM from 2014-15 to 2019-20. To support to achieve objective of “harkhetkopani” & “Per Drop More Crop”, 274600 pump sets, 126967 sprinklers and around 764 lakh metres of water carrying pipes were distributed amongst the farmers under NFSM from 2014-15 to 2019-20. To educate to farmers about the newer improved crop production and protection technologies at real time, 60677 cropping system based trainings for capacity building of farmers were conducted from 2014-15 to 2019-20 and this benefitted around 18 lakh of farmers.

During 2014-15 to 2019-20, a sum of Rs.8760.81 crores has been released under the scheme to the States and other implementing institutions as Central share. After implementation of the programme in the country and concerted efforts made by the state governments as well as Government of India. This has resulted in increase of total foodgrains production from 252.02 million tonnes in 2014-15 to 296.65 million tonnes during 2019-20, which is a 17.71% increase. The productivity of foodgrains which was 2028 kg/ha in 2014-15, has increased to 2325 kg/ha during 2019-20 (14.64% increase). Especially noteworthy is the production of pulses which has increased from 17.15 million tonnes in 2014-15 to 23.15 million tonnes in 2019-20 which is about 35% increase.

Sub-Mission on Seeds & Planting Materials

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 Panchayat 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 numbers of 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 no. of 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 and 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 didn't 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 and 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 Rs.10 lakh) and 16 Plant Genome Saviour Farmers Awards (a Memento and cash of Rs.1.5 lakh), besides, 37 Plant Genome Saviour Farmers Recognition (a Memento and cash of Rs.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.

Acknowledged the information used/taken from the public domain