



ANNUAL REPORT 2022-23



Department of Agriculture & Farmers Welfare
Ministry of Agriculture & Farmers Welfare
Government of India



सत्यमेव जयते

ANNUAL REPORT

2022-23

Department of Agriculture & Farmers Welfare
Ministry of Agriculture & Farmers Welfare
Government of India
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Chapter-1

OVERVIEW

Overview

1.1 Agriculture plays a vital role in India's economy. 54.6 of the total workforce is engaged in agriculture and allied sector activities (Census 2011) and accounts for 18.6 % of India's GVA at current prices during 2021-22. Given the importance of the agriculture sector, Government of India has taken several steps for its development in a sustainable manner.

1.2 Land Use Statistics

As per the Land Use Statistics 2018-19, the total geographical area of the country is 328.7 million hectares, of which 139.3 million hectares is the reported net sown area and 197.3 million hectares is the gross cropped area with a cropping intensity of 141.6%. The net area sown works out to be 42.4% of the total geographical area. The net irrigated area is 71.6 million hectares. The details of important parameters of Land Use Statistics for the year 2018-19 are given in the table below.

Table-1

Details of important parameters of Land Use Statistics for the year 2018-19		
		(thousand hectares)
A) Classification of land		
	Reporting area for land utilization statistics (1 to 9)	307787
1	Forests	72011
2	Area put to non-agricultural uses	27344
3	Barren & unculturable land	17168
4	Permanent pastures & other grazing lands	10376
5	Culturable Wasteland	12219
6	Land under Misc. tree Crops	3154
7	Fallow Land Other than Current Fallows	11633
8	Current Fallow	14531
9	Net Area Sown	139351
	Agricultural Land (5+6+7+8+9)	180888
	Cultivated Land (8+9)	153882
	Cropping Intensity (% of Total cropped Area over Net Area Sown)	141.6
B) Irrigated Area		
1	Government Canals	16264
2	Private Canals	165
3	Total Canals (1+2)	16429
4	Tanks	1668
5	Tubewells	34708
6	Other wells	11042
7	Other Sources	7707
	Net Irrigated Area (3+4+5+6+7)	71554
	Gross Irrigated Area	102667
	% of Gross Irrigated Area over Gross Cropped Area	52.03
	% of Net Irrigated Area over Net Area Sown	51.35

C) Area under crops		
	Total Foodgrains	126952
	Total Cereals & Millets	99323
	Rice	45416
	Wheat	31588
	Total Pulses	27629
	Total Condiments and Spices	3973
	Total Fruits & Vegetables	11303
	Total Food Crops	148078
	Total Oilseeds	27453
	Sugarcane	5540
	Cotton	9287
	Total non food crops	49242
	Total Cropped Area	197320

Source: Directorate of Economics & Statistics, DA&FW

1.3 Gross Value Added (GVA) of Agriculture & Allied Sector

As per the Provisional Estimates of National Income, 2021-22 released by National Statistical Office (NSO), Ministry of Statistics & Programme Implementation,

the agriculture and allied sectors contributed approximately 18.6 % of India's GVA at current prices during 2021-22. GVA of agriculture and allied sectors and its share in total GVA of the country at current prices during the last 6 years is as follows:

Table-2
Gross Value Added (GVA) of Agriculture & Allied Sector (Rs. In Crore)

Items	Years					
	2016-17	2017-18	2018-19#	2019-20@	2020-21*	2021-22**
GVA of Agriculture and Allied Sectors	2518662	2829826	3029925	3358364	3609494	3980067
Per cent to total GVA	18.0	18.3	17.6	18.3	20.0	18.6

Source: National Statistical Office, Ministry of Statistics and Programme Implementation, Govt. of India

* First revised estimate as on 31st Jan, 2022, @second revised estimate, # Third revised estimate

** As per Provisional Estimates of National Income, 2021-22 released on 31st, May 2022

Note: 1. Gross Domestic Product (GDP) includes GVA taxes on Products including import duties and less subsidies of Products.

1.4 GROWTH IN GVA OF AGRICULTURE AND ALLIED SECTORS

Growth (over the previous year) in the total GVA of

the Economy and that in the GVA of agriculture and allied sectors at 2011-12 basic prices is given below:

Table-3 (In percent)

Year	Total Economy	Agriculture & Allied Sector	Crops	Livestock	Forestry & Logging	Fishing
2016-17	8.0	6.8	5.3	10.0	5.5	10.4
2017-18\$	6.2	6.6	5.4	7.9	5.4	15.2
2018-19 #	5.8	2.1	-2.4	8.7	7.6	8.5
2019-20@	3.8	5.5	5.5	7.5	0.3	4.4

2020-21*	-4.8	3.3	1.9	6.1	0.7	6.0
2021-22**	8.1	3.0	Will be released in January, 2023			

Source: National Statistical Office, Ministry of Statistics and Programme Implementation, Govt. of India

*Third Revised Estimates, @Second Revised Estimate, * First Revised Estimates as on 31 Jan, 2022

**As per the Provisional Estimates of Annual National Income, 2021-22 released on 31st May 2022.

Note: 1. Gross Domestic Product (GDP) includes GVA taxes on Products including import duties and less subsidies on Products.

1.5 Rainfall 2022

Monsoon Rainfall (June – September)

The **cumulative rainfall** in the country during the monsoon season i.e. 01st June to 30th September, 2022 has been **higher by 6%** 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 22% in South Peninsula, by 19% in Central India and by 1% in North-West India but lower than LPA by 18% in East & North East India. Out of 36 meteorological sub- divisions, 12 met subdivisions in the country had received large excess/excess rainfall,

188(27%) districts received deficient rainfall and 7(1%) districts received large deficient rainfall.

Post-Monsoon (October - December)

During the post-monsoon season (1st October to 31st December, 2022) country received rainfall which was **19% higher** than the LPA. Out of 36 meteorological subdivisions, 16 received large excess/excess rainfall, 14 received normal rainfall and 6 met subdivisions received deficient/large deficient rainfall.

1.6 Production Scenario 2021-22

As per Fourth Advance Estimates for 2021-22, the production of Foodgrains in the country is estimated at 315.72 million tonnes which is higher by 4.98 million tonnes than the production of foodgrain during 2020-21. The production during 2021-22 is higher by 25 million tonnes than the previous five years' (2016-17 to 2020-21) average production of foodgrains. Total production of Rice during 2021-22 is estimated at record 130.29 million tonnes. It is higher by 13.85 million tonnes than the last five years' average production of 116.44 million tonnes. Production of Wheat during 2021-22 is estimated at 106.84 million tonnes. It is higher by 2.96 million tonnes than the last five years' average wheat production of 103.88 million tonnes. production of Nutri / Coarse Cereals estimated at 50.90 million tonnes, which is higher by 4.32 million tonnes than the last five years' average production of 46.57 million tonnes. Total Pulses production during 2021-22 is estimated at record 27.69 million tonnes which is higher by 3.87 million tonnes than the last five years' average production of 23.82 million tonnes.

Total Oilseeds production in the country during 2021-22 is estimated at record 37.70 million tonnes which is higher by 1.75 million tonnes than the production of 35.95 million tonnes during 2020-21.



18 met subdivisions received normal rainfall and 6 met subdivisions received deficient rainfall. Out of 703 districts for which rainfall data available, 53(7%) districts received large excess rainfall, 175(25%) districts received excess rainfall, 280(40%) districts received normal rainfall,

Further, the production of oilseeds during 2021-22 is higher by 5.01 million tonnes than the average oilseeds production.

Total production of Sugarcane in the country during 2021-22 is estimated at record 431.81 million tonnes which is higher by 58.35 million tonnes than the average sugarcane production of 373.46 million

tonnes. Production of Cotton and Jute & Mesta is estimated at 31.20 million bales (each of 170 kg) and 10.32 million bales (each of 180 kg), respectively.

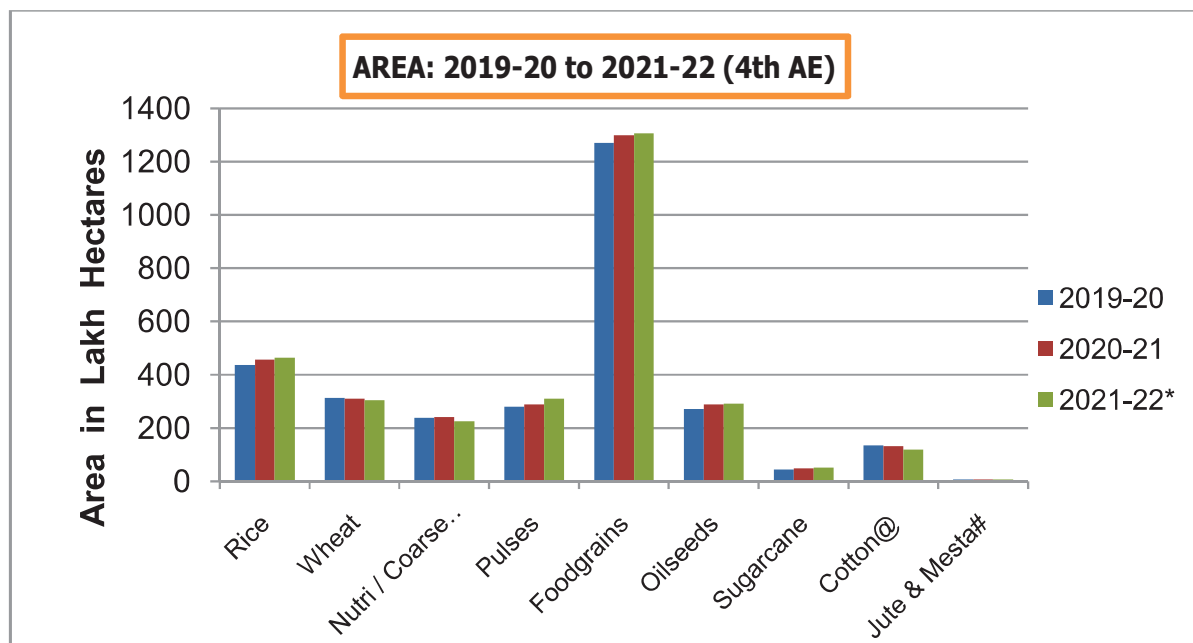
The data on area, production and yield of major crops from the year 2019-20 to 2021-22 (as per 4th AE) is given in the table below:

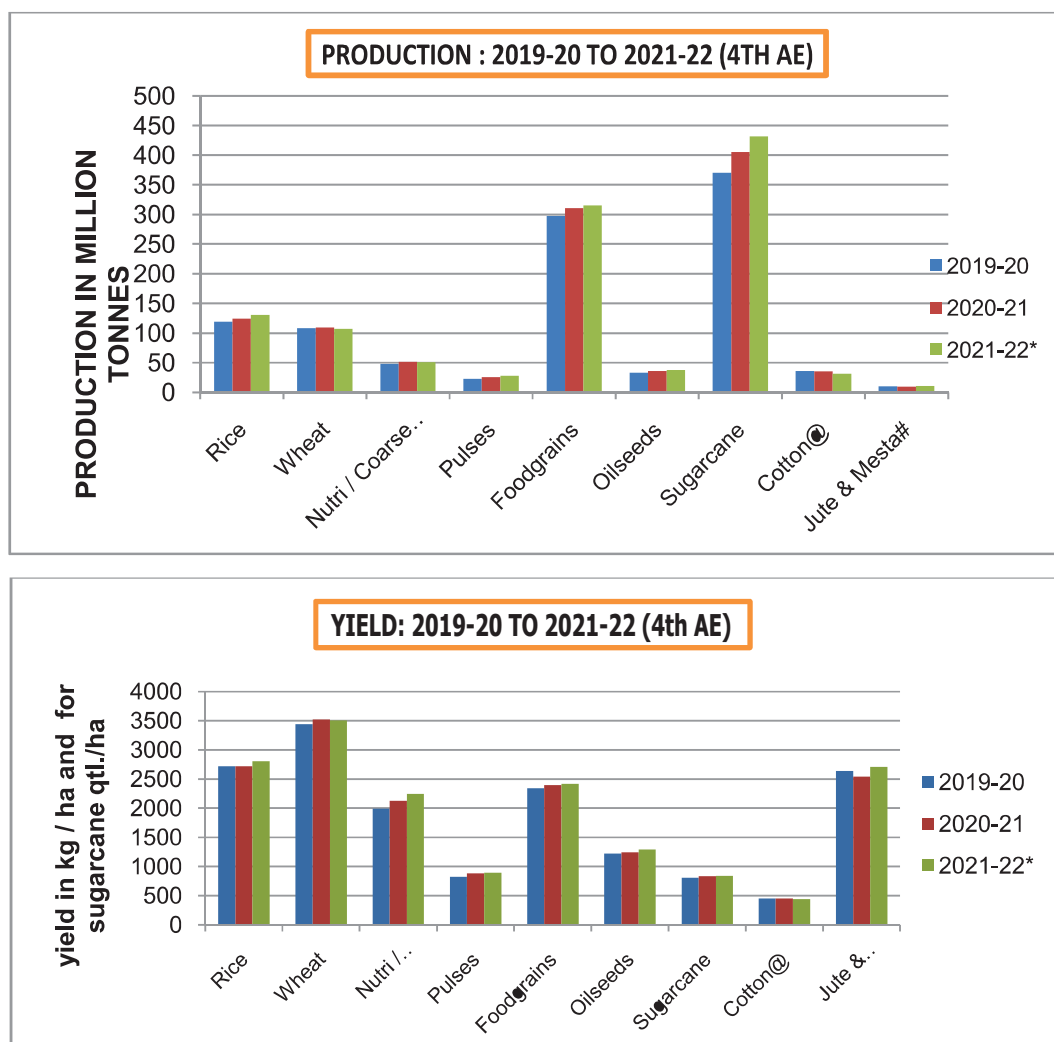
Table 4:
Area, production and yield of major Crops

Crops	Area (Lakh hectare)			Production (Million Tonnes)			Yield (kg/hectare)		
	2019-20	2020-21	2021-22*	2019-20	2020-21	2021-22*	2019-20	2020-21	2021-22*
Rice	436.62	457.69	463.79	118.87	124.37	130.29	2722	2717	2809
Wheat	313.57	311.25	304.69	107.86	109.59	106.84	3440	3521	3507
Nutri / Coarse cereals	239.88	241.18	226.52	47.75	51.32	50.90	1991	2128	2247
Pulses	279.87	287.83	310.30	23.03	25.46	27.69	823	885	892
Foodgrains	1269.95	1297.95	1305.3	297.50	310.74	315.72	2343	2394	2419
Oilseeds	271.39	288.33	291.67	33.22	35.95	37.70	1224	1247	1292
Sugarcane	46.03	48.51	51.48	370.50	405.40	431.81	80497	83566	83887
Cotton@	134.77	132.86	119.10	36.07	35.25	31.20	455	451	445
Jute & Mesta#	6.73	6.62	6.86	9.88	9.35	10.32	2641	2542	2709

* 4th advance estimates @ Production in million bales of 170 kg each

Production in million bales of 180 Kg. each.





1.7 Production Scenario during Kharif 2022-23 (as per First Advance Estimates)

As per First Advance Estimates for 2022-23 (Kharif Only), total foodgrain production in the country is estimated at 149.92 million tonnes which is higher by 6.98 million tonnes than the average foodgrain production of previous five years' (2016-17 to 2020-21).

Total production of Kharif rice during 2022-23 is estimated at 104.99 million tonnes. It is higher by 4.40 million tonnes than the previous five years' (2016-17 to 2020-21) average Kharif rice production of 100.59 million tonnes.

Production of Maize in the country during 2022-23 is estimated at record 23.10 million tonnes which is higher by 3.21 million tonnes than the average Maize production of 19.89 million tonnes.

Production of Kharif nutri / coarse cereals is estimated at 36.56 million tonnes which is higher by 2.92 million tonnes than the average production of 33.64 million tonnes. Total Kharif pulses production during 2022-23 is estimated at 8.37 million tonnes.

Total Kharif oilseeds production in the country during 2022-23 is estimated at 23.57 million tonnes which is higher by 1.74 million tonnes than the average oilseeds production.

Total production of sugarcane in the country during 2022-23 is estimated at record 465.05 million tonnes. The production of sugarcane during 2022-23 is higher by 91.59 million tonnes than the average sugarcane production of 373.46 million tonnes.

Production of cotton is estimated at 34.19 million bales (of 170 kg each) and production of Jute & Mesta is estimated at 10.09 million bales (of 180 kg each).

The estimated production of various crops (Kharif only) as per the First Advance Estimates for 2022-23 vis-à-vis the comparative estimates for the years 2008-09 onwards is enclosed.

A comparative position of production of food grains, oilseeds, sugarcane and cotton during 2022-23 vis-à-vis Normal Average (2016-17 to 2020-21) is given below:

Table 5
Production in Kharif 2022-23 and Average (2016-17 to 2020-21)

(Million Tonnes)

Crop	2022-23 (1 st Advance Estimates)	Average (2016-17 to 2020-21)	Absolute Difference (2022-23 over average)	Percentage Increase/decrease in 2022-23 over average
Foodgrains	149.92	142.94	6.98	4.88
Oilseeds	23.57	21.83	1.74	7.97
Sugarcane	465.50	373.46	92.04	24.65
Cotton@	34.19	32.95	1.24	3.76
Jute & Mesta*	10.09	10.00	0.09	0.90

@ Production in million bales of 170 kg each.* Production in million bales of 180 kg each

1.8 Minimum Support Price

The Government's price policy for major agricultural commodities seeks to ensure remunerative prices to the growers for their produce with a view to encouraging higher investment and production and to safeguard the interest of consumers by making available supplies at reasonable prices. Towards this end, Government announces Minimum Support Prices (MSPs) for twenty-two (22) mandated crops **based on the** recommendations of the Commission for Agricultural Costs & Prices (CACP) after considering the views of concerned State Governments and Central Ministries/ Departments. The 22 mandated crops include 14 Kharif crops viz. paddy, jowar, bajra, maize, ragi, arhar, moong, urad, groundnut, soybean (yellow), sunflower seed, sesamum, nigerseed, cotton and 6 Rabi crops viz. wheat, barley, gram, masur (lentil), rapeseed & mustard, safflower and two commercial crops viz. jute and copra. In addition to that, MSP for toria and de-husked coconut are also fixed on the basis of MSPs of rapeseed & mustard and copra respectively.

While recommending MSPs, CACP considers important factors like cost of production, overall demand-supply situation of various crops in domestic and world markets, domestic and

international prices, inter-crop price parity, terms of trade between agricultural and non-agricultural sector, likely effect of price policy on rest of the economy and a minimum of 50 percent as the margin over cost of production.

The Union Budget for 2018-19 had announced the pre-determined principle to keep MSP at levels of one and half times of the cost of production. Accordingly, Government has increased the MSPs for all mandated Kharif, Rabi and other commercial crops with a return of atleast 50 per cent over all India weighted average cost of production from the agricultural year 2018-19. In line with the same principle, Government has announced the increase in MSP for all mandated Rabi crops of year **2022-23 on 31st October, 2022** and for all mandated Kharif crops of year 2022-23 on **8th June 2022**.

The highest absolute increase in MSP of Rabi crops has been announced for lentil (Rs. 500 per quintal) followed by rapeseed/mustard (Rs.400 per quintal), safflower (Rs.209 per quintal) and wheat (Rs. 110 per quintal). For barley and gram, an increase of Rs. 100 per quintal and Rs.105 per quintal respectively has been announced. The expected return to farmers over their cost of production is estimated to be highest in case of

rapeseed/mustard (104%), followed by Wheat (100%), lentil (85%), gram (66%), barley (60%) and safflower (50%).

The highest absolute increase in MSP of Kharif crops over the previous year has been recommended for sesamum (Rs. 523 per quintal) followed by moong (Rs. 480 per quintal) and sunflower seed (Rs. 385 per quintal). In case of cotton (medium staple) and nigerseed, there has been an increase of Rs 354 per quintal and Rs 357

per quintal respectively in comparison to last year. The expected returns to farmers over their cost of production are estimated to be highest in case of bajra (85%) followed by tur (60%) and urad (59%). For rest of the crops, return to farmers over their cost of production is estimated to be at least 50%.

Statements showing Costs, MSPs and percent return over cost for the year 2020-21, 2021-22 and 2022-23 is given below.

Table 6
Cost MSP and percentage return over cost

(Rs. Per Quintal)

Sl. No.	Year	2020-21			2021-22			2022-23		
	Commodity	Cost*	MSP	% Return over Cost	Cost*	MSP	% Return over Cost	Cost*	MSP	% Return over Cost
	<u>KHARIF CROPS</u>									
1	PADDY(Common)	1245	1868	50	1293	1940	50.0	1360	2040	50.0
	(Grade A) ^		1888			1960			2060	
2	JOWAR (Hybrid)	1746	2620	50	1825	2738	50.0	1977	2970	50.2
	(Maldandi) ^		2640			2758			2990	
3	BAJRA	1175	2150	83	1213	2250	85.5	1268	2350	85.3
4	RAGI	2194	3295	50	2251	3377	50.0	2385	3578	50.0
5	MAIZE	1213	1850	53	1246	1870	50.1	1308	1962	50.0
6	ARHAR(Tur)	3796	6000	58	3886	6300	62.1	4131	6600	59.8
7	MOONG	4797	7196	50	4850	7275	50.0	5167	7755	50.1
8	URAD	3660	6000	64	3816	6300	65.1	4155	6600	58.8
9	COTTON (Medium Staple)	3676	5515	50	3817	5726	50.0	4053	6080	50.0
	(Long Staple) ^		5825			6025			6380	
10	GROUNDNUT IN SHELL	3515	5275	50	3699	5550	50.0	3873	5850	51.0
11	SUNFLOWER SEED	3921	5885	50	4010	6015	50.0	4113	6400	55.6
12	SOYABEAN (yellow)	2587	3880	50	2633	3950	50.0	2805	4300	53.3
13	SESAMUM	4570	6855	50	4871	7307	50.0	5220	7830	50.0
14	NIGERSEED	4462	6695	50	4620	6930	50.0	4858	7287	50.0
	<u>RABI CROPS</u>									
1	WHEAT	960	1975	106	1008	2015	99.9	1065	2125	99.5
2	BARLEY	971	1600	65	1019	1635	60.5	1082	1735	60.4
3	GRAM	2866	5100	78	3004	5230	74.1	3206	5335	66.4
4	MASUR (LENTIL)	2864	5100	78	3079	5500	78.6	3239	6000	85.2
5	RAPESEED/MUSTARD	2415	4650	93	2523	5050	100.2	2670	5450	104.1
6	SAFFLOWER	3551	5327	50	3627	5441	50.0	3765	5650	50.0

Note: 1.* Refers to cost which includes all paid out costs such as those incurred on account of hired human labour, bullock labour/machine labour, rent paid for leased in land, expenses incurred on use of material inputs like Seeds, fertilizers, manures, irrigation charges, depreciation on implements and farm buildings, interest on working capital, diesel/electricity for operation of pump set etc., miscellaneous expenses and imputed value of family labour.

2. ^ Cost data are not available for Paddy (Grade A), Jowar (Maldandi), Cotton (Long staple), Toria, Copra (Ball) and De-husked Coconut.

1.8 Doubling of Farmers' Income (DFI):

Government constituted an Inter-ministerial Committee in April, 2016 to examine issues relating to “Doubling of Farmers Income” and recommend strategies to achieve the same. The Committee submitted its Report to the Government in September, 2018 containing comprehensive strategy for doubling of farmers' income through various policies, reforms & programmes. To achieve the objective, the Committee identified seven sources of income growth :-

- i. Increase in crop productivity
- ii. Increase in livestock productivity
- iii. Resource use efficiency – reduction in cost of production
- iv. Increase in cropping intensity
- v. Diversification to high value agriculture
- vi. Remunerative prices on farmers' produce
- vii. Shift of surplus manpower from farm to non-farm occupations

2. In line with the strategy for increasing farmers' income, as suggested by the DFI Committee, Government has adopted various reforms and policies that focus on higher income for farmers and implemented various developmental schemes, programmes and initiatives aimed at supplementing the efforts of the State Governments for the welfare of farmers by modernizing and rationalizing use of inputs so as to decrease cost, increasing production, remunerative returns, income support, old age security, etc. The approach is in consonance with the sources of growth in income of the farmers suggested by the DFI Committee. These schemes, programmes and initiatives include:

- (i) Increase in Minimum Support Price (MSPs) for all Kharif & Rabi crops ensuring a minimum of 50 percent of profit margin on the cost of production,
- (ii) Supplementary income transfers under PM-KISAN,
- (iii) Crop insurance under Pradhan Mantri Fasal

Bima Yojana (PMFBY),

- (iv) Better access to irrigation under Pradhan Mantri Krishi Sinchai Yojana (PMKSY),
- (v) Special attention for creation of infrastructure through Agri Infrastructure Fund (AIF) with a size of Rs. 100,000 crore,
- (vi) New procurement policy under PM-AASHA in addition to FCI operations,
- (vii) Kisan Credit Cards (KCC) offering production loan to even dairy & fishery farmers besides agricultural crops,
- (viii) Formation and promotion of 10,000 FPOs,
- (ix) National Mission for Sustainable Agriculture (NMSA), which aims to evolve and implement strategies to make Indian agriculture more resilient to the changing climate,
- (x) Adoption of drone technologies in agriculture which has a potential to revolutionize the Indian agriculture,
- (xi) Benefits accruing under Bee-keeping, Rashtriya Gokul Mission, Blue Revolution, Interest Subvention Scheme, agro-forestry, restructured bamboo mission, implementation of new generation watershed guidelines etc,
- (xii) Focus on application of digital technology at all stages of agricultural value chain,
- (xiii) Supply of fertilizer to farmer at subsidized price so as to reduce input cost.

3. All these policies & programmes are being supported by higher budgetary allocations (from Rs. 21,933.50 crore during BE 2013-14 to Rs. 1,24,000 crore during BE 2022-23), non-budgetary financial resources such as creating Corpus Funds like Micro Irrigation Fund, Agriculture Infrastructure Funds, PM Matsya Sampada Yojana, Animal Husbandry Infrastructure Development Fund, etc. Further, due to implementation of these schemes, programmes and initiatives, there has been record production in foodgrain and in horticulture and other crop sectors, as also in

respect of livestock & fisheries. Also the country has witnessed emphatic growth in export of agriculture and allied commodities.

4. The efforts of Government for positive implementation of these schemes are, therefore, yielding good results and the income of the farmers is improving. As part of the 'Azadi ka Amrit Mahotsav', Indian Council of Agricultural Research (ICAR) has released a book, which contains compilation of success stories of 75,000 farmers out of innumerable successful farmers whose incomes have increased more than two times.

1.9.1. Agriculture Infrastructure Fund (AIF) - Central Sector Scheme of financing facility under Agri Infrastructure Fund is operational from the year 2020-21 to 2032-33. The aim is creation of infrastructure at the farm gate. The scheme shall provide 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 financial support for credit guarantee.

Under the scheme, Rs. 1 Lakh Crore will be provided by banks and financial institutions as loans to Primary Agricultural Credit Societies (PACS), Marketing Cooperative Societies, Farmer Producers Organizations (FPOs), Self Help Group (SHG), Farmers, Joint Liability Groups (JLG), Multipurpose Cooperative Societies, Agri-entrepreneurs, Start-ups and Central/State agency or Local Body sponsored Public Private Partnership Project, Agriculture Produce Market Committees (APMCs) (APMCs operated regulated markets for agri allied sector produce including fisheries), State Agencies, National and State level Federations of Cooperatives, Federations of FPOs and Federations of Self Help Groups (SHGs), etc. The Fund of Rs. 1 lakh crore under the scheme will be disbursed from FY 2020-21 to FY 2025-26 and the support under the scheme will be provided for the duration of FY 2020-21 to FY 2032-33.

Under the scheme, financing facility shall be provided to create/modernise post-harvest management infrastructure like dry and cold

storage infrastructure, ripening chambers, pack-house, primary processing centres, assaying units, Cold chains, supply chain infrastructure including e-marketing platform, logistic facility etc. and community farming assets like bio-stimulant production, farm/harvest automation, infrastructure for smart and precision farming, organic input production, Remote sensing and IoT based farming infrastructure etc.

All loans under this financing facility will have interest subvention of 3% per annum up to a limit of Rs. 2 crore. This subvention will be available for a maximum period of 7 years. Further, credit guarantee coverage will be available for eligible borrowers from this financing facility under Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE) scheme for a loan up to Rs. 2 crore. The fee for this coverage will be paid by Government.

Progress under the scheme:

As on 20th January 2023, Rs. 15287 Crores have been sanctioned for 20710 projects. These sanctioned projects have mobilized an investment of Rs. 31102 crores in agriculture sector. Major projects sanctioned under AIF include 8505 warehouses, 3574 primary processing units, 2372 custom hiring centres, 1088 sorting & grading units, 803 cold store projects, 163 assaying units and around 3883 other kinds of post-harvest management projects and community farming assets.

1.9.2 The National Beekeeping and Honey Mission (NBHM) - Govt. of India has approved a Central Sector Scheme entitled “**National Beekeeping & Honey Mission (NBHM)**” with total budget outlay of Rs. 500.00 crores for 3 years (2020-21 to 2022-23) under Aatma Nirbhar Bharat Announcement for overall promotion and development of scientific beekeeping and to achieve the goal of “**Sweet Revolution**” in the country by implementing 3 Mini Missions (MMs)- MM-I, MM-II & MM-III under which thrust will be given on awareness, capacity building/ trainings, focus on women empowerment through beekeeping, setting up of requisite infrastructural

facilities, viz.; Integrated Beekeeping Development Centres (IBDCs), Honeybees Disease Diagnostic Labs, Setting/ upgradation of Honey Testing labs, Beekeeping Equipment Manufacturing Units, Custom Hiring Centres, Api therapy Centres, Development of Quality Nucleus Stock Centres & Bee Breeders etc., Digitization/online registration etc. under MM-I, processing, value addition, market support, etc. under MM-II and R&D under MM-III.

1.10 Pradhan Mantri Annadata Aay Sanraks Han Abhiyan (PM-AASHA)

Investment and Price Support Division of this Department implements umbrella scheme of put “Pradhan Mantri Annadata Aay Sanraks Han Abhiyan” (PM-AASHA) comprising Price Support Scheme (PSS), Price Deficiency Payment Scheme (PDPS) and Private Procurement and Stockist Scheme (PPSS). Under PM-AASHA, States / UTs are offered to choose either PSS or PDPS in a given procurement season with respect to particular oilseeds crop for the entire State. The pulses and copra are procured under PSS. Only one scheme i.e. PSS or PDPS is made operational in one State with respect to one commodity. Further, States have the option to roll out Private Procurement and Stockist Scheme (PPSS) on pilot basis in district / selected APMC(s) of district involving the participation of private stockist for oilseed. The brief of PSS, PDPS and PPSS are as under:-

(i) PSS:- This scheme is implemented at the request of the concerned State Govt. which agrees to exempt the procured commodities from levy of mandi tax and assist central nodal agencies, in logistic arrangements, including gunny bags, working capital for state agencies, creation of revolving fund for PSS operations, etc. as required under the scheme guidelines. Procurement of these commodities are undertaken by Central Nodal agencies at Minimum Support Price (MSP) announced by the Govt. as and when prices fall below the MSP and as well as compliance of State Govt. to PSS guidelines. The procurement details of pulses, oilseeds & copra procured at MSP under PSS since 2018-19 are enclosed at **Annexure-1.1**

(ii) PDPS:- This scheme envisages direct payment of the difference between the MSP and the selling / modal price to pre- registered farmers selling their produce in the notified market yard through a transparent auction process. All the payments will be transferred directly into bank account of farmers. This scheme does not involve any physical procurement of crops as the farmers are paid the difference between the MSP and Sale / Modal price on sale in notified market.

(iii) PPSS:- In addition to PDPS, oilseed producing States will have the option to roll out Private Procurement Stockist Scheme (PPSS) on pilot basis in district/ selected APMC(s) of district involving the participation of private stockist. The pilot district/ selected APMC(s) of district will cover one or more crop of oilseeds for which MSP is notified. Since this is akin to PSS, it involves physical procurement of the notified commodity.

2. This Section also implements Market Intervention Scheme (MIS) for procurement of agricultural/horticultural commodities, which are perishable in nature and for which MSP is not notified by the Central Government. The objective of intervention is to protect the growers of these commodities from making distress sale in the event of a bumper crop during the peak arrival period when the prices tend to fall below economic levels and cost of production. The condition for implementation of MIS is that there should be either at least a 10 percent increase in production or a 10 percent decrease in the ruling market prices over the previous normal year. The scheme is implemented at the request of a State/UT government which is ready to bear 50 percent of the loss (25 percent in case of North-Eastern States), if any, incurred on its implementation. The extent of total amount of loss incurred by the implementation agency is restricted to 25 percent of the total procurement value which includes cost of the commodity procured plus permitted overhead expenses. Details of sanction accorded under MIS since 2018-19 are enclosed at **Annexure-1.2.**

1.11 Agriculture Credit

Government announces annual target for agriculture credit in the budget every year. Agricultural credit flow has shown consistent progress every year. The agriculture credit flow target for the year 2021-22 was fixed at Rs. 16,50,000 crore and against this target the achievement was Rs.18,63,363 crore. The agriculture credit flow target for 2022-23 has been fixed at Rs.18,50,000 crore.

1.12 Modified Interest Subvention Scheme (MISS)

The Department implements the Modified Interest Subvention Scheme with a view to provide short term Agri-loans to the farmers at concessional rate of interest. Under the scheme, farmers are given upfront interest subvention of 1.5%. Therefore, short term crop loan upto Rs. 3.00 lakh is available to farmers engaged in Agriculture and other allied activities at an interest rate of 7%. Additional 3% subvention is also given to the farmers for prompt and timely repayment of loans; thus the effective rate of interest comes down to 4% per annum.

1.13 Kisan Credit Card (KCC)

The Kisan Credit Card (KCC) Scheme was introduced for issue of Kisan Credit Cards to farmers on the basis of their land holdings for uniform adoption by the banks so that farmers may use them to readily purchase agriculture inputs such as seeds, fertilizers, pesticides etc. and draw cash for their production needs.

1.14 Commission for Agricultural Costs and Prices

The Commission for Agricultural Costs and Prices (CACP) was set up with a view to evolve a balanced and integrated price structure and is mandated to advice on the price policy of 23 crops. These include Minimum Support Prices (MSP) for 22 crops i.e. seven cereal crops (paddy, wheat, jowar, bajra, maize, ragi and barley), five pulses (gram, tur, moong, urad and lentil), seven oilseeds (groundnut, sunflower seed, soybean, rapeseed and mustard, safflower, nigerseed and sesamum), copra (dried coconut), cotton, raw jute and Fair and Remunerative Prices (FRP) for sugarcane. CACP submits its recommendations to the government in the form of Price Policy Reports every year, separately for five groups of commodities namely Kharif crops, Rabi crops, Sugarcane, Raw Jute and Copra. Before preparing these five price policy reports, the Commission seeks views of various Central Ministries, State Governments, Farmers, Farmers Association, Research Institutes and other stakeholders.

Determinants of MSP

The Commission considers important factors like cost of production, overall demand-supply situation, price trends in domestic and global prices, inter-crop price parity, terms of trade between agriculture and non-agriculture sectors, likely impact of the price policy on the rest of the economy, rational utilization of land, water and other production resources and a minimum of 50 percent as the margin over the cost of production before making its recommendations.

Chapter-2

FUNCTIONS AND ORGANIZATIONAL STRUCTURE

2.1 Structure: The Department of Agriculture & Farmers Welfare (DA&FW) is one of the two constituent Departments of the Ministry of Agriculture & Farmers Welfare, and Department of Agricultural Research and Education (DARE). This Department is headed by Agriculture & Farmers Welfare Minister and is assisted by two Ministers of State. The Secretary (A&FW) is the administrative head of the Department. The Secretary is assisted by four Additional Secretaries including one Financial Adviser, 10 Joint Secretaries including Mission Director (Mission on Integrated Development of Horticulture) & Mission Director (National Mission on Sustainable Agriculture), Agriculture Commissioner, Horticulture Commissioner, Sr. Economic Advisor, Horticulture Statistics Advisor, Advisor cost and Deputy Director General. In addition, Chairman of Commission for Agriculture Costs and Prices (CACP) advises Department on pricing policies for selected agricultural crops.

2.2 The DA&FW is organized into 28 divisions (**Annexure-2.1**) and has five attached offices and twenty-one subordinate offices (**Annexure-2.2**) which are spread across the country for coordination with state level agencies and implementation of Central Sector Schemes in their respective fields. Further, one Public Sector Undertaking, seven autonomous bodies, and two authorities (**Annexure-2.3**) are functioning under the administrative control of Department.

2.3 Administrative Vigilance Unit (AVU) functions in the Department under a Joint Secretary, designated as Chief Vigilance Officer, to ensure a transparent, clean and corruption free work environment through surveillance, preventive and punitive measures.

2.4 Administrative Vigilance Unit under the

leadership of JS&CVO is regularly monitoring all the pending complaints/Regular Departmental Action cases in this Department and in attached, subordinate and autonomous organization by way of regular review meetings, monthly reports. Two officers have been chargesheet for irregularity for entering into illegal conspiracy, demanded and accepted illegal gratification at PQS, Tuticorin. Three disciplinary proceedings have been disposed of during the year. 82 new cases were received during the year. 74 cases including some previous complaints have been finalized/disposed of till date of 2022. Further, 98 public grievance cases have been addressed/finalized till date. 08 RTI cases have been processed and disposed of within the prescribed time limit. 06 part-time Vigilance Officers (Vos) in the organizations under this Department have been appointed during the year. Monthly/Quarterly/Yearly Reports relating to complaints/vigilance cases in respect of this Department and its organizations are being sent regularly within the prescribed time frame to CVC and DOP&T.

2.5 Identification of sensitive posts in the Department for the year 2022 has also been undertaken to enable periodical rotation of staff posted in sensitive posts. List of Officers of Doubtful Integrity (ODI) and the Agreed List for the year 2022 in respect of this Department have also been finalized. Identification of sensitive posts in the Department and its organizations for the year 2022 has also been finalized for implementation of rotational transfer.

2.6 As per direction of CVC, Vigilance Awareness Week, 2022 has been observed from 31st October to 6th November, 2022 in the Department. The theme of the week was “**Corruption Free India for a Developed Nation - भ्रष्टाचारमुक्तभारत-विकसितभारत**”.

2.7 A Public Grievance Cell has been set up and is fully functional in the Department of Agriculture & Farmers Welfare under the Joint Secretary (O&M/PG) who acts as Nodal Appellate Authority of the Department and Deputy Secretary has been nominated as nodal officer for monitoring redressal of public grievances received in the Department at Headquarters. One Deputy Secretary has been nominated as Staff Grievance Officer to deal with grievances of the employees working in the Department of Agriculture & Farmers Welfare for this purpose. Similar arrangements have been made at the level of all Attached and Subordinate Offices and all organizations under the administrative control of this Department in order to ensure expeditious redressal of grievances. During the year 2022-23 (from 01.04.2021 to 30.12.2022) 37045 public grievance petitions/suggestions have been received through CPGRAMS portal and 646 cases were carried forward from previous year, out of 37691 total cases, 33061 cases have been disposed of and 4630 cases were pending in this Department as on 30th December, 2022.

2.8 Citizens'/Clients' Charter of this Department has been prepared as per the instructions/guidelines of Cabinet Secretariat and Department of Administrative Reforms and Public Grievances. The Citizens'/Clients' Charter is available on the website of the Department (www.agricoop.nic.in).

2.9 Implementation of the Right to Information Act, 2005: During year 2022-23 (as on 30.12.2022), 4235 physical & online RTI applications and 194 appeals seeking information under the Right to Information Act, 2005 were received in RTI Cell and replies were sent to the applicants in time.

2.10 Information and Facilitation Counter: This counter provides information in respect of Department of Agriculture & Farmers Welfare. During year 2022-23, various visitors from NGOs as well as general public visited the counter to obtain information. Numerous telephonic calls were also received in RTI Cell from general public to obtain information pertaining to DA&FW, Ministry of Agriculture and Farmers Welfare.

2.11 Progressive Use of Hindi: The Department has an Official Language Implementation Committee (OLIC), chaired by the Joint Secretary (Administration) to monitor the implementation of the Official Language Policy of the Union and progressive use of Hindi in the official work of the Department. During the year under report, quarterly meetings of the Official Language Implementation Committee were held regularly.

2.12 The Official language Division continued to review the position of the progressive use of Hindi in the Department and subordinate offices regularly, through quarterly progress reports and inspections. Besides, officers of the Official language Division also participated in the meetings of the Official Language Implementation Committees of the Attached and Subordinate offices, etc., and extended necessary guidance to them in the implementation of Official Language Act and Rules. In addition to this, 02 offices under the control of this Department, wherein 80 per cent of the officers and employees have acquired working knowledge of Hindi, were notified in the Gazette of India under Rule 10 (4) of the Official Language Rules, 1976.

2.13 Every year, the Department nominates JSA and stenographers for training in Hindi shorthand and typing under the Hindi teaching Scheme of the Department of Official Language. Five entries have been received under the incentive scheme for noting/drafting done originally in Hindi.

2.14 With a view to create awareness regarding the progressive use of Hindi in the official work of the Department, a Hindi Fortnight was held during the 14th-28th September, 2022. On this occasion, the Hon'ble Agriculture and Farmers Welfare Minister issued an appeal to all officers and staff of the Department of Agriculture and Farmers' Welfare to carry out more official work in Hindi. During the Hindi Fortnight, various Hindi Competitions such as essay writing, noting and drafting Hindi spelling and grammar Knowledge, Hindi dictation for MTS, Hindi Prashan Manch & Hindi Kavita Path were organized and interested officers and employees

participated in these competitions. Cash awards and certificates of appreciation were given to the winners of these competitions.

2.15 The Second Sub-Committee of the Committee of Parliament on Official Language conducted inspection of 05 offices under the control of the Department of Agriculture and Farmers Welfare to review the position regarding the progressive use of Hindi in official work during the year. The officers of this Department were also present in these inspection meetings. In addition to this, 37 subordinate/attached offices have been inspected by the officers of the Hindi Division of the Department of Agriculture and Farmers Welfare.

2.16 Reservation for Scheduled Castes/ Scheduled Tribes /Other Backward Castes:

Department of Agriculture & Farmers Welfare continued its endeavour for strict implementation of the orders issued by the Government of India from time to time, regarding reservation in services for SCs, STs, OBCs, minorities, ex-servicemen and physically disabled persons.

2.17 Prevention of Harassment of Women Employees:

An Internal Complaints Committee regarding prevention of sexual harassment of women at their work place has been constituted by the Department. This Committee is chaired by a senior lady officer of the Department.

Chapter-3

DIRECTORATE OF ECONOMICS & STATISTICS

Directorate of Economics & Statistics

Overview

3.1 Directorate of Economics & Statistics (DES), an attached office of DA&FW, is mandated to support work of the Ministry of Agriculture & Farmers Welfare through quality data and analysis towards appropriate policy formulation and execution of schemes in the interest of farmers and consumers. The Directorate is mandated to build and maintain a strong data base in partnership with the States on area, production, yield of principal crops and cost of production of mandated crops to arrive at Minimum Support Price. DES collects price data through its regional offices and regularly analyses the same to identify trigger points for policy intervention towards stable food prices. DES is the knowledge bank of the Ministry that places a large volume of data and information in the public domain for multiple stakeholders and carries out agro-economic research / studies in the field of agriculture. In addition, the Directorate coordinates with international bodies such as the Food and Agriculture Organization (FAO) on global effort to improve agricultural statistics. It is responsible for providing necessary data of the Central Statistics Office (CSO) for GDP compilation and also meets international obligation related to standards of data dissemination.

3.2 Major Programmes / Activities

3.2.1 Agricultural Statistics Division

The Directorate of Economics & Statistics (DES), under Department of Agriculture, and Farmers' Welfare, releases four Advance Estimates (AEs) followed by one Final Estimates of production of major agricultural crops of the country. Each of these five estimates is available at state and national level for 28 major agricultural crops including rice, wheat, coarse cereals, pulses, oilseeds, sugarcane and Jute & Mesta. The First Advance Estimates

covering only Kharif crops are released in September, when Kharif sowing is generally over. The Second Advance Estimates are normally released in February, the following year when rabi sowing is also over. The Second Advance Estimates cover Kharif as well as Rabi crops. The Third Advance Estimates incorporate revised data on area coverage for Rabi crops and better yield estimates of Kharif crops. These are released in May. The Fourth Advance Estimates are released in August. By this time fully firmed up data on area as well as yield of Kharif crops and Rabi crops are expected to be available with the states.

Final Estimates are released after about seven months of the release of Fourth Advance Estimates i.e. in February of the following year. This allows sufficient time to State Governments to take into account even delayed information while finalizing area and yield estimates of various crops. While finalizing all-India level estimates, the crop-wise data on area, production and yield received from State Governments are thoroughly scrutinized and validated on the basis of information from alternative sources such as remote sensing technology based forecast from the Mahalanobis National Crop Forecast Centre (MNCFC), econometric modeling based crop forecast provided by the Institute of Economic Growth (IEG), inputs received from the weekly Crop Weather Watch Group (CWWG) meetings, trends in area, production and yield of crops during the last 5 years, rainfall conditions and trends in procurement and prices of respective commodities.

3.2.2 Cost Study Division:

The Cost Study Division is mainly responsible for implementation and monitoring of Comprehensive Scheme for Studying the Cost of Cultivation of Principal Crops in India and other issues relating to this scheme including answering parliament questions, generating cost of cultivation and

production estimates and providing to CACP for the purpose of arriving at the recommendations of the Minimum Support Prices (MSP) etc. Cost of cultivation surveys are an important data source for decision making on sectors of national importance. There are very intensive surveys wherein data are collected on the various inputs which are used for the cultivation of crop

3.2.3 Commercial Crops Division

Commercial Crops (CC) Division in the Directorate of Economics and Statistics of the Department of Agriculture and Farmers Welfare (DA&FW) is mandated for fixation and declaration of Minimum Support Price (MSP) of commercial crops such as Copra, Raw Jute and Toria. The division examines Price Policy reports on Copra and Raw Jute submitted by the Commission for Agricultural Costs and Prices (CACP) considering the views of concerned State Governments and Central Ministries/Departments and other relevant factors which are considered important for fixation of MSP and submits the note for consideration of Cabinet Committee on Economic Affairs (CCEA) for declaration of MSP of these crops. In addition, the

division fixes the MSP of Toria based on price differentials of Toria and Rapeseed/Mustard.

Further, the division also takes necessary steps with concerned Divisions/Departments for timely action on non-price recommendations. Apart from fixation of MSP, the division prepares monthly review of Commercial Crops for dissemination in the monthly journal of "Agricultural Situation in India" and also maintains the data related to commercial crops.

Details of MSP of Copra:

For 2023 season, MSP of milling copra has been fixed at Rs. 10860/- per quintal and for ball copra at Rs. 11750/- per quintal. This is an increase of Rs. 270/- per quintal for milling copra Rs. 750/- per quintal for ball copra over the previous season. The MSP provides a return of 51.82 percent for milling copra and 64.26 percent for ball copra over the all India weighted average cost of production estimated at Rs. 7153/- per quintal for 2023 season. Year-wise cost of production, MSP and percentage margin over the cost of production of Milling and Ball Copra for past five years can be seen from the following table:

Table: 1

Season*	Cost of Production (₹ per quintal)	MSP (₹ per quintal)		Margin (%) over cost of Production	
		milling copra	ball copra	milling copra	ball copra
2019	6347	9521	9920	50.00	56.29
2020	6639	9960	10300	50.02	55.14
2021	6805	10335	10600	51.87	55.76
2022	6974	10590	11000	51.85	57.73
2023	7153	10860	11750	51.82	64.26

*calendar year

Details of MSP of Raw Jute:

For 2022-23 season, the MSP for raw jute (TDN3 equivalent to TD5 of old grade) is fixed at Rs. 4750/- per quintal. The MSP provides returns of 60.5 percent over the all India

weighted average cost of production estimated at Rs. 2959/- per quintal for 2022-23 season. Year-wise cost of production, MSP and percentage margin over the cost of production of Raw Jute for past five years may be seen from the following table:

Table: 2

Season	Cost of Production	MSP (₹ per quintal)	Margin (%) over cost of Production
2018-19	2267	3700	63.2
2019-20	2535	3950	55.8
2020-21	2709	4225	56.0
2021-22	2832	4500	58.9
2022-23	2959	4750	60.5

Details of MSP of Toria:

The MSP of Toria of Fair Average quality (FAQ) for 2021-22 season to be marketed for 2022-23 has been fixed at Rs. 5050/-per quintal marking an increase of 8.6 percent over the previous season's MSP.

3.2.4 Special Data Dissemination Standards (SDDS) Division

The Division is involved in collection and compilation of data relating to nine-fold classification of land, irrigated area (source-wise and crop-wise) and total area under crops for States and UTs. The compiled data is brought out in the Directorate's publications 'Land Use Statistics' and 'Agricultural Statistics at a Glance'. The compiled data on Land Use Statistics (District wise and State-wise) from 1998-99 onwards are available on the website. The URL of the website is <http://aps.dac.gov.in/LUS>. Similarly, the district wise compiled data on Area, Production and Yield (APY) from 1998-99 onwards are also available on the website. The URL of the website is <http://aps.dac.gov.in/APY>. The Division also generates quarterly estimates of agricultural production for use in the compilation of quarterly National Accounts by the National Statistical Office. This activity was undertaken in order to meet the obligations concerning supply of data to the International Monetary Fund. In the absence of direct data, quarterly production is estimated by using the estimates of Kharif and Rabi seasons in conjunction with the crop calendar.

**3.2.5 Agro-Economic Research (AER) Scheme
Background of the scheme**

"Agro-Economic Research (AER) Scheme" an

independent component of "Integrated Scheme on Agriculture Census and Statistics which is a part of umbrella scheme 'Green Revolution- Krishonnati Yojana. The Agro-Economic Research (AER) Scheme was initiated in 1954-55 through a network of 15 AER Centres/Units. 12 Agro-Economic Research Centres (AERCs) are located at Allahabad, Bhagalpur, Chennai, Delhi, Jabalpur, Jorhat, Ludhiana, Pune, Shimla, Vallabh-Vidyanagar, Visva-Bharati and Waltair and 3 Agro-Economic Research Units are located at IEG-Delhi, ISEC Bangalore and IIM-Ahmedabad. The scheme is staff oriented and 100% funded through Grants-in-Aid by Government of India, Ministry of Agriculture & Farmers Welfare.

The AER Centres/Units are functioning under the administrative control of their respective University/Institute that conducts research and evaluation studies on annual basis as per need of the Government of India on Agricultural Economy and allied sectors for meeting the needs of the Department of Agriculture & Farmers Welfare, other Ministries/Departments which have a bearing on the performance of the Agriculture Sector for policy formulation and provide a feedback for implementation of the various schemes.

The objectives of the AER scheme under "Integrated Scheme on Agriculture Census, Economics and Statistics" are:

- (i) To study specified agro-economic issues at the macro and micro levels;
- (ii) To conduct continuous studies on changes in the rural economy through periodic surveys of selected villages;

- (iii) To conduct research on structural changes and fundamental problems of agricultural and rural economy; and
- (iv) To give technical advice to the Union and State Governments on issues that may be referred to them.

Annually, on an average 30 research studies are conducted by these Centres /Units, relating to various agro-economic issues in agriculture, animal husbandry, water management, fisheries & horticulture, food processing, rural development etc. During last five years (2017-18 to 2021-22) more than 130 studies have been completed on the following important topics: such as Future Market for Agricultural commodities, Price support and trade in Pulses and Oilseeds, Cold chain for fruits and vegetables, Soil Health Card, Jhumming Cultivation, Livestock Feed and Fodder, Neem Coated Urea, Electronic- National Agricultural Market(e-NAM), Pradhan Mantri Fasal Bima Yojana (PMFBY), Pradhan Mantri Krishi Sinchayee Yojana

(PMKSY), National Horticulture Mission (NHM) and Farmers Suicides. During the year 2022-2023 till November 2022, 05 research studies have been completed by these AER Centres/Units.

For the Current Financial Year 2022-2023 an amount of Rs 3820.00 lakhs was allocated as Budget Estimate (BE) and after re-allocation of BE during CFY 2022-23 an amount has been revised to Rs.3530.00 (including Rs.430.00 lakhs for Northeast regions). Out of which Rs.877.07 lakhs has been released including Rs.384.22 lakhs for Northeast regions till 31.08.2022.

North East Region: An Agro-Economic Research Centre was established in 1960 and is functioning under the administrative control of Assam Agricultural University, Jorhat, Assam for conducting research studies on various agricultural issues in the North-Eastern States viz., Assam, Meghalaya, Nagaland, Manipur, Tripura, Arunachal Pradesh, and Mizoram. The details are in the following table:-

**PROGRAMMES OF NORTH-EASTERN STATES IN RESPECT OF
AGRO-ECONOMIC RESEARCH CENTRE – JORHAT**

Note: (*) Fund released, expenditure and studies completed till 30th November, 2022.

(Rs. In lakhs)

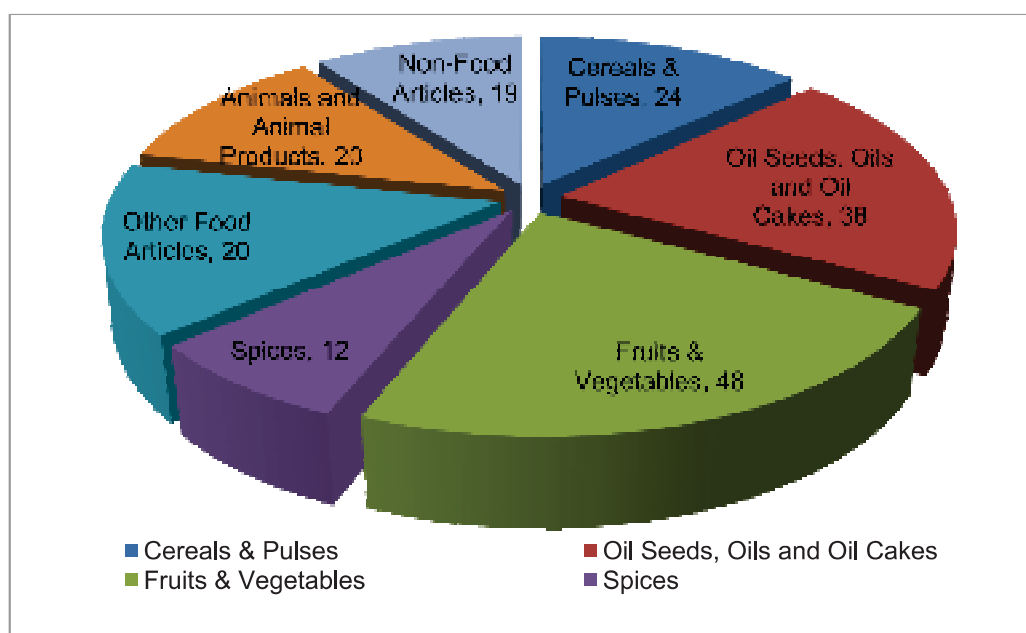
Name of Division: Agro-Economic Research Division					
Schemes/ Program Activities Approved	Details of Schemes/ Programs/ Activities taken up	Targets	Achievements	Funds Released	Funds Utilized
1	2	3	4	5	6
“Agro-Economic Research (AER) Scheme” an independent component of “Integrated Scheme on Agriculture Census and Statistics” of Central Sector Plan Scheme	AER Centre, Jorhat undertakes research studies on Agro-Economic Problems of North Eastern States	There is no fixed target.	Study completed by AER Centre, Jorhat during the Financial Year 2016-17, 2017-18, 2018-19, 2019-2020, 2020-2021, 2021-22 and 2022-23 are given below:	2016-17 = 122.61	118.10
				2017-18 = 90.00	119.66
				2018-19 = 138.00	142.88
				2019-20 = 275.00	214.28
				2020-21 = 151.00	161.54
				2021-22 = 149.80	200.00
				2022-23 = 404.22	355.02
			<u>Studies Completed</u>		
			2016-17 = 0		
			2017-18 = 3		
			2018-19 = 0		
			2019-20 = 2		
			2020-21 = 1		
			2021-22 = 2		
			2022-23 = 0		

3.2.6 I. Price & Market Division

Prices & Market Division provides market intelligence to the Government and is involved in collection, compilation and dissemination of data/information on prices - wholesale, retail, farm harvest and international prices of important agricultural commodities. Wholesale prices of 181 selected agricultural commodities from around 737 market centers spread across the country and retail

prices of 46 food items from around 87 market centers are collected and compiled on weekly basis. Weekly wholesale prices (888 price quotations) of 109 agricultural commodities from around 241 markets centers spread across the country are provided by this division to the Department for the Promotion of Industry and Internal Trade (DPIIT), Ministry of Commerce & Industry for the computation of monthly Wholesale Prices Index (WPI).

Details of Prices of Agricultural Commodities on Number of Items maintained by the Directorate of Economics & Statistics



There are Twelve (12) field level Market Intelligence Units (MIUs) with Kolkata MIU having additional Charge of Shillong MIU, located across India reporting to this division which play major role in data collection. A Working Group was constituted by DPIIT for the revision of Base Year of WPI series (base 2011-12) to the base year 2017-18 under the chairmanship of Shri. Ramesh Chand (Member, NITI Aayog). Based on the recommendation of working group for the revision of Base Year of WPI series (base 2011-12) some new commodities have been added and the number of quotations have also increased.

This Division also compiles data on farm harvest prices of 35 principal crops from 30 States / Union

Territories. Two annual publications "Agricultural Prices in India" and "Farm Harvest Prices of Principal Crops in India" are brought out by this division every year.

Index of Terms of Trade (TOT) of farmers and agricultural Sectors. is also prepared on annual basis as per the methodology recommended by the Working Group headed by Prof. S.Mahendra Dev, Director, Indira Gandhi Institute of Development Research (IGIDR), Mumbai. This Index is to be used as an input for price policy formulation of agricultural crops by Commission for Agricultural Costs and Prices (CACP).

The Agricultural Market Information System (AMIS), hosted by Food & Agriculture Organization

of United Nations, is an inter-agency platform launched in 2011 by the G20 Ministers of Agriculture, to enhance food market transparency and policy response for food security. AMIS-FAO prepares Food Balance Sheet, where data on inputs of production, food, feed; seed use and trade of 4 agricultural commodities, i.e. wheat, rice, maize and Soyabean are maintained globally. As per government directive, Prices & Market Division provides the required data to AMIS-FAO at regular intervals.

II. Agricultural Wages

Agricultural Wages Division is involved in collection, compilation and dissemination of data on prevailing average daily wages of agricultural labourers and non-agricultural rural labourers. Data on the average daily wages is collected from village/district level of currently 22 States for the following categories for different operations:

1. Field Labour: Ploughing, Sowing, Weeding, Reaping & Harvesting
2. Other Agricultural Labour: Includes average wages of different operations like; digging well, cleaning silt from water channels, watering, carrying load, embankment, tilling, plucking, etc.
3. Non agricultural Occupations: Carpenter, Blacksmith & Mason.
4. Tractor Driver

Data for these occupations are collected by the State Governments and supplied to DES, Ministry of Agriculture & Farmers Welfare on monthly basis. On the basis of furnished data, DES publishes an annual publication; Agricultural Wages in India. This Division also releases the latest wage rate in our monthly journal; Agricultural Situation in India.

The annual publication provides information on wage levels for agricultural activities in States across different seasons both for men and women. This rich database facilitates inter-state and intra-state comparison in wage cost variation across different centers spread across 22 States that would help in evidence based policy formulation and

further research activities.

3.2.7 International Agriculture & Compilation Division

International Agriculture Compilation (IAC) Division is the nodal Division in DES for providing inputs/comments on international issues relating to agricultural economics and statistics (production, yield, prices, MSP, agricultural growth etc). The Division also brings out the flagship publication of the Department, namely Agricultural Statistics at a Glance.

During 2022, IAC Division provided inputs and comments on international issues relating to food security & nutrition dealt by BRICS, G-20, and WFP etc. Division keeps track of monthly Agriculture Trade data, EXIM policy, FDI etc. and reports of various international organizations like FAO, OECD, IGC etc.

In addition, the Division has published the latest 2021 issue of Agricultural Statistics at a Glance. This publication is available on the website <https://desagri.gov.in/> and hard copy is available at Department of Publication.

3.2.8 Crop Forecasting Coordination Centre

CFCC division is coordinating the implementation of "Forecasting Agricultural Output using Space, Agro - Meteorology and Land Based Observations (FASAL)" scheme through partner organizations i.e. Mahalanobis National Crop Forecast Centre (MNCFC), New Delhi, India Metrological Department (IMD), New Delhi, Institute of Economic Growth (IEG), New Delhi. Under the FASAL scheme, Multiple-in-season crop forecast is provided based on Econometric models (19 crops) and Remote Sensing models (9 crops).

Besides, the division is also involved in organization of weekly Crop Weather Watch Group (CWWG) meeting every Friday. Crop Weather Watch Group (CWWG) in the Directorate of Economics & Statistics is an inter-departmental forum that undertakes weekly review of progress of crop sowing, weather conditions, reservoir levels, level of pest and disease, seeds and fertilizer availability, horticulture arrivals

and prices. The purpose is to facilitate timely policy intervention and operational support by the concerned subject matter Divisions of the DA&FW. IMD, CWC, Crops, Fertilizer, Prices, Plant Protection, Horticulture, Seeds etc. Departments/Divisions give their inputs and participate for the meeting. The CWWG meeting is chaired by Secretary/Additional Secretary, DA&FW. The Key Points emerged from the CWWG meeting submitted to the Secretary on the same day. The CWWG data and Minutes of CWWG meeting are uploaded on the Directorate's website every week. Crop Statement is also prepared from the CWWG data and the same is forwarded to different Ministries/Departments.

3.2.9 Publication Division

The main role of the Publication Division is to carry out the printing and publication work of the Directorate's manuscripts on monthly/yearly basis. Primarily, the Division is involved in bringing out the monthly journal '**Agricultural Situation in India**', an age-old journal since 1948. The journal aims to provide a forum for scholarly work and disseminate knowledge; provide a learned reference in the field; and a platform for communication between academic and research experts, policy makers.

The journal covers information on multiple topics ranging from farm sector news, general survey of agriculture, commodity review *w.r.t.* to food grain procurement, prices indices of commercial crops and agricultural commodities along with research articles and an agro - economic research. Agricultural Situation in India has been accredited by the National Academy of Agriculture Sciences (NAAS) and has been given a score of 4.53 out of 6.

The Division also assists in bringing out the periodical publications of DES *viz.*; Land Use Statistics at a Glance, Agricultural Prices in India, Farm Harvest Prices of Principal Crops in India and Agricultural Wages in India.

3.2.10 Coordination Division

The Coordination Division's main work is to coordinate work between Department of

Agriculture & Farmers Welfare (DA&FW) and the Divisions of DES on all concerned subject matters. Its main activities includes preparing material for the Economic Survey i.e. Chapter "Agriculture & Food Management" on behalf of DA&FW, and routine matters wherein several Divisions of DES and those of DA&FW are involved, preparation of material for annual report, providing information on budget related matter under the scheme namely 'Integrated Scheme of Agriculture Census, Economics and Statistics', providing input on the Parliament Questions assigned to various Divisions of DA&FW, working as Public Grievance Cell and as RTI Cell for the Directorate of Economics and Statistics.

3.3 Scheme Implemented by the Directorate of Economics and Statistics

The scheme namely 'Agriculture Census, Economics and Statistics' a part of Krishonnati Yojana is being implemented by the Directorate of Economics and Statistics. This scheme comprises with following component.

(I) Comprehensive Scheme for studying Cost of Cultivation of Principal Crops in India:

1. The Cost of Cultivation of principal crops in India is being implemented in India since 1970-71 as a Central Sector Plan Scheme. The main objectives of the Scheme are to collect and compile data on cost of cultivation and production in respect of principal crops and to generate crop-wise and State-wise cost of cultivation and production estimates of mandated crops.
2. Comprehensive cost statistics are collected through 19 Agricultural/Central Universities in respect of Principal crops centers located in different States; cost of cultivation data is transmitted to the CACP so as to enable them to recommend the MSPs of the crops under both Kharif and Rabi Seasons.
3. The cost estimates generated under the Schemes are also used for research purpose and policy formulations by the Central Ministries

and State Governments, Agricultural /General Universities, Government/Non-government Research Organizations, Individual researchers (both at domestic and international levels) etc.

4. The Scheme is implemented in 19 states namely Andhra Pradesh, Assam, Bihar, Chhattisgarh, Gujarat, Haryana, Himachal Pradesh, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Odisha, Punjab, Rajasthan, Tamil Nadu, Telangana, Uttar Pradesh and West Bengal.
5. During the block period 2020-21 to 2022-23, the schemes covers 25 principal crops, i.e., paddy, wheat, jowar, bajra, maize, ragi, barley, moong, urad, arhar, gram, lentil, groundnut, rapeseed and mustard, nigerseed, safflower, soybean, sunflower, sesamum, cotton, jute, sugarcane, onion, potato, and coconut. The combination of crops covered in each state (also known as crop complex) varies from state to state depending upon their importance in terms of its relative contribution in the production of the relevant crop at all-India level.
6. The field data are collected on the basis of Cost Accounting Method by the 19 State Implementing Agencies. Under the Scheme, daily entries of debit/credit for expenditure/income are made in order to assess the total cost/benefit incurred/accrued to each farmer. The field data is collected through a detailed questionnaire administered by Fieldsman through direct interaction with the sample farmers of 10 selected farm holdings as per the sampling design. These consist of 2 each from 5 different size classes, viz., up to 1 hectare, 1-2 hectare, 2-4 hectare, 4-6 hectare and above 6 hectare allotted to each fieldman.
7. In the year 2021-22 (April-March), 300 cost estimates were generated and provided to CACP. Out of these estimates, 45 for Rabi, 238 for Kharif, 10 for Sugarcane and 07 for others were generated in respect of 25 mandated crops.

(ii) Improvement of Agricultural Statistics

Improvement of Agricultural Statistics The basic objective of the Central Sector Scheme, Improvement of Agricultural Statistics, is to collect and improve agricultural statistics of principal agricultural crops. The Scheme has three components; (i) Timely Reporting Scheme (TRS), (ii) Improvement of Crop Statistics (ICS) and (iii) Establishment of an Agency for Reporting of Agricultural Statistics (EARAS). Since 2007-08, the scheme has been converted to Central Sector Scheme from Centrally Sponsored Scheme with 100 percent funding by the Central Government. The Component-wise details of the scheme are as under:-

1. **Timely Reporting Scheme (TRS):** The objective of this component is to obtain estimates of area under principal crops in each season, with the breakup of area under irrigated/unirrigated and traditional/high yielding varieties of crops on the basis of random sample of 20% of villages by a specific date. These estimates are used for generating advance estimates of production of principal crops. This component is being implemented in 16 land record States and Union Territories of Delhi, Ladakh, Jammu & Kashmir and Puducherry.
2. **Improvement of Crop Statistics (ICS):** The objective of this component is to improve the quality of statistics on area and production of crops through supervision and monitoring. Under this component, a sample check of area enumeration of 10,000 villages and approximately 30,000 crop cutting experiments at harvest stage are undertaken. These sample checks are equally shared by the Central Agency i.e. National Sample Survey Office; and the State Agricultural Authorities. These checks specifically relate to (a) Enumeration of crop-wise area covered in the selected villages as recorded by the Patwari; (b) Total Area under each crop recorded in Khasra Register of

villages; and (c) Supervision of Crop Cutting Experiments at the harvest stage. The IAS scheme is being implemented in 25 TRS / EARAS states and the Union Territory of Delhi, Ladakh, Jammu & Kashmir and Puducherry. The performance of the implementation of this component is also being closely monitored through Quarterly and Seasonal progress Reports.

3. **Establishment of an Agency for Reporting of Agricultural Statistics (EARAS):** This Component is being implemented in the permanently settled States of Kerala, Orissa and West Bengal and North Eastern States of Nagaland, Sikkim, Arunachal Pradesh and Tripura. Under the component, an agency has been established in these states for generating estimates of area and production of principal crops and land use statistics, on the basis of complete enumeration of 20% villages in each year. The performance of the implementation of the component is being closely monitored through Quarterly and Seasonal progress Reports. **For the financial year 2022-23 under Improvement of Agricultural Statistics Scheme against total allocation of Rs. 137.75 Crores (BE), Rs. 64.20 Crore have been released till 31th October, 2022.**

Activities undertaken for Welfare of Women and North- Eastern States

As the main objective of the scheme is to collect and compile agricultural statistics and it is not a welfare oriented scheme, no specific activity either for women or for the North-eastern States are undertaken under the scheme. However, in North Eastern States (NES), the scheme is in operation in Arunachal Pradesh, Assam, Nagaland, Sikkim & Tripura. For the financial year 2022-23, Rs.3.66 Crore have been released to NES under the Scheme (31th October, 2022).

(iii) Forecasting Agricultural Output using Space, Agro-Meteorology and Land Based Observations (FASAL)

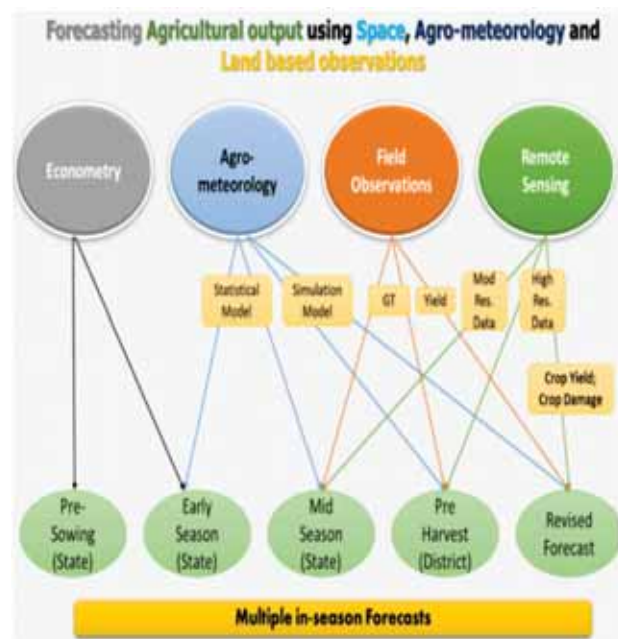
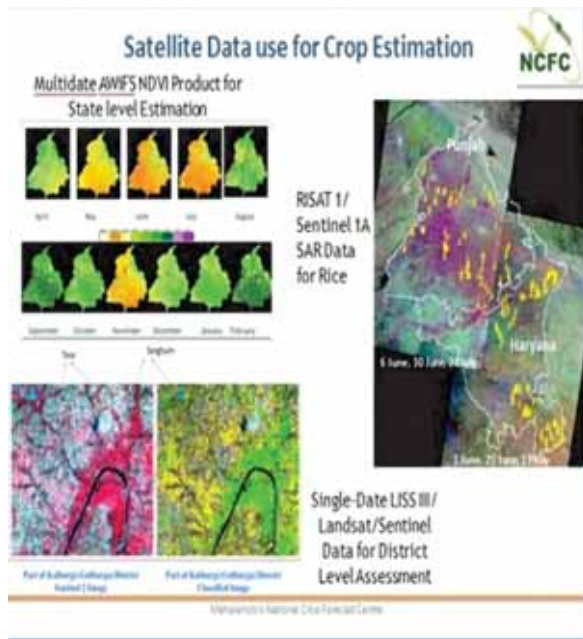
The FASAL scheme was approved as a Central Sector Plan Scheme of the Directorate of Economics & Statistics, DA&FW and is in operation since August 2006. Partner Organizations of the FASAL Scheme are India Meteorological Department (IMD), New Delhi, Institute of Economic Growth (IEG), New Delhi and Space Application Centre (SAC), Ahmedabad. Objective of the Scheme is to provide multiple-in-season forecast based on Agromet, Econometric and Remote Sensing based methodology. MNCFC has been providing Remote Sensing based forecasts in respect of 9 major crops of the country jute, cotton, sugarcane, Rice (Kharif & Rabi), Wheat, rapeseed, mustard, Sorghum (Rabi), Pigeonpea/Tur, Pulses (Rabi).

Role of India Meteorological Department (IMD) has been limited to developing crop yield forecasting models based on multiple correlation and regression techniques in collaboration with Agromet Field Units (AMFUs) using both Statistical and Crop Growth Simulation Models. Crop yield forecast of major crops is issued at mid-season and pre-harvest stage using agromet models during Kharif as well as Rabi season for crops. Presently, IMD has been providing crop yield forecast in respect of Rice, Jute, Cotton and Sugarcane during Kharif season and wheat, potato, mustard and sorghum during Rabi season to MNCFC for the preparation of forecasts based on Remote Sensing. .

IEG is providing Econometric model based State level / National level forecast of Area, Yield and Production forecasts in respect of 24 crops on monthly basis. The Crops are: Rice (Kharif & Rabi), Wheat, Maize (Kharif & Rabi), Bajra, Jowar (Kharif & Rabi), Moong (Kharif & Rabi), Arhar, Garm Masur (Lentil), Rapeseed & Mustard, Barley, Urad (Kharif & Rabi), Groundnut (Kharif & Rabi), Soyabean, Caster Seed, Cotton, Jute and Sugarcane.

The Model used for forecasting yield estimates takes into account crop price (expected),

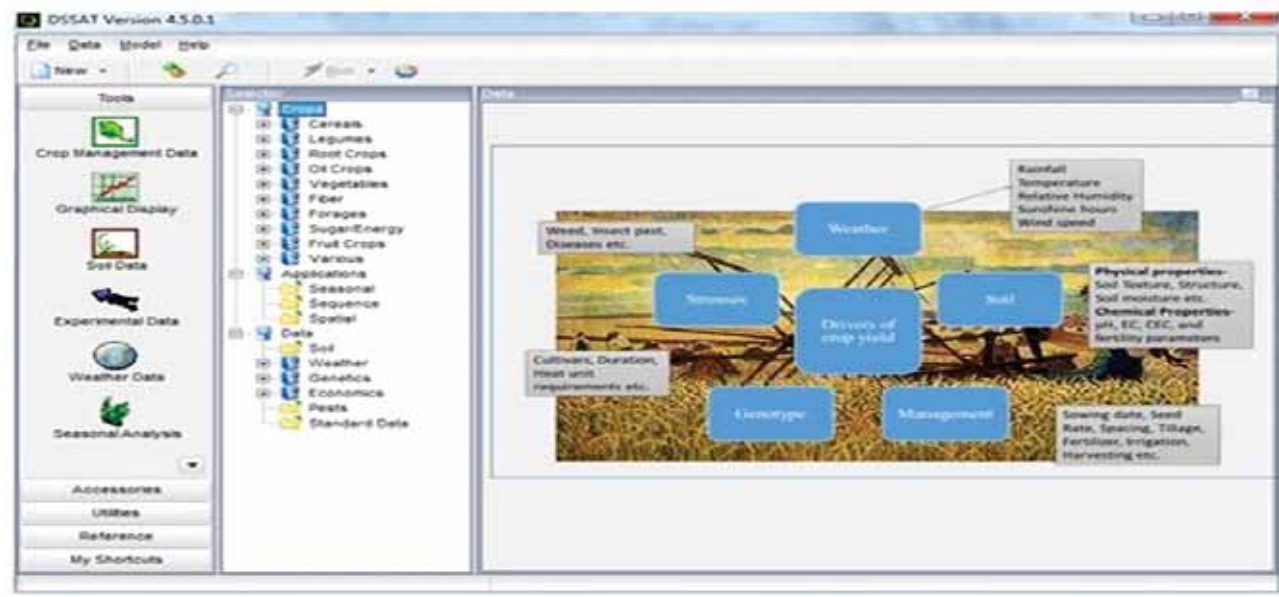
substitute crop price (expected), irrigation, is given below.



pre-sowing month reservoir and groundwater level, sowing season rainfall, rainfall in growing season, temperature in growing

season and input price fertilizer, Nutrients (DAP, Ammonium Sulfate) , Pesticides, Insecticides price.

Crop Simulation Model



The objective is to validate the data on production, yield and area obtained from the

States, So that forecast can be generated for use in formulating policy interventions, if need be.

Chapter-4

NATIONAL E-GOVERNANCE PLAN IN AGRICULTURE (NeGP-A)

4.1 Overview

Ministry of Agriculture & Farmers' Welfare aims to improve awareness, knowledge and efficiency of farmers. A comprehensive ICT strategy has, therefore, been developed not only to reach out to farmers in an easy and better way to improve efficiency but also for planning and monitoring of schemes so that policy decisions can be taken at a faster pace and farmers can be benefited quickly. To empower different sections of rural society, ICT strategies have been devised.

4.2 National e-Governance Plan - Agriculture

Ministry of Agriculture & Farmers' Welfare is implementing National e-Governance Plan - Agriculture (NeGP-A). Its aim is to achieve rapid development in India through use of Information & Communication Technology (ICT) for timely access to agriculture related information for the farmers. In agriculture, availability of real time information at the right time is a continuous challenge. Lack of information at the proper time causes loss to farmers. NeGP-A aims to bridge this gap in communication by using technology.

National e-Governance Plan in Agriculture (NeGPA) was initially launched in seven selected States namely, Assam, Himachal Pradesh, Jharkhand, Karnataka, Kerala, Madhya Pradesh and Maharashtra, in the last quarter of 2010-11. This Scheme has subsequently been extended in the 2nd

Phase to cover all the States and 7 UTs from 2014-15. NeGP-A aims to achieve rapid development in India through use of Information & Communication Technology (ICT) for timely access to agriculture related information for the farmers. Support was rendered for buying hardware, software and deployment of manpower for handling them under the scheme.

However, 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 as recommended by the DFI Committee, 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 and involving use of modern Information Technologies such as Artificial Intelligence & Machine Learning, Block Chain Technology, Internet of Things, Robotics etc. The pilots were sanctioned during 2021-22 for the States/UTs as below: -

Sr. No.	Proposal Received from State/UT	Name of Project	Central Share (Rs. In Lakhs) (2021-22)
1.	Sikkim	Sikkim Agriculture Resource and Management System (ARMS)	250.497
2.	Uttarakhand	1.Computerize reporting of Agricultural Statistics Land Use Statistics and Area under different crops right from village level to State level	227.56

		2. For designing, development, installation and commissioning of the smart agriculture platform using GIS, Remote Sensing, AI and IoT	
3.	Nagaland	Soil & Water Resource Management, Meteorological Analysis & Forecasting System using Remote Sensing, GIS mapping, Drone and Emerging Technologies under NeGPA.	1097.00
4	Meghalaya	Regarding farmers database	33.057
5.	Tamil Nadu	Creation of Unified Farmers Database and building layers or solutions over the Farmers Database	257.142
6.	Arunachal Pradesh	1. Developing a resilient Agriculture /Farm Produce Supply Chain System Leveraging Digitalization in Arunachal Pradesh 2. Development of Smart Pest Surveillance System cum Geo Spatial aided Agricultural Information System	270.00
7.	Mizoram	Geospatial Analytics & Decision Support for agriculture Development in Mizoram	122.31
8.	Haryana	Implementation of Emerging Technologies in Agriculture Sector in Haryana	497.13
9.	Andhra Pradesh	Implementation of Phase - II “UDP app to operate RBKs”	2667.60
10.	Punjab	Estimation of Groundwater Unit Draft and Water Budgeting in Different Agro-climatic Regions of Punjab Using Internet of Things and Satellite Remote Sensing	205.194
11.	Odisha	Phase II of Krushak database (Odisha’s farmers database)	165.05

4.3 MKisan-Use of basic mobile telephony:

Since the penetration of smart phones with internet in rural areas is around 18% only, mobile telephony is considered to be the alternate and the best option to deliver services to the farmers. Mobile telephony has transformed the tenor of our lives. The Department has developed a portal-mkisan (mkisan.gov.in), where, around 5.3 crore farmers are registered and experts/scientists of different departments like IMD, ICAR, State Government, State Agriculture Universities send information to farmers in 12 local languages on a regular basis.

Information related to the weather such as likelihood of rainfall, temperature, etc. enables farmers to make informed decision in choice of seed varieties and decide on timing of sowing and harvesting. With market information, farmers are better informed to sell produce, prevailing market prices and quantity demanded in the market. Thus, they can make informed decisions to sell produce at the right price and at the right time. This helps in reducing distress sales by farmers due to market supply fluctuations. More than 2462 crore SMSs have been sent through mKisan since its inception in 2013.

Farmers' Portal is a one stop shop for farmers where a farmer can get relevant information on a range of topics including seeds, fertilizer, pesticides, credit, good practices, dealer network, availability of inputs, agromet advisory etc. This information can be drilled down through the pictorial view of the Map of India placed on the Home page as well.

This centralized repository is the back bone of all mobile apps and SMS advisories. This portal provides information across all stages of crop management right from sowing of seeds till post harvesting. An important feature of this web based portal is that one can drill down to the block level and get information of the particular block.



4.5 Development of Mobile Apps:

Spreading agriculture related information to farmers in the poorest communities has been made easier by proliferation of mobile phones. Today, mobile apps and services are being designed and released in different parts of the world. Mobile apps help to fulfil the larger objective of farmers' empowerment and facilitates in dissemination of extension services to address food security issues. Various mobile apps have been developed for farmers. Details are as listed below:

Kisan Suvidha: It is a Smart App for farmers, which is platform independent as well as available on Google Play Store. All the services/information relevant to farmers are linked here as a common platform. It will include various schemes and services of Central and State Governments for Farmers. It includes Agriculture as well as Animal Husbandry Sector. Users can visit <https://kisansuvidha.gov.in> to access app in multiple languages.

Some of the Services and sub-services listed under Agriculture Sector are:

PM-Kisan - Beneficiary and Payment Status under PM-KISAN Scheme, Edit Aadhaar details, Check status of Self Registered Farmer.

Fertilizers - Fertilizers Dealers, Stock position and prices.

Kisan Rath - Transport Service Provider in your Area, App Installation link, App Help Video, Sell Offers.

Farm Machinery - Manufacturers / Dealers of Agricultural Machinery, Calculate subsidy, know application status, Register themselves for subsidy, Know about Custom hiring Centres, check availability of agriculture machinery for sale and purchase.

Seeds - Seed Varieties and Dealers.

Soil Health Card - Get Soil Health Card and know details of nearby Soil Testing Laboratories.

Agriculture Marketing and Procurement - Market prices, Minimum Support Prices, Nearby Markets, procurement points and schedules for procurement.

Crop Insurance - Premium Calculator, Application Status, Insurance Directory, Bank Directory.

Organic Farming, Regional Councils, Horticulture Schemes, Application Status, Trainings and Extension Services, Extension Services, Agri- Clinic and Agri Business Scheme, Government Schemes, Directory Services and Other Services.





4.6 New application development in 2021-22 by Digital Agriculture Division:

The Following activities have been undertaken :-

- Development of the new Website for the Department.
- Development of the Natural Farming portal.
- Development of the Monitoring System portal.
- Development of Knowledge Management Portal for Agristack.
- Development and Maintenance of Farms App.
- Development of NSC Dashboard
- Development of Seed EXIM portal.
- Revamping of them Kisan portal.

- Revamping of the Farmers portal.
- Enhancements in FM-DBT, FM-TTI, Farms and Kisan Drone portals by on-boarding of the States, farm machinery manufacturers & dealers by implementation of better process management.

4.7 DBT implementation in schemes of the Department

- 15 schemes of the Department have been identified for DBT implementation
- 14 schemes are already on-boarded (linked with Centralised DBT portal of DBT Bharat Mission).
- Management Information System of these schemes is linked with the Central Agriculture portal (dbtdacfw.gov.in).

Schemes on boarded on DBT

1	Agri Clinics and Agri Business Centres (ACABC) Scheme
2	Sub Mission on the Agriculture Mechanization (Two component – One Central Sector and other Centrally Sponsored)
3	Pradhan Mantri Krishi Sinchai Yojana

4	Mission for Integrated Development of Horticulture
5	Support to States for Extension Reforms ATMA Scheme (two components – one for Farmers and other for Functionaries)
6	Sub-Mission on Seeds and Planting Material
7	Crop Insurance Scheme
8	National Mission on Oilseeds & Oil Palm (NMOOP)
9	Integrated Scheme on Agriculture Cooperation
10	National Food Security Mission (NFSM)
11	Krishi Unnati Yojana (KUY)-MOVCDNER
12	NMSA-Rainfed Area Development
13	Interest Subsidy for Short term Credit to farmers
14	PM-KISAN

DIRECT BENEFIT TRANSFER (DBT)
Department of Agriculture and Farmers Welfare
Ministry of Agriculture & Farmers Welfare
Government of India

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75 Azadi Ka Amrit Mahotsav
Har Ghar Tiranga
13th-15th August 2022

A Unified Central Portal for Agriculture Schemes

14 Total Schemes
0 Total Beneficiaries (FY 2021-22)
0 Total Beneficiaries Mobile (FY 2021-22)
0 Aadhaar Seeded Beneficiaries (FY 2021-22)

Visitors Count : 2364

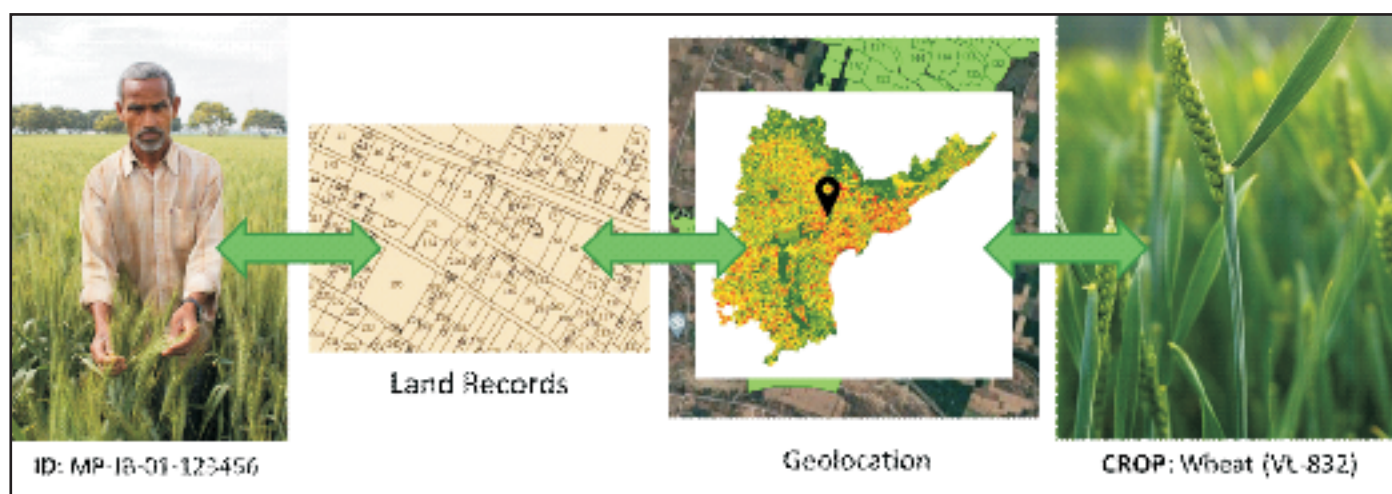
DBT Schemes → Central Nodal Officer (CNO) User login → Create State Nodal Officer (SNO) → Add beneficiary and fund details → CNO verifies the data and freeze the data → Freeze data is sent to DBT Bharat Mission

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4.8 Agri Stack

Agri Stack project is an ambitious digital agriculture initiative of the Department of Agriculture and Farmers Welfare (DAFW), Ministry of Agriculture & Farmers Welfare, Government of India.

Agri Stack is a collection of databases, registries, frameworks, standards, data schema, APIs, IT systems, that open up data related to agriculture, through interoperable systems for the development of innovative services and solutions by government entities and private sector.

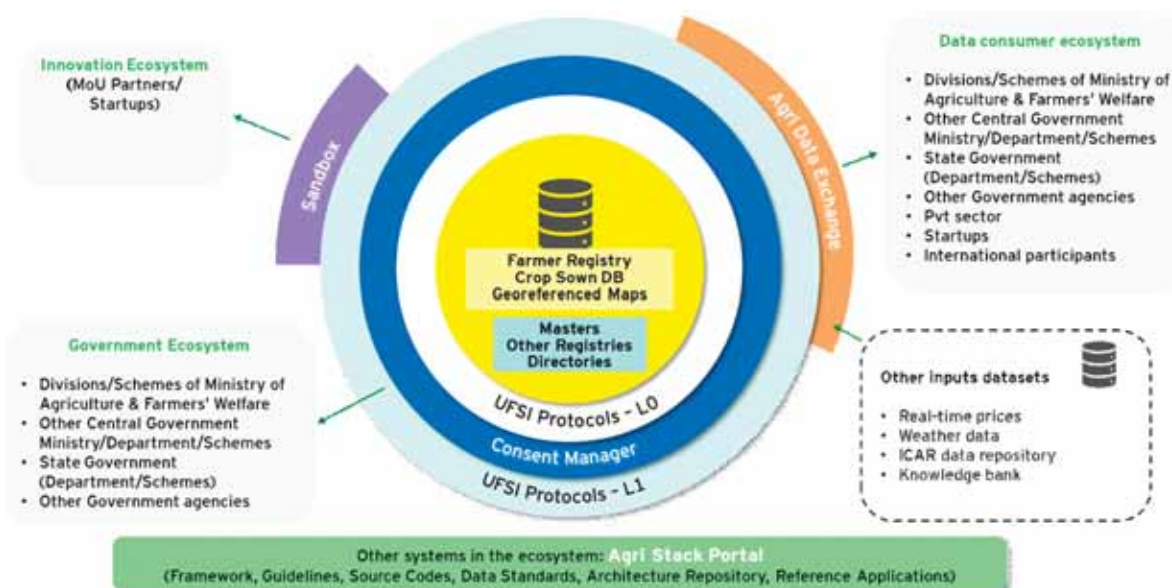


Enabling data in Agri Stack

Agri Stack is being built on open standards, with a federated architecture, ensuring participatory and inclusive design to ensure the agriculture sector evolves collectively with the help of specialized line Ministries, the states and private Agri tech players. Agri Stack will, at its core, respect and enable data privacy, based on principles of the Data Empowerment and Protection Architectures. Accordingly, all personal data belonging to a farmer will be collected with purpose limitation, and shared only with the farmer's consent, and only with authorized data seekers.

Agri Stack, akin to Aadhaar, is envisioned to be the core data infrastructure for Agriculture that will

digitally enable better public and private ecosystems for service delivery across the agriculture value-chain. Using Agri Stack various government departments, and public and private sector entities can build a variety of use-cases for the benefit of farmers and farmer collectives, primarily. As a digital public good, Agri Stack will help improve efficiencies and costs for state and central governments, and private companies, to provide services in agriculture – by making high-quality, verified, (or curated) current data available to them (with farmers' consent where required). In its initial version, Agri Stack will comprise of the following core components at the Centre:



While the Agri Stack will evolve over time, the following initial building blocks have been planned for Agri Stack:

A. Farmer Registries

At the centre of Agri Stack is a Farmer Registry – a federated registry of all the farmers in the country, compiled by States according to common standards, and cached by the Centre. Each farmer will be assigned a unique FarmerID (a functional ID, based on Aadhaar as per IndEA 2.0) along with a digitally verifiable credential. The Farmer Registry will be dynamically linked to their farmland plot records – for non-legal, planning and advisory, and scheme-delivery purposes only. It will contain the minimal demographic details of the farmer to enable identification and eligibility determination for availing government scheme benefits – and to enable access to key services.

B. Geo-referenced Village Maps

Historically, village maps have existed as hand-drawn records on paper. Under the Digital India Land Records Modernisation Programme (DILRMP), these paper village maps are being scanned and digitised, which ensures that the geometry of the boundaries are kept intact as compared to paper village maps/raw cadastral maps. These digital cadastral maps are finally geo-referenced, which implies that the land is tied to coordinates i.e. latitude and longitude. The coordinates help to place the land in its appropriate real world location. This data will be one of the Core Registries of Agri Stack to help place identify the location where the crop is being Sown. It will also serve as a basis for the Digital Crop Survey.

C. Crop Sown registry

The Crop Sown Registry is designed to be a federated registry of crops being sown and grown across the country every season, on every farm by each farmer. It aims to streamline and improve previously prevalent paper-based methods of surveying crops by introducing smart-phone and image-based (including drone and satellite images in future), more fool-proof methods of crop survey. The Crop Sown registry, along with the Farmer and

Farmland Plot Registries, forms part of the initial set of core central registries. The Crop Sown Registry together with the other two core registries, enables the State and Central governments to estimate the crop production quicker and more accurately, better understand and be more responsive to the actual crop being grown in the country and plan interventions and support to help address the crop specific issues. It can also enable government and private service providers to better target schemes, services, seeds, fertilisers, pesticides, farm machinery, advice, credit, etc. customised to a farmer's individual needs.

D. Unified Farmer Service Interface (UFSI)

Unified Farmer Service Interface is the building block that enables interoperability across stakeholders in Agri Stack. It comprises a standardised schema and API definitions, along with their various associated specifications. UFSI is envisioned to be used by government, and authorised private users, such as Banks, Agri-Techs, agriculture value-chain companies, etc. UFSI will enable centre-state federation of data, authorised and consent-brokered access to the core registries' data, and standards-based interactions between various public and private stakeholders.

E. Agri Stack Sandbox

Encouraging innovation in the agriculture ecosystem is one of the core goals of Agri Stack. It is, hence, essential that various stakeholders such as individuals, start-ups, private companies, and public entities are able to get access to the various services aggregated by Agri Stack. It is equally essential that such stakeholders work in a safe and controlled environment that enables them to test out their ideas, products and services without impacting the real-world.

The Agri Stack Sandbox is a subset of the Agri Stack that will provide a simulated environment with the access to the Unified Farmer Service Interface (UFSI) along with sample data for the various registries and databases, to authorised stakeholders to allow them to test and safely fail, or succeed and get fully authorised access to the

production environments. In the initial phase of Agri Stack, the Agri Stack Sandbox will also serve as an innovation playground to enable agile and iterative definition of the UFSI APIs and schema.

F. Consent Manager

Since maintaining data privacy and complying with prevalent data privacy norms and regulations is critical. A robust consent architecture, that is easy and convenient to use by the data principals, i.e., the farmers, is thus a critical foundational pillar of Agri Stack. The Agri Stack Consent Manager, which provides the foundation for data privacy, is initially designed around the Data Empowerment and Protection Architecture (DEPA) framework, and will evolve as the data privacy regulations are formally legislated. The Consent Manager facilitates data-blind sharing of personal data only with persons/entities for whom the data principal (i.e., a farmer) has provided consent. Consent once given, may also be revoked, preventing future sharing of data.

G. Agri Data Exchange

The Agri Data Exchange will support one of the sectoral needs for non-personal datasets in an aggregated form such as satellite images with NDVI, watershed data, weather data, warehouse data, market prices, soil data, IoT data, etc from different providers to seamlessly deliver various services, such as research papers, business plans, sector reports and papers, etc. It is proposed that a sector-agnostic Data Exchange that is being developed by MeitY will be used by Agri Stack, and will set up appropriate mechanisms (such as taxonomies) and governance structures to curate valuable data sets for this exchange.

H. Agri Stack Website

Agri Stack is designed on the principles of inclusive and participatory design, it is essential to be present on right channels to facilitate dissemination of information on Agri Stack or a domain or technical audience. Hence an Agri Stack is being developed that will act as a repository for:

- General Descriptions

- Technical Documentation
- Presentations
- Case Studies
- Publications
- Architecture documents

In future, all notifications regarding Agri Stack will be issued via website. Further, another Web Portal will be developed for various Agri Stack data and APIs. It may be merged with this one in future.

I. Building Reference Applications for States

Reference Applications are applications which will facilitate quick adoption for States on to the Agri Stack. In lines with the thinking of InDEA 2.0, the DA&FW will build up the Common and Reference Building Blocks at Centre and ease the adoption process for the State Governments. i.e. Farmer Registry & Registration Application, Crop Survey Application, Consent Manager.

J. Create other support Registries in Agri Stack

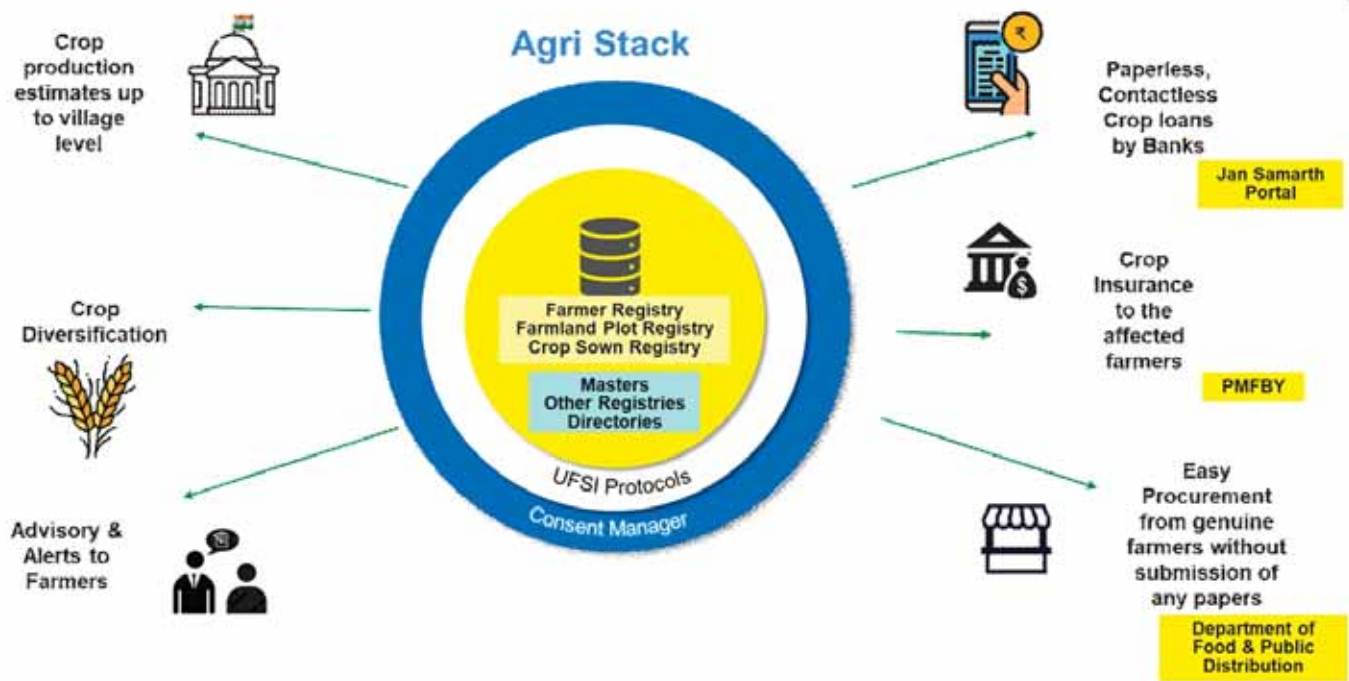
To help facilitate Data Standardization and Interoperability in Agri Stack, the Ministry is planning to create support Registries for Agri Stack i.e. Crop, Seed, Pesticide, etc.

Agri Stack will be similar to Aadhaar, in that it provides enabling digital infrastructure, along with the required enabling regulations, but with minimal data collection and consent brokered data sharing, to catalyze innovation. Agri Stack will enable various use-cases, through these infrastructure, but will not directly implement use-cases.

Various use-cases envisioned to be enabled by Agri Stack include:-

1. Kisan Credit Card saturation – through presence-less, contact-less applications / approval of loans on KCC
2. More streamlined delivery of various Central Government / Centrally Sponsored Government Schemes, including specifically, PMKISAN, PMFBY, PMKSY, and AIF
3. Enablement and delivery of right advisory

- at the right time, customized to specific farmer, his/ her farm and crop sown by the farmer
4. Improved access to better, quality-assured inputs, such as seeds, pesticides and fertilizers
 5. Better access to nationwide digital marketplaces for agricultural services, such as warehousing, quality assaying, logistics, farm mechanization
 6. Better access to local and national (and eventually, international) markets for agricultural produce



Chapter-5

MISSION FOR INTEGRATED DEVELOPMENT OF HORTICULTURE (MIDH)

Mission for Integrated Development of Horticulture (MIDH)

Overview

5.1 Mission for Integrated Development of Horticulture (MIDH) is a Centrally Sponsored Scheme for the holistic growth of the horticulture sector covering fruits, vegetables, root & tuber crops, mushrooms, spices, flowers, aromatic plants, coconut, cashew and cocoa.

5.2 Major Schemes – Objectives

MIDH consists of 5 schemes on Horticulture viz. (i) National Horticulture Mission (NHM), (ii) Horticulture Mission for North East and Himalayan States (HMNEH), (iii) National Horticulture Board (NHB), (iv) Coconut Development Board (CDB), (v) Central Institute of Horticulture (CIH), Nagaland.

Under MIDH, Government of India (GOI) contributes 60%, of total outlay for developmental programmes in all the States except States in North East and Himalayas, 40% share is contributed by State Governments. In the case of North Eastern and Himalayan States, GOI contributes 90%. In case of National Horticulture Board (NHB), Coconut Development Board (CDB), Central Institute for Horticulture (CIH), Nagaland and the National Level Agencies (NLA), GOI contributes 100%.

The budget allocation of Rs. 1914.38 crore has been earmarked for MIDH during 2022-23. As on 31st December, 2022, funds to the tune of Rs. 543.22 crores have been released for implementation of activities of MIDH i.e. Rs. 252.35 crore under NHM, Rs. 124.23 crore under HMNEH, Rs. 49.77 crore under CDB, 106.17 crore to NHB, Rs. 7.83 crore to CIH, DCCD & DASD and Rs. 2.87 crore to NBM.

5.3 Brief of schemes under MIDH is as follows:

5.3.1 National Horticulture Mission (NHM):

This Centrally Sponsored Scheme was launched in the year 2005-06 and aims at the holistic development of the horticulture sector by ensuring forward and backward linkage through a cluster approach with the active participation of all stakeholders. A total of 384 districts in 18 States and 6 Union Territories were covered under NHM. Sixteen (16) National Level Agencies (NLAs) have also been included for providing support for developmental efforts which require inputs at the national level.

Supply of quality planting material through establishment of nurseries and tissue culture units, production and productivity improvement programmes through area expansion and rejuvenation, technology promotion, technology dissemination, human resource development, creation of infrastructure for post harvest management and marketing in consonance with the comparative advantages of each State/region and their diverse agro-climatic conditions are major interventions under NHM.

5.3.2 Horticulture Mission for North East and Himalayan States (HMNEH)

The Department is implementing a Centrally Sponsored Scheme - Horticulture Mission for North East and Himalayan States (HMNEH) earlier known as Technology Mission for Integrated Development of Horticulture in North Eastern States since 2001-02. During the X Plan (2003-04), the scheme was further extended to three Himalayan States namely: Himachal Pradesh, Jammu and Kashmir and Uttarakhand. The Mission covers the entire spectrum of horticulture, right from planting to consumption with backward and forward linkages. With effect from 2014-15, HMNEH scheme has been subsumed under MIDH.

5.3.3 National Horticulture Board

The National Horticulture Board (NHB) was set up

by the Government of India in 1984 as an Autonomous organization under the administrative control of Ministry of Agriculture and Farmers Welfare and registered as a society under Societies Registration Act with its headquarters at Gurugram. Presently, NHB has 29 field offices located all over the country. The broad aims and objectives of the Board are to develop production clusters/hubs for integrated Hi-tech commercial horticulture, development of Post-harvest and cold chain infrastructure, ensuring availability of quality planting material and to promote adoption of new technologies/tools/ techniques for Hi-tech commercial horticulture etc.

The Board is implementing following schemes:

1. Development of Commercial Horticulture through Production and Post Harvest Management of Horticulture Crops.
2. Capital Investment Subsidy for Construction/ Expansion/ Modernization of Cold Storages and Storages for Horticulture Products.
3. Technology Development and Transfer for Promotion of Horticulture.
4. Market Information Service for Horticulture Crops.
5. Horticulture Promotion Services/ Expert Services and Strengthening Capability of NHB.

5.3.4 Coconut Development Board

Coconut Development Board (CDB) is a statutory body established by Govt. of India by an Act of Parliament (Coconut Development Board Act 1979) and came into existence in January 1981. The thrust areas of the Coconut Development Board programmes under MIDH are production and distribution of quality planting material, expansion of area under coconut cultivation especially in potential and non-traditional areas, improving the productivity of coconut in major coconut producing States, developing technology in post-harvest processing and marketing activities, product

diversification and by-product utilization of coconut for value addition, dissemination of information and capacity building in the coconut sector.

The major programmes that are being implemented by the Board are;

A.1. Production and Distribution of Quality Planting Materials

- (a) Demonstration cum-Seed Production (DSP) Farm
- (b) Establishment of Regional Coconut Nurseries
- (c) Establishment of Nucleus Coconut Seed Garden
- (d) Establishment of Small Coconut Nursery

A.2. Expansion of Area under Coconut

A.3. Integrated Farming for Productivity Improvement

- (a) Laying out of Demonstration Plots
- (b) Aid to Organic Manure Units

A.4. Technology Demonstration/Quality Testing Lab

A.5. Marketing, Market Intelligence Services, Statistics and Strengthening of Export Promotion Council (EPC)

A.6. Information & Information Technology

A.7. Technical Service & Project Management

B: Technology Mission on Coconut

C. Replanting & Rejuvenation of Old Coconut Gardens

D. Coconut Palm Insurance Scheme

E. Kera Suraksha Insurance Scheme

5.4 Physical and Financial Progress

5.4.1 National Horticulture Mission (NHM):

A. Physical Progress: The summary details of progress achieved during 2022-23 are given at **Table 1** below:

Table 1: Progress under NHM

S. No.	Components	Unit	Progress during 2022-23 (as on 31 st December, 2022)
1	Area Expansion	Ha.	70417
2	Rejuvenation	Ha.	1643
3	Protected Cultivation	Ha.	10733
4	Integrated Pest/ Nutrient Management	Ha.	7646
5	Nurseries	No.	28
6	Water Resources	No.	1551
7	Beekeeping	No.	17820
8	Horticulture Mechanization	No.	8970
9	Post Harvest Management		
	(i) Pack House	No.	2191
	(ii) Cold Storage	No.	25
	(iii) Primary/mobile processing units	No.	26
10	Rural Market	No.	0

Source: as per the data uploaded by the State Govt. on MIDH web portal

B. Financial Progress: During 2021-22, as on 31st March, 2022, funds to the tune of Rs. 516.18 crore have been released to States/UTs/NLAs for implementing NHM scheme against RE of Rs 830.23 crore. During 2022-23, an amount of Rs. 1049.26 crore has been allocated for NHM, against which an amount of Rs. 252.35 crore has been released as on 31st December, 2022.

5.4.2 Area, Production & Productivity of Horticulture Crops

The comparative details of area, production and productivity of various horticulture crops during 2021-22 (3rd Adv. Est) with reference to 2004-05 are given in the following Table 2.

Table 2: NHM Scenario: Area, Production & Productivity

(Area: '000 Ha, Production: '000 MT, Productivity: MT/Ha)

Crop	Area			Production			Productivity		
	2004-05	2020-21	2021-22*	2004-05	2020-21	2021-22*	2004-05	2020-21	2021-22*
Fruits	5049	6930	7049	50867	102481	107242	10.07	14.79	15.2
Vegetables	6744	10859	11348	101246	200445	204835	15.01	18.46	18.1
Flowers	118	322	283	659	2980	3128	5.58	9.25	11.1
Aromatic & Medicinal crops	131	653	668	159	825	689	1.21	1.26	1.0

Plantation crops	3147	4255	4239	9835	16629	15488	3.13	3.91	3.7
Spices	3150	4457	4487	4001	11117	10814	1.27	2.49	2.4
Others	106			172	125	133			
Total	18445	27476	28075	166939	334603	342329	9.05	12.18	12.2

***3rd Advance Estimates of Horticulture Crops 2021-22-DA&FW**

The wide and varied nature of the horticulture sector covering fruits, vegetables, root and tuber crops, flowers, aromatics and medicinal crops, spices and plantation crops facilitates better returns per unit of area, besides opportunities for diversification in agriculture.

Horticulture crops cover an area of 28.08 Million Hectare at present; it has registered an increase of 20.8% as compared to 23.24 Million Hectare in 2011-12. However, with a production of about

342.33 Million Tonnes, horticulture production has witnessed an increase of about 33.06% during the period 2011-12 to 2021-22 (3rd Advance Estimates). The significant feature is that there has been improvement of productivity of horticulture crops which increased by about 10.12% during this period.

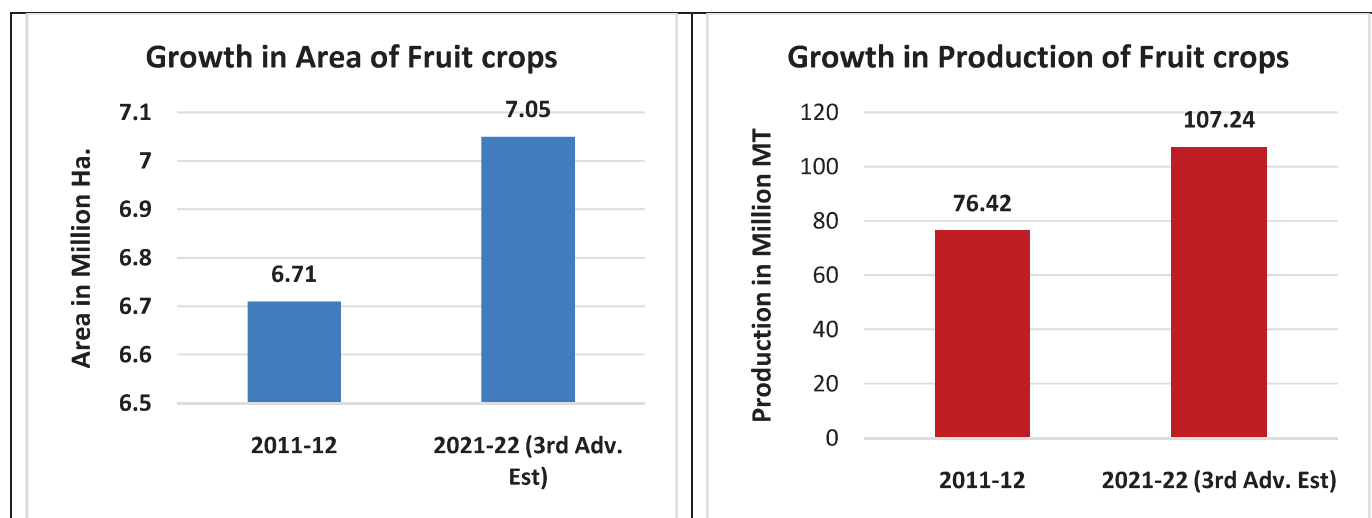
Area, Production & Productivity of Horticulture crops during the past 11 years are given in Table 3.

Table 3: Area, Production & Productivity of Horticulture crops
Area: Million Hectare, Production: Million Tonnes, Productivity: Tonnes/Hectare

Year	Area	Production	Productivity
2011-12	23.24	257.28	11.07
2012-13	23.69	268.85	11.35
2013-14	24.20	277.35	11.46
2014-15	23.41	280.99	12.00
2015-16	24.47	286.19	11.69
2016-17	24.85	300.64	12.10
2017-18	25.24	310.67	12.31
2018-19	25.74	311.05	12.09
2019-20	26.48	320.47	12.10
2020-21	27.48	334.60	12.18
2021-22 (3rd Advance Estimates)	28.08	342.33	12.19

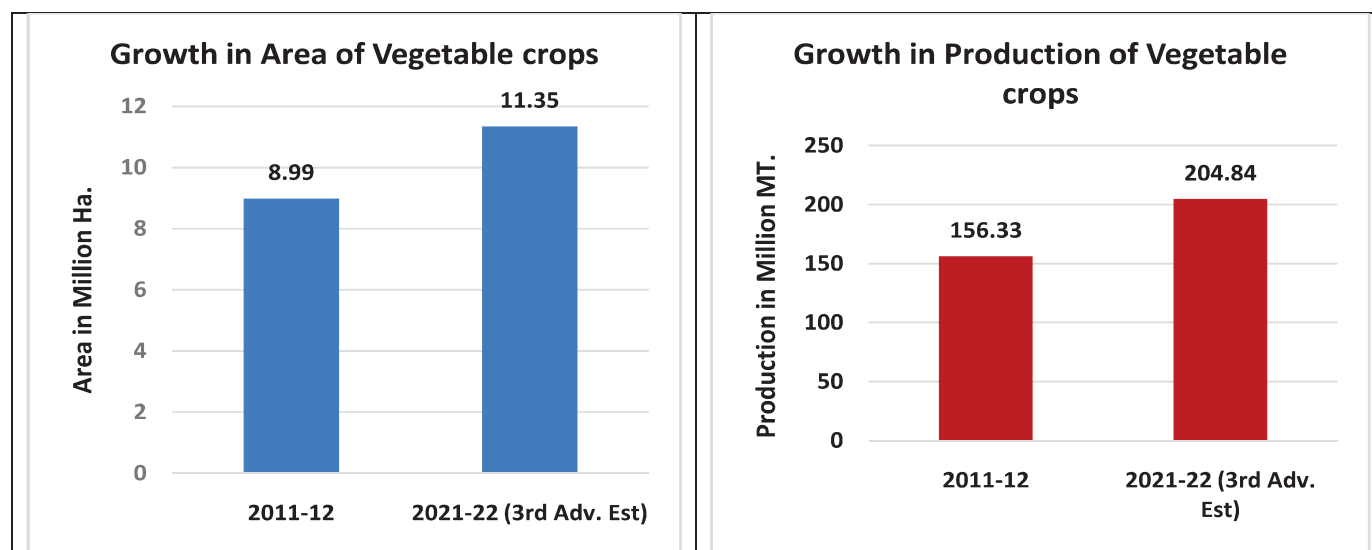
The area under fruit crops during 2021-22 (3rd Advance Estimate) is 7.05 Million Hectare, with a total production of 107.24 Million Tonne. During the Period 2011-12 to 2021-22 (3rd Adv. Est.),

production of fruits increased by about 40.3%, while the area increased by about 5.1%. Comparative details of area, production and productivity of fruit crops are given in **figure 1**.

Figure 1: Growth in Area and Production of Fruits

Vegetables are an important crop in the horticulture sector, occupying an area of 11.35 Million Hectare as per 2021-22 (3rd Advance Estimates) with a total production of 204.84 Million Tonne with average productivity of 18.1 Tonnes/Hectare. In fact, vegetables constitute

about 59.84% of horticulture production. During the period 2011-12 to 2021-22 (3rd Advance Estimates), area and production of vegetables increased by 26.2% and 31.0% respectively. The comparative details are depicted in the Figure 2.

Figure 1: Growth in Area and Production of Vegetables

India has also made remarkable advancements in production of flowers, particularly cut flowers, which have a high potential for exports. Floriculture during 2021-22 (3rd Advance Estimates) covered an area of 0.28 Million Hectare with a production of 3.13 Million Tonne of flowers.

India is the largest producer, consumer and exporter of spices and spice products. The total production of spices during 2021-22 (3rd Advance Estimates) was 10.81 Million Tonne from an area of 4.49 Million Hectare.

5.4.3 Horticulture Mission for North East and Himalayan States (HMNEH)

under HMNEH during 2022-23 are given at **Table 4** below:

A. Physical Progress

The summary details of progress achieved so far

Table 4: Progress under HMNEH

S. No.	Components	Unit	Progress during 2022 -23 (as on 31 st December, 2022)
1	Area Expansion	Ha.	10956
2	Rejuvenation	Ha.	1025
3	Protected Cultivation	Ha.	1532
4	Integrated Pest/Nutrient Management	Ha.	3586
5	Nurseries	No.	4
6	Water Resources	No.	233
7	Beekeeping	No.	0
8	Horticulture Mechanization	No.	196
9	Post Harvest Management		
	(i) Pack House	No.	251
	(ii) Cold Storage	No.	7
	(iii) Primary/Mobile Processing Units	No.	5
10	Rural Market	No.	0

Source: as per the data uploaded by State Govt. on MIDH web portal

B. Financial Progress

During 2021-22, as on 31st March, 2022, funds to the tune of Rs. 215.90 crore have been released to States implementing HMNEH scheme against RE of Rs.447.00 crore. During 2022-23, an amount of Rs.375.74 crore has been allocated for North Eastern States and Himalayan States (including PMDP), against which an amount of Rs. 124.23 crore has been released as on 31st December, 2022.

5.4.4 National Horticulture Board (NHB)

A. Physical Progress:

1. **“Development of Commercial Horticulture through Production and Post Harvest Management of Horticulture Crops” for a better alternative to increase the income of farmers** in which the financial support in the form of back-ended subsidy is provided for

setting up units relating to horticulture sector such as production related projects, PHM viz. Pack House, Ripening Chamber, Refer Van, Retail Outlets, Pre-cooling units, Primary processing etc. The brief of the scheme is as under:-

1.1 Open Filed Cultivation- Credit linked back-ended subsidy @ 40% of the total project cost limited to Rs 30.00 lakh per project in general area and @ 50% of project cost limited to Rs. 37.50 lakh in NE Region and Hilly States and Scheduled areas for horticulture projects in open field condition on project mode including component viz, planting material, plantation, irrigation, fertigation, mechanization, GAP etc. for projects covering area over 2.00 ha (5 Acres). In case of NE Region, projects having area over 1 Acre are eligible.

Credit linked back-ended subsidy

1.2 Protected Cover/ Cultivation - Credit linked back-ended subsidy @ 50% of project cost limited to Rs 56.00 lakh per project for horticulture project in protected condition on project mode including components viz Green House, Shade net house, plastic tunnels, planting material, plantation, irrigation, fertigation, mechanization, etc for project having area over 2500 sq meter. In case of NE Region, projects having area over 1000 sq meter are eligible.

1.3 Post Harvest Management- Integrated PHM Projects relating to Pack House, Ripening Chamber, Refer Van, Retail Outlets, Pre-cooling units, Primary processing etc. Credit linked back-ended@35% of the project cost limited to Rs. 50.75 lakh per project in general area and 50% of project cost limited to Rs. 72.50 lakh per project in NE Region, Hilly States and Scheduled areas for post-harvest management projects/ components.

Achievements

Under the scheme, the Board sanctioned **192 projects** during the current financial year (**as on 31.12.2022**) involving subsidy of **Rs. 4933.27 lakh**. The projects include Hi-Tech cultivation of perennial fruit crops in open field, vegetables & flowers in protected cultivation, tissue culture units, mushroom cultivation, establishment of pack house and grading centers, ripening chambers, refer van, retail outlets, pre-cooling units, primary processing units etc.

2. "Capital Investment Subsidy for Construction/ Expansion/ Modernization of Cold Storages and Storages for Horticulture Products", under this scheme, credit linked back-ended subsidy @35% of the capital cost of the project in general areas and 50% in case of North East, Hilly States & Scheduled areas for Cold storage capacity above 5000 MT and up to 10000 MT is sanctioned for construction/ expansion/ modernization of cold storage and CA store. In case of NE Region, the capacity

above 1000 MT are also eligible. Only those projects are considered which are set up in conformity of technical standards for energy efficiency and environmental safety energy and multi chambers.

Achievements

Under the scheme, the Board sanctioned **35 projects** of Cold Storages/CA Storages involving subsidy of **Rs. 5668.77 lakh** for creation of capacity of **219460.94 MT** during the current financial year (**as on 31.12.2022**).

3. Technology Development and Transfer for Promotion of Horticulture

Under this scheme, the Board is also providing grant-in-aid for popularization of identified new technologies/tools/ techniques for commercialization and adoption through following programmes:

- (i) Setting up of block / mother plant and root stock nursery (Area above 4 ha).
- (ii) Acquisition of technologies including import of planting material.
- (iii) Import of new machines and Tools for horticulture.
- (iv) Development & Transfer of Technology.
- (v) Long Distance Transport Solution.
- (vi) Product Promotion and Market Development Services- Horti-fairs.
- (vii) Exposure visit of farmers (Outside State).
- (viii) Visit Abroad for Government Officers.
- (ix) Organization/Participation in Seminar/ symposia/workshop for development of horticulture.
- (x) Accreditation and Rating of Fruit Plant Nurseries

Achievements

Under this scheme, NHB has assisted **07 projects** for Introduction of New Technology, Visit of Progressive Farmers, Horti. Sangam, Organization/Participation in Seminars/

Symposia/ Exhibitions, Technology Awareness, Mother Plant Nurseries, etc. and released financial assistance amounting to **Rs. 28.13 lakh** during the current financial year in **(as on 31.12.2022)**.

4. Market Information Service for Horticulture Crops

This scheme deals with work of computerization, development of technology package, data feeding, information dissemination through publicity, printed literature local advertisements etc scheme provides for engagement of outsourced staff such as Senior Programmer, Programmer, Data Entry Operators and horticulture assistant as per need at approved rates under TSG component of MIDH.

5. Horticulture Promotion Services/ Expert Services and Strengthening Capability of NHB

Under this component, specialized studies and surveys shall be carried and study/ survey reports shall be brought out for use by targeted beneficiaries. In addition, technical laboratories shall be set up or cause to be set up and also provide technical services including advisory and consultancy services.

New Initiatives

Following new initiatives were taken by the National Horticulture Board during the year under report:-

i) Horticulture Cluster Development Programme

To address the challenges and enhance the global competitiveness of the Indian horticulture sector, the Ministry of Agriculture and Farmers' Welfare, Government of India, launched the Central Sector Programme namely, Cluster Development Programme (CDP) on 31st May 2021 to be implemented by the National Horticulture Board (NHB).

CDP aims to enable holistic growth and development of identified horticulture clusters to make them globally competitive and entrench them into national and global value chains.



This programme is designed to leverage the geographical specialization of horticulture clusters and promote integrated and market-led development of pre-production, production, post-harvest, logistics, branding and marketing activities. Ministry of Agriculture and Farmers' Welfare identified fifty-five (55) horticulture clusters and assumed that after successful implementation of the programme in all the clusters, the overall impact is envisaged to benefit around 1 million farmers leveraging a total estimated investment of INR 10000 Cr and an increase in exports of the targeted crops by 20%.

Based on field visits and extensive feedback received from various stakeholders of the value chain, Operational Guideline for Horticulture Cluster Development Programme has been prepared and finalized. Further, it has been decided to implement the Pilot Phase of programme initially with shortlisted 12 clusters and the programme will be scaled up to cover all the 55 clusters based on the learning from the pilot phase.

Union Minister of Agriculture and Farmers' Welfare Shri Narendra Singh Tomar launched the Operational Guideline for Horticulture Cluster Development Programme virtually on 29th October, 2021.

As per the implementation framework stipulated in guideline, Cluster Development Agencies (CDAs) have been appointed for each identified cluster for undertaking the detailed analysis on gaps and determining the scope for innovative interventions in the clusters. Based on the Cluster Gap Assessment Reports (CGARs) submitted by CDAs for all 12 clusters, Request for Proposals (RFPs) for selection of Implementing Agencies for Implementation of

Different Verticals under CDP in all clusters have already been published. Outreach activities including stakeholder consultations, Krishi Melas, one to one meetings and interaction through different forums of various organizations, have been done.

Integrated Proposals have been received for Anantpur (Banana), Sophian (Apple), Nashik (Grape), West Jaintia Hills (Turmeric) and Sepahijila (Pineapple) Clusters, Mahabubnagar (Mango), Solapur (Pomegranate), Kutchh (Mango).

A large number of nurseries for horticultural crops have been established both in public and private sector and several of them have been accredited by various agencies, however, information related to the location of nurseries, their rating and availability of planting material with them during any given period for various crops and their varieties, is scattered and not available at one place. As a result, there is little access of information for farmers/ growers and other stake holders in this field.

In order to overcome the above problem, the Ministry of Agriculture and Farmers Welfare through National Horticulture Board decided to setup an '**Online Digital Platform**' for Nurseries in India, enabling easy access to information on availability of quality planting material in the nearby localities for farmers/ growers and other stake holders.

Through this portal, the nursery owners will be able to showcase their profiles and post sell offers and



ii) National Nursery Portal

Inadequate availability of quality planting material is one of the primary reason for low productivity of various horticultural crops in India. The Government of India is providing financial assistance through its various schemes for establishment of nurseries, their accreditation and rating with an aim to establish a network of quality nurseries across the country for the purpose of propagation, multiplication and distribution of quality planting material of horticulture crops in India.



"Ensuring Availability of Quality Planting Material "

buyers of planting material can post enquiries and view matching sell offers with feature of virtual aggregation. The National Nursery Portal has also been developed in important regional languages, apart from English and Hindi versions for wider coverage of the farming community. Apart from this, Mobile Apps of National Nursery Portal for Registered Buyers and Nurseries both in "Android" and "iOS" platforms has also been launched.

The National Nursery Portal was launched by the Hon'ble Union Agriculture and Farmers Welfare Minister on 13.4.2021. The newly developed NHB's National Nursery Portal platform will greatly help buyers to easily access Nurseries as well as be aware of the availability, price expectation, etc., of the quality planting material. Similarly, Nurseries will also get exposed to the market demands.

B. Financial Progress: During 2022-23, an amount of Rs.106.17 crore has been released (as on 31.12.2022) to NHB against a BE of Rs.300.00 crore.

5.4.5 Coconut Development Board (CDB)

A. Physical Progress: India being the largest coconut producing country in the world comprises 31% of global production. The coconut palm provides food security and livelihood opportunities to more than 30 million people/ 12 million farmers in India. It is also a fiber-yielding crop for more than 16,000 coir-based industries which provides employment to nearly 7 lakh people.

The crop contributes around Rs. 307,956 million to the country's GDP and earns export revenue of around Rs. 75,768 million. There are 5 million coconut holdings in the country and the average

size of these holdings is less than one hectare. As per the all India second advance estimate for the year 2021-22, the area and production of coconut in the country is 2.11 million hectares and 19247.22 million nuts, respectively. The four southern States of Kerala, Tamil Nadu, Karnataka and Andhra Pradesh accounted for 89% of the coconut area and 91 % of the coconut production in the country. The annual assistance also extended for establishment of 17 new coconut nurseries and a coconut nucleus seed garden. Under the Technology Mission on Coconut, financial assistance for establishment of 3 new coconut processing units for value added products viz., Activated Carbon Blocks & pellets (1 unit) and Dessicated coconut powder (2 unit). Financial assistance of Rs. 1993.74 lakh is extended to various States under Replanting & Rejuvenation programme.



B. Financial Progress: During the current financial year, funds to the tune of Rs. 49.77 crore has been released (as on 30.09.2022) to CDB against a BE of Rs. 110.00 crore.

Pending audit paragraphs:

The audit of the accounts of the Board is entrusted with the Comptroller and Auditor General of India as per provisions of Section 15 (2) of CDB Act, 1981. The accounts of the Board as certified by the Comptroller and Auditor General of India are being placed before each House of Parliament through the Ministry of Agriculture & Farmers Welfare. Audit queries raised by the CAG are attended on priority

basis. Replies were furnished through the Ministry and disposal of the paras are awaited. Presently 25 paras are outstanding, pertaining to year 16-17 onwards.

5.4.6 Central Institute of Horticulture (CIH), Nagaland

Central Institute of Horticulture, Medziphema, Nagaland has been engaged in the task of various horticulture development activities. The programmes are executed through capacity building by training of trainers and farmers/beneficiaries; on& off farm demonstration of improved production technologies; production

and supply of quality planting material; accreditation and certification of nurseries in NE region; promotion of organic cultivation of horticultural crops; agri-business promotion through exhibitions, seminars, workshops, exposure trips, buyers & sellers meet; post harvest management and value addition of horticultural crops; skill development & certificate courses in horticulture; transfer of technology through method & result demonstration, publication of folders, manuals, leaflets and coordination with state horticulture departments of NER and other National organizations, NGOs, farmers' group and self-help groups. The salient achievements are summarized below:

I. Capacity building and training programmes:

A total of 21 trainings have been conducted where 1394 farmers and officials have been provided training on various aspects of horticulture by the Institute such as Cultivation of exotic vegetables, Production technology of various horticulture crops, post harvest management & value addition and nursery management & accreditation. Nine (9) trainings are being targeted till March 2023 in different states of the region.

II. Kisan Bhagidari Prathamika Hamari Campaign under Azadi Ka Amrit Mahotsav:

The Institute conducted awareness cum training programme on various horticultural and marketing aspects on 26th April 2022. The programme was organized as a part of Kisan Bhagidari Prathamika Hamari Campaign under Azadi Ka Amrit Mahotsav, with the objective to create awareness on various horticulture avenues for income generation and livelihood sustenance for farmers. The programme was conducted in four locations under peren and Chumoukedima districts of Nagaland viz. Punglwa B village, Molvom village, Chumoukedima and Medziphema village. The technical team of the Institute provided awareness and training programme on mushroom cultivation and vegetable cultivation, floriculture and

marketing linkage. A total of 222 participants comprising of farmers, SHGs, FPOs and entrepreneurs have actively participated and interacted with subject expert.

III. Production of quality planting material:

The Institute produces a variety of plants in its nursery units with the objectives to provide disease free quality planting. A total of 45000 nos. of rootstocks of Citrus, mango, Cashew nut and guava have been raised and 5400 Quality Planting materials have been propagated & produced for Citrus, Dragonfruit, Avocado, litchi, Cashewnut, Mango and Guava. Besides these, 3 nursery units and 2 scion blocks in polyhouse & scion mother block in field is being maintained.

IV. Demonstration of improved production technologies (on & off farm):

The Institute has established demonstration plots and gap filling of fruit crops (Khasi Mandarin, Acid Lime, Avocado, Pineapple), vegetables & spices (Okra, Indian bean, Cowpea, Sweet potato, Colocasia, ginger, turmeric, Cabbage, Broccoli, Cauliflower, Pakchoi, Knoll Khol), seasonal flowers, Cultivation of Capsicum, Tomato, Muskmelon and Cucumber under protected structures, oyster mushroom production.

V. Post harvest management:

Standardization of protocol and preparation of 3 types of RTS from Litchi, Protocol development for value added dehydrated carambola, Value addition of jackfruit – Jackfruit chips, Launching of RTS from locally available fruits prepared by Ex-trainee of CIH during the Hon'ble Union Minister's Visit to CIH on 26th June 2022.

VI. Marketing and agri-business promotion:

Under Agri business promotion, Central Institute of Horticulture, Nagaland organized Farmers Workshop cum Exhibition on 26th & 27th June 2022 at its campus in Medziphema, Nagaland. The event was graced by Hon'ble Union Minister of Agriculture and Farmers Welfare, Shri Narendra Singh Tomar. The Hon'ble Union Minister inaugurated the

workshop and the exhibition.

VII. Skill Development course & 3 months Certificate

- Skill Development course on Protected cultivation – Floriculturist with a total of 19 trainees from Mizoram.
- Skill Development course on gardener with a total of 18 trainees from Noklak District of Nagaland.
- Three months' certificate course on Post

Harvest Management with 15 trainees from Nagaland and Manipur.

VIII. Participation

- Participated in one-day training programme on “Measuring Agricultural Sustainability” at ICAR-NRCM, Medziphema on 13th April, 2022.
- Participated in World Bee Day programme held at Statue of Unity, Kevadia in Gujarat on 20th May, 2022

GLIMPSES OF ACTIVITIES CARRIED OUT IN CIH, NAGALAND

A. Demonstration activities



B. Quality planting material production



C. Post harvest management & value addition



Pending Audit Paragraphs: 11 pending audit paras

5.5 Directorate of Arecanut and Spices Development, Calicut

The Directorate of Arecanut and Spices Development (DASD) is a subordinate office under Ministry of Agriculture & Farmers Welfare, Government of India, entrusted with the responsibility of development of Spices, Arecanut, Betel vine and Aromatic plants at National level. The Directorate monitors the development programmes implemented by the states in spices under MIDH.

5.5.1 The mandate of the Directorate is as follows:

- i. Assessment of the developmental needs of spices, Arecanut, aromatic plants, betel vine etc.
- ii. Monitoring of the schemes and Coordinating State Departments, Research Institutes, State Agri. Universities, traders, exporters and other stakeholders to address major issues confronting mandate crops.
- iii. Rendering technical assistance to State Governments and other agencies on commodity development programmes.
- iv. Collection and compilation of all the statistics related to the mandate crops and dissemination of the same to various agencies.
- v. Keeping liaison with the research institutes and extension agencies and acting as a two-way channel in the transfer of technology.

- vi. Undertaking the publicity and promotion works relating to the commodities.
- vii. Conduct Skill development training programmes in agriculture sector to enable youth for self-employment, leading to increase earnings and/or improved working conditions.

5.5.2 Programmes implemented by the Directorate

- i. Planting material Production programme.
- ii. Accreditation of Spice nurseries.
- iii. Establishment of Frontline demonstrations
- iv. Innovative Programmes
- v. Skill development training
- vi. Transfer of Technology programmes
- vii. Collection and Compilation of data related to mandate crops.
- viii. Promotion and Publicity.

5.5.3 Major Achievements of DASD during 2022-23

During the year 2022-23, the Directorate had an outlay of Rs. 14 crores for development and promotion of spices, arecanut, aromatic crops and betelvine under MIDH.

Following are the major achievements of the Directorate in 2022-23:-

● Planting material production Programme

The Directorate is directly involved in the

production and distribution of quality planting material of high yielding varieties of spices and technology transfer programmes in association with State agricultural Universities and Central Institutes across the country. Planting material production programmes worth Rs.7.33 crores was implemented during the year. More than 974 tonnes of seeds/rhizomes and 50 Lakhs of seedlings of various spices were produced and distributed under this programme.

- **Accreditation of Spice nurseries**

DASD is engaged in accreditation of nurseries to improve the quality of planting material disbursed through various nurseries across the nation. More than 50 nurseries are recognised under DASD accreditation programme till date.

- **Upgradation of spice nurseries**

Under the programme 'Upgradation of spice nurseries', financial assistance was given for improving the infrastructure facilities of 4 spices nurseries established at different State Agri Universities to meet accreditation norms.

- **Establishment of nursery infrastructure, storage infrastructure facilities**

Nursery infrastructure facilities for spices were established at 5 different SAUs under this programme, during 2022-23. Established nurseries exclusively for large cardamom under state department farms in Nagaland for ensuring availability of quality disease free planting material to the farmers of North Eastern region. Five seed processing and storage infrastructure facilities for spice crops were also established in selected centres.

- **Skill development trainings**

Skill based certificate trainings on selected agri-based job roles were provided to unemployed rural youth. About 150 youth were trained and certified under this programme during the year.

- **Innovative programmes**

Innovative technologies such as single bud

planting and protrait method of nursery rising in ginger and turmeric had been promoted by the directorate. Special programme on micro-rhizome derived ginger seed production through tissue culture technique was undertaken in association with SAUs to promote disease free seed material in these crops. The Scaling up programme for microrhizome production in ginger was implemented successfully through ten different implementing centres of Kerala Agricultural University during 2020-21 & 2021-22.

- A project on identification and multiplication of Cochin Ginger and Alleppey Finger Turmeric was being implemented in association with Kerala Agri University and other stakeholders to promote export-oriented production of these trade varieties.

- Established precision farming unit for cultivation and production of quality planting material of spices in association with CWRDM, Kozhikode.

- Established two distillation units for extraction of aromatic plants /spices at different centres to encourage small and marginal farmers for extraction of essential oil, processing and marketing.

- **Webinar/ Seminars/ farmers training programmes**

Around 11,000 farmers were given training on different aspects of cultivation, management, post harvest management and processing of spice crops.

- **Frontline demonstrations established by DASD in 2022-23.**

- Demonstration plots of F1 Chilli Hybrid varieties ArkaTejasvi, ArkaYashasvi, Arka Saanvi, Arka Tanvi and Arka Gagan released from IIHR, Bangalore were established in selected chilli growing belts and their performance were evaluated.

- Cluster based demonstration on cultivation and value addition of aromatic plants were successfully established in an area of 72 ha at various locations.
- Demonstration on drip irrigation technique in spices were established in an area of 72 ha at selected SAUs & farmer fields to demonstrate the effective and efficient use of water to improve productivity and quality.
- Demonstrations on 'EPN technology for management of white grub in arecanut' and 'Cultivation of Arecanut dwarf hybrids', 'Arecanut fruit rot disease management using Mandipropamid fungicide', 'Integrated Management of Inflorescence dieback in Arecanut' were established in different locations through farmer participatory approach.
- Demonstration of disease-free ginger seed production using microrrhizomes and IDM were undertaken at multiple locations in association with Kerala Agricultural University.
- The Directorate had established 70 demonstration plots of size 1 ha each for seed spices to demonstrate latest technologies including pesticide free production technology evolved in seed spices.
- 30 acre of farmer participatory demonstration plots on intensive Cinnamon intercropping in coconut gardens were established in association with selected State Agricultural Universities in Goa, Kerala, Orissa, Karnataka, and Maharashtra.
- **Monitoring of MIDH Scheme progress through review meeting**
 - Conducted fifteenth Annual Review meeting of the MIDH programmes implemented through the Directorate of Arecanut and Spices Development at College of

Horticulture, Periyakulam, Tamil Nadu Agriculture University. Dr. Prabhat Kumar, Horticulture Commissioner, Govt of India, inaugurated the programme and Principal investigators of the scheme representing 46 State Agri Universities/ ICAR institutes participated in the meeting.

- **Collection and compilation of data related to spices**

- The All-India estimates (2021-22 Estimate) arrived for 22 spices and arecanut were submitted to the Horticulture Statistics Division of DA&FW for all India release along with the estimates of other horticulture crops. The same has been disseminated to different National/State level agencies engaged in research and planning.
- Conducted quick Pepper survey to find out the likely production of pepper in 2022-23 at major pepper growing centres in the States of Karnataka Kerala and Tamil Nadu.
- Organised a Workshop on Horticulture Statistics for North-Eastern States at Assam Agricultural University, Jorhat to streamline the procedure of area and production estimation of horticulture crops in North-Eastern States including Sikkim.

- **Publicity activities**

- a Directorate published a quarterly journal 'Indian Journal of Arecanut Spices and Medicinal Plants' for the dissemination of information on various technologies related with Arecanut, Spices and medicinal plants.
- b Pamphlets/leaflets in English/Hindi and vernacular languages have been released for the distribution of farmers.
- c Participated in National/State level exhibitions/programmes in connection with development of spices across the country.

● **Promotion of Hindi Language**

- a Participated in Hindi Diwas Samaroh and Second All India Official Language Conference at Surat on 14-15th, September 2022. To create awareness regarding the use of Hindi in official work, a Hindi Pakhwada was organised in September 2022. Various Hindi competitions were

conducted at DASD office viz. Essay writing, Noting Drafting, Grammar & Spelling, Typing, Dictation, Reading, quiz programme etc. as part of Hindi Pakhwada Samaroh 2022-23..All the officers and employees participated in these competitions.

- b. Two workshops on Official Language policy of GOI was conducted 2022-23.

Photographs of DASD activities held in 2022-23



Nursery centre established for aromatic plants at Acharya Narendra Deva University of Agriculture and Technology, Kumarganj, Ayodhya.



One day workshop on Cashew and Spices production, processing and export organised in association with Dr. BSKKVP, Dapoli at Chandgad, Maharashtra.



Pepper survey conducted to find out the likely production of pepper in 2022-23



Farmers visiting DASD stall at 3rd Gramodaya Mela, Chitrakoot, Madhya Pradesh

5.6 Directorate of Cashewnut and Cocoa Development, Kochi

The Directorate of Cashewnut and Cocoa Development (DCCD) functioning at Cochin is the subordinate office of the Department of Agriculture & Farmers Welfare of the Union Ministry of Agriculture & Farmers Welfare. This was established in the year 1966 for the promotion of cashew cultivation in the country, bifurcating the erstwhile Indian Central Spices and Cashewnut Committee. The promotion of Cocoa also was entrusted to this Directorate in the year 1997. The Directorate formulate and execute the development programmes of cashew and cocoa in the country and monitor the implementation of development programmes formulated and executed by the State Governments under Mission for Integrated Development of Horticulture. The DCCD also acts as a nodal agency for accreditation of existing cashew/cocoa nurseries and issue recognition.

5.6.1 Brief about the scheme with objectives

- **New plantation development**

Fresh area of 3800 ha were brought under cashew new planting programme in the states of Gujarat, Karnataka, Kerala, Madhya Pradesh and Maharashtra. 640 ha of 2nd year maintenance and 800 ha of third year maintenance were also achieved in the states of Andhra Pradesh, Karnataka and Kerala during the current financial year. Besides, an area of 200 ha of cocoa fresh planting programme and 150 ha each for 2nd and 3rd year maintenance were established exclusively for tribal farmers. 7, 23,000 Nos. cashew grafts and 1, 0,000 cocoa hybrid seedlings distributed to small and marginal farmers. More than 6000 small and marginal farmers were benefitted under the scheme.

- **Replanting of senile cashew plantations**

An area of 500 ha for fresh replanting and an area of 1140 ha for second and third year maintenance undertaken during the current financial year.

- **Accreditation of cashew/cocoa nurseries**

The DCCD acts as a nodal agency for accreditation of existing cashew/cocoa nurseries based on the guidelines prepared by the DCCD and issue certificate of accreditation. Forty cashew/cocoa nurseries were accredited for production and distribution of good quality planting materials.

- **Nursery programmes**

The maximum financial assistance shall be limited to Rs.40.00 lakhs for Hi-tech nursery, Rs.20.00 lakhs @ 40% of the total project cost for big Model nursery and Rs.7.50 lakhs @ 50% of the total project cost for small nursery. For upgradation of nurseries, 50% of cost to private sector subject to a maximum of Rs.5.00 lakh/nursery. The establishment/modernization of five cashew nurseries is in progress.

- **Publicity for crop promotion:**

This programme is intended to take up intensive publicity measures for promotion of cashew and Cocoa by dissemination of latest productive technologies to the farming community and other target groups coming under the fold of cultivation, processing, marketing and export by organizing District level seminar, fairs on cashew and cocoa in various states. As part of publicity and crop promotion activities, 50 district level seminars on cashew and cocoa will be

organized in various states in association with State Agricultural Universities, KVK's, Corporations and ICAR institutes.

● **HRD programme**

The objective of the programme is to provide an appropriate training to the farmers in various aspects of cashew and cocoa farming consisting of nursery management, management of diseases, canopy management, improved production technologies, post-harvest management and processing, drying and storage, preparation of primary and value added products.

I. Salient achievements - 2022-23:

- New plantation of cashew in an area of 3800 ha is completed in the states of Gujarat, Karnataka, Kerala, Madhya Pradesh and Maharashtra.
- An area of 200 ha of cocoa was brought under a new planting programme exclusively for tribal farmers.
- Total 7.23 lakh good quality cashew grafts were distributed to farmers from DCCD accredited nurseries.
- 1, 00,000 cocoa hybrid seedlings were distributed to cocoa farmers as part of new planting programme.
- Under replanting programme, fresh planting has been done after removing senile plantations with high yielding varieties in an area of 540 ha in the states of Odisha & Karnataka.
- Fifteen frontline technology demonstration plot with high density planting was established in the state of Karnataka and **125 units in the state of Madhya Pradesh is in progress.**
- 40 cashew/cocoa nurseries in the states of

Andhra Pradesh, Karnataka, Kerala, Maharashtra, Odisha and Tamil Nadu will be accredited by the Directorate based on the assessment made by the expert team.

- In order to ensure the availability of planting materials, stablishment/modernization of five cashew nurseries is in progress.
- As part of publicity and crop promotion activities, 25 district level seminars on cashew and cocoa was organized in various states in association with State Agricultural Universities, KVK's, Corporations and ICAR institutes and **25 seminars is in progress in various cashew and cocoa growing states.**
- Under the HRD programme, 100 farmers training, 5 exposure visits and 25 cashew apple utilization trainings will be conducted in association with SAU's and ICAR institutes.
- A National Level Interface meeting on cashew and cocoa was organized under the chairmanship of Dr. Prabhat Kumar, Horticulture Commissioner, Govt. of India
- The Directorate organized two Nari Shakthi Mela in Cashew and Cocoa at Kannur, Kerala and Kidu, Karnataka respectively. Around 650 women beneficiaries attended the function.
- The Directorate organized three days National Level Training programme on Cocoa to the field level implementing officials of various development department involved in cocoa sector at Bankers Institute of Rural Development, NABARD, Mangalore.
- As a part of the celebration of Kisan Bhagidari-Prathmikta Hamari Campaign under the Azadi Ka Amrit Mahotsav in the

country, DCCD has organized a Seminar on Cocoa at Vazhathoppu Panchayat, Idukki, Kerala on 26.04.2022. Around 300 numbers of farmers, mostly women, has participated in the Seminar.

- DCCD in association with Keladi Shivappa Nayaka University of Agricultural &

Horticultural Sciences, Shivamogga organized Cashew & Cocoa fair under the 'Kisan Bhagidari Prathmikta Hamari' campaign under Azadi Ka Amrit Mahotsav on 28.04.2022 at KSNUAHS Campus Shivamogga. Nearly 1000 farmers are participated from adjoining districts of Shivamogga.



Felicitating best cashew farmers in one day cashew seminar



Replanting of senile plantations in Odisha



'Kisan Bhagidari Prathamikta Hamari' campaign under Azadi Ka Amrit Mahotsav



Inaugurating Nari Shakthi Mela at Kidu Karnataka



Interface meeting on cashew and cocoa

Chapter-6

NATIONAL BEEKEEPING AND HONEY MISSION (NBHM) /NATIONAL BEE BOARD (NBB)

6.1 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., that serves as a source of livelihood for rural poor. Diversified agro climatic conditions of India provide great potential and opportunities for beekeeping/ honey production and export of Honey.

6.2 Schemes of DA&FW for promotion of Beekeeping:

A. National Beekeeping & Honey Mission (NBHM):

Govt. of India has approved a Central Sector Scheme entitled “**National Beekeeping & Honey Mission (NBHM)**” with total budget outlay of Rs. 500.00 crores for 3 years (2020-21 to 2022-23) under Aatma Nirbhar Bharat Announcement for overall promotion and development of scientific beekeeping and to achieve the goal of “**Sweet Revolution**” in the country by implementing 3 Mini Missions (MMs)-MM-I, MM-II & MM-III under which thrust will be given on awareness, capacity building/ trainings, focus on women empowerment through beekeeping, setting up of requisite infrastructural facilities, viz.; Integrated Beekeeping Development Centres (IBDCs), Honeybees Disease Diagnostic Labs, Setting/ upgradation of Honey Testing labs, Beekeeping Equipment Manufacturing Units, Custom Hiring Centres, Api therapy Centres, Development of Quality Nucleus Stock Centres & Bee Breeders, etc., Digitization/online registration, etc. under MM-I, processing, value addition, market support, etc. under MM-II and R&D under MM-III.

National Bee Board (NBB):

National Bee Board (NBB), a registered society under Societies Registration Act XXI of 1860 (19th July, 2000), was reconstituted under the Chairmanship of Secretary (A&C) in June, 2006. The main objective of NBB is overall development & promotion of Scientific Beekeeping in the country to increase the productivity of crops through pollination and increase the Honey production for increasing the income of the Beekeepers/ Farmers. NBB has been designated/recognized as Nodal Agency for overall development/promotion of scientific beekeeping in the country. The scheme NBHM is being implemented by NBB.

6.3 Main activities under NBHM during 2022-23:

Details of main activities implemented during the year 2022-23 under NBHM, as on date, are given as under:

- 14 project proposals of the State Govts./ Agencies/ Organizations/ Deptts./ ICAR/ CAUs/ SAUs, etc. for total assistance of Rs. 1422.96 lakhs were approved by Executive Committee (EC) of NBHM during 2022-23.
- A National Conclave on “High Altitude Honey” was organized on 06.04.2022 under the Chairmanship of Additional Secretary (AL), DA&FW in collaboration with National Agricultural Cooperative Marketing Federation of India Limited (NAFED).
- A National Conclave on ‘Wild and Forest Honey’ was organized on 28.04.2022 under the Chairmanship of Additional Secretary (AL), DA&FW in collaboration with Tribal Cooperative Marketing Development Federation of India Limited (TRIFED).
- World Bee Day (WBD) was celebrated under

the gracious presence of Hon'ble Minister of Agriculture & Farmers Welfare, Govt. of India on 20.05.2022 at Statue of Unity, Gujarat.

- A workshop on “Export Potential of Honey & other Bee-hive products” was organized on 30th August, 2022 in gracious presence of Dr. Abhilaksh Likhi, Additional Secretary, DA&FW at VAMNICOM, Pune, Maharashtra.
- A National Workshop on “Role of Agri Start-ups in Honey Value Chain” was organized 22nd September, 2022 under the Chairmanship of Addl. Secretary (AL), DA&FW at NSRTC, Varanasi.
- Participated in तृतीय ग्रामोदय मेला तथा सरदोस्त्व- a Regional Agriculture Fairs in Chitrakoot, Madhya Pradesh from 9th to 12th October, 2022.
- Participated in Krishi Mela and Agri Exhibition held in Morena, Madhya Pradesh from 20th to 22th October, 2022.
- Meeting for promoting and funding of Honey Startups under NBHM was held under the chairmanship of Additional Secretary (AL), DA&FW on 27th October, 2022.
- A National workshop on "Potential of Honey Sector in Western Ghats was organized at Kanyakumari, Tamil Nadu on 29th December, 2022.
- Participated in “Krishi-Mahotsav: Pradarshani evam Prashikshan” held in Kota Rajasthan from 24th to 25th January, 2023.
- 13,285 Beekeepers/Beekeeping & Honey Societies/ Firms/ Companies with 20.05 lakhs honeybee colonies registered with NBB and uploaded on “Madhukranti Portal” upto January, 2023.
- Orientation Workshops/ Video Conferences for States/ UTs and other Stakeholders for effective implementation of NBHM scheme and registration on “Madhukranti” Portal have been organized time to time.

- 3 World Class State of the Art Honey Testing Labs have been set up under NBHM: **(i)** at NDDB, Anand, Gujarat. The Lab has been accredited by NABL and has started testing of honey samples, **(ii)** Labs at IARI, Pusa, New Delhi completed and **(iii)** Indian Institute of Horticultural Research (IIHR), Bengaluru, Karnataka is under process of establishment.
- 27 Mini Honey Testing Labs have been sanctioned under National Beekeeping & Honey Mission (NBHM) in the states of Arunachal Pradesh (1), Bihar (1), Haryana (1), Chhattisgarh (1), Gujarat (2), Karnataka (4), Madhya Pradesh (2), Maharashtra (1), Rajasthan (1), Jammu & Kashmir (4), Kerala (1), Odisha (1), Uttarakhand (1), Uttar Pradesh (2), Telangana (1), West Bengal (2) and Himachal Pradesh (1). Out of 25 labs, 6 labs at J&K (3), Karnataka (1), Uttar Pradesh (1) & Maharashtra are set up and working.
- Under the scheme of “Formation of 10,000 FPOs”, 100 FPOs of Beekeepers/ Honey Producers are allotted to TRIFED (14 nos.), NAFED (60 nos.) and NDDB (26 nos.) for implementation of activities under NBHM. Thus, out of total 105 FPOs allotted to NBB, 80 FPOs of Beekeepers/ Honey Producers have been registered/ formed till date.
- A Book on “Sweet Revolution” was launched by Hon'ble Minister of Agriculture & Farmers Welfare, Govt. of India on the occasion of World Bee Day celebrated at Statue of Unity, Gujarat on 20.05.2022.

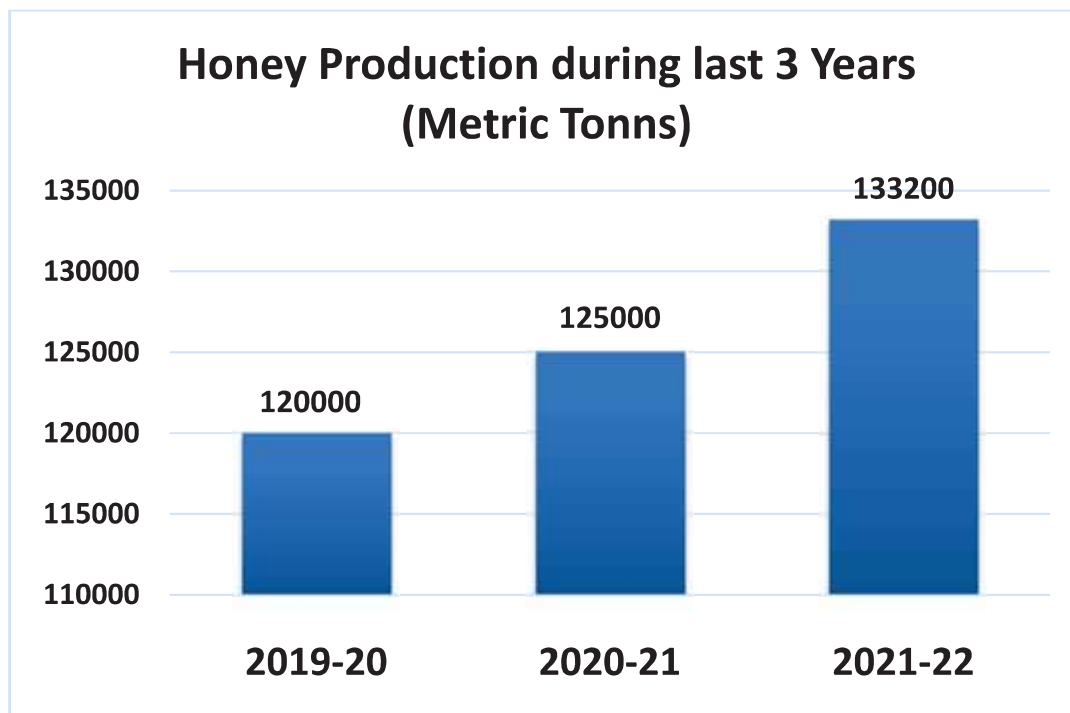
6.4 Main achievements of NBB in beekeeping/ honey production:

The main achievements of NBB in beekeeping/ honey production since its inception in 2006 are summarized as under:

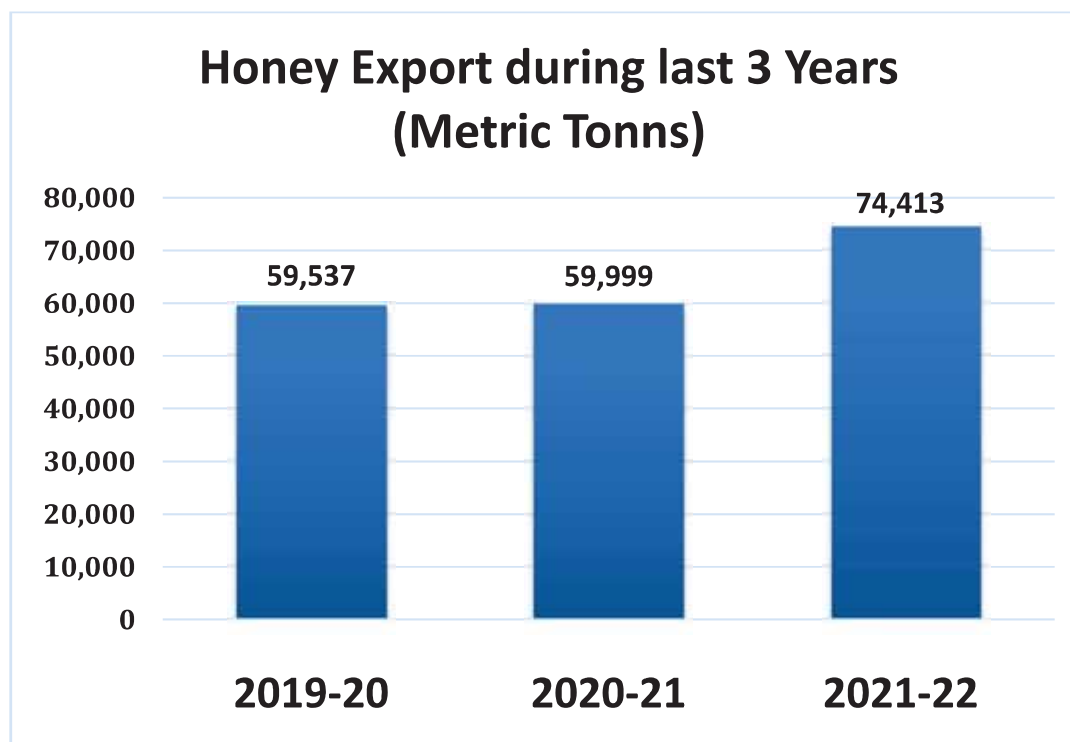
- India is producing about 1,33,200 Metric tonnes of Honey (2021-22 2nd advance estimate).
- The country has exported **74,413 MT** of Honey

to the world for the worth of Rs. 1221.17 Crores during the year of 2021-22. (source: APEDA)

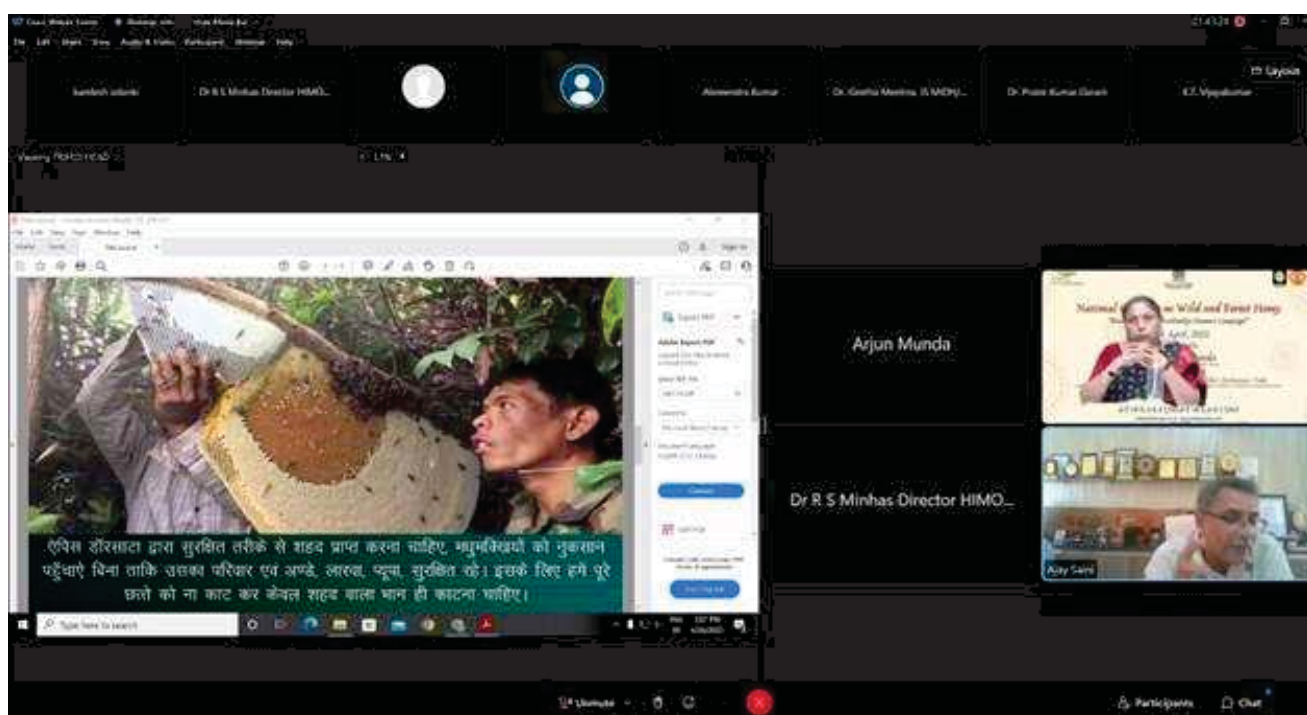
- Four training modules, viz.; (i) basic training on beekeeping (ii) training on scientific beekeeping (iii) training on post-harvest management, processing, etc. & (iv) training on production of high value beehive products viz.; royal jelly, pollen, propolis, bee venom, bees wax, bee bread, etc. prepared & circulated to all the stakeholders including ICAR, SAUs, State Govts., KVIC, etc. for trainings in beekeeping.
- To boost the agricultural production through pollination enhancement in crops in sustainable manner in the country, Department of Agriculture & Farmers Welfare, GOI has decided to treat Beekeeping/ Honeybees as an Input in Agriculture.
- 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.
- Advisories on Good Beekeeping Practices (GBPs) published & circulated to all State Govts. & concerned Agencies/Stakeholders.
- Projects for Integrated Development of Scientific Beekeeping (IDSB) on Cluster/ Area/ District development approach for enhancing the crop productivity & income of farmers/ beekeepers and generating employment in rural areas formulated/ implemented.
- Designed technical standards for food grade plastic containers for storing honey, which helped in minimizing the problem of presence of lead in honey.
- Standards of Honey, Bees Wax & Royal Jelly notified by FSSAI.
- Prepared 5 years Vision Document for overall development of beekeeping.
- Requested Ministry of Finance and NABARD for instructing the financial institutions for financing beekeeping activities by providing credit limits/Kisan credit cards etc. In pursuance to this, NABARD has already directed all commercial banks to finance beekeeping on priority basis.
- National Bee Board is also promoting beekeeping and marketing of honey to explore the possibilities for utilizing milk routes/ NDDDB's infrastructure/ cooperative network in the field.
- Honey & other beehive product Processing Lab sanctioned under NBHM at Kamrup, Assam was inaugurated by Hon'ble Minister of Agriculture & Farmers Welfare, GOI on 04.10.2021.
- In pursuance to NBB, **Beekeeping Development Committee (BDC)** under the Chairmanship of Dr. Bibek Debroy, Chairman EAC to PM, was constituted with seven members, including ED, NBB to take lead in promoting & coordinating activities involved in Beekeeping Industry so that “**Sweet /Golden Revolution**” in the Country may be achieved.



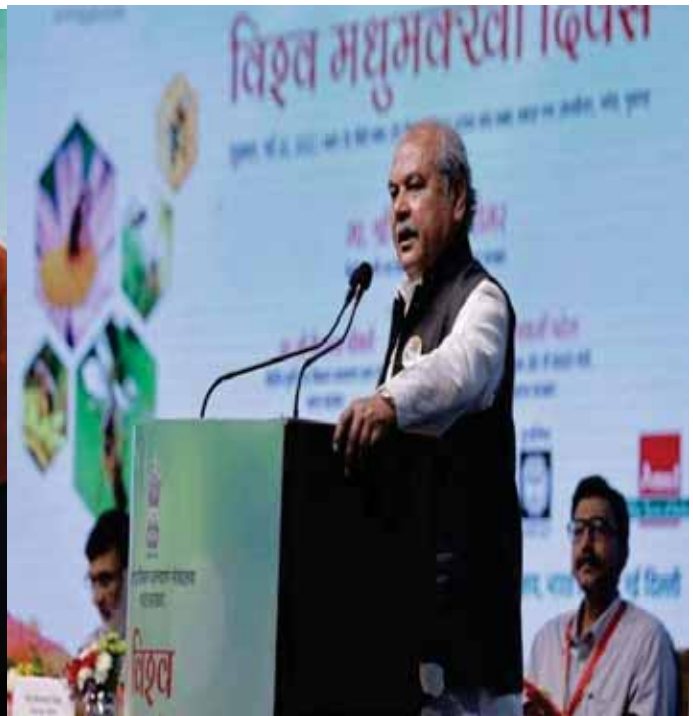
Production of Honey during last 3 years (2019-20 to 2021-22)



Export of Honey during last 3 years (2019-20 to 2021-22)



National Conclave on 'Wild and Forest Honey' organized on 28.04.2022 under the Chairmanship of Additional Secretary (AL), DA&FW in collaboration with Tribal Cooperative Marketing Development Federation of India Limited (TRIFED)





World Bee Day (WBD) celebrated by National Bee Board (NBB) under the gracious presence of Hon'ble Minister of Agriculture & Farmers Welfare, GOI on 20.05.2022 at Statue of Unity, Gujarat.



Virtual inauguration of Honey and other beehive product testing lab by Hon'ble Minister of Agriculture and Farmers Welfare, Govt. of India at ICAR- Indian Institute of Horticultural Research (IIHR), KVK, Hirehalli, Tumakuru, Karnataka sanctioned under National Beekeeping and Honey Mission (NBHM) on 20th May, 2022



Virtual inauguration of Honey and other beehive product testing lab by Hon'ble Minister of Agriculture and Farmers Welfare, Govt. of India at Hi-Tech Natural Products India Limited, Saharanpur, Uttar Pradesh sanctioned under National Beekeeping and Honey Mission (NBHM) on 20th May, 2022



Virtual inauguration of Honey and other beehive product testing lab by Hon'ble Minister of Agriculture and Farmers Welfare, Govt. of India at Sher-e-Kashmir University of Agricultural Sciences and Technology (SKUAST)- Jammu sanctioned under National Beekeeping and Honey Mission (NBHM) on 20th May, 2022



Virtual inauguration of Honey and other beehive product testing lab by Hon'ble Minister of Agriculture and Farmers Welfare, Govt. of India at Sher-e-Kashmir University of Agricultural Sciences and Technology (SKUAST)- Kashmir sanctioned under National Beekeeping and Honey Mission (NBHM) on 20th May, 2022



Workshop on “Export Potential of Honey & other Bee-hive products” organized on 30th August, 2022 in gracious presence of Dr. Abhilaksh Likhi, Additional Secretary, DA&FW at VAMNICOM, Pune, Maharashtra.



National Workshop on “Role of Agri Start-ups in Honey Value Chain” was organized 22nd September, 2022 under the Chairmanship of Addln. Secretary (AL), DA&FW at NSRTC, Varanasi



7 Days Training on Scientific Beekeeping conducted by Tamil Nadu Horticulture Development Agency, Govt. of Tamil Nadu at Sankarapuram Block from 2nd to 6th June, 2022 under National Beekeeping and Honey Mission (NBHM)



7 Days Training on Scientific Beekeeping conducted by Navsari Agricultural University (*NAU*), Gujarat at Navsari from 20th to 26th January, 2023 under National Beekeeping and Honey Mission (NBHM)



2 Days District Level Seminar on Scientific Beekeeping conducted by Tamil Nadu Agriculture University (TNAU) at Coimbatore, Tamil Nadu from 1st to 2nd February, 2023 under National Beekeeping and Honey Mission (NBHM)

Chapter-7

NATIONAL FOOD SECURITY MISSION (NFSM)

Overview

7.1 National Food Security Mission was launched in 2007-08 to increase the production of rice, wheat and pulses by 10,8 and 2 million tonnes respectively by the end of the 11th Plan through area expansion and productivity enhancement; restoring soil fertility and productivity; creating employment opportunities and enhancing the farm level economy. The Mission was continued during the 12th Plan with new targets of additional production of 25 million tonnes of foodgrains 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 the 12th Plan. Beyond the 12th Plan (2017-18 to 2019-20), it was decided to continue the programme with new targets to achieve 13 million tonnes of additional foodgrains production comprising of rice-5 million tonnes, wheat-3 million tonnes, pulses-3 million tonnes and nutri-cum-coarse cereals-2 million tonnes by 2019-20 with an additional objective to enhance post-harvest value addition at farm gate for better price realization to farmers through efficient market linkages. The target during 2022-23 is for additional 1.7 million tonne of rice, 1 million tonne wheat, 1.2 million tonne pulses and 0.7million tonne nutri-cum-coarse cereals production.

7.2 The strategy of the Mission is to promote and extend improved technologies of package of practices of crops through various types of demonstrations (FLDs/Cluster FLDs), distribution of HYVs/ Hybrid seeds, production of seeds, distribution of micro-nutrients/soil ameliorants/bio-fertilizers, plant protection chemicals/bio-pesticides, improved resource management tools/machineries/implements, efficient water application devices, capacity building off armers and local initiatives etc. From the year, 2020-21, primary processing units/small storage bins/flexibility interventions has been added as per local requirement.

7.3 Currently, NFSM is being implemented in identified districts of 28 states & 2 Union Territories (UTs) viz. Jammu & Kashmir and Ladakh in the country. NFSM-Rice in 193 districts of 24 states & UT of Jammu & Kashmir, NFSM-Wheat in 124 districts of 10 states & 2 UTs viz. Jammu & Kashmir and Ladakh, NFSM-Pulses in 644 districts of 28 states & 2 UTs viz. Jammu & Kashmir and Ladakh and NFSM-Coarse Cereals in 269 districts of 26 states & 2 UTs viz. Jammu & Kashmir and Ladakh.

NFSM-Nutri-Cereals is being implemented in 212 districts of 14 states. The North Eastern States & Hilly States including UTs of Jammu & Kashmir and Ladakh have been given flexibility to implement the programme on nutri-cereals. The Government has approved Crop Development Programme on Cotton, Jute and Sugarcane for enhancing the production and productivity under National Food Security Mission-Commercial Crops (NFSM-CC) w.e.f. 2014-15. Under this Scheme thrust has been given on transfer of technology through frontline demonstrations and training in order to extend benefits to the farmers. NFSM-Commercial Crops, cotton is implemented in 15 states, Jute in 9 states and sugarcane in 13 states of the country.

7.4 Monitoring & Evaluation at National level: A three-tier monitoring mechanism existing NFSM at National, State and District levels. At National level, NFSM-General Council(GC) under the chairmanship of the Union Minister of Agriculture and Farmers Welfare was constituted to oversee the implementation of NFSM and take policy decisions for mid-term corrections. National Food Security Mission-Executive Committee (NFSMEC) under the chairmanship of Secretary (A&FW) periodically review State Action Plans and the progress of the programme of each state. National Level Monitoring Teams(NLMTs) constituted for monitoring of National Food Security Mission activities. Each team is comprised of experts in the field of rice, wheat, pulses, coarse

cereals and nutri-cereals as per requirement and the respective Directors of the Crop Development Directorates of Ministry of Agriculture and Farmers Welfare as Coordinator. As such, there are eight (8) National Level Monitoring Teams (NLMTs).

7.5 At state level, the monitoring & review is undertaken by the State Food Security Mission- Executive Committee (SFSMEC) under the Chairmanship of Chief Secretary. At district level, the monitoring is undertaken by District Food Security Mission- Executive Committee (DFSMEC) under the chairmanship of District Collector.

7.6 The Mid-Term Evaluation and the Impact Evaluation study of NFSM for the 11th and 12th plans were conducted by independent agencies to assess the impact of the programme in increasing the production and productivity of foodgrain crops. NITI Aayog has conducted an evaluation study through Deloitte Touch Tohmatsu India LLP from 2017-18 to 2019-20.

- The evaluation report covered all the aspects of the NFSM scheme.
- The performance of NFSM during the above said period was satisfactory in Most of the cases as per the report.
- The recommendations and way forward for NFSM is for greater focus on pulses, nutri-cereals and bio-fortified varieties which is already being done and promoted under NFSM.
- Suggestions from any institutions/states responsible for increasing production and productivity of foodgrain crops help in refining NFSM.

7.7 Funding pattern: The programme is being implemented on 60:40 sharing basis between Government of India (GOI) and state government in general states and 90:10 sharing basis for North Eastern states, Hilly states, states and 100% for Union Territories. As per the operational guidelines of NFSM, at least 30% of allocation is made for women farmers, 33% allocation of the fund is made for small and marginal farmers. In accordance with the decision of the Government of India regarding

implementation of Special Component Plan (SCP) for Scheduled Castes and Tribal Sub-Plan (TSP) for Scheduled Tribes, 16% of the total allocation for SCP and 8% for TSP is earmarked. However, States are allowed to make allocation to SC/ST farmers in proportion to their population in the States/districts.

7.8 Achievement during 2021-22:

Recommended agronomic practices have been encouraged through various demonstrations of rice, wheat, pulses & nutri-cum-coarse cereals in 7.86 lakh ha area. Nearly, 5.05 lakh quintals of high yielding varieties/hybrids of rice, wheat, pulses and nutri-cum-coarse Cereals have been distributed, 4.13 lakh quintals of seeds of pulses & nutri cereals has been produced, 13.68 lakh ha area has been treated with micro nutrients, bio-fertilizers, soil ameliorants/(gypsum/lime/others) and 15.06 lakh ha area has been covered under Integrated Pest Management (IPM). Nearly 0.92 lakh numbers of improved farm machineries including pumpset & mobile rain gun have been distributed 0.06 lakh ha area has been covered under sprinkler system, 81.75 lakh meters water carrying pipes have been distributed. About 6089 cropping system based trainings were conducted for capacity building of farmers.

7.9 New initiatives taken for increasing production and productivity of pulses:-

- Breeder seed production of pulses was introduced under NFSM-Pulses programme.
- 150 Seed Hubs were created to produce quality seeds of pulses to farmers across the country through the ICAR-Indian Institute of Pulses Research (IIPR), Kanpur and their centres.
- Supplying of Seed Minikits of pulses not older than 10 years free of the cost (100% share) to the farmers. During 2022-23, around 24.53 lakh numbers of seed minikits of pulses have been allocated to different states for Kharif & Rabi seasons which is 13% higher than previous allocation. The allocation for summer season is yet to be taken up.

- In addition to State Governments, the ICAR/KVKs/SAUs are also involved in conducting demonstrations on improved latest package of practices of pulses. During 2022-23, a total of 92,375 numbers of cluster frontline demonstrations have been sanctioned to 641 Krishi Vigyan Kendras coming under 11 ATARIs of ICAR in the country for demonstrating latest technologies of pulses at farmers' field. The 2960 numbers of (one ha. each) FLDs have been sanctioned to different ICAR Institutes on barley, pulses, maize, small millets, pearl millet and sorghum crops during 2022-23 for demonstrating latest technologies at farmers' field.
- 15% allocation is earmarked under NFSM-Pulses for production of quality seeds of pulses through State Governments.
- The government created a buffer stock of pulses to control fluctuation of prices of pulses.
- Under NFSM, 370 districts have been identified for promotion of pulses i.e., Tur, Masoor, Urad (Tur Masoor Urad-370: TMU-370) during 2022-23.

New initiatives taken for increasing production and productivity of **Nutri-Cereals**:

- Breeder seed production of nutri-cereals.
- Creation of seed hubs.
- Certified seed production.
- Seed minikits allocation.
- Establishment of Centers of Excellence.
- Publicity of nutri-cereals.

7.10 International Year of Millets - 2023:

Realizing the health benefits of millets viz gluten free, low fat and low carbohydrates, the efforts have been made to increase production, productivity and income of millet growers under various schemes of the Central and State Governments. In order to encourage production and consumption of millets, Government of India notified millets as Nutri-Cereals in April, 2018 which includes Sorghum (Jowar), Pearl

Millet (Bajra), Finger Millet (Ragi/Mandua), Minor Millets i.e., Foxtail Millet (Kangani/Kakun), Proso Millet (Cheena), Kodo Millet (Kodo), Barnyard Millet (Sawa/Sanwa/ Jhangora), Little Millet (Kutki) and two Pseudo Millets Buck-wheat (Kuttu) and Amaranthus (Chaulai).

To create domestic and global demand and to provide nutritional food to the people, Government of India had proposed to United Nations for declaring 2023 as International Year of Millets (IYoM-2023). The proposal of India was supported by 72 countries and United Nation's General Assembly (UNGA) declared 2023 as International Year of Millets on 5th March, 2021.

The United Nation's General Assembly (UNGA) declared 2023 as the International Year of Millets (IYM) on 5th March 2021. The proposal submitted by the Government of India was supported by 72 countries. Through this declaration, the UNGA aims to elevate awareness of nutri-cereals (millets) for food security and nutrition, enhance investment in R&D and extension, and to inspire stakeholders towards improving production, productivity and quality of millets. Additionally, the Government of India aims to make IYM 2023 a people's movement for the overall benefit of the Cultivator, Consumer and Climate.

The Ministry of Agriculture & Farmers Welfare, as the nodal Ministry of the Government of India, has taken a multistakeholder engagement approach (engaging all the central government ministries, states/UTs, farmers, start-ups, exporters, retail businesses, hotels, Indian Embassies etc.) to achieve the objectives of IYM 2023 and positioning India as the 'Global Hub of Millets'. The Ministries/Departments, State Governments and Embassies have been allocated specific focus months for promotion of millets around the year 2023.

On 24th November 2022, the Ministry of Agriculture and Farmers Welfare and the Ministry of External Affairs (MEA) co-hosted a special 'luncheon' with the foreign ambassadors of various countries appointed to India at Sushma Swaraj Bhawan, New Delhi. High Commissioners/Ambassadors to India from more than 100 countries attended the official luncheon.

On 6th December 2022, the Food and Agriculture Organization (FAO) of the United Nations, organized the opening ceremony for the International Year of Millets – 2023 at Rome, Italy. The event was attended by a delegation of senior government officials from India. To mark the significance of this day in India, the Ministry launched and organized several initiatives, which included an extensive social media campaign on the importance of Millets in Indian context, showcasing Government's collective effort for sustaining the momentum, citizen engagement drives involving all other Ministries and several other outreach activities to celebrate IYM.

Next in series of the year-long grand celebration of 'International Year of Millets (IYM) 2023', on 20th December 2022, the Ministry of Agriculture & Farmers Welfare hosted a special 'Millet Luncheon' for the Members of the Parliament at the Parliament

House. The event was graced by Hon'ble Prime Minister of India, Shri Narendra Modi. The luncheon was organized with an aim to celebrate and display the glorious food heritage of India and engage with the Members of the Parliament for their alliance to make IYM 2023 a peoples' movement across the country.

Additionally, as a part of promotional activities of IYM 2023, the Ministry of Agriculture and Farmers Welfare is promoting millets during India's G20 & SCO presidency. Millets will be showcased through byte sized millets exhibitions during all the G20 & SCO working group meetings, along with a millet-based lunch and a specially curated millet hamper for all foreign dignitaries.

The year 2023 will witness a year-long campaign and several activities nationally and globally for increased adoption and promotion of millets.





7.11 Targeting Rice Fallow Areas (TRFA):

The TRFA is a sub-scheme of the National Food Security Mission (NFSM) programme which gives emphasis on land that remains underutilized after harvesting of Kharif paddy crops. The aim is to bring a change in the cropping pattern during the Rabi season by introducing appropriate varieties of pulses that can be cultivated by using available moisture. It is being implemented through a combination of innovative technological interventions and provision of essential agri-

inputs including extension services in 11 TRFA implementing States of the country. Targeting Rice Fallow Area Programme was implemented as a sub scheme of NFSM from 2017-18 in 6 states namely, Assam, Bihar, Chhattisgarh, Jharkhand, Odisha and West Bengal. However, this was extended to 5 new states namely, Gujarat, Maharashtra, Madhya Pradesh, Karnataka and Tamil Nadu during 2019-20. From 2017-18 to 2021-22, an area of 36.85 lakh ha was covered under rice fallow for cultivation of pulses.



Farm implements distributed at Coimbatore district of Tamil Nadu under NFSM programme;



Promotion of Millets at Millet Culinary Carnival during 29th to 31st July, 2022, Dilli Haat, INA Market, New Delhi in presence of Hon'ble Minister of State for Agriculture & Farmers Welfare Sushri Shobha Karandlaje;



Ms. Shubha Thakur, Joint Secretary (Crops) MoA&FW was presented with a 'green certificate' at the first Task Force meeting on millets organized by Federation of Indian Chambers of Commerce & Industry (FICCI) on 30th September, 2022.

Chapter-8

NATIONAL FOOD SECURITY MISSION (OILSEEDS) AND NATIONAL MISSION ON EDIBLE OILS-OIL PALM (NMEO-OP)

8.1 Overviews of Edible Oil Production:

India is heavily dependent on imports to meet its edible oil requirements and is the largest importer of vegetable oils in the world followed by China and USA. Of all the imported edible oils, share of palm oil is about 57% followed by soybean oil with a share of 29% and sunflower (14%). Import growth in respect of edible oils during the last decades is about 174%. The import figure of edible oils during 2021-22 reveals that India imported a total of 14.19 million tonnes of vegetable oils costing Rs. 156800 crore. The per capita consumption which was 15.80 kg per person per annum in 2012-13 increased to

19.70 kg per person per annum. The consumption is around 19kg/year/person during last five years. The year wise domestic production and import of edible oils in the country is given in (Table -1).

Domestic edible oil production has not been able to keep pace with the growth in consumption. During 2021-22 domestic production of edible oils was 11.57 million tonnes from both primary (Oilseeds) and secondary sources (Coconut, Oil palm, Rice bran oil, Cotton seed oil and TBOs). The year wise demand and supply of edible oil during last five years in the country are given below.

Table-1: Demand and Supply of Vegetable Oils in India

Year	Total domestic demand	Domestic availability	Import	Million tonne
				Import (%) of total domestic demand
2015-16	23.48	8.63	14.85	63.24
2016-17	25.42	10.10	15.32	60.35
2017-18	24.97	10.38	14.59	58.43
2018-19	25.92	10.35	15.57	60.06
2019-20	24.07	10.65	13.42	55.75
2020-21	24.61	11.16	13.45	54.65
2021-22	25.76	11.57	14.19	55.10

*Directorate General of Commercial Intelligence & Statistics (Ministry of Commerce)

8.2 Overviews of Oilseeds Production:

Oilseeds cultivation is undertaken across the country in about 29.17 Million ha, largely under rainfed areas covering 72% and producing around 37.70 million tonnes of oilseeds. Nine oilseeds are the major source of vegetable oil in the country. Among nine major oilseeds Soybean (34%), Rapeseed & Mustard (31%) and Groundnut (27%) contributes to more than 92% of total oilseeds production in the country. However, in terms of vegetable oil production Mustard, Groundnut, and

Soybean contributes 31.49%, 19.81% and 17.99% respectively.

Rajasthan, Madhya Pradesh, Gujarat and Maharashtra are the major oilseeds producing states contributing more than 77% of oilseeds production in the country. During 2021-22, Area, production and yield was 29.17 million ha, 37.70 million tonnes and 1292 kg/ha respectively. The highest ever production of oilseeds was achieved during 2021-22. (Table-2)

Table-2: Area, Production and Yield of oilseed crops in India

Year	Area (Million ha)	Production (Million tonnes)	Yield (Kg/ha)
2016-17	26.18	31.27	1195
2017-18	24.51	31.46	1284
2018-19	24.79	31.52	1271
2019-20	27.14	33.22	1224
2020-21	28.83	35.95	1247
2021-22*	29.17	37.70	1292

* 4th advance estimate

In view of the aforesaid background, Oilseeds Division is mandated with the activities related to increasing production and productivity of oilseeds and area expansion under oil palm & TBOs for increasing domestic availability of edible oils.

8.3. On-going Scheme

8.3.1 National Food Security Mission (Oilseeds & Oil Palm) – NFSM (OS&OP)

With effect from 2018-19, the NMOOP scheme has been merged with National Food Security Mission (NFSM) and is being implemented as NFSM (OS&OP). This scheme comprises of three sub-missions namely, NFSM-Oilseeds, NFSM-Oil Palm and NFSM-TBOs. The scheme is being implemented through the State Department of Agriculture/ Horticulture in 25 States and 3 UTs. The assistance under the various interventions of the scheme is focusing to benefit the farmers and has direct impact on increasing the farmers income involved in oilseed cultivation. Most of the components are in the ratio of 60:40 % (GoI: State) sharing laving for general states and 90:10 % for North East and hilly states. Few components are 100 % funded by GOI to Central agencies, ICAR, KVKs/SAUs.

Now, the Government has launched a separate Mission for Oil Palm, which is the National Mission for Edible Oils (Oil Palm) - NMEO (OP) to promote oil palm cultivation for making the country Aatamnirbhar in edible oils with special focus on North-Eastern States and Andaman and Nicobar Islands. NMEO (OP) has been launched by targeting an additional 6.5 lakh hectare area from 2021-22 to 2025-26.

Both NFSM- Oilseeds and NMEO (OP) are being implemented in the country with the objective of augmenting the availability of edible oils by increasing the production and productivity of oilseeds and oil palm and reducing the import burden.

8.3.2 Oilseeds Production Target 2022-23:

- To augment the availability of vegetable oils and to reduce the import of edible oils by increasing the production and productivity of oilseeds from an average production of 33.42 million tonnes and productivity of 1236 kg/ha during 12th plan period to 41.35 million tonnes production and yield of 1346 kg/ha, by the end of 2022-23.
- An area of 68.27 lakh ha-under Special Programme on Rapeseed and Mustard, during 2022-23.
- An area of 2621.12 ha - under TBOs namely Olive, Mahua, Kokum, Wild Apricot, Neem, Jojoba, Karanja, Simaroba and Tung during 2022-23.

8.4. Strategies of Oilseeds Production

The strategies for enhancing the productivity (and profitability) of oilseed based production systems are prepared for the annual oilseeds in the country. The interventions/ strategies proposed in oilseeds are time tested with scale neutrality that can be grounded for enhancing the productivity of the oilseed based production system with necessary institutional support/ handholding. The proposed strategies are categorized under three situations as

follows:

1. Horizontal (area expansion) and vertical (productivity increase) expansion of oilseeds crop.
2. Increasing seed production and distribution of newly released varieties.
3. Low cost technologies with high impact on productivity resulting in higher income.
4. Technologies with high impact that involve reasonable investment with high return on investment (ROI), with emphasis on eco-friendliness, high input use efficiency.
5. Strategies with emphasis on quality improvement and value addition leveraging technologies with a bearing on the employment through skill/ entrepreneurship development.
6. Strategies to increase additional area and production of oilseeds through rice fallow, intercropping and crop diversification.

The newer opportunities to explore non-traditional seasons and regions for crops are also projected that have proven success for area expansion and integration into major cropping systems.

8.5. Annual Action Plan of NFSM (OS) during 2022-23:

NFSM (OS) programme is being implemented in 25 states and 3 UTs comprising of 7 (seven) Central seed producing agencies with Budgetary Estimate (BE) of Rs.600 crore.

The salient features of NFSM (OS) are given below:

8.5.1 NFSM-Oilseeds:

Under this Mission, financial assistance is being provided for Seed Components (production & distribution of certified seeds, seed hubs and minikits,); Inputs (Plant Protection Equipments, Bio-pesticides, Distribution of Micro-nutrients, bio-fertilizers, improved farm implements, pipes,

sprinklers, seed storage bins, seed treatment drums) and Transfer of Technology through Block demonstrations, Frontline Demonstrations (FLDs), Cluster Frontline Demonstrations (CFLDs), farmers and extension workers training etc. The scheme is being implemented through State Department of Agriculture. NFSM-Oilseeds is also supporting ICAR institutes for undertaking FLDs on oilseeds crops and ICAR-KVKs for organizing cluster demonstration on oilseeds.

The major interventions targeted under oilseeds programme during the year 2022-23 are as follows:

- A total of 1.75 lakh qtls of seed production of oilseed crops.
- More than 1.49 lakh qtls of certified seed distribution.
- 1.33 lakh ha block demonstrations.
- 0.035 lakh ha Front Line Demonstration (FLD) & Cluster FLDs through ICAR and KVKs.
- 1597 farmers & officers training
- Supply of soil ameliorants over an area of 2.91 lakh ha.
- Supply of PP chemicals/ Bio-pesticides/ weedicides/ micronutrient over an area of 1.63 lakh ha.
- Distribution of 0.36 lakh farm implements and PP equipments.
- Distribution of 4706 sprinklers and 29.64 lakh mt water carrying pipes.
- 35 oilseeds hubs has been establishment with a target of producing 60825 qtls of certified seeds through ICAR, SAUs and KVKs.
- Oilseeds production of 37.70 million tonnes has been achieved during 2021-22 which is the highest during past four years of implementation of the programme.
- The yield of 1292 kg/ha of oilseeds has been achieved during 2021-22.

Year and Season wise oilseeds production target and achievement during 2014-15 to 2021-22						
Year	Target			Achievement		
	Kharif	Rabi	Total	Kharif	Rabi	Total
2016-17	23.50	11.50	35.00	21.53	9.75	31.28
2017-18	25.40	10.10	35.50	21.01	10.45	31.46
2018-19	25.50	10.50	36.00	20.67	10.84	31.52
2019-20	25.84	10.26	36.10	22.25	10.97	33.22
2020-21	26.06	10.42	36.48	24.03	12.07	36.10
2021-22*	26.89	14.46	41.35	23.89	13.81	37.70

* 4th Advance estimate, DES

8.5.2 Seed production, Minikits and FLDs during 2022-23:

In order to encourage the adoption of newly released varieties and improved agro-techniques in oilseed crops, support is provided under NFSM-Oilseeds to Central Agencies viz. NSC, KRIBHCO, HIL (include NFL), NAFED, NCCF, IFFDC & KVSSL for procurement of breeder seed (B/S), production of foundation seed (F/S) and production certified seed (C/S), and supply of seed minikits (Kharif/Rabi/Summer) during 2022-23. In addition, support is also provided for conduct of Front Line Demonstrations (FLDs) through ICAR/SAUs network.

During Kharif-2022 and Rabi 2022-23, total 38,33,300 nos. of seed minikits of different oilseeds crops (354150 nos. of seed minikits during Kharif, 2022, 829000 nos. of seed minikits during Rabi, 2022-23 and 2650150 nos. of seed minikits under special Rapeseed & Mustard programme) were supplied to the farmers in the oilseeds producing States through Central Seed Producing Agencies.

A total of 14550 acre FLDs on improved varieties and agro-techniques of nine oilseeds crop (Groundnut, Soybean, Castor, Niger, Sesame, Rapeseed-Mustard, Linseed, Safflower, and Sunflower) were planned through ICAR-AICRP network during Kharif-2022 and Rabi, 2022-23. Moreover, a total of 73600 acre Cluster FLDs have been planned through ATARI/KVKs of ICAR in different states covering (Groundnut, Soybean, Rapeseed-Mustard, Sunflower, Safflower, Linseed, Sesame, Niger and Castor) during Kharif/ Rabi/

Summer, 2022-23. Further, 35 Seed Hubs for Oilseeds have been established to produce quality /certified seeds and also to make available to the farmers timely.

8.5.3 Targeting Rice Fallow Areas (TRFA) in six Eastern states and four other States:

A new scheme namely TRFA was launched in 6 Eastern states viz., Assam, Bihar, Chhattisgarh, Jharkhand, Odisha and West Bengal in 2016-17 for utilization of rice fallows for cultivation of pulses and oilseeds. During 2019-20, 4 new states namely Andhra Pradesh, Maharashtra, Karnataka & Tamil Nadu have also been included. During the year 2021-22, more than 2 lakh ha area covered under TRFA-Oilseeds.

8.5.4 NFSM-Tree Borne Oilseeds (TBOs)

- Assistance under NFSM-TBOs is provided to promote various TBOs namely Simarouba, Neem, Jojoba, Karanja, Mahua, Wild apricot, Cheura, Kokum, Tung and Olive having capability to grow and establish in varied agro-climatic conditions as well in the waste land of the country.
- The interventions under NFSM-TBOs are integrated development of nurseries & plantation on the wasteland, maintenance of TBOs plantation, incentives for undertaking intercropping with TBOs, Research and Development, distribution of pre-processing, processing and oil extraction equipment, training of farmers, training of extension workers and local initiatives/contingency.

- iii. During 2022-23, NFSM-TBOs programme is being implemented in 8 States i.e Chhattisgarh, Jammu & Kashmir, Maharashtra, Mizoram, Rajasthan, Tamil Nadu, Tripura and Uttar Pradesh with 2621.12 ha target to cover plantation area of TBOs.

8.5.5 National Mission on Edible Oils-Oil Palm (NMEO-OP):

A new Centrally Sponsored Scheme namely, National Mission on Edible Oil (NMEO)-Oil Palm (NMEO-OP) has been launched by Government to promote oil palm cultivation for making the country Aatamnirbhar in edible oils with special focus on North-Eastern States and A&N Islands. The Mission will bring additional area of 6.5 lakh ha under Oil Palm plantation with 3.28 lakh ha in north-eastern states and 3.22 in Rest of India in next 5 years from 2021-22 to 2025-26. Under NMEO-OP the cost will be shared as 60:40 between the Central and the State Government for General states and 90:10 for NE states and 100% for UTs and Central Agencies.

The major focus of the Mission is to provide Viability price of FFBs to the farmers linked with assured procurement by the industry with simple price fixing formula. Central Government will compensate farmers through viability gap payment, if price paid by industry is below viability price.

The Government has assessed that a total area of around 28 lakh hectares in the country and around 9.62 lakh hectares for the North East alone fit for oil palm cultivation. Out of the total assessed area, only 3.92 lakh hectares is under oil palm cultivation including NE states at present only of which about 2.00 lakh ha is fruiting area. Hence there is a lot of potential for the growth of oil palm in the country.

The mission will result in increase the area of oil palm by 6.5 lakh hectares by 2025-26 and 16.71 lakh ha by 2029-30. The current fruiting which is 1.89 lakh hectares will be increased to 2.80 lakh hectares by 2025-26 and above 8.50 lakh hectares by 2029-30. The expected FFBs production will be 75.19 lakh tonnes by 2025-26 and 170.00 lakh tonnes by 2029-30. The CPO production is expected to increase upto 28.11 lakh tonnes by 2029-30.

The total estimated cost of the NMEO (Oil Palm) is 8844 crore GOI share ` 2196 crore state share, and total of ` 11,040 crore including Viability Gap funding with a cost of ` 1163 crore. (Rest of India- 1144 crore and `19.00 crore for NE states and Andaman & Nicobar Islands till 2025-26.

The progress of NMEO-OP and action to be carried out in 2022-23 is given below:

- i. 13 states have signed the MOU with the Central Government. Telangana and Andhra Pradesh have not signed.
- ii. Announced Viability Price of Rs. 13,346/- ton of FFBs effective from 1st Nov, 2022 to 31st Oct, 2023.
- iii. After launch of NMEO-OP, an area of 40000 ha achieved and production of FFBs of 22.34 lakh tons and CPO production 3.58 lakh tons.
- iv. Import of Oil Palm seed sprouts since new mission-373 lakhs permission given.
- v. Govt. of India has approved Annual Action Plans (AAPs) of 15 States of Rs. 498.93 crores (GoI share) for coverage 1.05 lakh ha area under Oil Palm cultivation under NMEO-OP during 2022-23.
- vi. Govt. of India has approved the Annual Action Plan (AAP) of ICAR-Indian Institute of Oil Palm Research (ICAR-IIOPR), Pedavegi of Rs. 2742.26 lakhs for implementation of 11 Research & Development projects on Oil Palm under NMEO-OP during the next 5 years from 2022-23 to 2026-27. The main objectives of R&D projects are as under:
 - To identify potential unexploited oil palm genetic resources of wild and semi-wild nature from primary centres of origin in Africa and America (collection, conservation and utilization).
 - To develop location specific hybrids by effective utilization of PGRs.
 - To strengthen collaborations with other OP research organizations of

- member countries.
- Supporting the existing and new oil palm seed gardens.
- To supply more number of germinated seeds/ planting materials to the stakeholders,
- Development of hybrids by utilizing selected parental palms
- Identification of high oil yielding genotypes
- Development of semi-clonal and bi-clonal seed gardens for large scale development of homozygous planting material
- To develop cost effective techniques for conversion of on farm biomass to rich organic manure
- To develop a sensor and IOT based automated smart micro irrigation system for oil palm to enhance water use efficiency
- To develop sensor and IOT based automatic nitrogen fertigation system for oil palm for precise nitrogen management
- To assess the diversity and pollination efficiency of insect pollinators of oil palm.
- To develop various value added edible products from oil palm produce and industrial waste
- To develop various value added non-edible products from oil palm produce and industrial waste
- To develop prototype for lever operated harvesting machine.
- To develop lever operated automatic machine for harvesting oil palm bunches
- To equip knowledge and skills of officers, farmers and other stakeholders on oil palm production technologies for sustainable oil palm

production.

- vii. Govt. of India has approved Detailed Project Report (DPR) submitted by Central Agriculture University (CAU), Imphal for Establishment of Centre of Excellence -Oil Palm in Arunachal Pradesh, Manipur and Mizoram of Rs. 2159.40 lakhs for the period 2022-23 to 2025-26.

- viii. **Oil Palm Processing Mills-** Approved 10 Oil Palm Mills for the NER. Arunachal Pradesh (2), Assam (6), Mizoram (1) and Nagaland (1).

- **Arunachal Pradesh-** M/s Patanjali Foods Pvt Ltd., organized Bhumi Pooja/Foundation stone laying ceremony at IGC-Niglok (East Siang District) on 31st August 2022. M/s 3F Oil Palm Pvt Ltd., has also organized Bhumi Pooja/Foundation stone laying ceremony at Roing (Lower Dibang Valley District) on 10th October 2022.

- **Assam-**Land identification for two Palm Oil mills is in progress.

- **Mizoram & Nagaland-** site earmarked.

ix. Seed Nurseries-

- Approved-33 for RoI and 28 for NER.
- Established-4 Nurseries in Assam, 3 in Mizoram, 6 in Manipur, 4 nurseries in Arunachal Pradesh and 30 in Telangana.
- **Assam-PATANJALI FOODS** finalized 3 Nursery sites. Setting up of Infrastructure & land development in progress. Total target- 5 Nos nurseries in 2022-23.
- **Assam-GODREJ AGROVET** finalized 2 Nursery Sites. Setting up of Infrastructure & land development in progress.

x. Seed Gardens –

- Approved-3 for RoI and 6 for NER.
- Established-One New Seed Garden is being established at Kukathoopuzha of Kollam District in Kerala. Land identification for establishment of one

seed garden is in progress in Assam.

- xi. **Custom Hiring Centers-** Approved 14 RoI and 22 for NER.

➤ Custom duty on import of Oil Palm seed

sprouts has been reduced to 5% from 30% and other import formalities are also streamlined.

8.6. Budgetary Estimate (BE) and release:

NMEO-Oil Palm



Recently, a meeting to review major schemes of Ministry of Agriculture and Farmers Welfare being implemented in NE States was held on 12.11.2022 at Central Institute of Horticulture, Dimapur, Nagaland under the Chairmanship of Secretary (Agriculture), Government of India with the Senior Officers of all NE States and stakeholders. The glimpses are under:





During 2022-23, An amount of Rs. 156.60 crore has been released out of the budgetary allocation of Rs. 600.00 crore under Edible Oil-Oilseeds for implementing in States and Central agencies as on 23.11.2022. An amount of Rs. 134.90 crore has been released out of the budgetary allocation of Rs.

900.00 crore under Edible Oil-Oil Palm for implementing in States and Central agencies as on 23.11.2022. The programme-wise allocation and release is given below:

8.7. Implementation of Direct Benefit

(Rs. in crore)

S.No.	NFSM (OS&OP)	Allocation (2021-22)	Release of fund
	A. States	451.00	
1.	i. NFSM-Oilseeds		67.7737
	ii. NFSM-TRFA		3.2424
	iii. TBOs		0.50
	iv. NFSM- Special Programme R&M		0.00
	Total	451.00	71.5161
2.	Central Agencies/R& D institutions	149.00	85.0871
	Total Edible Oil-Oilseeds	600.00	156.6032
	B. Edible Oil-Oil Palm		
1	States	900.00	132.3365
2	Central Agencies		2.5653
	Total Edible Oil-Oilpalm	900.00	134.9018

Transfer (DBT) – an initiative under NMOOP:

Notifications for implementation of Direct Benefit Transfer (DBT) for NMOOP has been published vide SO 1343(E) dated 24th April, 2017. NMOOP-DBT portal has been created to facilitate the NMOOP implementing states for updating the beneficiary details. The DBT-NMOOP portal is used by the NMOOP implementing states for uploading of the DBT linked beneficiary details in the main NFSM

DBT Portal. As on 30.11.2022, 241740 no. of beneficiaries are enrolled in DBT Portal during 2022-23.

8.8 Fund flow (%) under SCSP and TSP:

The release of fund under NFSM (OS&OP) programme is made to the states with category wise break-up for SC/ST and also there is a special mention in the release letter that the funds earmarked for SC/ST category cannot be diverted

for General category. Even while conveying the re-validation of previous year unspent balance of fund to the states it has the specific mention of category-wise (SC/ST) break-up of amount that is to be utilized by the state.

Women beneficiaries:

While conveying the Budgetary allocation for Annual Action Plan to the States, 30% of allocation has been earmarked for women beneficiaries/ farmers at the level of state

Government implementing the NFSM (OS&OP) programme.

Extension activities

The Department is also organizing Kisan Mela, seminar, workshop, Brain storming session, exhibition for mass awareness of NFSM (OS&OP) programme and activities among the stakeholders including farmers. The details of Major Events Agriculture Fairs (Kisan mela) during 2018-19 & 2019-20 are as follow:

(Amount Rs in lakh)

S.No.	Event	States	Fund Released
2018-19			
1	National Seminar, On Road Map of vegetable oil production by 2022" by ICAR-IIOR during 28-29 April, 2018	AP	18.00
2	Soya Kisan Meala at KVK, Betual, MP by JNKVV, Jabalpur on 20.09.2018	MP	4.00
3	Farmers Fair-cum Exhibition on Groundnut at ICAR-DGR, Junagadh at 1st October, 2018	Gujarat	4.00
4	Mustard kisan mela ICAR-DRMR, Bharatpur, Rajasthan 02.02.2019	Rajasthan	4.00
2019-20			
1	Farmers Fair-cum Exhibition on Groundnut 10.10.2019	Gujarat	4.50
2	Kisan mela by NSC 29.02.2020	Bihar	4.00

Chapter-9

NATIONAL MISSION FOR SUSTAINABLE AGRICULTURE (NMSA) & PRADHAN MANTRI KRISHI SINCHAYEE YOJANA (PMKSY)

9.1 Overview

Centrally Sponsored Schemes: National Mission for Sustainable Agriculture (NMSA) is one of the eight Missions outlined under the National Action Plan on Climate Change (NAPCC) and aims at promoting sustainable agriculture by devising appropriate adaptation strategies/dimensions. During the 12th Five Year Plan, these strategies / dimensions were embedded and mainstreamed into Missions/ Programmes /Schemes of the Department of Agriculture and Farmers Welfare (DA&FW) through a process of restructuring and convergence. NMSA as a programmatic intervention made operational from the year 2014-15 aims at making agriculture more productive, sustainable, remunerative and climate resilient by promoting location specific integrated / composite farming systems; soil and moisture conservation measures; comprehensive soil health management; efficient water management practices and main streaming rainfed technologies. NMSA aims at promoting Sustainable Agriculture through climate change adaptation measures. The major thrust is enhancing agriculture productivity especially in rainfed areas focusing on integrated farming, soil health management and synergizing resource conservation. From the year 2018-19, NMSA was being implemented as a sub-mission/ sub-umbrella scheme under the Umbrella Scheme of 'Green Revolution-Krishonnati Yojana'. From 2022-23, various programmes/Schemes of NMSA has been subsumed under Rashtriya Krishi Vikas Yojana (RKVY) as RKVY- Annual Action Plan based programme. The Centrally Sponsored and Central Sector Schemes of NMSA are as under:

- On Farm Water management (OFWM)- Subsumed as Per Drop More Crop (PDMC) after launch of Pradhan Mantri Krishi Sinchai Yojana in 2015-16- Now Subsumed under RKVY Cafeteria approach.
- Rainfed Area Development (RAD)- Now

Subsumed under RKVY Cafeteria approach.

- Sub Mission on Agro Forestry (SMAF)
- National Bamboo Mission (NBM)
- Soil Health Management (SHM)
- Paramparagat Krishi Vikas Yojana (PKVY)
- Soil and Land Use Survey of India (SLUSI)
- National Rainfed Area Authority (NRAA)
- Mission Organic Value Chain Development in North Eastern Region (MOVCDNER)
- National Centre of Organic Farming (NCOF)
- Central Fertilizer Quality Control and Training Institute (CFQC&TI)

9.2 Rainfed Farming Systems

Food grain production in the country accrues from approximately 139.18 million hectare of net area sown. Of this, 69.48 million hectares is net irrigated and the remaining area of about 69.70 million hectares is under rainfed conditions (as per Land Use Statistics at a Glance 2017-18). Rainfed agriculture is complex, diverse and risk prone characterized by low levels of productivity and low input usage. Rainfed areas if managed properly have the potential to contribute a larger share in the overall production of food grains in the country. In view of this, the Government of India has accorded very high priority to the holistic and sustainable development of rainfed areas through efficient use of water management at farm level and appropriate farming systems etc. In this context, the RFS division is implementing the Per Drop More Crop Component (PDMC) and Rainfed Area Development (RAD) component of the National Mission for Sustainable Agriculture (NMSA). Besides, a dedicated Micro Irrigation Fund (MIF) has been instituted with NABARD with a corpus of Rs. 5000 crores for expanding coverage of Micro Irrigation which has been proposed to be doubled to 10000 crores.

9.2.1 Per Drop More Crop Component (PDMC):

The Pradhan Mantri Krishi Sinchai Yojana (PMKSY) was launched during the year 2015-16 with the objective of achieving convergence of investments in irrigation at the field level, enhance the physical access of water on the farm, integration of water source, distribution and its efficient use, improve on-farm water use efficiency, enhance the adoption of precision-irrigation and other water saving technologies. The PDMC scheme which was conceived under PMKSY by amalgamating ongoing scheme of 'On Farm Water Management (OFWM)' focuses on enhancing water use efficiency at farm level through Micro Irrigation viz Drip and Sprinkler Irrigation System.

The major objectives of the scheme are increasing the area under Micro Irrigation to enhance water use efficiency in the Country; increasing productivity of crops and income of farmers through precision water management; promoting micro irrigation technologies in water intensive crops like sugarcane, banana, paddy etc. and give adequate focus to extend coverage of field crops under micro irrigation technologies; making potential use of micro irrigation systems for promoting fertigation.

Evaluation of the PDMC Scheme taken up by NITI Aayog reveals that the scheme is relevant in achieving national priorities such as substantially improving on-farm water use efficiency, enhancing crop productivity, generating employment opportunities etc. Micro irrigation adoption has helped in saving water across various states to the tune of around 30% to 50% besides, increase in productivity; reduction in fertilizer consumption, water consumption, power consumption etc. This also helps in increase in income of farmers and creation of direct and indirect employment opportunities.

From 2015-16 to 2021-22, Central Assistance of Rs. 16344.07 crore was released to States for implementation of PDMC. Further, Rs.906.35 crore was released during 2022-23 up to 15.11.2022. During 2015-16 to 2021-22, an area of 67.46 lakh ha has been covered in the country under Micro

Irrigation under PDMC and an area of 4.21 lakh ha has been covered during 2022-23 till October 2022.

9.2.2 Micro Irrigation Fund (MIF): Union Finance Minister in the Union Budget 2017-18 announced setting up of a dedicated Micro Irrigation Fund (MIF) to be instituted with NABARD with an initial corpus of Rs. 5000 crore. The objective of the fund is to facilitate the States in mobilizing resources for expanding coverage of Micro Irrigation by taking up special and innovative projects and also for incentivising micro irrigation beyond the provisions available under PDMC to encourage farmers to install micro irrigation systems. The Steering Committee of MIF & NABARD has approved Grant of Loan of Rs 4710.96 crore to the Governments of Andhra Pradesh, Tamil Nadu, Haryana, Gujarat, West Bengal, Punjab, Rajasthan and Uttarakhand till now. NABARD has released an amount of Rs. 2174.00 crores to the States of Tamil Nadu, Andhra Pradesh, Haryana, Gujarat and Punjab. Interest Subvention by Government of India under MIF of Rs. 31.34 crore has been released to NABARD till quarter ending September, 2022. MIF has been proposed to be augmented by additional amount of Rs. 5000 cr.

9.2.3 Rainfed Area Development (RAD): RAD is being implemented as a component of the National Mission for Sustainable Agriculture (NMSA) from the year 2014-15. RAD adopts an area based approach for development and conservation of natural resources through promoting Integrated Farming Systems (IFS). IFS focuses on multi cropping, rotational cropping, inter-cropping and mixed cropping practices with allied activities like horticulture, livestock, fishery, apiculture etc. to enable farmers not only in maximizing farm returns for sustaining livelihood, but also to mitigate the impact of drought, flood or other extreme weather events. The benefits of IFS are as under: (a) Increasing agricultural productivity of rainfed areas in a sustainable manner by adopting an appropriate farming system based approach (b) To minimize the adverse impact of possible crop failure due to drought, flood or un-even rainfall distribution through diversified and composite farming systems (c) Enhancement of farmer's income and livelihood

support for reduction of poverty in rainfed areas. The total area covered under NMSA-RAD since inception upto 31 March, 2022 is 6.74 lakh ha. During 2022-23, an amount of Rs.64.42 crore has been released upto 7th February, 2023 to the States for implementation of the programme. Since inception and upto 7th February, 2023, an amount of Rs. 1573.98 crore has been released to States under RAD.

9.3 National Rainfed Area Authority (NRAA):

The 'National Rainfed Area Authority' (NRAA) was setup by Govt. of India as an expert body to provide knowledge inputs regarding systematic up-gradation and management of country's dry land and rainfed agriculture. In the present challenges of adverse impact of climate change, growing intensities of extreme climatic events, water scarcity, productivity decline of land etc., NRAA has a bigger role to play towards institutional and knowledge support in the field of overall natural resource governance issues of the country particularly in the rainfed ecosystem. Accordingly, the Group of Secretaries (GoS) constituted in 2015-16 to derive strategies and innovative ideas for sustainable growth in agricultural sector in one of its suggestion, recommended strengthening of National Rainfed Area Authority (NRAA) as a repository of knowledge for dryland agriculture and to focus on 150 most vulnerable rainfed districts across the country. In this context, NRAA has brought out a report on prioritization of districts for development planning in India based on Composite Index Approach and identified 168 districts as high priorities considering various parameters on natural resources and livelihood indices. NRAA was allocated Rs. 3.4 crores during 2021-22. Some of the major activities undertaken during the year 2022-23 by NRAA are:

- A Committee of Experts (CoE) was constituted to study the crop feasibility to recommend appropriate mechanisms for providing farmers with rational compensation on occurrence of crop losses and identifying vulnerable districts for risk coverage under Pradhan Mantri Fasal Bima Yojna (PMFBY). Study report has been prepared and shared

with DA&FW on 12th September 2022.

- In recognition of the pastoral ecosystem as a critical livelihood option for millions across the country, NRAA in association with FAO rolled out a Technical Cooperation Project (TCP) titled "Reviving Traditional Pastoralist Routes in Dry and Arid Parts of the Country". The Project was implemented since December 2019 over a period of 2 (two) years in the Lunkaransar Block of Bikaner District in Rajasthan. A comprehensive policy has been developed to facilitate Government in replicating the model.
- NRAA in association with FAO has conducted a study to evaluate the efficacy of sugar beet cultivation as an alternative or complimentary crop to sugarcane for resource conservation, enhancing farmer's income and potential use of sugar mills which are underutilized. After successful completion of the study, a policy document is being prepared to promote sugar beet cultivation.
- NRAA has attempted a draft policy for accelerated growth of rainfed agriculture. The draft is based on consultations with several individuals and organisations serving the cause of rainfed agriculture and farmers welfare. The draft policy has been uploaded on NRAA and DA&FW portal for receiving the suggestion/inputs from various stakeholders. Significant responses have been received which are being examined for appropriate improvement.
- NRAA with financial support from FAO and technical support from NRSC, ISRO, Dept. of Space, Govt. of India took up a pilot study under the title, "Spatial Inventory of Agroforestry Resources Using Geospatial Technology and AI with Very High Resolution Images". The Study could establish a standard procedure for creating spatial database on agroforestry component at micro-level, with a feasibility to upscale it

to regional & national levels. The outcomes will help in drawing up an implementation strategy to survey and assess various agroforestry system across the country.

- NRAA prepared drought proofing action plans for 24 most critical drought prone districts as identified by the Drought Management Division of Department of Agriculture & Farmers Welfare in consultation with the state governments of Rajasthan, Karnataka & Andhra Pradesh. Piloting of drought proofing action plans have been taken up in 11 clusters of Andhra Pradesh, Karnataka and Rajasthan with funding from RKVY-RAFTAR under supervision of NRAA. As recommended by GoS, draft development plans for 16 districts from the high priority ones have been prepared and shared with states for their inputs.
- FAO has approved a Technical Cooperation Project “Efficient weather forecasting and agro-advisory models for seasonal and contingent planning of agriculture operations to minimize risks associated in agriculture, more particularly for rainfed areas” for implementation under supervision of NRAA
- Department of Land Resources (DoLR) has identified NRAA as the knowledge partner for the World Bank assisted REWARD project, as the guidelines for next generation watershed programmes have been formulated by the authority. To this effect, a MoU has been signed between NRAA and DoLR on 2nd June 2022. NRAA has identified ICRISAT, MANAGE, NRSC and WASSAN as the consortium Partners to drive the project. This project envisages instilling lessons from the state interventions and synthesizing those to develop nationally scalable technical standards on scientific watershed development. NRAA will also supervise the National Level Technical Committee to provide technical support to DoLR for watershed development.

Apart from above, NRAA is engaged with ICAR

institutes, state agricultural universities and other national institutes to drive the research agenda for rainfed agriculture and capacity buildings of stake holders. NRAA has also taken up a project with ICAR- National Bureau of Plant Genetic Resources (NBPGR) for in-situ conservation of wild rice species – *Oryza rufipogon* in the Sonitpur district of Assam. All clearances from Assam Govt have been received to operationalise the same.

Natural Resource Management

9.4 National Bamboo Mission (NBM)

Brief on restructured National Bamboo Mission (NBM):

1. Restructured National Bamboo Mission (NBM) was approved by the Cabinet Committee on Economic Affairs (CCEA) on 25-04-2018. The Restructured National Bamboo Mission is a Centrally Sponsored Scheme (CSS). The NBM scheme was under the umbrella of the 'National Mission for Sustainable Agriculture (NMSA)' until 2021-22. With effect from 2022-23, NBM has been merged with MIDH as a sub-scheme. The Mission envisages promoting holistic growth of bamboo sector by adopting area-based, regionally differentiated strategy and to increase the area under bamboo cultivation and marketing.
2. NBM mainly focuses on the development of complete value chain of bamboo sector to link growers with consumers starting from planting material, plantation, creation of facilities for collection, aggregation, processing marketing, micro, small & medium enterprises, skilled manpower and brand building initiative in a cluster approach mode. Presently the scheme is being implemented in 24 States/UTs (Assam, Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, Tripura, Madhya Pradesh, Maharashtra, Chhattisgarh, Odisha, Karnataka, Uttarakhand, Bihar, Jharkhand, Andhra Pradesh, Telangana, Gujarat, Tamil Nadu, Kerala, Uttar Pradesh, Himachal Pradesh and UT Jammu & Kashmir) in non-forest Govt land and private farmers field with the funding pattern of

60:40 between Centre and State Govt. for all States excepting NE & Hilly states, where it is 90:10 and 100% in case of Union Territories/ R&D institutes/ Bamboo Technology support Groups (BTSGs) and National Level Agencies.

3. Financial Status: The scheme was announced during the Budget speech on 2018 and Rs. 333.08 cr has been released to the implementing States and supporting National Level Agencies.

Year	RE	Expenditure
2018-19	153.30	150.03
2019-20	87.00	84.51
2020-21	94.00	75.21
2021-22	70.00	20.58
2022-23	65.00	2.87

4. Physical Progress: Since the launch of restructured NBM during 2018-19, 23756 hectare non-forest area has been planted with bamboo. 367 Nos. of Bamboo Nurseries, 78 Nos. of bamboo treatment and preservation (in nos.), 380 Nos. of Product Development and Processing units, 105 Nos. of Infrastructures for Bamboo Market, 1801 Nos. of development of tools, equipment and machinery were achieved. 11959 persons were trained. 224 Nos. of Workshop/ seminar/ trade fairs/ exhibition activities and 237 Nos. of minor R&D activities were carried out.

5. Other Initiatives:

i. Two externally aided projects have been approved for implementing in the North Eastern Region.

a. “Development of Bamboo Value Chain in the North East” will be supported by Asian Development Bank. The two roundtable discussions have been carried out for the execution of the project. Under the project it has been envisaged to establish 3 Integrated Bamboo Parks each in Assam, Nagaland & Tripura. Field visit to Assam has been conducted and the Govt of Assam has allocated around 36 acres of land for the project at Golaghat. It has been decided that the Assam State Bamboo Mission will be the Implementing Agency for the first phase of the project and the

PMU has been notified by the SBDA, Assam.

b. “India-Japan Initiative for Sustainable Development of the bamboo sector” will be supported by the government of Japan through JICA. The National Bamboo Mission will be the Executive agency and North East Cane and Bamboo Development Council will be the implementing agency for the project. The major focus areas are; skill upgradation of the artisans, improvement of production of export quality bamboo articles, knowledge and technology sharing etc.

ii. NBM with GeM launched a **“Green Gold Collection”** a dedicated bamboo window on the Government e-Marketplace Portal on 3rd June, 2021. This will facilitate specialized marketing model for the multifaceted bamboo products for purchase from the governmental as well as the private consumers. As of now GeM has created 79 bamboo product articles under 10 major bamboo categories.

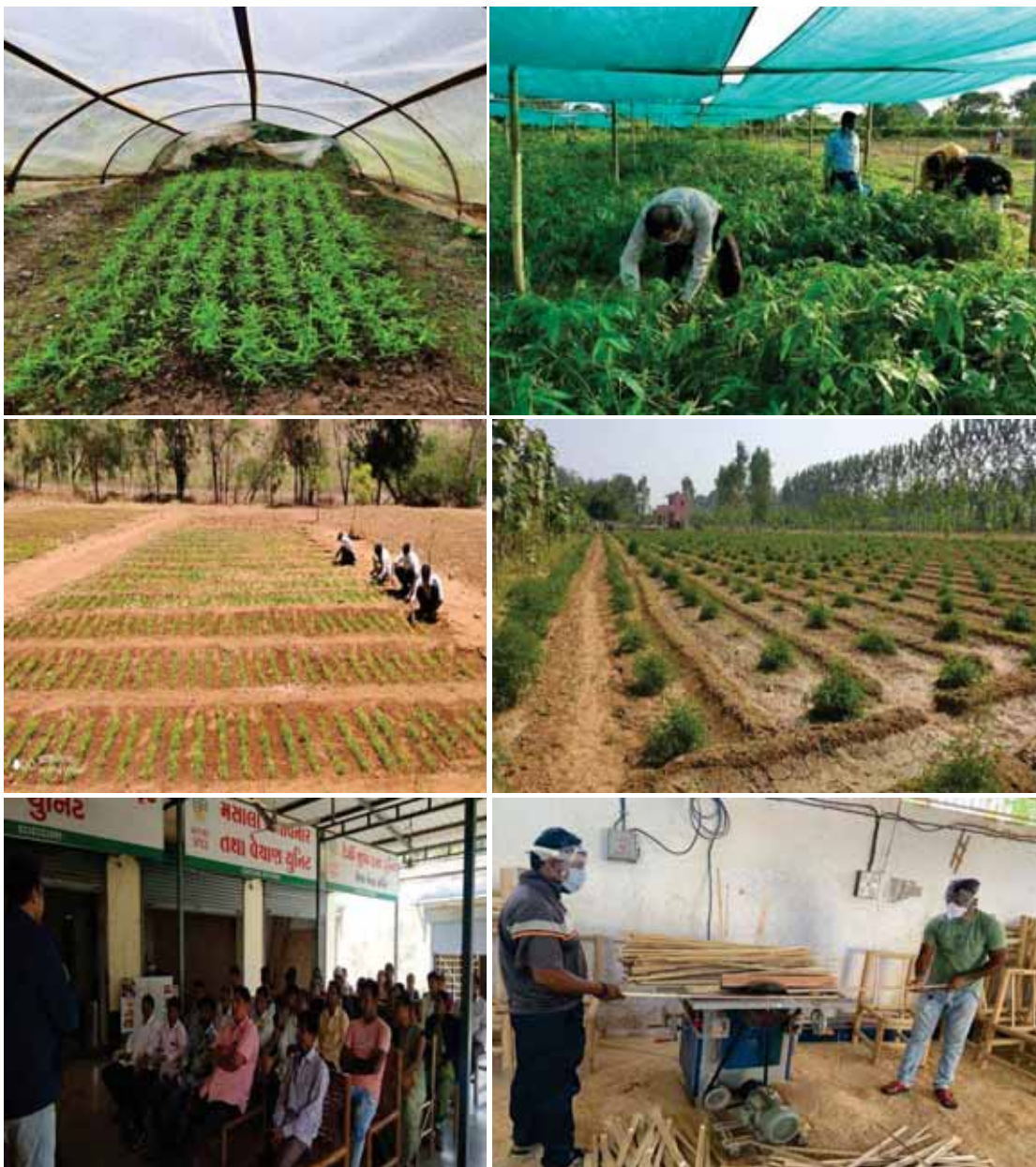
iii. Initiatives have been taken for the policy reforms in the export regime of Bamboo and bamboo products with DGFT especially for lifting the ban of bamboo charcoal export. Subsequently, the GoI has made the export of bamboo charcoal with certificate origin from forest range offices under free category (during 2022).

vi Formation & Promotion of FPOs in bamboo sector: 37 FPO in Bamboo Sector has been formed under the Central Sector Scheme, Formation & Promotion of 10,000 FPOs. The Implementing Agencies (IAs) viz. National Bank for Agriculture and Rural Development (NABARD), National Agricultural Cooperative Marketing Federation of India (NAFED) and North Eastern Regional Agricultural Marketing Corporation Limited (NERAMAC).

v. Subsequent to the MoU is signed between the National Bamboo Mission (NBM) and the

Handicrafts and Carpet Sector Skill Council (HCSSC) on 26th February, 2021 with the objective of working in collaboration on the development of the bamboo sector; a project has been approved for the upskilling of 1500 artisans in the NER under the 'Recognition of Prior Learning (RPL-1) module' the PM Kousal Vikas Yojana.

vi. An Advisory group for boosting the bamboo sector development formed under the Chairmanship of the Secretary, DA & FW, Ministry of Agriculture and Farmers Welfare.





9.5 Sub-Mission on Agroforestry (SMAF)

The Sub-Mission on Agroforestry was launched for the first time by the Government of India in 2016-17 to encourage tree plantation on farm land “HarMedh Par Ped”, along with crops/ cropping system following the inception of the National Agriforestry Policy 2014. The scheme was implemented in the States which have liberalized transit regulations for selected tree species. At present, scheme is being implemented in 21 States namely *i.e.* Meghalaya, Mizoram, Nagaland, Manipur, Andhra Pradesh, Bihar, Chhattishgarh, Gujarat, Haryana, Himachal Pradesh, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Odisha, Punjab, Rajasthan, Tamil Nadu, Telangana and Uttar Pradesh, Manipur and UTs of Jammu & Kashmir and Ladakh.

Agroforestry helps in creating additional source of income to the farmers and help in carbon sequestration. Under the Mission, multipurpose tree species with short, medium and long term returns are encouraged, so that farmers may get additional income at regular intervals. These would include fruits, fodder, medicinal, timber species.

The Sub-mission had the following broad objectives:

- To encourage and expand tree plantation in farmland
- To ensure availability of quality planting material
- To popularise various Agroforestry practices/models
- To create database, information and knowledge support in the area of agroforestry.
- To provide extension and capacity building support to agroforestry sector.

The implementation of the Sub-mission resulted in the following benefits:

- Agroforestry provides additional income/ savings opportunities for farmers and will also serve as a cushion to crop damage.
- Increase in tree cover through Agroforestry leads to higher carbon sequestration and compliment the National initiatives on climate change adaptation and mitigation efforts.

- Trees grown in farm land helps in enriching soil organic matter and enhancing nutrient uptake of the crops measurable under different time interval (mid & end of the programme). This can be periodically assessed from the soil health status depicted on the soil health card to be issued to the farmers from time to time.
- Contribute in availability of agroforestry produce to meet the increasing demand of raw materials for wood based industries which will result in saving of foreign exchange being used for import of wood and wood based products.
- Development of information system and database on agroforestry
- Income & livelihood generation of the farmers

9.5.1 Funding Pattern:

Scheme is being implemented with funding pattern of 60:40 between Centre and State Govt. for all States excepting NE & Hilly states, where it is 90:10 and 100% in case of UTs & National Level Agencies.

9.5.2 Financial Progress:

For implementation of the programmes a cumulative amount of **Rs.15696.25 lakh** has been released to the States / Agencies since the start of the programme from 2016-17 to 2021-22.

9.5.3 Physical Progress:

Under this scheme, an area of 1,61,238 Ha has been brought under plantation, 899 nos. of nurseries have been established and about 682.611 lakh trees have been planted during last six year years (2016-17 to 2021-22) across 21 states and two UTs which are implementing SMAF scheme. Around 77418 nos of farmers have been benefitted under the scheme. The major species being planted include *Santalum album* (Sandal wood/Chandan), *Aegle marmelos* (Bael), *Azadirachta indica* (Neem), *Litsea glutinosa* (Bollygum), Poplar, Eucalyptus, *Dalbergia sissoo* (Indian rosewood/Shisham), *Terminalia arjuna* (Arjuna) etc.

The scheme has been discontinued since April 1st, 2022 as per EFC recommendation.

9.6 Climate Change

National Mission on Sustainable Agriculture (NMSA) is one of the Missions launched under the National Action Plan on Climate change (NAPCC) in 2008 which is being implemented/coordinated under NRM Division. The Mission aims to evolve and implement strategies to make Indian agriculture resilient to climate change. NMSA was approved for three major components i.e. Rainfed Area Development (RAD); On Farm Water Management (OFWM); and Soil Health Management (SHM). Subsequently, four new programmes were introduced under the ambit of NMSA namely Soil Health Card (SHC), Paramparagat Krishi Vikas Yojana (PKVY), Mission Organic Value Chain Development in North Eastern Region (MOVCDNER) and Sub Mission on Agroforestry (SMAF). During 2015-16, Pradhan Mantri Krishi Sinchayee Yojana (PMKSY) was operationalised wherein the OFWM component of NMSA was subsumed under the Per Drop More Crop (PDMC) component of PMKSY. In addition to the aforementioned programmes under NMSA, the Restructured National Bamboo Mission (NBM) was launched in April 2018. Details of these schemes are mentioned in the write ups of the respective Program Divisions.

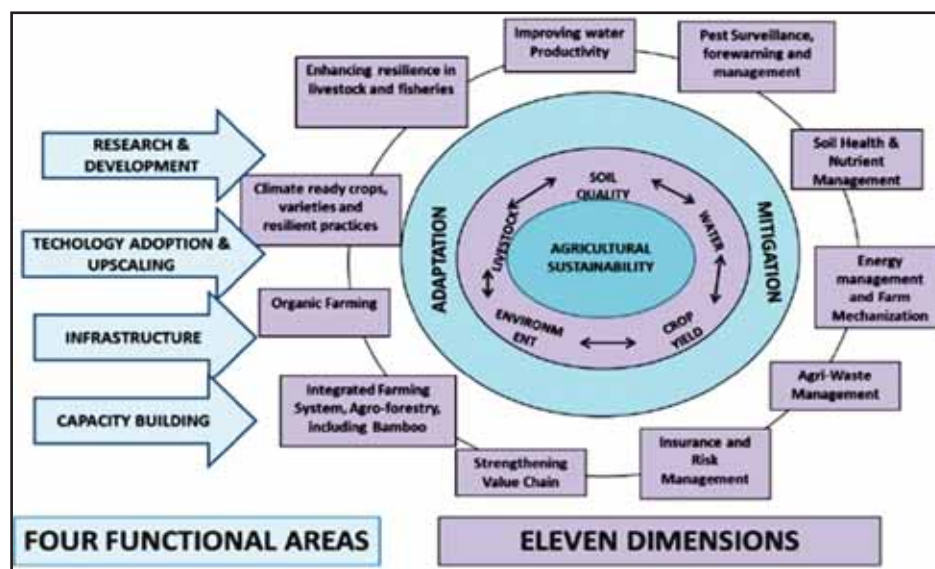
Many national and international developments have taken place since the launch of NMSA. The understanding on the impact of climate change on Indian agriculture has improved and promising adaptation and mitigation strategies have been identified, which can help farmers to cope with climate change. However, agriculture in India as elsewhere globally continues to face challenges posed by climate variability including aberrant monsoons, heat waves, extreme weather events and degradation of natural resources. Climate resilience is being promoted through research & technologies being developed by ICAR and disseminated by programmatic interventions of DA&FW, DAHD and DoF.

The NMSA Strategy document was revised for the period 2018 to 2030 and has adopted an integrated holistic approach focusing more on vulnerable

regions, deploying the best bet technologies and practices for adaptation and mitigation and empowering farmers through capacity building and financial support. Implementation strategies are designed with a time frame up to 2030. Eleven key priority areas have been identified for programmatic interventions which can minimize the impact of climate change and reduce risk. Each of these priority areas has to be analysed in the context of four functional areas, viz., Research and

Development, Technology Adoption, Infrastructure and Capacity Building for Identifying adaptation and mitigation measures in a multi-dimensional and cross sectoral matrix.

The programmatic interventions in these four functional areas covering eleven priority items will effectively address the adaptation and mitigation needs of the complete value chain from production to marketing in agriculture and allied sectors.



A Ministerial Dialogue of COP-26 for Sustainable Agriculture Campaign was held on 15-09-2021 on a virtual platform wherein, the dialogue was to Transform Agriculture & Food Systems to become more sustainable, resilient, nutritious and productive, in addition to a technical dialogue along with case studies on organic farming.

Reductions in agricultural sector emissions have been achieved as a result of various initiatives such as expansion of area under horticulture, system of rice intensification, neem coated urea, direct seeded rice cultivation, solar pumps, micro-irrigation, balanced feedstock and bypass protein.

Carbon markets can offer opportunities to mobilize investments in priority sectors such as agriculture, forest and land use. Carbon markets have gained significant traction in recent years and this it can help to accelerate the transformation needed, by creating an economic incentive for reducing emissions. Keeping in view of existing global scenario of carbon market, it may be mentioned that

developing carbon market in agriculture is important to move towards more remunerative agriculture/farming system through adoption of regenerative agriculture practices and linking farmers to carbon markets. In view of above a separate Cell, has been constituted in NRM Division to develop framework/mechanism for carbon market in Agriculture Sector.

9.7 Soil and Land Use Survey of India (SLUSI)

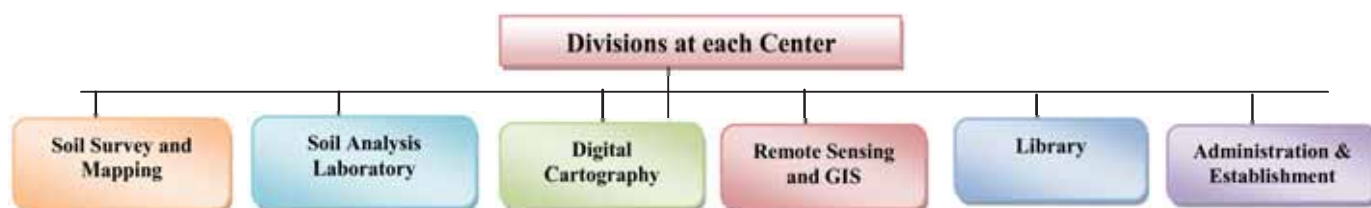
Soil and Land Use Survey of India (SLUSI) established in 1958 is an apex organization in the country, which deals with Soil Survey and Land Resource Mapping. It is a subordinate office under INM Division, Department of Agriculture and Farmers Welfare, Ministry of Agriculture and Farmers Welfare, Government of India.

The organization is mandate to carry out soil survey of different intensities in order to the provide scientific database for developmental programmes encompassing soil and water conservation

planning, watershed development, soil health /soil fertility management, scientific land use planning etc. The database generation of the organization commensurate with the requirement of soil and land use information of various land-based development programmes.

The organization is well-equipped with Remote Sensing & Geographic Information System (GIS), GPS laboratories for Image Analysis/On-screen Image Interpretation along with modern facilities of

soil analysis and cartography laboratories for acquisition of soil and land information for the development and management of digital spatial database. It operates soil survey activities from Headquarters at New Delhi through seven centres located at Ahmedabad, Bengaluru, Hyderabad, Kolkata, Nagpur, Noida and Ranchi. SLUSI has also established a Remote Sensing Cell (RSC) at Noida for leveraging applications of advanced technologies in soil survey programmes.



Status of Soil & Land Database:

SLUSI has generated database on soil & land characteristics for priority categorization in **262 million ha** in catchment areas of the different river basin of the country. Similarly, the institute has also accomplished detailed soil survey database generation in **23 million ha** area in priority sub/micro watersheds, Rainfed/ Aspirational districts of various states at 1:4,000 to 15,000 scale (Presently at 1:10,000 Scale) using cadastral maps/ Satellite Data / Aerial photographs. Similarly, SLUSI has also carried out Soil Resource Mapping (SRM) at 1:50,000 scale in area of **162 million ha** areas in 332 districts of the country using Remote Sensing & GIS techniques.

SLUSI provides technical support for monitoring and evaluation of various national developmental

programmes namely Model Village Program on **Soil Health Card Scheme and PMKSY (AIBP)**.

Major Activities during 2022-23 (as on 31st December, 2022)

• Development of Digital Detailed Soil Database:

SLUSI has taken up the task to carry out the Detailed Soil Survey (DSS) at 1:10,000 scale to generate digital soil data base and integrating the basic soil properties of detailed soil data with Soil Fertility attributes to prepare integrated Map of Villages in various districts of the country. During 2022-23, the institute initiated the field work in 22 districts having an area of 62 lakh ha. Out of which, the work of 11 districts having area of 45.96 lakh ha has been completed (as on 31.12.2022). The detail is as given below:

State	District	Area (in ha) in Agricultural land (FY 2022-23)	Status (Achievement upto 31.12.2022)
Maharashtra	Nandurbar	2.97	2.97 (completed)
	Jalgaon	8.50	2.49 *
	Osmanabad	5.82	5.82(completed)
Tamilnadu	Tuticorin	2.30	2.30 (completed)
	Sivagangai	1.35	1.35 (completed)
	Tirunelveli	2.50	2.50 (completed)
Telangana	KumaraBheem Asifabad	1.27	1.27 (completed)
	Adilabad	5.51	5.51(completed)

Andhra Pradesh	Kadapah	3.00	0.15*
West Bengal	Birbhum	3.20	1.71*
	Murshidabad	4.00	4.00 (completed)
Madhya Pradesh	Vidisha	5.37	2.0*
	Narsinghpur	3.12	3.12 (completed)
Rajasthan	Sawai Madhopur	0.95	0.95 (completed)
	Dholpur	1.97	1.97 (completed)
	Karuli	2.95	2.95 (completed)
Jharkhand	Garhwa	1.00	To be completed by March, 2023
	Palamu	1.00	To be completed by March, 2023
	Gumla	3.29	3.29 (completed)
	Latehar	.86	0.54*
Uttar Pradesh	Fatehpur	.67	.67 (completed)
Odisha	Bolangir	.40	.40 (completed)
	Total	62.00	45.96

*The remaining area to be completed by March, 2023.

The work of DSS will provides complete diagnosis of soils for evaluating the potential of soils and integrating it with soil health card fertility status map of villages to develop integrating soil maps for sustainable crop production.

The aim of the soil data is to create a digital system incorporating land use trends, soil characteristics, topography, fertiliser usage and major & micro nutrient availability status, for use in

monitoring and predicting those areas vulnerable to deficiency, toxicity and to provide a basis for land use decision making. One of the main aims at national-level soil data base is to establish a **land information system** by digitally integrating soil, climatic, land use and agronomic data. It will provide data structure framework for planning and will aid decision making in the context of resource use & improved management at regional and farm levels, leading to improved technical efficiency.

Soil Map and Land Use Map of Fatehpur district, Uttar Pradesh:

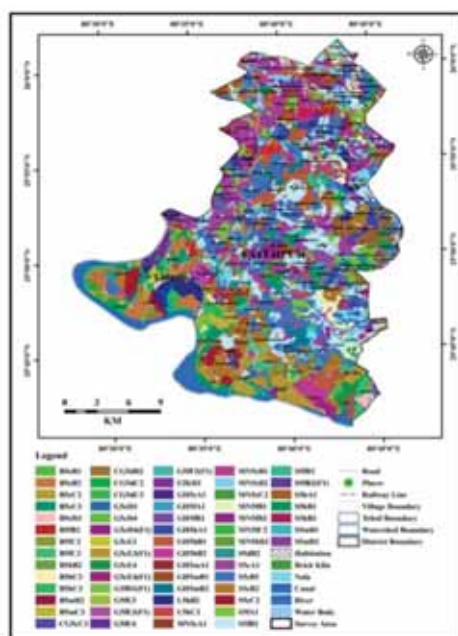


Fig.10: Spatial Distribution of Mapping Unit of Survey area of District Fatehpur, State-Uttar Pradesh

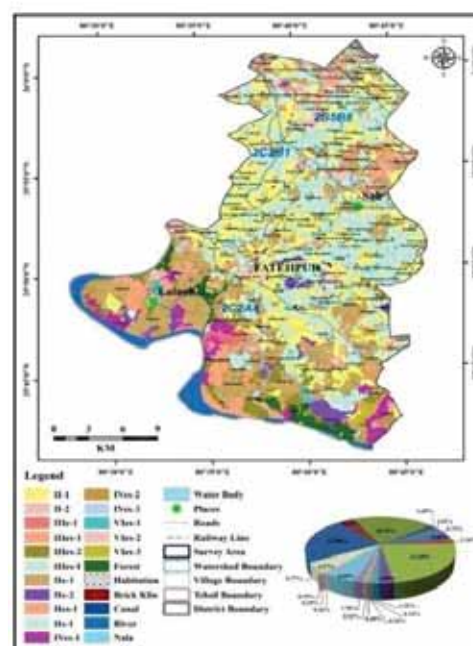
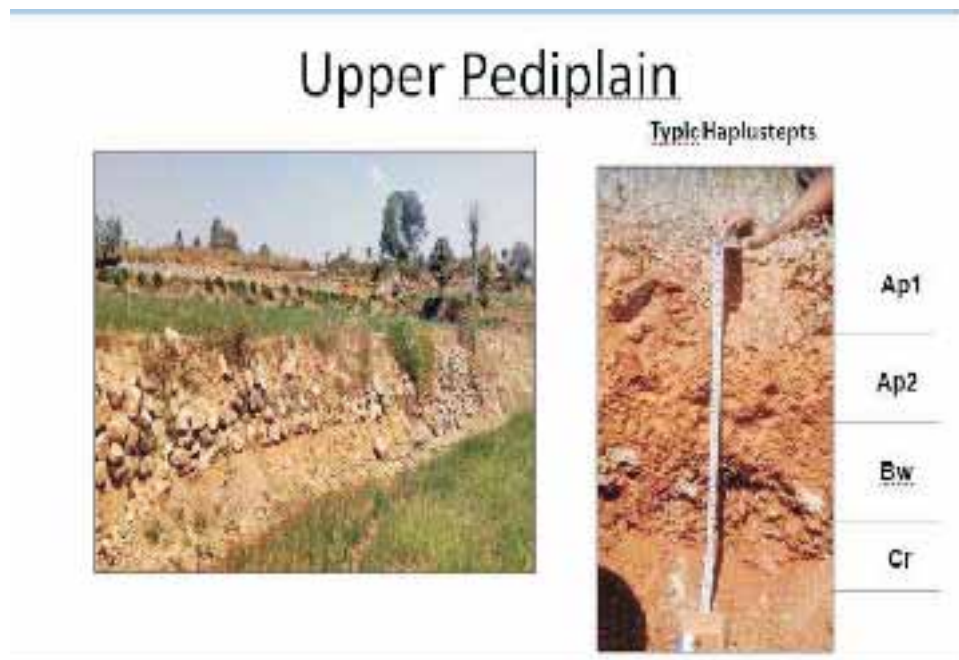


Fig.11: Spatial Distribution of Land Capability Units of Survey area of District Fatehpur, State-Uttar Pradesh

Photographs below showing the field survey work, i.e. Physiography and Pedon Description with Taxonomic Class

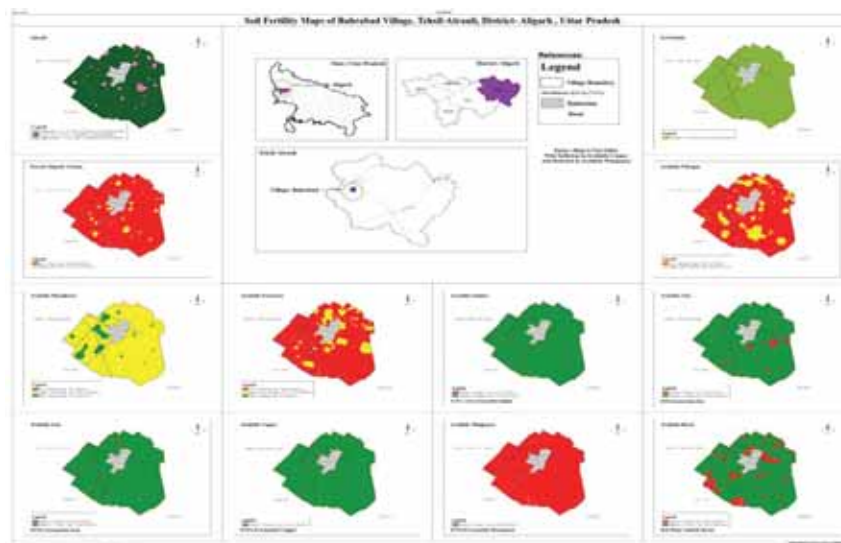


- **Generation of Soil Fertility Maps under Soil Health Card (SHC) Scheme:**

SLUSI is also associated with the work of preparation of Soil Fertility Maps from Soil Health Card data in identified **6954 model villages** to provide spatial information to farmers about the status of nutrient availability. The institute is preparing maps on digital / khasra map of villages sourced from State Govt department or through in-

house digitization of village map. The soil fertility maps developed will be displayed in villages for spreading awareness about SHC and motivate farmers to use fertilizers judiciously. The work of preparation of soil fertility mapping is being accomplished in **1345 model villages** and the work of remaining villages is under progress in collaboration with State Agriculture department and SHC data provided by NIC.

The village wise Soil Fertility Maps having 12 parameters like pH, OC, EC, N, P, K, S, B, Fe, Mn, Cu, Zn generated by SLUSI is as given below.



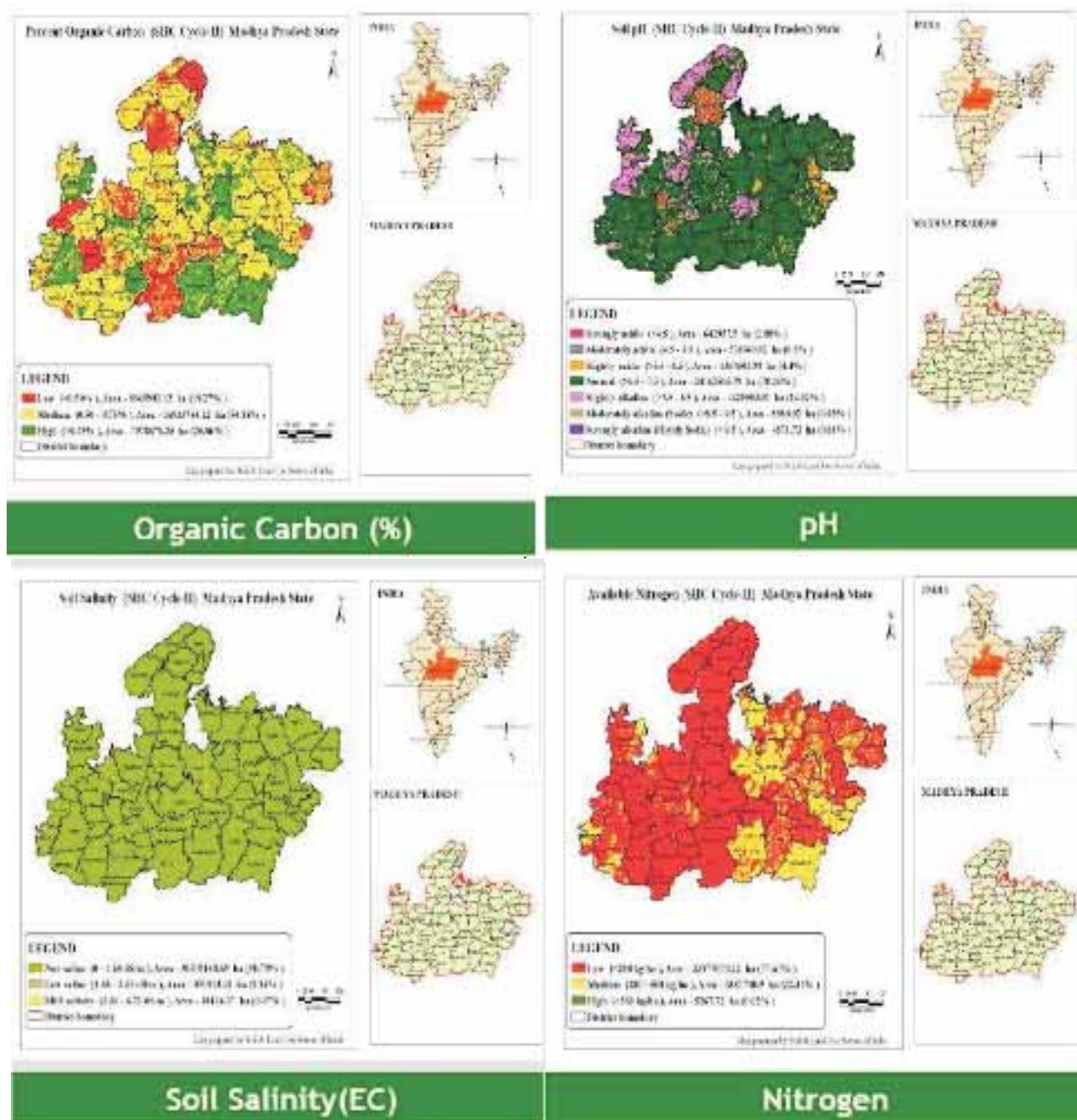
- District wise Soil Fertility Mapping from SHC Cycle II data:**

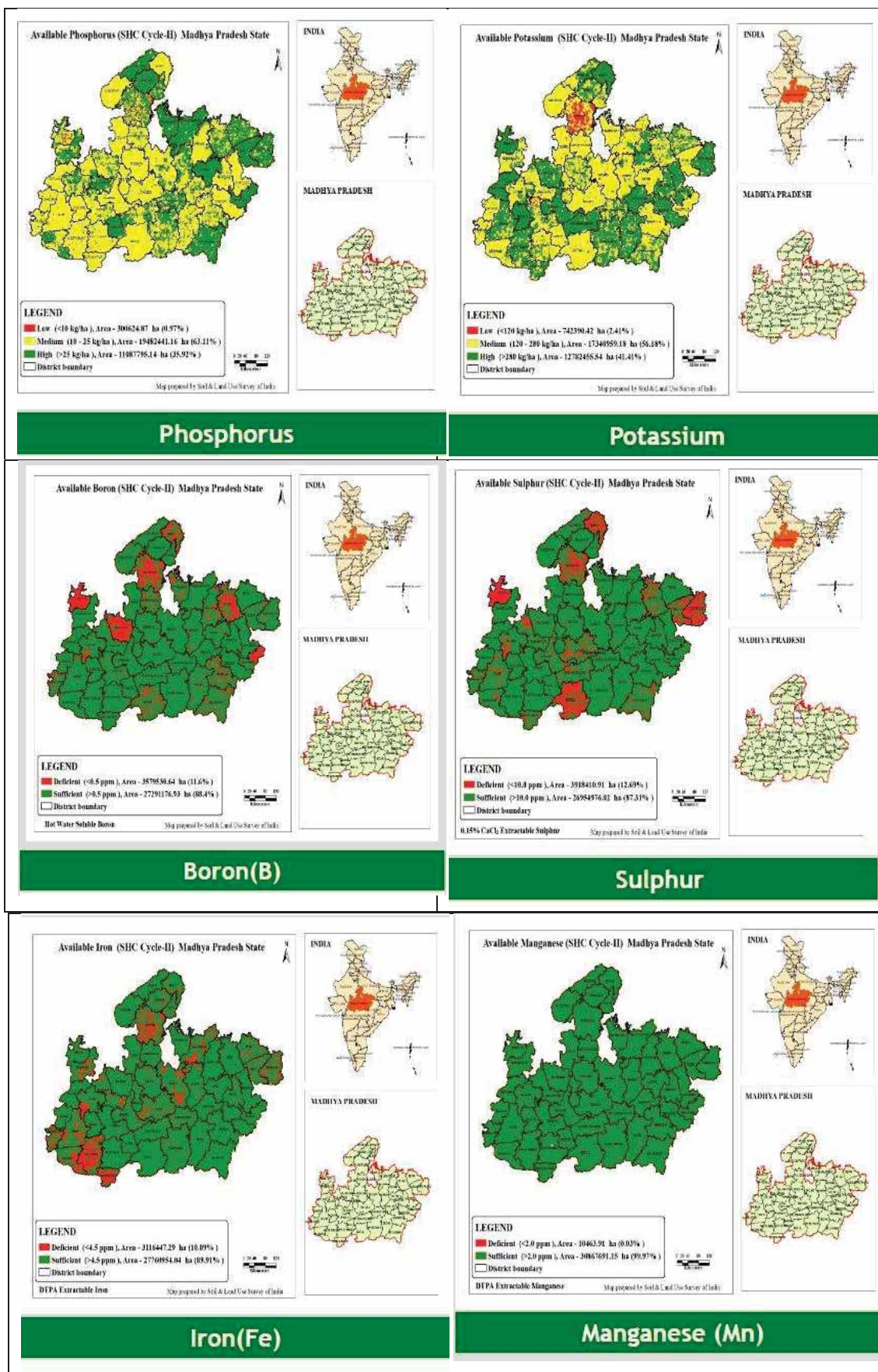
SLUSI has generated the District wise Soil Fertility Mapping from SHC Cycle II data of 633 districts with LGD code. The maps will be assessable to any users / farmers on Soil Health Card Portal and

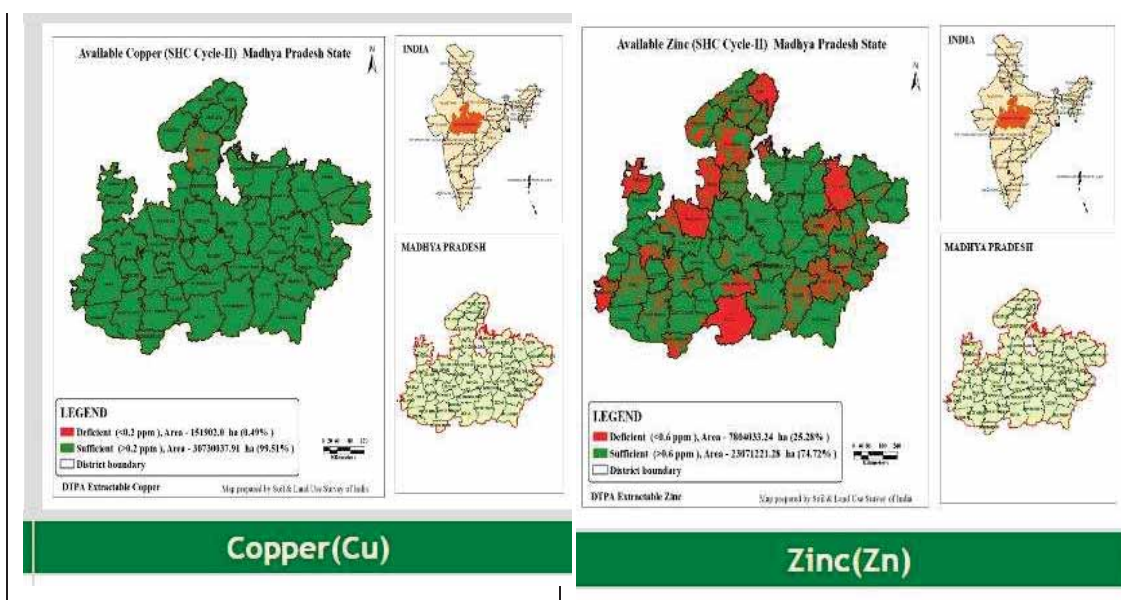
SLUSI website (<https://slusi.dacnet.nic.in>) with the use of android mobile application / web portal services. The main aim to generate the district soil fertility maps is to provide spatial information to farmers about the status of nutrient availability at district level at a glance.

One of the example of district wise Soil Fertility Map generated by SLUSI is as given below.

Madhya Pradesh - Soil Fertility Maps of Cycle-II data of Soil Health Card (SHC) Scheme





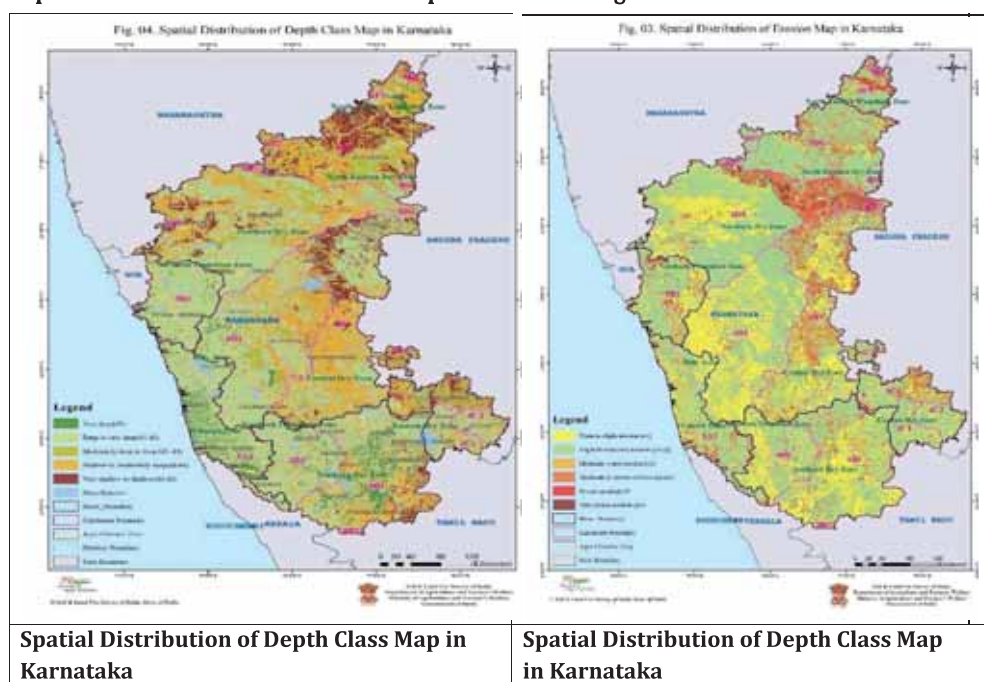


- **Seamless Database Generation in Rapid Reconnaissance Survey (RRS) reports:**

In order to facilitate users on requirement of digital data on soils & land for characterizing the Micro Watersheds in the country, the seamless mosaicking of digital RRS database state wise has been taken by the centres. Out of total 370 nos. of reports (spatial & non-spatial), the database of 370 reports in respect of spatial data and 370 reports in respect of non-spatial data have been generated.

On the basis of spatial and non-spatial database, the state wise seamless database of eight states namely **Kerala, Karnataka, Tamilnadu, West Bengal, Sikkim, Nagaland, Mizoram and Tripura** have been generated. The seamless database of rest states are under progress and will be completed by March, 2023. On the basis of seamless database, the various types of thematic maps like physiography, geology, erosion, depth, texture, slope, land use, management etc. can be generated.

The one example of spatial distribution of Erosion and Depth of Karnataka generated from Seamless Database of Karnataka as



● Collaborative Projects:

Soil Resource Atlas of India: MoU between SLUSI & NRSC signed on 05th April, 2021 for preparation of Soil Resource Atlas of India on 1:50000 scale. The harmonization of soil information state wise completed by both SLUSI & NRSC is taken up through five joint committee constituted region wise. Similarly, SLUSI is taking up the field ground truthing & mapping in 17.35 lakh ha area unsurveyed in 05 districts namely **North Cahhar Hills (Assam); Kisthwar, Poonch, Ramban & Reasi (J&K)**. The harmonization of SRM soil data with NRSC is under process. Till date, the harmonization of

Uttarakhand, Himachal Pradesh, Ladakh, Madhya Pradesh, Kerala, Andhra Pradesh & Telangana States are completed and rests are under process.

● Publication :

- I. Detailed Soil Survey: 23 reports
- II. Soil Resource Mapping: 21 Report
- III. Rapid Reconnaissance Survey Seamless database of Kerala, Karnataka, Tamilnadu, West Bengal, Sikkim, Nagaland, Mizoram and Tripura States

● Physical Target for Soil Survey Work:

Annual Target for field ground truthing & interpretation:

Type of Survey	Target (FY 2022-23)	Achievement upto 31.12.2022
Soil Survey Field Ground Truthing using RS & GIS Technique		
(i) (a) Detailed Soil Survey & Fertility Survey at 1:10 K scale	62.00 lakh ha	45.96 lakh ha*
(i) (b) Collection of Soil Samples for Soil Fertility (1.5km x 1.5 km Grid Size)		6500* soil samples
(ii) Soil Resource Mapping at 1:50 K scale under Soil Atlas of India (1:50K scale) project between SLUSI and NRSC	17.35 lakh ha	17.35 lakh ha**

* District covered: Karauli (Rajasthan); Fatehpur (Uttar Pradesh); Gumla (Jharkhand); Murshidabad (West Bengal); Bolangir (Odisha); Narsinghpur (Madhya Pradesh); Asifabad (Telangana); Nandubrar (Maharashtra); Shivaganag (Tamilnadu), Jalgaon (Maharashtra), Osmanabad (Maharashtra), Tuticorin (Tamil Nadu), Tirunelveli (Tamil Nadu), Adilabad (Telangana), Birbhum (West Bengal), Vidisha (Madhya Pradesh), Lathehar (Jharkhand), Swai Madhopur (Rajasthan), Dholpur (Rajasthan).

** The unsurveyed districts covered: North Cahhar Hills (Assam); Kisthwar, Poonch, Ramban & Reasi (J&K) under the project Soil Atlas of India (1:50K scale).

● Revenue Generation :

Through Sale of Soil and Microwatershed data:
Rs. 639015/-

Estimates of the Activities to be carried out from November, 2022 to March, 2023:

● Physical Target for Soil Survey Work:

The field ground truthing remaining area of **16.04 lakh ha** for Detailed Soil Survey in 07 districts will be completed by March, 2023.

● RRS Seamless Database Generation:

The digital Rapid Reconnaissance Survey (RRS)

state wise seamless database of eight states namely Kerala, Karnataka, Tamilnadu, West Bengal, Sikkim, Nagaland, Mizoram and Tripura has been generated. The seamless database of rest states are under progress and will be completed by March, 2023.

● Generation of Soil Fertility Maps under Soil Health Card (SHC) Scheme:

The work of preparation of soil fertility mapping of remaining villages under model village programs are under progress with collaboration of State Agriculture department on SHC data provided by NIC.

- **Soil Resource Atlas of India:**

Till date, the harmonization of Uttarakhand, Himachal Pradesh, Ladakh, Kerala, Madhya Pradesh, Andhra Pradesh and Telangana States are completed and rests are under process. The assigned target will be completed by March, 2023. Thus, the country first Soil Resource Atlas at 1:50000 scale will be published by March, 2023.

9.8 Central Fertilizer Quality Control & Training Institute, Faridabad

9.8.1 Introduction

The Central Fertilizer Quality Control & Training Institute (Earlier-Central fertilizer Control Laboratory) was established during 4th Five Year Plan (1971-72) as a subordinate office of the Ministry of Agriculture & Farmers Welfare, Department of Agriculture & Farmers Welfare to undertake the inspection and analysis of indigenous and imported fertilizers, standardization of Methods of analysis and providing technical guidance to the State Govts. on Fertilizer Quality Control.

The activities of the laboratory were further strengthened during successive Plan periods. Further in view of the increasing importance of fertilizer quality control and thrust on training to State Enforcement Officers, the laboratory was upgraded and renamed as Central Fertilizer Quality Control & Training Institute in 1982-83. Based on the activities, the Institute was also recognized as a Scientific and Technological Institute by the Department of Science and Technology (DST) in 1982. During 7th Plan, 3 Regional Laboratories of the Institute were also set up at Mumbai, Kalyani and Chennai, which started functioning from 1988-89 and are called as Regional Fertilizer Control Laboratories (RFCLs). The Institute as well as Regional Laboratories have been notified as Recognized Laboratory under clause 29 of Fertiliser (Control) Order, 1985 for analysis of samples throughout the country. The Fertiliser Inspectors of Institute & R.F.C.Ls have been notified as authorized Fertiliser Inspector under clause 27 of FCO (1985) having jurisdiction throughout the Country.

9.8.2 Functional jurisdiction and role of CFQC&TI/RFCLs:-

CFQC&TI as a Head quarter of all three Regional Fertiliser Control Laboratories (RFCLs), is responsible to decide jurisdiction of all 04 Centres in view of drawal of imported fertilisers & indigenous fertilisers and imparting the training programmes to all the State Agricultural Enforcement Officers. Imparting trainings at CFQC&TI and its RFCLs are mandatory as per provisions of Fertiliser Control Order, 1985. The Ministry has also assigned other quality control work to check the quality of fertilisers is being manufactured/imported/sold in the country. Similarly, this year, the Ministry assigned the special task to control the quality of SSP/DAP/NPK (Physical Mixture) fertilisers wherein 1367 additional samples were analyzed.

In view of training programmes and imported fertilisers, the work has also been assigned zonewise to RFCLs located at Chennai/Mumbai/ Kalyani. The RFCL, Chennai, having its own land/building includes hostel facilities for the trainees, is responsible to impart training programme on Fertiliser Quality Control to the officers of Southern States as well as for drawal of samples from all the ports located at Southern States. The RFCL, Navi Mumbai, having its own land/building includes hostel facilities for the trainees, is responsible to impart training programme on Fertiliser Quality Control to the officers of Western States as well as for drawal of samples from all the ports located at Western States.

The RFCL, Kalyani (Kolkata) was established in view of Eastern and North Eastern States, having its own land/building includes hostel facilities for the trainees, is also responsible to impart training programme on Fertiliser Quality Control to the officers of Eastern & North Eastern States as well as for drawal of samples from all the ports located at Eastern States.

Further, the training programmes for all the State Fertiliser Analysts, Foreign Participants are being organized at CFQC&TI, Faridabad. The Institute is also organized training programme for Agricultural Officers of the Northern States. The Institute have 18 rooms with modern facilities includes an

Auditorium having capacity of more than 100 persons.

9.8.3 Mandate

- i) Inspection, Drawal and Analysis of Imported Fertilizers.
- ii) Inspection, Drawal and Analysis of Indigenous Fertilizers (includes Dealers & Manufacturers).
- iii) Imparting training on Fertilizer Quality Control for States Agricultural Enforcement Officers.
- iv) Imparting training on Fertilizer Quality Control for Foreign participants.
- v) Imparting training on Fertilizer Quality Control for Fertilizer Dealers in the field.
- vi) Imparting training for Soil & Water Laboratory Assistant from time to time under "Skill India Training Program".
- vii) Acting as referee Laboratory besides an advisory body on technical matters.
- viii) Development and Standardization of new methods of analysis.
- ix) Regular member of Central Fertilizer Committee constituted under clause 38 of FCO, 1985.
- x) Regular member of Central Bio-stimulant Committee constituted under clause 38A of FCO, 1985.
- xi) Other task assigned by the Ministry from time to time.

9.8.4 Main Activities & Achievements:-

Effective implementation of the FCO is the main responsibility of the State Government, who have been given adequate powers for its implementation including drawal of samples from manufacturing units and retail outlets and its analysis in the State Laboratories. However, the Central Government also supplements their activities through random inspection and sampling by the Central Teams of the Institute and Regional Laboratories from manufacturing units and their retail points. The Central Teams are randomly sent to manufacturing

units and their dealer in different States for inspection and drawal of samples. The samples are analyzed at Institute/ RFCLs and report sent to respective State for taking further follow up action.

I. Quality Control of Fertilizers

- a. Analysis of fertilizer samples (both of imported and indigenous fertilizers).
- b. Inspection of imported fertilizers at ports.
- c. Inspection of Manufacturing units, wholesale and retail dealers of the country through Central Teams.
- d. Analysis of Referee fertilizer samples.

II. Training:-

- a. Organization of training programmes for State Enforcement Officers (i.e. for Fertilizer Inspectors, Registering Authorities, Analysts & Laboratory Incharges).
- b. Organization of Orientation Training Courses (OTC) for Enforcement officers at District level.
- c. Organization of Dealer Training Programme (DTP) at District level.
- d. Organization of training programmes for Foreign participants at Institute under ITEC Scheme of Ministry of External Affairs.

III. Development & standardization of Methods of Analysis:-

The Institute has developed new methods of analysis of different new fertilizers for inclusion in the Fertilizer Control Order, 1985.

IV. Advisory Activities:-

The Institute as a Member of Central Fertilizer Committee and Central Bio-stimulants Committee advice the Central Government on technical aspects of Fertilizer Control Order and also State Governments on Fertilizer Quality Control.

V. Compilation of Half Yearly/Annual Progress Reports of State Govts. on Fertilizer Quality Control:-

The Institute compiles half yearly/annual

progress report on Fertilizer Quality Control at national level.

9.8.5 Strength of CFQC&TI and its RFCLs as on 31.12.2022:-

S.No.	Group	Sanctioned Strength	Existing Strength
1.	Group 'A'	15	09
2.	Group 'B'	11	05
3.	Group 'C'	47	28
	Total	73	42*

* Actions are being taken to fill up the vacant posts.

9.8.6 Target & Achievements during 2022-23 (upto 31.12.2022)

During 2022-23, the Institute has achieved 100% of targets in respect of all consignment discharged at

various sea ports/terminals in the country for inspection and analysis of fertilizer samples and also achieved 40% of the assigned targets of various training courses. The details of achievement (upto 31.10.2022) are as under:-

S. No.	Name of the item	Target	Achievement
1.	No. of ships/containers covered and sample analyzed	2500	2606 (348 Non-Std.)
2.	Refresher Training Courses for Fertiliser Analysts & Fertiliser Inspectors	10	04 (through VC)
3.	Orientation Training Courses in States	17	0
4.	Dealers Training Programme in States	10	02
5.	Financial (Rs. in Crore)	BE 11.45	4.38

Note: Assigned target could not complete due to delay of financial approval of the Ministry. However, the efforts are being made to achieve the target of training programme by end of this financial year.

The details of ships/containers inspected by the Institute /RFCLs during 2017-18 to 2021-22 as follows:-

S. No.	Name of Fertilizer	2017-18	2018-19	2019-20	2020-21	2021-22
1	Urea	133(1)	182(1)	202	216(1)	190
2	DAP	109(1)	150(2)	127(1)	141	126
3	MOP/SOP	190(05) /323(07)	125/ 267(1)	137(7) /200(10)	163(1) /271(10)	151(19) /307(06)
4	NPK (C)	88(11)	103(3)	74(3)	139(16)	120(08)
5	MNF	176(22)	155(7)	75(15)	12(4)	15(03)
6	NPK 100% WS	1842(102)	1944(105)	2154(151)	1881(122)	1983(110)
7	Sulphur	13(02)	20	45(10)	31(2)	51(03)
8	Others	780(21)	796(14)	869(26)	1093(75)	988(223)
9	SSP/NPK(M)	-----	-----	-----	1194(487)	1367(619)
	Total	3654(172)	3742(133)	3883(223)	5141(718)*	5298(991)*

*ADDITIONAL SAMPLES OF SSP, DAP, Zn/S etc ANALYSED AS A SPECIAL TASK ASSIGNED BY THE MINISTRY. PARENTHESIS DENOTES NUMBER OF SAMPLES FOUND NON-STANDARD.

Training program conducted on Fertilizer Quality Control by CFQC&TI/RFCLs for last five years (2017-18 to 2021-22)

S. No.	Year	No. of training conducted	No. of participants attended from States/Countries
1	2017-18	41	1953 / 19
2	2018-19	40	2127 / NA
3	2019-20	41	1878 / 19
4	2020-21	04	210 (Due to COVID-19 assigned target could not achieved)
5	2022-23	11(10 for STATE FIs & 01 for STATE FERTILIZER ANALYSTS	More than 550 officers of different States were trained.
6	2022-22	02 (As on 30.09.2022)	135

Some photographs of Training Activities during 2022-23



Agricultural Enforcement Officers of State of Gujarat attending 03 days Orientation Training Course on Fertiliser Quality Control conducted by CFQCTI.



Director of Agriculture, Govt. of Gujarat presented Certificate to the participants of State of Gujarat in the Orientation Training Course conducted by CFQCTI.



Officers of State of Gujarat attended 03 days Orientation Training Course on Fertiliser Quality Control conducted by CFQC&TI, Faridabad at Gandhinagar.

9.9 National Centre of Organic and Natural Farming (NCONF)

1) Role of the NCONF as enabler and catalyst for implementation of Participatory Guarantee System of India (PGS-India)

Government is implementing Participatory Guarantee System of India (PGS-India) through NCONF Ghaziabad as a quality assurance initiative for certification of organic produce that is locally relevant and emphasizing the participation of stakeholders, including producers / farmers and consumers and operate outside the frame of third-party certification. In the operation of PGS-India, stakeholders (including farmers/producers) are involved in decision making and essential decisions about the operation of the PGS-India certification itself by assessing, inspecting and verifying the production practices of each other and collectively declare produce as organic.

PGS-India has a number of basic elements which embrace a participatory approach, a shared vision, transparency and trust. Participation is an essential and dynamic part of PGS. Key stakeholders (producers, consumers, retailers, traders and others such as NGOs, PGS-facilitators and service providers) are helping in capacity building and making farmers aware in group formation, system operation, decision making and integrity management. In the operation of PGS, stakeholders (including producers) are involved in decision making and essential decisions about the operation of the PGS itself. PGS Groups in addition to being involved in the mechanics of the PGS, stakeholders, particularly the farm-producers are engaged in a structured ongoing learning process, which helps them improve what they do. The learning process is usually 'hands-on' and involves field days or workshops. The idea of participation embodies the principle of collective responsibility for ensuring the organic integrity of the PGS. Although PGS-India is basically a farmer group centric organic guarantee system but to integrate all sections of producers, processors, handlers and traders, to complete the value chain from farm to fork and keep the PGS-India programme as central

guiding force to the entire organic agriculture movement, it also provides for an access to individual producers, individual processing and handling facilities under PGS groups, organized processing, warehousing, handling and packaging and trading entities away from producer groups. To ensure end-to-end traceability (as per the requirements of regulatory framework under FSS [Organic Foods] Regulation 2017). PGS-India programme also provides uninterrupted chain of custody, starting from producer groups till the products are processed and finally packed into retail packs.

To integrate traditionally organic areas in to mainstream organic and harvest the benefits of traditionally organic practices for safe and healthy certified organic food for consumers, PGS-India programme also provides for a mechanism to certify large contiguous areas, involving village councils and Gram Panchayats by adopting village wise conformity assessment on annual basis.

1 (a). Major Initiatives/Revisions in PGS India Certification include:

- Addition of new scopes for Individual farmers registration, Large Area Certification (Traditional Default Organic areas) and including registration for Processor/ Handlers
- Launch and operationalization of new PGS India web portal

1 (b). Present status of PGS-India progress (As on 17.10.2022) :

- Total Number of Groups : 47980
- Total Number of Farmers : 1308656
- Total number of valid Certificates : 99159
- Certified Cumulative Area (Ha) : 811692

2. Overview of Proposed Natural Farming Certification System (NFRS):

Director, NCONF Ghaziabad acted as Member

Secretary in a 12 member committee constituted by Ministry of Agriculture for drawing the standards of certification system for Natural Farming products. The committee has proposed the Natural Farming Recognition System (NFRS) and has submitted its report to DA&FW for further course of action.

3. Revision / Modifications in FCO, 1985 with reference to Biofertilizers and Organic Fertilizers

- Revision / Modification of Standards and protocols of sampling and testing of Biofertilizers and organic fertilizers based on recent advancements to remove inconsistencies in FCO, 1985.
- NCONF Ghaziabad has played an important role in introducing new organic inputs in schedule -IV of FCO, 1985 to promote the availability of quality inputs to farmers.
- Standard Operating Procedure has been adopted in accordance with FCO, 1985 for disposal of samples received in the N/RCONF for testing.
- All RCONF laboratories are developing State of Art testing facilities through purchase of modern and advanced equipments and in this context, NCONF has purchased nearly 40 instruments amounting to Rs 58.00 lakhs through GeM Portal till date.
- Besides Technical upgradation, all RCONF laboratories are also under process of obtaining NABL accreditation to ensure quality testing and availability of quality organic and biological inputs for use by small and marginal farmers of the country.
- Two officers have successfully qualified the NABL assessor exam.
- Sample tested (01st January 2022 to 30th September 2022)
 - *Bio fertilizers: (Total Tested -111, Substandard- 80)*
 - *Organic Fertilizers: (Total Tested - 165, Substandard – 102)*

4. National Skill Programmes

To give boost to Government of India's vision of promoting sustainable agricultural practices for safe food production in synchrony with natural resource conservation, NCONF Ghaziabad has taken initiatives for aligning the targeted HRD programmes such as 30 Days certificate course viz., "Organic Farming Promoter/Manager" of 240 hours duration as per the Skill India norms with the objective to create a trained workforce by targeting unemployed national youth which can handle the different scopes of the Indian Organic Industry including production, quality assurance/certification and marketing etc. The course will cover variety of topics such as Strategies for switching to Organic Farming, Nutrient Management, Weed, Pest and Disease Management of organic farms, Post Harvest Handling, Knowhow of existing certification systems in India and their importance as well as role of FPO/SHGs to facilitate the marketing of organic produce in domestic and Global markets by small and marginal farmers of the country.

5. Training programmes (online and offline)

Organic farming has come a long way during the last two decades with the efforts of the Indian Government and as a result India has emerged as the 1st largest in terms of producers with significant increase in area under organic. Emerging policies and programmes of Central Government supported by States for reduction in chemicals and shift of Indian agriculture towards organic/natural or non-chemical methods is an indication of determination to secure health of citizens by creating options for safe and healthy food. Therefore, to gear up the Governments mission on implementation of Chemical free farming across the country, NCONF has proposed variety of training programs focusing farmers, Officers of Central and State Govt. Depts., members of RCs/SPs and for other Stakeholders endorsing chemical free farming. Recently, NCONF Ghaziabad has received the administrative and financial approval for Rs 99.99 lakhs for organizing various HRD programs as per the Annual Action Plan. These training programs will help in creating awareness, mobilization,

capacity building at grass root level and exploring possibilities to identify key focus areas for implementing the organic and natural farming across the country in addition to showcasing achievements of selected natural/ organic growers.

5 (a). Progress/Achievements of HRD Programs:

- During the period from January, 2022 to September, 2022 a total of 108 programs either in online or offline mode on organic and natural farming have been organized covering

more than 16000 participants including farmers, college students, members of Regional Councils, Service Providers, Officers of State Agriculture, Horticulture Depts., Day NRLMs and other Stakeholders etc associated with chemical free farming methods were trained during these programs.

- Highlights of the various training programs organized and persons benefitted are given below:

Sl. No	Name of the Online/Offline Training Program organized by N/RCONFs	Number of trainings/ Webinars	Number of Beneficiaries
1.	Awareness campaign on Organic & Natural Farming under Azadi ka Amrit Mahotsav	66	9080
2.	One Day Farmers Training and Demonstrations	14	775
3.	One Day Training for Extension Officers/LRP's/Farmers on PGS India Certification	10	369
4.	Two Days Training on PGS for State Govt. Extension Officers/RCs/SPs/LRPs etc	01	20
5.	Training for Extension Officers/LRPs/ Farmers on organic farming	05	200
6.	Trainings organized as Co-Organizers in association with other institutes/ universities etc	09	5398
7.	Training on Analysis of Organic Fertilizers as per FCO 1985 for State Analysts	01	50
8.	Awareness Program on Organic and Natural Farming for college students	02	183
	Total Beneficiaries	108	16075

6. Important Publications of the Organization:

NCONF has published the following literatures for the promotion of Organic & Natural Farming in the country:

- Comprehensive Training Manual on Natural Farming. (116)

- Field Guide for Natural Farming. (13)
- Module on Two Days Training for Master Trainer/ Champion Farmers/ Extension Officers on Natural Farming. (36)
- Module on One Day Farmers Training and Demonstration on Natural Farming. (24)

- Compilation of Natural Farming Practices. (212)
- Organic Farming Newsletter on quarterly basis
- Biofertilizer Newsletter on Half-Yearly basis
- Jaivik Kheti Sahayak Pustika (Bengali, Malayalam Khasi and Garu)
- Booklets & Pamphlets on Organic Farming (Hindi & English)
- PGS-India Manual
- Bhu-Sanrakshan pamphlet
- Comprehensive Training Manual on Organic Farming

7. Farmers Outreach Initiatives:

- More than 1800 farmers have been contacted through various outreach activities including farmers visit/trainings/ webinars/ exhibitions etc organized or attended by officials of N/RCONFs on organic and natural farming.
- N/RCONFs have participated in more than 50 events such as Seminars / Webinars /Exhibitions / Trainings / Workshops etc organized for promotion of organic and natural farming in the country.

8. Awareness Creation through Print, Electronic and Digital media:

- To create mass awareness among the farmers, students, State Government Officers and other stakeholders practicing and encouraging organic and natural farming in the country, activities and efforts of NCONF Ghaziabad were recognized and telecasted on DD Kisan Channel through a special programme viz., "Shresth Sansthan: NCONF, Ghaziabad".
- Besides TV programs, NCONF Ghaziabad is also creating mass awareness on organic and natural farming activities through various digital media platforms like Twitter, Facebook, YouTube Channels etc.
- Officials of N/RCONFs have created mass

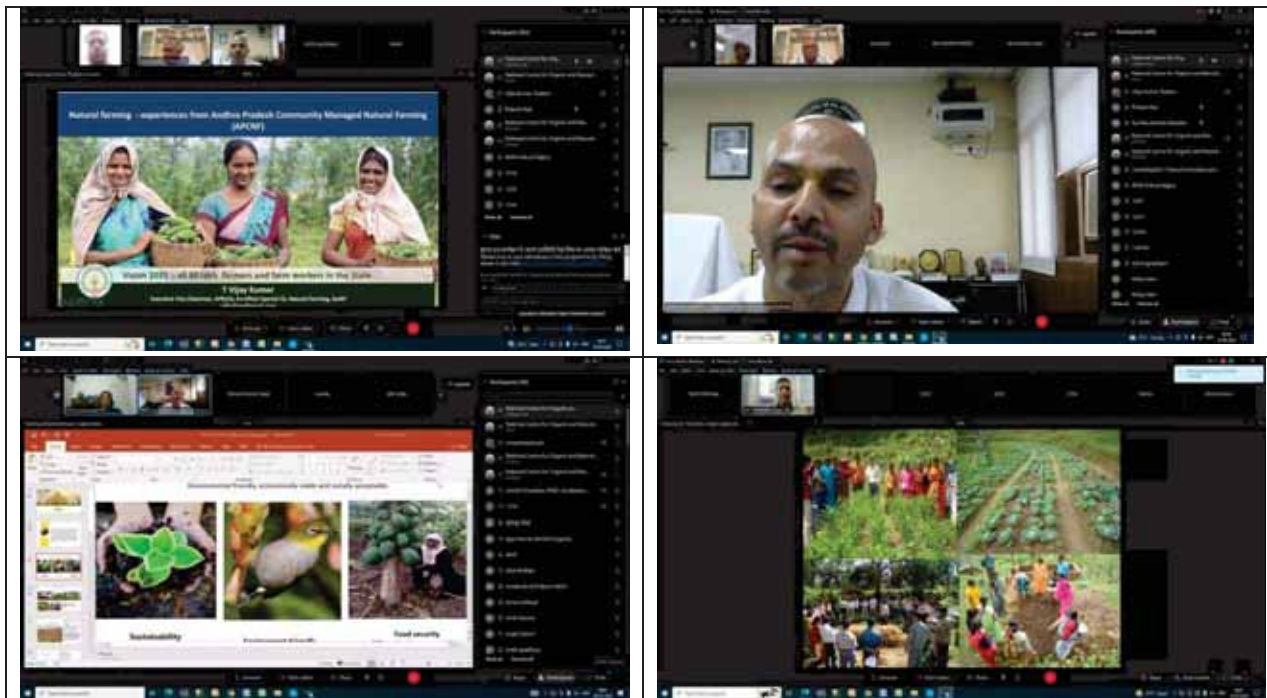
awareness on organic and natural farming activities through deliberation of more than 66 Guest Lectures, radio talks and TV talks altogether in various training programs, seminars, webinars, exhibitions etc organized by premier Govt. and private Institutes of India.

- Around 6000 copies of publicity material for awareness creation on organic and natural farming have been distributed to visiting farmers, stakeholders/Industry people in numerous events organized and participated by N/RCONFs.

9. Ongoing initiatives:

- ❖ NCONF Ghaziabad entered into MoU with National Rural Livelihood Mission for promotion of Organic farming activities in 16 states covering more than 1 lakh farmers.
- ❖ NCONF Ghaziabad entered into MoU with Dr. Y.S. Parmar University of Horticulture and Forestry Nauni for promotion of Natural farming activities in the country.
- ❖ NCONF Ghaziabad entered into MoU with Patanjali Organic Research Institute, Haridwar, of Organic and Natural farming activities in the country.
- ❖ Under process of making MoUs with various State Agricultural Universities like Dr Rajendra Prasad Central Agricultural University, Bihar, CSKHPKV, Palampur etc as well as with private organizations of national repute like WASSAN, Isha Foundation and Sri Sri Naisargik etc.
- ❖ Working on proposal on laying Model Demonstration plots on Organic & Natural farming in NCONF premises
- ❖ Working on proposals on establishing new HRD Cell with State of Art infrastructure & facilities
- ❖ Working on proposal for establishing new Certification Secretariat equipped with modern facilities and amenities

Some relevant Photographs are as under:



Glimpses of Webinars Organized to commemorate Azadi Ka Amrit Mahotsava by N/RCONFs



Technologically advanced version of PGS-India portal operationalized since 27th June, 2022



Glimpses of opening ceremony of Indo German Global Academy for Agro-ecology Research & Learning at Pulivendula, AP on 07-07-2022



MoU signed between NCONF Ghaziabad and DAY-NRLM, MoRD for promotion of organic and natural farming activities in the country on 24th August, 2022



Glimpses of Induction lectures on Organic and Natural Farming during an excursion visit of B.Sc (Agri) Students of MIT at NCONF Ghaziabad on 25th August, 2022



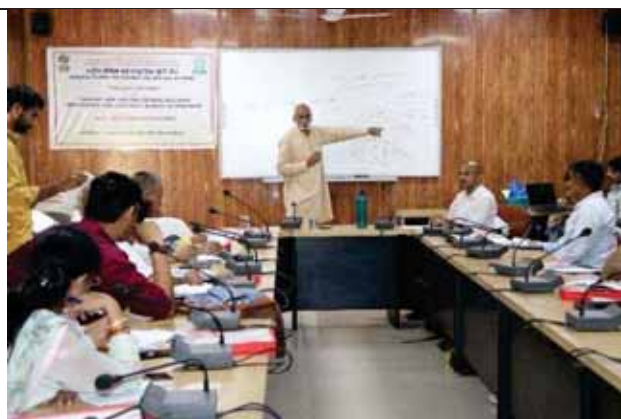
Orientation Program on contours of National Mission on Natural Farming attended by officers of N/RCONFs on 30th August, 2022



NCONF Ghaziabad's showcasing its activities in BIOFACH India at India Expo Center (IMEL) Greater Noida, during 1st to 3rd September, 2022



Glimpses of Rajya Stariya Prakritik Kheti Karyashala-2022" on promotion of Natural Farming attended by Director (I/C), NCONF Ghaziabad at Lucknow on 24th September, 2022





Glimpses of Training Programs on Organic and Natural Farming and PGS India Certification Organized by N/RCONFs during 2022



Dr. Gagnesh Sharma, Director (I/C), NCONF Ghaziabad addressing "India The Global Gateway for Bio AG Solutions Summit" at Hyderabad on 19th September, 2022



Glimpses of Prakritik Kheti Karyashala organized by NCONF Ghaziabad in collaboration with MoJS under Namami Gange at Chandi Ghat Haridwar on 21st October, 2022



Collaboration between NCONF Ghaziabad and Patanjali Organic Research Institute, Haridwar on 21st October, 2022 for promotion of organic and natural farming

9.10 Paramparagat Krishi Vikas Yojana (PKVY)

Government is committed to promote Organic Farming, with emphasis on sustainable productivity, food security and soil health. Government has prepared a road map to



encourage the farmer for adopting organic farming

with launching a new scheme i.e. Paramparagat Krishi Vikas Yojana (PKVY) for promotion of Organic farming in our country

The Parampragat Krishi Vikas Yojana (PKVY) is the first comprehensive scheme launched by the Central Government as a centrally sponsored programme (CSP), where the Central and state Govts share the funding in varying ratio. It is 100% in Union Territories (UT), 90:10 in North-Eastern and Hilly States and 60:40 in case of all other States.

The PKVY Scheme is implemented in a cluster mode with min. 20 ha size and states have been asked to implement in cluster size of 1000 ha in plain area and 500 ha in hilly area to facilitate marketing of organic produce. All farmers are eligible but within a group a farmer can avail benefit to a maximum of 2 ha. and the limit of assistance is Rs.50, 000 per hac., out of which 62% i.e., Rs. 31,000 is given as incentives to a farmer for organic conversion, organic inputs, on farm inputs, production infrastructure, etc., shall be provided directly through DBT during the conversion period of 3 years.

Objectives

1. To promote natural resource based integrated and climate resilient sustainable farming systems that ensure maintenance and increase of soil fertility, natural resource conservation, on-farm nutrient recycling and minimize dependence of farmers on external inputs;
2. To reduce cost of agriculture to farmers through sustainable integrated organic farming systems thereby enhancing farmer's net income per unit of land.
3. To sustainably produce chemical free and nutritious food for human consumption.
4. To protect environment from hazardous inorganic chemicals by adoption of eco-friendly low cost traditional techniques and farmer friendly technologies.
5. To empower farmers through their own institutional development in the form of clusters and groups with capacity to manage production, processing, value addition and certification management;
6. To make farmers entrepreneurs through direct market linkages with local and national markets

Progress/achievement

1. Total fund released under PKVY Scheme is 1758.48 crore during the period 2015-16 to 2022-23 (as on 31.02.2023).
2. Total fund released Rs 93.25 crore during 2022-23.
3. During 2022-23 fund release for 5670 new clusters covering an area of 113400 ha.
4. Continue work in existing 4.15 lakh ha sanctioned since 2018-19 in IInd phase and 10.25 lakh farmers have been mobilized in 20493 clusters.
5. In addition to above, work continue in existing 1.23 lakh ha area under Namami Gange Program & 4.09 lakh ha area covered under BPKP.
6. A dedicated online web portal- www.Jaivikkheti.in/ has been created to encourage, sale of organic products directly by farmers to consumers farming by directly connecting the consumers. On Jaivik-kheti portal total 6.09 lakh farmers, 18326 local groups formed, 89 input suppliers, 8192 buyers and 1760 products have been registered.
7. Various Brands have been developed under PKVY Scheme.

States	Brand Name
Madhya Pradesh	Made in Mandla

Uttarakhand	Organic Uttarakhand
Tamil Nadu	Tamil Nadu Organic Product (TOP)
Maharashtra	Sahi organic, Nasik Organic & Gadchiroli Organic Farming
Jharkhand	Jaivik Jharkhand , from the land of Jharkhand
Chhattisgarh	Aadim brand of Bhoomi Gadi FPO, Bastar Naturals
Punjab	Five Rivers
Tripura	Tripureshwari Fresh

8. Business tie-ups have been formed with various business groups for marketing of organic produce:

- M/s Adani Group
- M/s Home Burps
- Priyank Associate
- Advance Crop Care (India) Pvt. Ltd.
- Prasad Nutriment Pvt. Ltd.
- All Season Farm Fresh, Jamshedpur

9. Government has initiated Large Area Certification (LAC) programme since 2020-21 to certify large traditional/default organic areas such as hills, islands, tribal or desert belt with no past history of GMO and agro chemical uses.

- Under this programme 14,445 ha area under Car Nicobar and Nancowry group of islands in Union Territory of A&N Islands have been certified to transform entire

territory of these islands to organic similar to Sikkim.

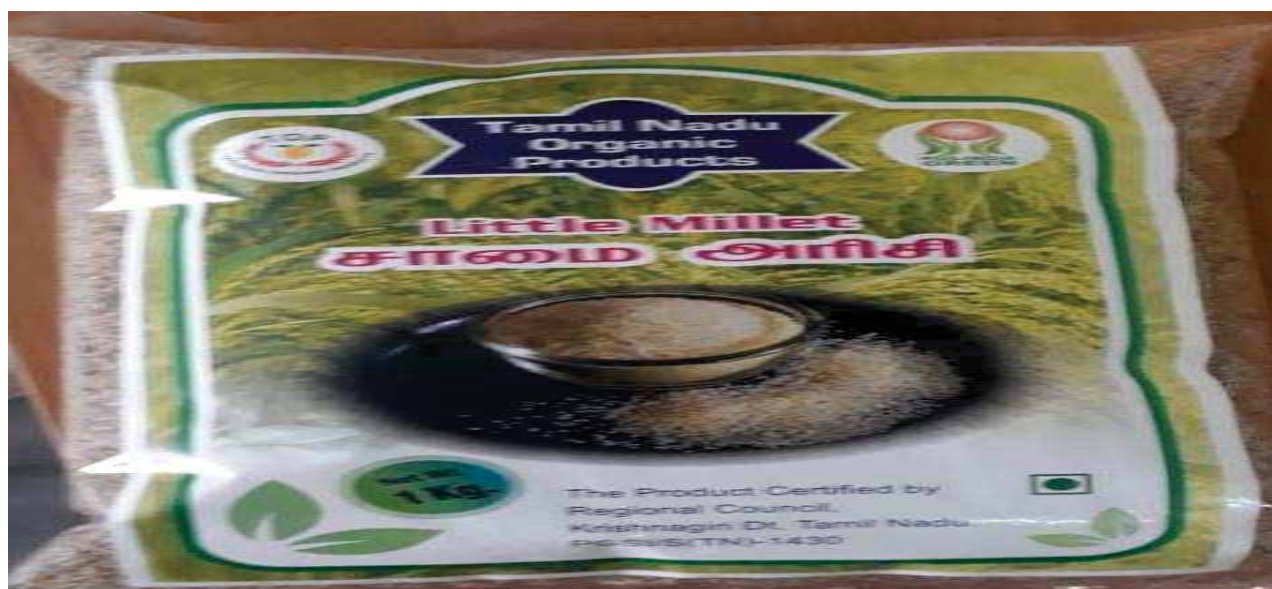
- Proposal of 5000 ha area has been received from Ladakh under LAC and fund Rs 11.475 lakh has been released.
- The entire cultivable land of 2700 ha area of Lakshadweep have been certified organic under Large area certification
- Under Large area certification fund Rs 96.39 lakh has been released for 60,000 ha area to the State Government of Sikkim

3. The status of PGS India as on date 24.11.2022 is as under:

- a) Nos of Regional Council - 69 nos registered
- b) Nos of Local Groups - 53962 nos registered
- c) Nos of farmers online - 14.28 lakh nos registered/ benefitted (approx.)







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



The MOVCDNER scheme aims at development of commodity specific, concentrated, certified organic production clusters in value chain mode to link growers with consumers and to support the development of entire value chain starting from inputs, seeds, certification, to the creation of facilities for collection, aggregation, processing, marketing and brand building initiative in Northeast Region (Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, and Tripura). The main focus of the scheme is on development of export market for organic produce. The scheme has completed two phases of three years each and is now moving forward in Phase III.

Summary Achievements in Phase-III (2020-21 to 2022-23)

- 200 FPO/FPCs created covering 92073 farmers and 87523 ha area
- 53 Collection, Aggregation, Grading units, Custom Hiring Centres, 6 processing and pack house entities created under FPO/FPCs and private ownership

- 18 transportation vehicles provided to FPO/FPCs
- 7 states developed their own brands
- Marketing facilitation of ginger, turmeric, pineapple and king chilli have been major success and FPCs have been supported with buy back agreements
- The export of king chilli sauce, pineapple (canned) and ginger flakes to UK, USA, Australia, France and Swaziland have already started
- Industry mentorship model with necessary infrastructure development with 3 FPCs
- Contract production of Ginger and Turmeric with 100% buyback assurance finalized with 3FPOs in Arunachal Pradesh with Parvata Foods

Contract cultivation of other high value crops such as Perilla, black thai ginger and Calandula flowers is under process.

A) Financial Progress

(Rs. Crore)

Year	BE	RE	Released	Expenditure
2020-21	175.00	175.00	137.17	137.17
2021-22	200.00	174.81	133.29	128.49
2022-23	198.00		103.17	28.99
Total	573.00	349.81	373.63	294.65



9.12 National Mission on Natural Farming

GoI has already initiated Natural Farming through implementation of Bhartiya Prakristi Krishi Padhati (BPKP-A sub scheme of PKVY)-since 2020-21 to promote traditional indigenous agro-ecological farming including Zero Budget Natural Farming which has gained huge importance across the country. A total of 4.09 lakh ha area has already been covered in 8 States under BPKP. The BPKP scheme is being upscaled in Mission Mode as a separate as National Mission on Natural Farming to cover 7.5 lakh ha area by developing 15000 clusters

The scheme has already been appraised by the EFC on 4th October 2022 and is being submitted for Cabinet approval.

Objectives of NMNF

- Centrally sponsored scheme with central Govt outlay of Rs.1584 crore
- Nation-wide outreach and training through central & State agencies.
- One Model Natural Farming cluster in at least one Gram Panchayat in each block.
- Farmer Field school (FFS) to be the key awareness strategy
- States to roll out Clusters in selected GPs.
- Clusters to be developed around a Champion farmer – Each One Teach One

Targets

- 20,000 Farmer field schools to be conducted.
- 15,000 clusters to be developed across the country.
- 750,000 ha area & 15 lakh farmers to be converted and equal number of Farmers to be trained – **Each One Teach One.**
- National Centre for Organic & Natural Farming (NCONF) to facilitate Certification & Training of Master trainers.
- ICAR has identified 425 KVKs to be model training and demonstration centres for NF.

- MANAGE designated as “**Knowledge partner for NF extension**”

Milestones achieved

- MANAGE has sensitized 55,600 Gram Pradhans on Natural farming and created more than 550 Master Trainers
- NCONF is undertaking large numbers of trainings and have developed necessary training material, videos, best practices and collected more than 250 success stories.
- ICAR-KVKs trained more than 85,315 farmers, laid demonstrations at 539 KVKs
- ICAR has also initiated research and drafted course curriculum for UG and PG courses.

The mission has already been rolled out. A total of 1.48 lakh ha area has sanction to 4 states namely Bihar (52,000 ha area), Jharkhand (4000 ha area), Uttarakhand (6400 ha area) & Uttar Pradesh (85,710 ha area). MANAGE as a knowledge partner has already trained 10,000 Master trainers and sensitized 55,600 Gram Pradhans in the country

National Project on Management of Soil Health and Fertility

Soil Health Management (SHM) was one of the most important interventions under National Mission for Sustainable Agriculture (NMSA) during 14th Finance Commission period. Now during 15th Finance Commission period, it will be merged as a soil health & fertility component of RKVY scheme. Soil Health & Fertility aims at promoting Integrated Nutrient Management (INM) through judicious use of chemical fertilizers including secondary and micro nutrients in conjunction with organic manures and bio-fertilizers for improving soil health and its productivity; strengthening of soil and fertilizer testing facilities to provide soil test based recommendations to farmers for improving soil fertility; up-gradation of skill and knowledge of soil testing laboratory staff, extension staff and farmers through training and demonstrations etc.

Soil Health Management (SHM)

The components under Soil Health include setting

up of new static Soil Testing Laboratories (STLs), setting up of new Mobile STLs, setting up of Village Level STLs/ Mini STLs, strengthening of existing Static/ Mobile STLs, setting up of new Fertilizer Quality Control Laboratory (FQCL), strengthening of FQCL, setting up of Bio-fertilizer Production Units (BPU), strengthening of BPU, setting up of Bio-fertilizer & Organic Fertilizer Quality Control Laboratories (BOQCL), strengthening of BOQCL, etc. Under the SHM Scheme, the following activities were sanctioned during 2021-22:

- 01 New Static STLs, & 10 Bio-fertilizer Production Units have been sanctioned for setting up.

Soil Health Card (SHC)

“Soil Health Card” was launched on 19th February, 2015 to provide Soil Health Cards to all the farmers in the country. Soil Health Card provides information to farmers on soil nutrient status of their soil and recommendation on appropriate dosage of nutrients to be applied for improving soil health and its fertility.

Financial Status

Details of funds released are shown below:

(Rs. in Crore)

Year	2014 -15	2015 -16	2016 -17	2017 -18	2018 -19	2019 -20	2020 -21	2021 -22	2022-23 (As on 23.01.2023)
Amount under Soil Health Management	62.97	44.39	95.50	42.17	78.31	46.99	57.76	8.50	16.92
Amount under Soil Health Card	23.89	96.44	133.66	152.77	237.40	112.44	142.18	0.26	
Total	86.87	140.83	229.16	194.94	315.71	159.43	199.94	8.76	16.92

*There is no separate allocation especially for women farmers. However, the State has been advised to incur at least 30% expenditure for women farmers under Soil Health Card/ Soil Health Management Schemes.

Chapter-10

PRADHAN MANTRI KISAN SAMMAN NIDHI (PM-KISAN)

10.1 Overview

Farmers' Welfare Division of this Department is entrusted with the formulation, implementation, monitoring and evaluation of two new Central Sector Schemes of the Government, namely, the Pradhan Mantri Kisan Samman Nidhi (PM-KISAN) and the Pradhan Mantri Kisan Maan Dhan Yojana (PM-KMY).

10.2 Pradhan Mantri Kisan Samman Nidhi (PM-KISAN):

10.2.1 Salient Features

- The objective of the scheme is to augment the income of families of all land holding farmers subject to certain exclusion criteria relating to higher income status. The Scheme was formally launched on 24th February, 2019.
- The scheme was originally started for Small & Marginal Farmers (SMFs) only, possessing a combined holding of upto 2 hectares of land, but later w.e.f. 01.04.2019 the Scheme was extended to all farmers, irrespective of the size of their land holdings.
- The Scheme aims to provide a payment of Rs. 6000/- per year to be transferred in three equal installments of Rs. 2000/- each, every four months directly into the bank accounts of eligible landholding farmer families.
- For effective implementation of the Scheme, detailed Operational Guidelines have been issued which are amended from time-to-time as and when considered necessary.
- The Scheme is being implemented online through the Direct Benefit Transfer (DBT)

mode for which an exclusive web-portal www.pmkisan.gov.in has been created.

- The identification of beneficiaries for the Scheme is the sole responsibility of the State/UT Governments which upload their necessary details on the PM-KISAN portal for enabling transfer of benefits to them.
- The Scheme is effective from 01.12.2018.
- The cut-off date with regard to the eligibility of farmers for the scheme is 01.02.2019.

10.2.2 Aims and objective of the Scheme

The scheme aims to supplement the financial needs of farmers to enable them to take care of expenses related to agriculture and allied activities as well as domestic needs. This would also protect them from falling in the clutches of moneylenders for meeting expenses and ensure their continuance in farming activities.

10.2.3 Beneficiaries of the Scheme

All landholding farmer families across the country having cultivable land, subject to certain exclusion criteria relating to higher income status are eligible for the benefit under the scheme.

10.2.4 Exclusion criteria:

The following categories of farmers are not eligible for benefit under the scheme:

- i. All institutional land holders; and
- ii. Farmer families in which one or more of its members belong to the following categories:
 - Former and present holders of Constitutional posts
 - Former and present Ministers/ State Ministers and former/present Members of the Lok Sabha/ Rajya Sabha/ State

Legislative Assemblies/ State Legislative Councils, former and present Mayors of Municipal Corporations, former and present Chairpersons of District Panchayats.

- All serving or retired officers and employees of Central/ State Government Ministries /Offices/ Departments and its field units, Central or State PSEs and Attached Offices /Autonomous Institutions under Government as well as regular employees of the Local Bodies (Excluding Multi-Tasking Staff / Class IV/Group D employees).
 - All superannuated/retired pensioners whose monthly pension is Rs. 10,000/- or more (Excluding Multi-Tasking Staff/ Class IV/Group D employees)
 - All Persons who paid Income Tax in the last assessment year.
 - Professionals like doctors, engineers, lawyers, chartered accountants and architects registered with professional bodies and carrying out professions by undertaking practice.
- iii. In case of new beneficiaries being uploaded on the PM-KISAN Portal, all land holding farmers' families who are Non-resident Indians (NRIs) in terms of the provisions of the Income Tax Act, 1961 shall be excluded from any benefit under the Scheme.

The number of eligible land holding farmer families has been estimated on the basis of projections of the Agricultural Census 2015-16 data for the year 2018-19. The total number of eligible beneficiaries has been estimated at 12.5 crore.

10.2.5 Mechanism of Implementation of the Scheme

- I. A high level committee comprising of the Union Ministers of Finance, Agriculture and Land Resources has been constituted for making necessary modifications in the scheme within

the overall financial parameters of income support approved by the Government for effective implementation.

- ii. In some of the North-Eastern States, land ownership is community based. In such states, an alternate implementation mechanism of eligibility will be developed for the farmers and shall be implemented with the approval of a High Level Committee comprising of Ministers of the Ministry of Development of North-East Region (DoNER), Ministry of Rural Development (Department of Land Resources), Ministry of Agriculture & Farmers' Welfare and the concerned State Chief Minister or State nominated Minister.
- iii. Special identification procedures have been devised for the States of Manipur and Nagaland in view of the community based land ownership in these states.
- iv. Extension of benefit of the scheme to forest dweller tribes: The Government has decided to include tribals who have been given 'Pattas' under the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006, subject to other eligibility conditions.
- v. **Jharkhand:** Jharkhand does not have up dated land records, as for many decades the mutation of land records on the basis of succession have not been recorded. Further, transfer of land is also restricted in these areas. This posed a difficulty in the implementation of the Scheme in Jharkhand. Therefore, with the approval of the HLC, the following procedure shall be adopted for identification of beneficiaries under the PM-KISAN Scheme in Jharkhand –

The farmer shall be asked to submit 'Vanshavalī' (Lineage) linked to the entry of land record comprising his/her ancestor's name giving a chart of succession. This lineage chart shall be submitted before the Gram Sabha for calling objections. After approval of the Gram Sabha, the village level/ circle level revenue officials will verify and authenticate

the Vanshavali and possession of holding. This authenticated list of farmers after due verification of succession chart shall be counter signed by the District Level Revenue authority. Farmers' names, subject to the exclusion criterion after following the aforementioned process, shall be uploaded on the PM-KISAN portal along with other required details for disbursement of benefit under the Scheme.

- vi. A National Level Review Committee under the Chairmanship of Cabinet Secretary with Secretaries of Department of Economic Affairs, Agriculture, Land Resources and Information Technology as members has been constituted to review and monitor implementation of the Scheme.
- vii. The States shall prepare database of eligible beneficiary landholder farmer families in the villages capturing the Name, Age, Gender, Category (SC/ ST), Aadhaar Number (in case Aadhaar Number has not been issued then Aadhaar Enrollment Number together with any other prescribed documents for purposes of identification such as Driving Licence, Voters' ID Card, NREGA Job Card or any other identification documents issued by Central/ State/ UT Governments or their authorities, etc.), Bank Account Number and the Mobile Number of the beneficiaries. Responsibility of identifying the landholder farmer family eligible for benefit under the scheme shall be of the State/UT Government. In case of beneficiaries in States/UTs of Assam and Meghalaya where Aadhaar number has not been issued to most of the citizens, Aadhaar number shall be collected for those beneficiaries where it is available and for others alternate prescribed documents can be collected for identity verification purposes. States/UTs shall ensure that there is no duplication of the payment transferred to eligible families. Speedy reconciliation in case of wrong/incomplete bank details of the beneficiary should be ensured.
- viii. Possession of Aadhaar number for release of benefits under the Scheme was optional for

release of the 1st Instalment. It became mandatory for release of the 2nd Instalment except for the States/UTs of Assam, Meghalaya and J&K where Aadhaar penetration is miniscule. Releases under the Scheme are being made only on the basis of Aadhaar seeded database of all beneficiaries.

- ix. For the purpose of exclusion, States have to take a self-declaration from the beneficiaries. In the said self-declaration taken by the States/UT Governments, an undertaking should also be included wherein the consent of the beneficiaries should be taken for using the Aadhaar number for verification of his eligibility for the scheme with the concerned agencies.
- x. From the period Aug'22 to Nov'22, land seeding has been made mandatory for release of benefits to a beneficiary. The existing land-ownership system in the concerned State/UT will be used for identification of beneficiaries.
- xi. The lists of eligible beneficiaries would be published at the village level. Small and Marginal Farmer families who are eligible but have been excluded should be provided an opportunity to represent their case.
- xii. The beneficiaries, whose names are uploaded on PM-KISAN Portal by the State/UT Government in a particular 4-month period / trimester, shall be entitled to receive benefit for that trimester and for further installments pertaining to the subsequent trimesters for that financial year.

10.2.6 Review, Monitoring and Grievance Redressal Mechanism

- i. There will be a stratified review/monitoring mechanism at the National, State and District Level. At the National level, the Review Committee will be headed by the Cabinet Secretary. The States shall notify the State and District Level Review / Monitoring Committee.
- ii. The States shall also notify State and District

Level Grievance Redressal Monitoring Committees for looking into all the grievances related to implementation of the scheme. Any grievances or complaints which are received should be disposed off on merit preferably within two weeks' time.

10.2.7 Setting up of Project Monitoring Unit (PMU)

- i. A Project Monitoring Unit (PMU) at the Central level namely National Farmer Welfare Programme Implementation Society (NFWPIS) has been set up in DA&FW. This PMU is tasked with the responsibility of overall monitoring of the scheme and is headed by the Chief Executive Officer (CEO). PMU also undertakes publicity campaigns (Information, Education and Communication-IEC).
- ii. Each State/UT Government has designated a Nodal Department for implementation of the

scheme and coordinating with the Central Government with regard to implementation of the Income Support Scheme.

- iii. On the lines of PMU at central level, States/UTs may consider setting up dedicated Project Monitoring Units at State/UT Level. The administrative charges payable to the States/UTs will be provided by the Government of India based on the volume of work and the number of beneficiaries and other related administrative expenses including cost to be incurred for procurement of stationery, field verification, filling of prescribed formats, their certification and its uploading as well as incentive for field functionaries, publicity, etc.

10.2.8 Release of funds

As on 30-11-2022, the state-wise details of funds released under PM-KISAN and beneficiary benefitted is attached at Annexure-I and II.

Annexure –I

State-wise and Period-wise number of beneficiaries paid as on 30.11.2022

Sr. NO.	State	2018-19	2019-2020				2020-2021			2021-2022			2022-2023	
		1st Period (Dec 18- March 19)	2nd Period (April-July 19)	3rd Period (Aug-Nov 19)	4th Period (Dec 19- Mach 20)	5th period (April-July 20)	6th Period (Aug-Nov 20)	7th Period (Dec 20- March 21)	8th Period (April-July 21)	9th Period (Aug-Nov 21)	10th Period (Dec 21- March 22)	11th Period (April- July 22)	12th Period (Aug-Nov 22)	
1	Andaman and Nicobar islands	10,107	13,714	15,915	16,139	15,971	16,254	16,108	16,075	15,593	15,088	14,952	9,722	
2	Andhra Pradesh	33,16,854	41,75,716	42,04,714	47,41,080	47,57,261	46,90,280	45,35,190	44,61,131	44,28,717	44,61,369	44,00,538	40,00,222	
3	Arunachal Pradesh	1,815	6,988	42,724	62,878	89,275	90,141	91,854	91,856	92,706	92,968	94,565		
4	Assam	11,55,390	24,53,735	21,12,058	20,08,024	18,91,762	12,20,266	13,89,701	12,81,363	9,27,499	10,82,149	6,90,096	4,61,430	
5	Bihar	2,50,811	26,20,798	45,52,073	60,63,908	69,55,358	75,38,392	76,80,555	79,22,156	80,94,029	82,48,528	83,05,227	81,62,683	
6	Chandigarh	49	244	452	429	430	430	402	386	378	389	5	-	
7	Chhattisgarh	1,13,035	10,63,512	16,24,918	18,45,570	24,79,757	26,40,347	29,17,455	28,48,124	30,24,356	27,71,026	27,27,726	19,75,340	
8	Delhi	-	-	11,534	12,452	13,331	14,043	13,690	13,967	14,490	14,615	14,882	12,165	
9	Goa	2,439	4,260	6,595	7,491	8,339	9,144	8,757	9,260	9,127	8,302	8,541	6,610	
10	Gujarat	28,58,911	39,60,784	46,89,076	48,70,678	52,95,218	55,67,057	54,01,968	55,40,880	56,05,025	58,42,030	58,74,348	51,79,528	
11	Haryana	9,66,435	12,49,040	14,29,942	15,47,031	16,86,907	18,24,851	18,42,769	17,40,892	18,45,745	18,65,654	18,41,201	12,77,620	
12	Himachal Pradesh	4,57,027	7,36,191	8,34,563	8,65,303	8,90,915	9,09,923	9,03,949	9,08,669	9,36,706	9,41,248	9,42,080	5,51,602	
13	Jammu and Kashmir	4,57,859	7,16,273	8,65,229	9,83,481	10,27,697	11,12,726	11,28,427	8,71,524	8,79,824	10,96,743	10,92,353	4,17,180	
14	Jharkhand	5,63,552	7,26,754	13,32,679	7,08,427	15,18,821	22,77,547	22,55,003	15,80,194	16,28,545	16,59,889	22,25,373	9,68,588	
15	Karnataka	19,872	29,63,051	46,66,930	49,47,227	51,14,500	52,19,740	52,81,757	51,75,786	52,12,951	34,53,238	49,20,221	49,66,688	
16	Kerala	9,57,969	18,64,855	27,04,961	26,90,840	30,01,870	33,52,805	34,64,817	33,57,442	34,82,010	35,44,881	34,61,911	19,34,506	
17	Ladakh	7,144	10,189	13,421	14,118	13,889	13,658	16,474	16,909	16,996	17,152	17,310	16,481	
18	Lakshadweep	-	-	-	1,515	650	700	827	866	-	-	-	-	
19	Madhya Pradesh	9,288	25,05,965	49,30,776	60,02,195	74,94,202	78,53,490	79,97,108	82,58,434	83,29,288	84,51,865	83,46,911	80,96,775	
20	Maharashtra	21,84,063	45,23,490	71,46,748	86,33,988	96,97,039	1,05,19,616	1,03,90,010	92,34,252	1,02,52,630	1,04,44,709	1,01,25,979	89,87,788	
21	Manipur	31,350	29,244	90,286	2,71,283	4,54,120	3,50,654	3,56,366	2,87,213	2,77,909	2,79,983	3,64,817	3,66,207	
22	Meghalaya	9,307	26,725	61,412	98,732	1,62,523	1,77,153	1,81,428	1,80,836	1,91,115	1,86,041	33,087	19,912	
23	Mizoram	27,075	52,684	65,532	62,766	1,24,447	1,31,984	1,45,309	1,00,906	1,04,170	96,172	86,498	87,146	
24	Nagaland	32,301	86,447	1,58,367	1,85,312	1,90,781	1,95,904	1,96,710	1,74,683	1,96,902	1,99,081	1,82,479	1,95,433	
25	Odisha	9,73,860	29,92,559	28,48,151	25,17,666	21,02,634	22,76,976	24,93,437	29,46,507	32,03,303	32,78,430	33,10,618	20,94,928	
26	Puducherry	4,264	5,779	9,106	9,378	10,198	10,635	10,343	10,246	10,245	10,218	10,157	9,949	
27	Punjab	11,81,102	14,11,655	22,21,609	23,01,313	19,01,758	19,04,579	18,71,649	17,59,801	17,38,610	17,13,808	16,96,355	2,05,308	
28	Rajasthan	64,972	38,34,966	47,82,730	47,78,953	57,06,071	63,14,146	66,40,505	68,54,513	69,67,977	71,40,935	71,10,891	54,70,330	
29	Sikkim	-	1,980	4,007	1,633	5,645	6,090	7,914	9,452	9,754	9,686	9,486	955	
30	Tamil Nadu	21,61,247	29,70,900	33,74,038	34,37,327	43,04,738	44,08,819	37,51,547	37,73,783	37,09,946	36,73,635	31,92,733	22,06,442	
31	Telangana	20,27,850	31,60,187	34,22,274	32,43,799	34,73,585	35,86,243	35,73,758	35,49,402	35,93,134	36,06,120	35,53,279	32,47,854	
32	The Dadra and Nagar Haveli and Daman and Diu	7,580	11,183	13,519	13,556	14,033	9,410	9,690	9,829	7,560	11,298	12,737	12,233	
33	Tripura	1,51,863	1,80,865	1,89,194	1,83,202	1,99,345	2,10,166	2,19,008	2,12,331	2,14,747	2,19,098	2,33,191	2,31,169	
34	Uttar Pradesh	1,11,93,600	1,51,46,240	1,75,13,799	1,81,81,519	2,13,10,180	2,19,04,818	2,28,15,840	2,37,16,467	2,39,23,197	2,41,68,243	2,40,91,647	1,79,59,303	
35	Uttarakhand	4,15,378	5,25,702	6,56,234	6,96,188	7,67,887	8,33,780	8,49,078	8,36,495	8,78,336	8,91,397	8,89,304	6,63,970	
36	West Bengal	-	-	-	-	-	-	-	20,29,595	35,84,688	46,28,605	46,78,407	44,18,341	
	Total	3,16,14,369	6,00,32,675	7,65,95,566	8,20,05,401	9,26,81,137	9,71,92,767	9,84,59,403	9,97,82,225	10,34,08,208	10,41,24,593	10,45,59,905	8,42,14,408	

Period wise amount released (in Rs.) as on 30.11.2022

Sr. NO.	State	2018-19	2019-2020			2020-2021		
		Dec 18-March 19	April-July 19	Aug-Nov 19	Dec 19-March 20	April-July 20	Aug-Nov 20	Dec 20-March 21
1	ANDAMAN AND NICOBAR ISLANDS	2,02,14,000	2,74,28,000	3,73,68,000	3,49,96,000	3,25,76,000	3,25,08,000	3,22,22,000
2	ANDHRA PRADESH	6,63,37,08,000	8,60,38,78,000	8,59,31,14,000	9,90,65,26,000	9,95,13,78,000	9,53,15,80,000	9,16,40,18,000
3	ARUNACHAL PRADESH	36,30,000	1,39,76,000	9,32,08,000	18,71,40,000	19,01,18,000	18,34,98,000	19,41,06,000
4	ASSAM	2,31,07,80,000	5,34,78,60,000	4,54,91,64,000	4,04,18,64,000	3,79,23,80,000	2,44,05,32,000	3,20,31,88,000
5	BIHAR	50,16,22,000	5,81,52,76,000	10,36,73,04,000	13,03,40,32,000	14,66,06,14,000	15,74,11,26,000	15,61,21,18,000
6	CHANDIGARH	98,000	4,88,000	13,86,000	8,70,000	8,64,000	8,60,000	8,04,000
7	CHHATTISGARH	22,60,70,000	2,12,79,32,000	3,93,22,26,000	4,37,48,32,000	5,54,22,74,000	5,54,14,46,000	6,24,37,46,000
8	DELHI	-	-	4,72,30,000	2,59,74,000	2,75,60,000	2,89,28,000	2,87,90,000
9	GOA	48,78,000	85,20,000	1,93,24,000	1,52,76,000	1,80,76,000	1,94,34,000	1,81,60,000
10	GUJARAT	5,71,78,22,000	8,19,80,92,000	10,48,66,20,000	10,16,44,26,000	11,46,02,66,000	11,47,07,10,000	10,87,53,00,000
11	HARYANA	1,93,28,70,000	2,73,40,86,000	3,25,46,80,000	3,13,93,88,000	3,79,08,18,000	3,87,64,02,000	3,85,40,86,000
12	HIMACHAL PRADESH	91,40,54,000	1,63,94,30,000	1,80,48,70,000	1,80,93,10,000	1,82,89,72,000	1,85,14,74,000	1,81,37,36,000
13	JAMMU AND KASHMIR	91,57,18,000	1,55,68,96,000	1,86,75,38,000	2,24,82,98,000	2,09,07,66,000	2,48,74,00,000	2,33,04,84,000
14	JHARKHAND	1,12,71,04,000	1,46,16,06,000	2,77,23,92,000	1,41,87,82,000	4,39,25,64,000	5,04,78,02,000	4,60,10,06,000
15	KARNATAKA	3,97,44,000	6,56,16,22,000	10,83,86,96,000	10,49,73,66,000	10,33,93,16,000	10,61,52,50,000	10,63,25,90,000
16	KERALA	1,91,59,38,000	4,53,18,86,000	8,00,95,02,000	6,84,13,64,000	6,82,62,54,000	7,13,79,08,000	7,17,91,20,000
17	LADAKH	1,42,88,000	2,28,42,000	3,57,30,000	2,94,22,000	3,19,68,000	2,73,66,000	3,31,84,000
18	LAKSHADWEEP	-	-	-	30,30,000	28,52,000	23,08,000	16,62,000
19	MADHYA PRADESH	1,85,76,000	5,01,21,92,000	12,00,09,06,000	14,11,82,82,000	18,31,62,98,000	16,49,94,54,000	16,78,40,54,000
20	MAHARASHTRA	4,36,81,26,000	10,10,06,82,000	19,40,25,64,000	19,48,26,96,000	21,88,90,82,000	22,82,18,64,000	22,00,63,12,000
21	MANIPUR	6,27,00,000	5,84,88,000	24,34,98,000	56,50,92,000	95,15,32,000	70,77,66,000	72,30,04,000
22	MEGHALAYA	1,86,14,000	7,86,18,000	14,34,60,000	21,18,42,000	34,67,28,000	35,81,84,000	36,81,20,000
23	MIZORAM	5,41,50,000	11,74,54,000	14,31,48,000	12,88,62,000	26,55,46,000	27,05,12,000	29,98,72,000
24	NAGALAND	6,46,02,000	17,64,38,000	34,46,42,000	39,05,58,000	41,30,90,000	40,67,94,000	39,97,16,000
25	ODISHA	1,94,77,20,000	5,98,58,68,000	5,75,59,68,000	5,12,52,30,000	4,31,13,00,000	4,67,86,24,000	5,59,07,78,000
26	PUDUCHERRY	85,28,000	1,15,62,000	2,78,40,000	1,96,70,000	2,20,06,000	2,27,46,000	2,09,70,000
27	PUNJAB	2,36,22,04,000	3,12,85,44,000	4,83,39,10,000	4,66,47,16,000	4,17,88,98,000	3,84,85,74,000	3,74,47,08,000
28	RAJASTHAN	12,99,44,000	11,91,47,24,000	11,37,98,88,000	10,39,26,10,000	14,62,94,82,000	14,25,01,90,000	14,32,62,82,000
29	SIKKIM	-	39,60,000	80,14,000	33,10,000	2,32,92,000	1,21,88,000	1,58,28,000
30	TAMIL NADU	4,32,24,94,000	6,60,83,84,000	7,52,97,62,000	7,16,87,52,000	9,33,63,02,000	9,02,79,02,000	7,56,75,50,000
31	TELANGANA	4,05,57,00,000	7,34,22,04,000	7,23,28,66,000	6,64,43,00,000	7,48,57,70,000	7,35,50,72,000	7,29,90,54,000
32	THE DADRA AND NAGAR HAVELI AND DAMAN AND DIU	1,51,60,000	2,28,14,000	3,03,30,000	2,75,84,000	2,91,80,000	1,88,20,000	1,94,96,000
33	TRIPURA	30,37,26,000	36,39,88,000	39,94,16,000	37,09,40,000	42,92,32,000	42,73,94,000	44,47,30,000
34	UTTAR PRADESH	22,38,72,00,000	32,06,43,70,000	37,39,53,02,000	40,59,95,90,000	50,56,45,88,000	46,20,12,80,000	47,54,27,54,000
35	UTTARAKHAND	83,07,56,000	1,07,36,32,000	1,67,77,34,000	1,56,86,56,000	1,69,52,46,000	1,74,78,02,000	1,74,32,90,000
36	WEST BENGAL	-	-	-	-	-	-	-
	Total	63,22,87,38,000	1,32,71,57,40,000	1,75,25,96,00,000	1,79,25,55,86,000	2,09,86,71,88,000	2,04,69,16,98,000	2,04,71,48,38,000

Sr. NO.	State	2021-2022			2022-2023	
		April-July 21	Aug-Nov 21	Dec 21-March 22	April-July 22	Aug-Nov 22
1	ANDAMAN AND NICOBAR ISLANDS	3,33,04,000	3,13,36,000	3,07,40,000	3,05,40,000	1,95,32,000
2	ANDHRA PRADESH	10,36,21,18,000	9,17,55,18,000	9,52,89,88,000	9,32,56,12,000	9,00,55,48,000
3	ARUNACHAL PRADESH	18,94,60,000	18,74,78,000	18,93,32,000	21,59,98,000	-
4	ASSAM	2,98,82,78,000	3,40,65,18,000	2,73,75,76,000	1,53,37,66,000	1,53,66,96,000
5	BIHAR	16,44,62,22,000	16,58,67,18,000	17,29,97,72,000	17,10,21,88,000	16,46,14,42,000
6	CHANDIGARH	7,84,000	7,56,000	8,86,000	30,000	-
7	CHHATTISGARH	6,24,81,44,000	6,65,13,36,000	6,29,84,20,000	6,89,89,34,000	4,58,69,20,000
8	DELHI	3,09,38,000	3,01,32,000	3,05,06,000	3,29,28,000	2,44,16,000
9	GOA	2,08,14,000	1,85,32,000	1,66,54,000	1,96,02,000	1,34,46,000
10	GUJARAT	11,83,78,22,000	11,64,76,58,000	12,50,76,88,000	12,02,82,50,000	10,53,77,46,000
11	HARYANA	3,62,20,10,000	3,97,39,78,000	3,86,65,92,000	3,91,03,54,000	2,56,54,20,000
12	HIMACHAL PRADESH	1,86,37,62,000	1,91,00,88,000	1,92,53,22,000	1,98,14,34,000	1,10,79,38,000
13	JAMMU AND KASHMIR	1,87,33,66,000	1,83,41,96,000	2,93,82,02,000	2,52,22,38,000	84,91,66,000
14	JHARKHAND	3,87,21,94,000	3,61,41,80,000	3,76,95,86,000	7,17,03,16,000	2,54,34,24,000
15	KARNATAKA	10,70,81,38,000	10,92,09,60,000	7,09,47,20,000	13,00,65,12,000	10,01,20,86,000
16	KERALA	6,94,35,02,000	7,39,31,74,000	7,52,29,48,000	7,06,66,36,000	3,93,10,56,000
17	LADAKH	3,52,24,000	3,65,62,000	3,61,54,000	3,64,78,000	3,42,94,000
18	LAKSHADWEEP	25,76,000	-	-	-	-
19	MADHYA PRADESH	17,57,50,40,000	16,98,16,60,000	17,37,07,96,000	17,29,89,54,000	16,65,14,02,000
20	MAHARASHTRA	19,26,53,94,000	23,16,41,46,000	21,87,69,28,000	20,59,81,98,000	18,62,30,86,000
21	MANIPUR	58,78,48,000	56,83,46,000	61,44,96,000	1,05,91,62,000	86,95,18,000
22	MEGHALAYA	36,97,04,000	40,16,86,000	38,44,84,000	6,87,82,000	4,83,04,000
23	MIZORAM	22,00,38,000	21,80,30,000	20,65,72,000	18,04,30,000	18,28,20,000
24	NAGALAND	35,24,26,000	44,71,80,000	42,56,30,000	37,80,94,000	42,14,48,000
25	ODISHA	10,56,14,18,000	8,44,16,84,000	7,69,78,72,000	7,09,84,76,000	4,35,40,12,000
26	PUDUCHERRY	2,06,86,000	2,06,06,000	2,06,12,000	2,05,72,000	2,00,60,000
27	PUNJAB	3,57,00,98,000	3,49,09,36,000	3,49,58,98,000	3,40,71,74,000	41,28,92,000
28	RAJASTHAN	15,39,11,64,000	14,68,10,02,000	15,24,31,86,000	14,93,14,02,000	11,21,32,12,000
29	SIKKIM	2,31,32,000	2,03,86,000	1,96,82,000	2,21,62,000	1,21,56,000
30	TAMIL NADU	7,91,19,64,000	7,44,79,16,000	7,42,07,74,000	7,07,51,04,000	4,52,63,84,000
31	TELANGANA	7,30,41,00,000	7,93,91,20,000	7,52,45,86,000	7,40,76,60,000	6,54,87,94,000
32	THE DADRA AND NAGAR HAVELI AND DAMAN AND DIU	2,09,44,000	2,68,26,000	3,60,90,000	3,70,92,000	2,52,36,000
33	TRIPURA	43,98,14,000	43,71,46,000	46,23,54,000	53,58,90,000	49,32,38,000
34	UTTAR PRADESH	55,10,65,76,000	50,49,08,34,000	51,98,19,72,000	50,39,56,46,000	36,23,64,48,000
35	UTTARAKHAND	1,74,64,90,000	1,85,79,42,000	1,86,54,40,000	1,82,18,30,000	1,34,24,26,000
36	WEST BENGAL	5,73,50,00,000	9,79,97,88,000	10,74,43,74,000	10,30,11,88,000	9,22,49,10,000
	Total	2,23,28,04,92,000	2,23,85,43,54,000	2,23,18,58,32,000	2,25,51,96,32,000	1,74,43,54,76,000

10.3 Pradhan Mantri Kisan Maan Dhan Yojana (PM-KMY)

10.3.1 Salient features

- (i) The Pradhan Mantri Kisan Maan Dhan Yojana (PM-KMY) is an old age pension scheme for all land holding Small and Marginal Farmers (SMFs) in the country.
- (ii) The Scheme was formally launched on 12th September, 2019.
- (iii) The PM-KMY is a Central Sector Scheme
- (iv) The LIC shall be the Pension Fund Manager and responsible for pension pay out.
- (v) It is a voluntary and periodic contribution based pension system meant for all land holding Small and Marginal Farmers (SMFs)

administered by the Department of Agriculture, Cooperation & Farmers' Welfare, Ministry of Agriculture & Farmers' Welfare, Government of India in partnership with the Life Insurance Corporation of India (LIC).

throughout the country, subject to the aforesaid exclusion criteria.

- (vi) The SMFs shall have the option to allow payment of his/her voluntary contribution to the Scheme from the financial benefits received by them from the PM-KISAN Scheme directly.
- (vii) The eligible SMFs who are desirous of using their PM-KISAN benefit for contributing for PM-KMY, will have to sign and submit an enrolment-cum- auto-debit-mandate form for giving their consent for auto-debiting their bank accounts in which their PM-KISAN benefits are credited, so that their contributions are automatically paid;
- (viii) The eligible SMFs who are not beneficiaries of PM-KISAN or who have not given consent to allow payment from the benefit of PM-KISAN shall submit an enrolment-cum- auto-debit mandate form for giving their consent to auto-debit a bank account which is normally used by them for bank transactions;
- (ix) The Central Government through the Department of Agriculture and Farmers Welfare shall also contribute an equal

amount as contributed by the eligible subscriber, to the Pension Fund. Account of such co-contributions shall be maintained separately by the LIC and these co-contributions along with fund earnings from time to time shall be utilized for pension payment on the date of vesting. Co-contributions would not be paid to subscribers in case of pre- mature exits. In such a case, the co- contributions along with fund earnings will be transferred back to the Pension Fund.

- (x) The State/UT Governments will have the option of sharing the burden of individual SMF beneficiary contribution.
- (xi) Monthly contributions will fall due on the same day every month as the enrolment date. The beneficiaries may also choose an option to pay their contributions on a quarterly, 4-monthly or half-yearly basis. Such contributions will fall due on the same day of such period as the date of enrollment;
- (xii) The amount of the monthly contribution shall range between Rs.55 to Rs.200 per month depending upon the age of entry of the farmers into the Scheme, as per the following contribution chart:

Entry Age	Superannuation Age	Member's contribution (Rs.)	Government's contribution (Rs.)	Total contribution (Rs.)
(1)	(2)	(3)	(4)	(5)
18	60	55	55	110
19	60	58	58	116
20	60	61	61	122
21	60	64	64	128
22	60	68	68	136
23	60	72	72	144
24	60	76	76	152
25	60	80	80	160
26	60	85	85	170

27	60	90	90	180
28	60	95	95	190
29	60	100	100	200
30	60	105	105	210
31	60	110	110	220
32	60	120	120	240
33	60	130	130	260
34	60	140	140	280
35	60	150	150	300
36	60	160	160	320
37	60	170	170	340
38	60	180	180	360
39	60	190	190	380
40	60	200	200	400

- xiii. In case of death of the subscriber before the vesting date, the spouse of the subscriber shall have an option of continuing the scheme by payment of remaining contributions under the scheme, provided she/he is not already an SMF beneficiary of the scheme. The rate of contribution and vesting date shall remain the same. Pension accruals will be calculated as if the subscriber were alive on the vesting date. The same pension would be payable to the spouse. Upon death of the spouse after the vesting date, the pension corpus would be transferred back to the Pension Fund.
- xiv. In case of death of the subscriber before the vesting date, if the spouse does not exercise the the option of continuing under the scheme, then the subscribers' contributions along with fund interest earned or Savings Bank Interest whichever is higher would be payable to the spouse under the scheme.
- xv. In case of death of the subscriber before the vesting date, if there is no spouse, then the subscribers' contributions along with fund interest earned or Savings Bank Interest, whichever is higher would be payable to the nominee/s under the scheme. The co-contributions made by the Government along with fund interest earned after adjusting for difference between Savings Bank Interest payable and fund interest earned, if any will be credited back to the Pension Fund of the Government.
- xvi. If a subscriber dies after the date of vesting, his/her spouse shall be entitled to receive fifty per cent of the pension received by such an eligible subscriber as Family Pension, provided she/he is not already an SMF beneficiary of the Scheme, and such Family Pension shall be applicable only to the spouse.
- xvii. After death of the subscriber as well as of his/her spouse, the corpus i.e. total accumulated contributions made by the subscriber and the Government shall be credited back to the fund.
- xviii. The Eligible SMFs desirous of joining the scheme shall visit the nearest Common

- Service Centre (CSC) along with his Aadhaar card and bank passbook or account details.
- xix. The Village Level Entrepreneur (VLE) present at the CSC shall complete the on-line registration process after taking details of Aadhaar number, name, date of birth, spouse and nominee particulars, mobile number (optional), address and a few other details.
 - xx. The on-line registration process includes capturing of bank account particulars and completion of an auto- debit mandate to the bank account of the subscriber for debiting the contribution amount to the subscriber's bank account every month. The demand will be made by the sponsor bank/IDBI on behalf of the LIC of India.
 - xxi. The data would be checked by the CSC through manual verification of bank particulars from supporting documents, demographic authentications of Aadhaar, etc.
 - xxii. The mobile number (optional) given by the subscriber will be verified through an OTP verification process.
 - xxiii. The subscriber will authenticate the data in an on-line generated enrolment form by putting his / her signature.
 - xxiv. The VLE will upload a scanned copy of the signed enrolment-cum- debit mandate form and thereafter enable his/her online payment of initial contribution and give him a receipt.
 - xxv. At this stage, the online registration process would be complete and the system would generate a Pradhan Mantri Kisan Maan-Dhan (PM-KMY) Pension Card with a unique Pension Account Number prominently printed on it.
 - xxvi. Upon completion of the enrolment process and payment of initial contribution, an enrolment-cum-auto-debit-mandate form for taking consent of farmers for auto-debiting from their PM-KISAN benefits through their bank accounts will be generated and signed by the subscriber.
 - xxvii. The CSC-SPV decentralized office would scan the signed enrolment-cum-auto-debit mandate form and upload the same to the CSC-SPV system.
 - xxviii. Subsequent to this a pension card would be generated and given to the subscriber as proof of pension account having been opened.
 - xxix. The CSC-SPV Centre would also return the original enrolment-cum-auto- debit mandate form to the subscriber to be retained by him.
 - xxx. Data of subscribers enrolled would be transferred by CSC-SPV to LIC on T+1 (i.e. the next day) for further process.
 - xxxi. The CSCs would charge Rs.30/- per beneficiary for enrolment for the above services. The DAC&FW would reimburse the above charge to CSC for which it would raise a consolidated invoice for the purpose.
 - xxxii. Eligible beneficiaries may alternatively also enroll themselves by contacting physically the State Nodal Officers (SNOs) (or agencies designated by them) in their respective districts. Eligible beneficiaries may alternatively also enroll themselves online through links provided on the appropriate web-sites.
 - xxxiii. The DA&FW will facilitate transfer of bulk data of beneficiaries from the SNOs to the CSC-SPV for the purpose of bulk enrolment of SMFs and also cross-verification of PM-Kisan beneficiaries registered at CSCs.
 - xxxiv. A subscriber who desires to change the bank details or any other details which are incorrect, will approach CSC or VLE along with PM-KMY number, Aadhaar Card. However, the date of birth of the Subscriber cannot be changed at any time. The VLE at CSC will validate the credentials of the member on the payment of the amount/ fee as prescribed by the Government from time to time.

xxxv. For effective implementation of the Scheme, detailed Operational Guidelines have been issued which may be amended from time-to-time as and when considered necessary.

10.3.2 Aims and objective of the Schème

There have been a series of interventions for income and price support by the Government for farmers. However, there is a felt need to create a social security net for farmers as old age may result in loss of livelihood for many of them. Farming requires hard work in fields which becomes difficult at an advanced age. The problem is compounded in respect of small and marginal farmers as they have minimal or no savings to provide for old age. The Pradhan Mantri Kisan Maan-Dhan Yojana (PM-KMY) provides for an assured monthly pension of Rs. 3000/- to all land holding Small and Marginal Farmers (SMFs), whether male or female, on attaining the age of 60 years. Farmers falling within the purview of the exclusion criteria are, however, not eligible for the benefit.

10.3.3 Beneficiaries of the Scheme

All Small and Marginal Farmers (SMFs) in all States and Union Territories of the country, who are of the age of 18 years and above and upto the age of 40 years, and who do not fall within the purview of the exclusion criteria are eligible to avail the benefits of this Scheme by joining it.

10.3.4 Exclusion criteria:

The following categories of farmers have been brought under the exclusion criteria:

- i. SMFs covered under any other statutory social security schemes such as National Pension Scheme (NPS), Employees' State Insurance Corporation Scheme, Employees' Fund Organization Scheme etc.
- ii. Farmers who have opted for Pradhan Mantri Shram Yogi Maan Dhan Yojana (PM-SYM) administered by the Ministry of Labour & Employment
- iii. Farmers who have opted for Pradhan Mantri Laghu Vyapari Maan-dhan Yojana

(PM-LVM) administered by the Ministry of Labour & Employment

iv. Further, the following categories of beneficiaries of higher economic status shall not be eligible for benefits under the scheme:

- All institutional land holders
- Former and present holders of constitutional posts
- Former and present Ministers/State Ministers and former/present Members of the Lok Sabha/ Rajya Sabha/ State Legislative Assemblies/ State Legislative Councils, former and present Mayors of Municipal Corporations, former and present Chairpersons of District Panchayats.
- All serving or retired officers and employees of the Central/ State Government Ministries/ Offices/ Departments and their field units, Central or State PSEs and Attached offices/ Autonomous Institutions under the Government as well as regular employees of the Local Bodies (Excluding Multi Tasking Staff/Class IV/Group D employees)
- All persons who paid Income Tax in the last assessment year.
- Professionals like doctors, engineers, lawyers, chartered accountant and architects registered with Professional bodies and carrying out profession by undertaking practice.

For the purpose of exclusion State/UT Government can certify the eligibility of the beneficiary based on self-declaration by the beneficiaries. In case the beneficiary is not available /does not reside in the village, State/UT Governments may consider certification based on a declaration by other adult members of his/her family. In case of incorrect self-declaration, beneficiary shall not be eligible for financial

benefit under the Scheme.

10.3.5 Mechanism of Implementation of the Scheme

- a. The Common Service Centres (CSCs) under the Ministry of Electronics and Information Technology and the State Nodal Officers (SNOs) (PM-KISAN) will be the enrolling agencies.
- b. The CSC will complete the on-line registration process after taking details of Aadhaar number, name, date of birth, spouse and nominee particulars, mobile number, address and a few other details.
- c. The CSC will take an auto-debit mandate for debiting contribution amount to the subscriber's bank account every month.
- d. The CSC will thereafter enable online payment of initial contribution and give the subscriber a receipt.
- e. The CSC will provide a PM-KISAN Maan-Dhan Pension Card with a Pension Account Number printed on it.
- f. The CSCs would charge the DA&FW Rs.30/- per beneficiary for enrolment for the above services.
- g. The data of SMF PM-Kisan beneficiaries already available with the SNOs will also be appropriately utilized for enrolment.
- h. The beneficiaries may choose an option to pay their contributions on a monthly, quarterly, 4-monthly or half-yearly basis.
- i. In case of failure of payment of contribution by the subscriber he/she may pay the outstanding installments.
- j. Late fee/interest may be charged for default in payment.
- k. If contributions remain unpaid for a period of six months, such account status would be changed to 'dormant account'. The subscriber will be allowed to regularize contribution by paying the entire outstanding dues, along with interest at the rate as determined by the Government from time to time.

10.3.6 Review, Monitoring and Grievance Redressal Mechanism

- a. An Empowered Committee under the Chairmanship of Cabinet Secretary with Secretaries of Agriculture & Farmers' Welfare, MeitY, Department of Expenditure, Department of Financial Services and any other Secretary concerned as members shall review and monitor implementation of the Scheme through appropriate implementation strategies and to approve any modifications in the Scheme within the within the overall financial parameters of the Scheme approved by the Cabinet, for effective implementation.
- b. The overall implementation of the Scheme would be done by the Project Monitoring Unit (PMU) namely National Farmer Welfare Programme Implementation Society (NFWPIS) set up for the PM- Kisan Scheme at the Central level in the DAC&FW. The PMU shall also undertake a publicity campaign (Information, Education and Communication-IEC) for the Scheme and also incur various administrative expenses.
- c. Each State/UT Government will designate a Nodal Department for implementation of the scheme and coordinating with the Central Government with regard to implementation of the Scheme.
- d. Grievance Redressal Cell shall be set up both at State and District Levels accordingly with representation of State Nodal Officers, State Level Bankers' Committee and Regional Manager, LIC. Similarly, the District Level shall have DLBC and LIC Representatives along with District Level Government Officers.
- e. All disputes to the extent of and limited to the transactions routed through the National Automated Clearing House (NACH) system should be routed by the banks through the Dispute Management System (DMS) provided by NPCI. The disputes so raised on the Sponsor Bank shall be resolved within 30 days from the date of dispute. If the Sponsor

Bank fails to respond / resolve the dispute within the agreed time line, the disputed amount will be debited to the settlement account of the Sponsor Bank maintained with the Reserve Bank of India (RBI).

- f. Any disputes other than that detailed above shall be resolved by LIC, the Sponsor Bank and the Ministry without any liability on the other participating stakeholders. The process to be followed for dispute resolution is provided in the MoUs.
- g. Any matter related to execution, grievance redressal, dispute resolution etc. shall be

referred to the Joint Secretary (Farmers' Welfare), Department of Agriculture, Farmers Welfare, Ministry of Agriculture & Farmers Welfare, Krishi Bhavan, New Delhi – 110001 for redressal.

10.3.7 Project Monitoring Unit (PMU):

The PMU set up for PM-KISAN Scheme will also take care of the implementation of PM-KMY.

10.3.8 Farmers registered so far:

As on 12.12.2022, the State-wise details of number of farmers enrolled under the PMKMY Scheme is at **Annexure-III**.

Annexure-III

State wise details of number of farmers enrolled under PM KMY (As on 12 Dec 2022)		
S.No.	State	Total Farmers enrolled
1	Andaman and Nicobar Islands	522
2	Andhra Pradesh	37,371
3	Bihar	3,41,558
4	Chandigarh	531
5	Chhattisgarh	2,03,224
6	Dadra and Nagar Haveli	161
7	Daman and Diu	120
8	Delhi	401
9	Goa	263
10	Gujarat	67,579
11	Haryana	4,32,514
12	Himachal Pradesh	4,357
13	Jammu and Kashmir	1,26,215
14	Jharkhand	2,49,082
15	Karnataka	41,331
16	Kerala	1,505
17	Ladakh	2
18	Lakshdweep	72
19	Madhya Pradesh	1,22,158
20	Maharashtra	80,635
21	Odisha	1,55,178
22	Puducherry	239
23	Punjab	14,594
24	Rajasthan	41,551
25	Tamil Nadu	1,10,218
26	Telangana	10,500
27	The Dadra and Nagra Haveli and Daman and Diu	6
28	Uttar Pradesh	2,52,495
29	Uttarakhand	2,474
30	West Bengal	8,442
	NORTH EAST STATES	-
31	Arunachal Pradesh	2,396
32	Assam	13,961
33	Manipur	704
34	Meghalaya	829
35	Mizoram	305
36	Nagaland	1,158
37	Sikkim	31
38	Tripura	910
	Total (2)	23,25,592

Chapter-11

NATIONAL CROP INSURANCE PROGRAMME (NCIP)

Agriculture Insurance

11.1 Keeping in view the risks involved in agriculture and to insure the farming community against various risks, the Ministry of Agriculture & Farmers Welfare introduced a crop insurance scheme in 1985 and thereafter brought improvements in the erstwhile scheme(s) from time to time based on the experience gained and views of the stakeholders, including States and, farming community etc. The insurance schemes currently under implementation are the Pradhan

Mantri Fasal Bima Yojana (PMFBY) and the Restructured Weather Based Crop Insurance Scheme (RWBCIS).

Considering the farmers demands, the scheme has been revamped in February 2020. Under revamped scheme, participation is made voluntary for all farmers, whereas earlier, it was compulsory for loanee farmers.

The total funds released by Government of India during last 5 years under various schemes for crop insurance are as under:

(Rs. crore)

Plan/ Year	Insurance Schemes	Expenditure
2017-18	Pradhan Mantri Fasal Bima Yojana (PMFBY) and Restructured Weather Based Crop Insurance Scheme (RWBCIS)	9419.79
2018-19	- do -	11945.38
2019-20	- do -	12638.32
2020-21	-do-	14165.44
2021-22	- do-	9719.24

as on 24.01.2022

11.2 Brief details of the crop insurance schemes being implemented in the country are given below:

11.2.1 Pradhan Mantri Fasal Bima Yojana (PMFBY)

After detailed discussions with various stakeholders including State Governments, representatives of farmer organizations, Government of India had formulated the new Crop Insurance Schemes viz. Pradhan Mantri Fasal Bima Yojana (PMFBY), which is being implemented in various States/Union Territories of the country from Kharif 2016. The Scheme is being implemented through 18 General Insurance Companies including 5 Government Sector Companies. Under PMFBY, a uniform

maximum premium of only 2% of the sum insured is paid by farmers for Kharif crops and 1.5% for Rabi crops. In case of annual commercial and horticultural crops, the maximum premium to be paid by farmers is upto 5%. The premium rates to be paid by farmers are very low and the balance of actuarial premium is being borne by the Government, to be shared equally by the State & Central Government, (except in North Eastern States where the subsidy sharing pattern between Central and State Govt. is 90:10) to provide full insured amount to the farmers against crop loss on account of natural calamities.

Earlier, there was a provision of capping the

premium rate which resulted in low claims being paid to farmers. This capping in earlier schemes has now been removed. In PMFBY farmers will get claim against full sum insured without any reduction. Central Government has rationalized the GoI subsidy sharing in the view of high premium in select crops and areas and to ensure a detailed analysis of the reasons leading to high premium rates. This needs a detailed examination and necessary course correction by the concerned State Government. Central Subsidy for premium is capped up to 30% for unirrigated & 25% for irrigated area/crops. Districts with irrigated area more than 50% (from all sources) will be considered as irrigated districts. Further, the sum insured has been equated to Scale of Finance/ Notional Value of the crop.

Efforts are being made to make the scheme technology driven with the primary objective to reduce the delays in claim payment to farmers. Capturing of CCEs data on smartphones/CCE Agri App and its real-time transfer on the National Crop Insurance Portal has been made mandatory from Kharif 2017 to ensure transparency and real time transfer of data. Remote sensing will be used to rationalize the number of Crop Cutting Experiments (CCEs) at unit area level. 8 pilot studies on use of innovative technology in CCEs have been completed by the Department which are coordinated by the Mahalanobis National Crop Forecast Centre (MNCFC). A High-Power Committee constituted in the Department of Agriculture and Farmers Welfare has evaluated the results of the 8 pilots and it has been decided to scale up and mainstream the operationalization of these approaches/ techniques for paddy crop in 9 States on the pilot basis.

14 more pilot studies by the Government, reputed international and national private agencies on direct yield estimation at Gram Panchayat level using technology have been initiated during the year 2020 which are also being coordinated by the MNCFC.

Under PMFBY, CCEs has increased manifold. Every

year around 70 lakh CCEs need to be conducted to arrive at yield data within a short harvesting window of 15-20 days is a challenging task. Smart Sampling and Two Step Yield Estimation has been adopted under PMFBY implementation to rationalize and reduce number of CCEs to be conducted. This will ensure reduction in CCE numbers without impacting quality of sampling and yield estimation results. Further, new age technology will be used to assess crop health using remote sensing and satellite indices.

Smart Sampling, Optimization of CCEs and Direct yield Estimation at GP Level

After evaluation of results obtained in pilot studies for Smart Sampling Technique, and Optimization of CCEs by the Expert Committee the approaches are being implemented operationally from Kharif 2019 in notified Rice growing areas in Kharif season and Rabi Sorghum, Rabi Rice, Mustard and Wheat in Rabi season. Similarly, technology driven approaches developed during pilot studies for GP level crop yield estimation in Kharif 2019 and Rabi 2019-20 are being tested over 100 Rice growing districts in Kharif 2020 season and 100 Rabi Rice and Wheat growing districts in Rabi 2020-21.

For effective implementation, an integrated National Crop Insurance Portal (www.pmfby.gov.in) has been developed to integrate all the stakeholders on a single platform on a real time basis. This has also enabled access to individual farmer-wise detailed data. Further, it has been decided to obtain the Aadhar number of insured farmers and details of land records for de-duplication. In addition, Direct Transfer of Benefits (Claims) to farmers account has been initiated from Kharif 2018 season.

Progress of the scheme implementation

The Scheme has completed 5 years of its implementation. Details of coverage and claims (as on 24.01.2022) are given in the following table:

PMFBY & RWBCIS - All India Business Statistics Since Implementation as on 24.01.2022									
Season/Year	Farmer Applications Insured (Lakh)	Area Insured (Lakh ha)	Sum Insured	Farmers Share in Premium	Gross Premium	Reported Claims	Paid Claims	Farmer Applications Benefitted (Lakh)	Claim Ratio
			Rs. Crore						
Kharif 2016	407.7	377.1	1,30,634	2,814	15,887	10,595	10,595	115.6	66.7%
Rabi 2016-17	176.0	188.5	72,247	1,271	5,811	6,212	6,212	41.0	106.9%
2016-17 Total	583.7	565.6	2,02,881	4,085	21,698	16,808	16,808	156.6	77.5%
Kharif 2017	357.3	329.5	1,24,580	2,800	18,273	18,154	18,151	147.1	99.3%
Rabi 2017-18	175.4	178.6	78,054	1,403	6,332	4,004	3,998	30.1	63.2%
2017-18 Total	532.7	508.1	2,02,634	4,203	24,605	22,158	22,149	177.2	90.1%
Kharif 2018	345.3	317.7	1,36,879	3,040	20,782	19,828	18,798	138.9	95.4%
Rabi 2018-19	232.5	207.1	92,651	1,650	8,268	9,527	9,464	85.7	115.2%
2018-19 Total	577.8	524.8	2,29,530	4,690	29,050	29,355	28,261	224.6	101.0%
Kharif 2019	431.4	334.7	1,44,208	3,052	23,709	21,403	20,440	186.7	90.3%
Rabi 2019-20	190.9	170.1	75,822	1,481	8,434	5,900	5,663	42.6	70.0%
2019-20 Total	622.4	504.8	2,20,030	4,532	32,143	27,302	26,103	229.3	84.9%
Upto 2019-20	2,316.5	2,103.5	8,55,076	17,510	1,07,496	95,623	93,322	787.6	89.0%
Kharif 2020	422.0	282.9	1,15,182	2,610	20,555	7,046	6,784	76.1	34.3%
Rabi 2020-21	193.9	167.0	82,378	1,411	11,006	4,386	4,092	37.4	39.9%
2020-21 Total*	615.9	449.8	1,97,560	4,021	31,561	11,432	10,875	113.5	36.2%
Kharif 2021	489.1	246.9	1,00,435	2,302	18,675	3,163	2,863	59.4	16.9%
Rabi 2021-22	170.2	81.7	39,232	745	6,178	-	-	-	NA
2021-22 Total**	659.3	328.6	1,39,666	3,047	24,852	3,163	2,863	59.4	NA
Total	3,591.7	2,881.9	11,92,303	24,578	1,63,909	1,10,219	1,07,059	960.5	NA
* Kharif 2020 claims yet to be reported by Assam and Madhya Pradesh; Rabi 2020-21 claims under finalization;									
** Kharif 2021 enrolment under finalization, yield-based claims yet to be initiated; Rabi 2021-22 enrolment under process;									

Decline in coverage of farmer applicants in 2017-18 was due to deduplication by making Aadhar mandatory and announcement of Debt Waiver Scheme by some States.

The scheme was very well received by the farming community as 27 States and UTs opted for the scheme in one or more seasons. The coverage in the first year of the scheme (2016-17) was 30% of Gross Cropped Area (GCA). This was the highest coverage in the history of crop insurance in India. Further, voluntary participation of non-loanee farmers has increased substantially (more than 6 times) as compared to earlier schemes and has reached 37% of total coverage under the scheme in 2019-20. This has been a major achievement under the scheme. To facilitate this, alternate mechanisms for coverage

of non-loanees were put in place which included access through Common Service Centres (CSCs) and encouraging direct enrolment on the portal. However, the scheme has been made voluntary for all farmers including loanee famers from Kharif 2020 season.

During 2016-17 about 584 lakh farmer enrolments were provided crop insurance for a sum of Rs. 2.03 lakh crore and during 2017-18 about 533 lakh farmer enrolments were provided crop insurance for a sum of Rs. 2.02 lakh crore under PMFBY & RWBCIS. There was some decline in coverage in 2017-18 primarily in the category of loanee farmers. The announcement of Debt Waiver Schemes in two big States namely, Maharashtra and Uttar Pradesh made more than 36 lakh farmers in

Kharif 2018 season who had availed crop loan, ineligible for the crop insurance as fresh loans were not drawn. At the same time, Direct Benefit Transfer (DBT) was introduced by the Government in April 2017, to help farmers receive claims directly in their bank accounts, which made registration through Aadhar number mandatory. This was a deliberate step by the Government to weed out ghost /duplicate beneficiaries and help genuine farmers through Aadhar based verification and it resulted in further decreasing the number of loanee farmers under the scheme.

Coverage under the scheme has increased from 533 lakh farmer applicants in 2017-18 to 578 lakh applicants during 2018-19 and 615 lakh farmer applicants during 2019-20, which is despite the withdrawal of Bihar State from the scheme from Kharif 2018 season and West Bengal State Government from Kharif 2019 season. The State Governments of Andhra Pradesh, Gujarat, Telangana and Jharkhand have also not implemented the scheme in 2020.

In spite of overall good monsoon during the first three years of implementation of PMFBY, the claim ratio was about 77.5%, 90.1%, 100.9% and 85.2% in 2016-17, 2017-18, 2018-19 and 2019-20 respectively.

Moreover, the farmers in most affected States received higher claims and the claim ratio was high in these States. Claim ratio in year 2016-17 was – Tamil Nadu-311.3%, Karnataka-157.1% and Andhra Pradesh-117.5%. Claim ratio was higher in 2017-18 in the states of- Chhattisgarh 384.5%, Odisha-221.9%, Haryana 198.2%, Tamil Nadu 164% and Madhya Pradesh 126.1%. Similarly, in 2018-19, States with higher claim ratio were Andhra Pradesh-172.8%, Tamil Nadu 169.6%, Karnataka-160.8%, Chhattisgarh-12.32% and Jharkhand 172.4%

Under PMFBY, benefits to the farmers are also being provided through early payment of claims directly into the bank accounts of the farmers. There is more transparency in assessment of crop losses and assessment of claims through use of technology etc.

Text SMS is being sent to all loanee farmers whose mobile numbers have been entered on the portal. Acknowledgement receipt is being generated on the portal and made available to banks. All farmers who are enrolling through CSCs or directly on the crop insurance portal are being provided physical receipt at the time of enrolment. Acknowledgement receipt is being provided to all loanee farmers from Kharif 2018 season.

Review of Operational Guidelines of the Scheme and issue of Revised Guidelines

The schemes' implementation is reviewed/monitored constantly through weekly video conferences, one to one meeting with the stakeholders on a regular basis and the National Level Monitoring Committee (NLMC). Learning from the Scheme implementation experience, an extensive consultative exercise with all implementing partners was made and Operational Guidelines (OGs) of PMFBY/RWBCIS were revised with effect from 1st October, 2018 from Rabi 2018-19 season and are available on the National Crop Insurance Portal i.e. <https://pmfby.gov.in/guidelines> for use of stakeholders under the scheme.

Though scheme and revised Operational Guidelines were made after detailed discussion with various stakeholders viz. farmers, States, insurance companies, financial institutions etc, some points/issues like voluntary coverage of non-loanee farmers, addressing challenges of delay in release of state premium subsidy and Crop Cutting data and leveraging technology for smooth implementation etc. were identified as critical issues in implementation of the scheme during the first eight seasons. Thereafter, after making detailed discussions, the PMFBY/RWBCIS has been revamped with the following changes to make the scheme more beneficial to farmers with effect from Kharif 2020:

- To address the demand of farmers, the scheme has been made voluntary for all farmers. However, there is no change in farmers' share of premium.

- The premium subsidy sharing pattern between Centre and North Eastern States has been changed from 50 : 50 to 90:10. This has been done to allow more States to notify the scheme and existing States to notify more crops and areas to facilitate greater coverage of farmers under the scheme. For the remaining States, the subsidy sharing pattern will continue as 50: 50.
- To address the issue of high premium rate for few crops/areas due to adverse selection, the requisite central share of premium subsidy (90 : 10 for North Eastern States and 50 : 50 for remaining States) will be provided for areas/crops having gross premium rate up to 25% for irrigated and up to 30% for un-irrigated areas/crops.
- States have to decide on these high-risk crops/areas. They can remove these crops from notification or notify these crops/areas and bear the entire subsidy over and above 25% for irrigated and 30% un-irrigated crops/areas. Central Govt. will share only up to 25% or 30% of applicable premium as the case may be.
- Besides, alternate risk mitigation measures will be explored for these high-risk areas/crops.
- Insurance companies will now be selected by the States for 3 years in a go instead of one year thereby increasing their commitment and accountability to the farmers.
- Option has been given to the States to choose the notional value of average yield or the Scale of Finance as sum insured in the interest of the farming community.
- In view of the demand of many States, option has been given to States to choose additional risk covers besides shortfall in yield-based cover depending upon the local weather challenges and requirements of the farmers.
- Insurance Companies to pay 12% interest to farmers for delaying claim payment beyond prescribed timelines. Similarly, penalty of 12% interest per month shall be levied on State Government if failing to release state share of premium subsidy within 3 months of requisition by concerned Insurance Company. States delaying the release of subsidy beyond stipulated timelines cannot participate in upcoming seasons.
- A two-step process of crop yield estimation using weather and satellite indicators etc. is adopted, which will help in early assessment of loss
- Use of smart sampling technique through satellite data for crop cutting experiments by some states has shown increased efficiency in implementation. This will now be universalized.
- The delay by some States in submission of crop yield data will now be suitably addressed using technological solutions.
- Provision has been made for earmarked administrative expenses @ 3% for strengthening infrastructure and technology for better delivery of the Scheme.

Working Group to examine Alternate Risk management Mechanism under Pradhan Mantri Fasal Bima Yojana has been constituted under the Chairpersonship of CEO, PMFBY consisting of Joint Secretary (Insurance), Department of Financial Services, Joint Secretary (Public Finance), Department of Expenditure, Principal Secretary (Agriculture), State Governments of Maharashtra, Madhya Pradesh, Rajasthan, Gujarat, Assam, Tamil Nadu, Uttar Pradesh & Odisha, CMD-Agriculture Insurance Company of India Ltd. (AICL), CMD-GIC Re, Representatives from IASRI & ISRO and Director-Mahalianobis National Crops Forecast Centre. Later, Department of Expenditure has expressed their inability to be a member in this Working Group. The first meeting of this Working Group has recently been held on 15.11.2021.

11.2.2 Restructured Weather Based Crop Insurance Scheme (RWBCIS)

With the objective to provide coverage for those crops for which there is no standard/approved methodology for assessment of yield and to overcome the shortcoming under erstwhile NAIS, a pilot Weather Based Crop Insurance Scheme (WBCIS) was launched in 20 States (as announced in the Union Budget 2007-08). However, WBCIS was implemented as a full-fledged component scheme of the National Crop Insurance Programme (NCIP) from Rabi 2013-14 season to Rabi 2015-16. WBCIS intends to provide insurance protection to the farmers against adverse weather incidence, such as deficit and excess rainfall, high or low temperature, humidity etc. which are deemed to impact crop production adversely. It has the advantage to settle claims within the shortest possible time. Under WBCIS, actuarial rates of premium were charged. The scheme has further been restructured on the basis of premium structure and administrative lines of PMFBY and is available in the country from Kharif 2016 as Restructured WBCIS.

Coverage of Women Farmers under PMFBY

All farmers whether sharecroppers, tenant farmers including women farmers growing crops in the areas notified by the concerned State/UT Government are eligible for coverage under the scheme and can insure themselves as per provisions of the scheme. The coverage under the scheme is subject to land records and tenancy contract. Further, the Scheme is demand driven. Since, the scheme has been made voluntary for participation, all farmers including woman farmers are eligible to enroll under the scheme. There are no specific extra benefits/provisions for women farmers under the scheme. However, the Government is bound to pay its share in premium subsidy for all the farmers including women who take up crop insurance.

The coverage of women farmers under PMFBY has remained consistent since inception of the scheme. Over the last three seasons mainly, Rabi 18-19, Kharif 18 and Kharif 19, out of the total coverage under the

scheme approximately 15%-16% women farmers were enrolled under the scheme every year. The State of Maharashtra has achieved maximum enrolment of women farmers, constituting almost 18%-19% of the State's total farmer coverage. Insured area owned by women farmers in the State of Maharashtra is the highest among all participating States since Kharif 18. Union Territories and North East States have recorded poor enrolment of women over the years.

There has been 0.7% increase in the enrolment of Loanee women farmers and a significant increase in the enrolment of Non-Loanee women farmers amounting to approximately 56% increase from Kharif 2018 to Kharif 2019 demonstrating favorable attitude among women farmers towards PMFBY.

In addition, it is also informed that no Audit Para is pending in Credit II Section.

Azaadika Amrit Mahotsav-India@75 campaign

With a view to contribute to commemorate 75 years of India's independence under "Azaadi ka Amrit Mahotsav-India@75" campaign, this department had planned to organize "Crop Insurance Week" or "FasalBimaSaptaah" during Kharif and Rabi enrolment season.

The first Crop Insurance Week was celebrated during the first week of July 2021 (1-7 July) for Kharif season. An extensive IEC campaign was conducted in all notified areas during the campaign in coordination with all Stakeholders viz. State Govt., Insurance Companies, Banks and CSCs etc. For providing special focus in the low enrolment areas, 75 districts having low penetration of the crop insurance were identified wherein preference was given to the aspirational districts. Dedicated campaigns with day-wise activities were planned and conducted in these identified locations. The virtual inauguration of the Crop Insurance Week was done by Hon'ble Agriculture Minister, Shri Narendra Singh Tomarji on 1st July 2021.

On similar lines the 2nd Crop Insurance Week was also celebrated from 1st Dec- 7th Dec 2021 to support ongoing IEC activities.

The key activities planned under Crop Insurance Week as under:

Activities by States/UTs:

- Address/Message from State Agriculture Minister to the farmers highlighting the benefits of PMFBY
- Audio-visual/ Radio – Spot campaign in regional channels/ Regional DDK/ AIR focusing on the key messages of PMFBY
- Half hour special programme on PMFBY by regional DD and AIR including bites/clips in news bulletins, coverage of various events organized by the State Govt.
- Press release in local language through local newspapers including success stories of beneficiary farmers
- Organize E-Kisansamvad with farmers through Facebook live or any other appropriate digital platform.
- Participation of District Magistrates/ Collectors and other officer bearers to flag off the IEC vans
- Organization of Village wise special campaign during the period in association with Agricultural Technology Management Agency(ATMA) functionaries, Panchayati Raj Institutions (PRIs), Food Processing Organisations (FPOs) and other farmers organizations etc. District Agriculture Officers & Block Agricultural Officers may be assigned to implement and supervise these campaigns.

- Special window for enrolment of farmers may be organized during the period with active participation of Banks, Primary Agricultural Credit Societies(PACS), CSC, Insurance Companies preferably nearer to the residence of farmers.

Activities by Insurance Companies:

- District/ Block/ Zila Panchayat/ Gram Panchayat level special programmes
- Display of banners/posters at Govt. Offices, Banks, PACS, CSCs, PRI, FPOs etc.
- Day-wise plan/schedule of the movement of IEC Vans in the block carrying messages on PMFBY with announcement and engaging farmers to clear their doubts
- Distribution of requisite number of publicity materials including pamphlets etc. to field offices of Govt. Offices, Banks, PACS, CSCs, PRI, FPOs etc.

Social Media Campaign:

- Tweeting and retweeting the various events which are organized at National level and the regional level, short clip/bites of the beneficiary farmers, dedicated hashtags and infographics and tweets by influencers, including social media posts/tweets of Hon'ble PM, Union Ministers, Hon'ble Governors, Chief Ministers, other ministers, and dignitaries.
- Use of hashtags #CropInsurance Week, #Amrit Mahotsav, # IndiaAt75, # फसल बीमा सप्ताह अमृतमहोत्सव # PMFBY in each social media post.

Chapter-12

AGRICULTURAL CREDIT

Overview

12.1 The Government has taken many policy initiatives for strengthening of farm credit delivery system for providing credit at lower rates of interest to support the resource requirements of the agricultural sector. The emphasis of these policies has been on providing timely and adequate credit support to farmers with particular focus on small and marginal farmers and weaker sections of society to enable them to adopt modern technology and improved agricultural practices for increasing agricultural production and productivity. The policy essentially lays emphasis on augmenting credit flow at the ground level through credit planning, adoption of region specific strategies and rationalization of lending policies and procedures and bringing down the rate of interest on farm loan.

12.2 Policy initiatives for increasing the flow of credit

The Government has initiated several measures to galvanize the institutional credit system to make them more responsive to the needs of farmers. Some of the important measures initiated in this regard are as under:-

12.2.1 Agriculture Credit: Target and Achievement

Government sets target for agricultural credit flow every year, which has increased consistently over the years and it reached Rs.18,63,363 crore against the target of Rs. 16,50,000 crore during 2021-22. Target for the year 2022-23 has been fixed at Rs.18,50,000 crore.

12.2.2 Modified Interest Subvention Scheme

The Interest Subvention Scheme (ISS) was launched in the year 2006-07 with a view to provide concessional short term crop loans including loan availed through Kisan Credit Card (KCC) to the

farmers. The scheme has been renamed as Modified Interest Subvention Scheme (MISS) from the scheme year 2021-22.

MISS is available to farmers availing short term agri loans upto Rs.3.00 lakh at an interest rate of 7% per annum for one year. The short term agri loans include crop Husbandry, Animal Husbandry, Dairying and Fisheries. Additional 3% subvention is also given to the farmers for prompt and timely repayment of loans; the same gets reduced to 4% per annum. The benefits of MISS can be availed by farmers in allied activities like Animal Husbandry and Fisheries and who already possess KCC within the overall limit of Rs.3.00 lakh. New KCC can be issued to Animal Husbandry and Fisheries farmers with provision of benefit of IS & PRI for loan amount upto Rs.2.00 lakh per annum. Interest subvention and prompt repayment incentive on restructured crop loans to farmers affected by severe natural calamities for a maximum period of 5 years on the basis of report of Inter-Ministerial Central Team (IMCT) for grant of NDRF assistance and Sub-Committee of National Executive Committee (SC-NEC) is also available. Further IS is available to Small and Marginal Farmers (SMFs) having Kisan Credit Card (KCC) on post harvest loans against Negotiable Warehouse Receipts (NWRs) i.e. at the same rates as applicable to crop loans for a period of up to six months post harvest.

During the financial year 2021-22, the Department released a sum of Rs. 21,476.933 crore to the implementing agencies i.e. Reserve Bank of India (RBI) / National Bank for Agriculture and Rural development (NABARD), as subsidy under Interest Subvention Scheme. The Government has allocated a sum of Rs. 19,500 crore for the current financial year for interest subsidy under the scheme. Out of the current year budget, an amount of Rs. 12404.61 crore has been released to RBI/NABARD under the scheme. Details of funds released during the last five years and current financial year are as under:

(Rs. in Crore)

2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
13,045.72	11,495.67	16,218.75	17,789.72	21,476.933	12,664.94*

*As on 15.02.2023

12.2.3 Kisan Credit Card Scheme (KCC)

KCC was introduced in 1998 to provide timely credit to farmers to meet short term/long term cultivation requirement, postharvest expenses, consumption requirement etc. KCC is implemented by Commercial Banks, Cooperative Banks and Rural Regional Banks (RRBs) under the overall guidance of Department of Financial Services. Reserve Bank of India had issued master circular on implementation of KCC scheme followed by more instructions from time to time.

This Ministry is actively involved in the promotion of KCC scheme with a view to provide easy access to concessional institutional credit to farmers. Several steps have been taken to simplify the procedure to have access to KCC. The KCC scheme along with the benefit of IS & PRI have been extended to farmers practicing animal husbandry and fisheries. Processing fee, inspection, ledger folio charges and all other service charges have been waived off for

fresh issue/renewal of KCC. Collateral free agriculture loan limit has been raised from Rs.1.00 lakh to Rs.1.60 lakh. Standardised application form for KCC has been designed for easy understanding of farmers and a time limit of 14 days (from receipt of farmer's application) has been fixed to provide KCC to all eligible farmers.

To bring the maximum number of farmers under KCC so that they can get loan at a cheaper rate through the MISS scheme, the Government has been running a campaign for saturation of KCC to farmers since, February, 2019. The Govt (DA&FW and DFS) has further taken up the task of covering 2.5 crore farmers under KCC in a mission mode. Since February, 2020, a renewed saturation drive is being run to cover eligible and willing farmers with special focus on PM KISAN beneficiaries. As a result, as on 03.02.2023, 396.08 lakh new KCC applications have been sanctioned with a sanctioned credit limit of Rs. 4,63,782 crore as part of the drive.

Chapter-13

AGRICULTURAL MARKETING

13.1. Overview

The Government has been playing a pivotal role in developing Agriculture Marketing system in the country. Agricultural Marketing Division of Department of Agriculture & Farmers' Welfare (DA&FW) is entrusted to look after a gamut of issues relating to agricultural marketing, starting from conceptualization and formulation of farmers oriented policies and programmes to effective monitoring thereof for proper and efficient implementation.

Agriculture sector needs structured and functional markets, preferably in the vicinity of farmers, to drive growth, employment, remunerative prices and economic prosperity in rural areas of the country. Enabling mechanism are also required to be put in place for procurement of agricultural commodities directly from farmers' field and to establish effective linkage between the farm production, the retail chain and food processing industries. In order to remove restrictive and monopolistic practices of present marketing system, reduce the intermediaries in supply chain, reduce wastages by way of promoting integrated supply and value chain and to benefit farmers through access to global markets, reforms in agricultural markets have to be perceived as an ongoing process. Agriculture sector needs competitive and well- functioning markets for farmers to sell their produce. There is a need to enhance private sector investment in development of post- harvest marketing infrastructure for which various schemes are also implemented by Govt. of India.

13.2 Major Schemes

Major schemes of Agri. Marketing Division consist of Integrated Scheme for Agricultural Marketing (ISAM) and Central Sector Scheme for Formation & Promotion of new 10,000 FPOs.

ISAM consists of 05 sub-schemes viz. Agricultural Marketing Infrastructure (AMI), National Agriculture Market (e-NAM), Marketing Research and Information Network (MRIN), Strengthening of Agmark Grading Facilities (SAGF), CCS-National Institute of Agricultural Marketing (CCS NIAM)

13.3 Implementation structures and stakeholders

The sub schemes under ISAM namely Agricultural Marketing Infrastructure (AMI), Marketing Research and Information Network (MRIN) and Strengthening of Agmark Grading Facilities (SAGF) is implemented by the Directorate of Marketing & Inspection (DMI), an attached office of Department of Agriculture and Farmers Welfare. Small Farmers Agri-business Consortium (SFAC) implements the sub scheme of e-NAM. CCS National Institute of Agricultural Marketing (CCS-NIAM), provides training, research and consultancy in agri-marketing sector.

Central Sector Scheme for Formation & Promotion of new 10,000 FPOs scheme is implemented through various Implementing Agencies. Presently following Implementing Agencies (IAs) have been allocated 10,000 FPOs produce clusters viz. Small Farmers Agri-Business Consortium (SFAC), National Cooperative Development Corporation (NCDC), National Bank for Agriculture and Rural Development (NABARD), National Agricultural Cooperative Marketing Federation of India (NAFED), North Eastern Regional Agricultural Marketing Corporation Limited (NERAMAC), Tamil Nadu-Small Farmers Agri-Business Consortium (TN-SFAC), Small Farmers Agri-Business Consortium Haryana (SFACH), Watershed Development Department (WDD)- Karnataka & Foundation for Development of Rural Value Chains (FDRVC)- Ministry of Rural Development (MoRD), Gujarat Agro-Industries Corporation Ltd.(GAICL), Uttar Pradesh Diversified Agriculture Support Project(UPDASP), National

Dairy Development Board(NDDDB) for beekeepers & Fodder FPOs, TRIFED & Central Agricultural University(CAU), Imphal.

13.4 Integrated Scheme for Agricultural Marketing (ISAM):

13.4.1 Agricultural Marketing Infrastructure (AMI):

To develop Agricultural Marketing Infrastructure including storage infrastructure, Ministry of Agriculture & Farmers Welfare is implementing capital investment subsidy sub-scheme "Agricultural Marketing Infrastructure (AMI)" of Integrated Scheme for Agricultural Marketing (ISAM). The erstwhile two schemes viz. (i) Grameen Bhandaran Yojana (GBY) implemented since 01.04.2001, and (ii) Scheme for Strengthening/ Development of Agricultural Marketing Infrastructure, Grading & Standardization (AMIGS) implemented since 20.10.2004 have been subsumed into one scheme known as Agricultural Marketing Infrastructure (AMI) w.e.f. 01.04.2014.

The AMI sub-scheme of ISAM was sanctioned for the XII plan Period (2012- 17). The scheme had been stopped after 05.08.2014 for new projects of General category and after 31.12.2016 for new projects of SC/ST/NER category.

The new operational guidelines 2018 of AMI sub-scheme of ISAM effective from 22.10.2018 has been continued/extended for a period till 31st March, 2021 or the date the recommendations of 15th Finance Commission come into effect, with the following objectives:

- I. To develop marketing infrastructure to effectively handle and manage marketable surpluses of agricultural and allied produce including horticulture livestock, poultry, fishery, bamboo, minor forest produce and such like produce supportive to enhance farmers' income.
- II. To promote innovative and latest technologies in post-harvest and agricultural marketing infrastructure.
- III. To develop alternative & competitive

marketing channels for agricultural and allied produce through incentivizing private and cooperative sectors to make investments therefor.

- IV. To benefit the farmers individually and collectively through FPOs from farm level processing and marketing of processed produce along with promotion of small size processing units.
- V. To promote creation of scientific storage capacity for storing farm produce, processed farm produce and agricultural inputs etc. to reduce post-harvest & handling losses, promote pledge financing and market access.
- VI. To incentivize developing and upgrading of Gramin Haats as GrAMs to make better farmer-consumer market linkages and also to assist in integration of GrAMs with e-NAM portal so as to improve transparency in trading and better price discovery.
- VII. To provide infrastructure facilities for grading, standardization and quality certification of agricultural and allied produce with the objectives of (a) ensuring produce quality based value realization to farmers, and (b) promoting pledge financing, e-NWRS and futures trading.
- VIII. To promote Integrated Value Chains through minimal processing/value addition to make the produce more marketable, which includes washing, sorting, cleaning, grading, waxing, ripening, packaging, labeling etc., wherein the product form is not changed.
- IX. To undertake publicity and awareness campaign among the stakeholders including farmers, agri.preneurs, market functionaries of sub-scheme and on other various aspects and functions of agricultural marketing including grading, standardization, quality certification, regulation, reforms, e-trading, promoting farmers facilitation centre for

market information & intelligence by FPOs etc.

Brief of the scheme

- a) Under the AMI sub-scheme, there are two components: (i) Storage Infrastructure, and (ii) Marketing Infrastructure other than storage. The main objective of the scheme is to promote development of agricultural marketing infrastructure including storage infrastructure in the country. The scheme is meant for holistic development of agricultural value chain critically focusing each linkage of post-harvest value chain. AMI sub scheme is a back ended capital subsidy scheme and subsidy provided on capital cost of the project to develop agricultural marketing infrastructure and storage infrastructure including Infrastructure for development/upgradation to Rural Haats as Gramin Agricultural Market (GrAMs), common facilitation centre for FPOs, marketing infrastructures in market yards, infrastructure for direct marketing, mobile infrastructure for post-harvest operations including reefer vans, Stand-alone cold storages up to 1000 MTs, Integrated Value Chain (IVC) Projects up to primary processing stage etc.
- b) The scheme is demand driven, credit linked with provision of back- ended subsidy. The scheme is also reform linked for non-storage infrastructure projects of State/UT agencies and allowed under the scheme for those States/Union Territories that have undertaken following reforms in their respective APMC Acts (i) direct marketing; (ii) contract farming; (iii) setting up of wholesale market for agricultural and allied produce in private and

cooperative sector, (iv) e-trading; (v) unified single trading license valid across the State/UT, and (vi) single point levy of market fee across the State/UT.

- c) The provisions with admissible rate of subsidy, subsidy pattern etc under revised operational guidelines of the scheme are as follows:

Eligible Beneficiaries under the Scheme:

- Individuals, Group of farmers / growers, FPOs/FPCs registered under respective companies Act/cooperatives societies Act/societies registration Act (with minimum 50 number of farmer members); Partnership/ Proprietary firms, Companies, Corporations; Non-Government Organization (NGO), Self Help Group (SHG); Cooperatives, Cooperative Marketing Federation; Autonomous Bodies of the Government, Local Bodies, Panchayat, State agencies including State Government Departments and autonomous organization / State owned corporations such as Agricultural Produce Market Committees & Marketing Boards, State Warehousing Corporations, State Civil Supplies Corporations etc.
- Subsidy pattern under the Scheme including Women farmers and entrepreneurs are as follows:
- AMI Scheme is a back ended capital subsidy scheme in which the rate of subsidy varies from 25% to 33.33% based on the category of eligible beneficiary and provided on the capital cost of the project.

However in respect of women farmers/ entrepreneurs irrespective of the category, the rate of subsidy admissible is 33.33%. The detail of subsidy pattern is as under:

FOR STORAGE INFRASTRUCTURE PROJECTS:

Category	Rate of Subsidy (on capital cost)	Subsidy ceiling		
		50-1000 MT in Rs./MT	More than 1000 MT and up to 10,000 in Rs./MT	Maximum Ceiling (Rs. in lakhs)
A. North Eastern States,	33.33%	1333.20	1333.20	133.20

Sikkim, UTs of Andaman Nicobar and Lakshdweep Islands, Hilly* areas				
B. In other Areas				
1. Panchayats, Women, Scheduled Caste (SC)/ Scheduled Tribe (ST) entrepreneurs or their cooperatives**/ Self-help groups	33.33%	1166.55	1000.00	100.00
2. For all Other categories of beneficiaries	25%	875/-	750/-	75.00

* Hilly area is a place at an altitude of more than 1,000 meters above mean sea level

** SC/ST Cooperatives to be certified by the concerned officer of the State Government

FOR INFRASTRUCTURE PROJECTS OTHER THAN STORAGE (NON- STORAGE) INFRASTRUCTURE INCLUDING FARMER-CONSUMERS MARKET AND DEVELOPMENT AND UPGRADATION OF RURAL HAATS/RPMs into GrAMs

Category	Rate of Subsidy (on capital cost)	Maximum Subsidy Ceiling (Rs. in lakhs)
A) North Eastern States, Sikkim, States of Uttarakhand, Himachal Pradesh, Jammu & Kashmir, UTs of Andaman & Nicobar and Lakshadweep Islands, Hilly* and tribal areas	33.33%	30.00
B) In Other Areas		
1. For Registered FPOs, Panchayati Raj Institutions, Women farmers/ entrepreneurs, Scheduled Caste(SC)/ Scheduled Tribe (ST) entrepreneurs and their cooperatives**	33.33%	30.00
2. For all other categories of beneficiaries	25%	25.00

* Hilly area is a place at an altitude of more than 1,000 meters above mean sea level

** SC/ST Cooperatives to be certified by the concerned officer of the State Government

Mini Oil expeller for extraction of edible vegetable oil (as per FSSAI but without refining) from indigenous oilseeds (viz. Mustard seed, Sesame seed, Ground nut, Linseed, Mahua, Safflower, Nigerseed Oil, Coconut, Almond and Olive only) and Mini Dal mill for primary processing of pulses,

which includes cleaning, grading, sorting, splitting, packaging and labelling for promoting direct marketing, are also eligible.

Infrastructure for setting up of common facilitation centre by FPOs/FPCs is eligible under the scheme.

Further, infrastructure projects other than storage (non-storage) Infrastructure including farmer-consumers market and development and upgradation of rural haats/RPMs into GrAMs) are also eligible under the scheme.

The detailed Operational Guidelines 2018 is available at <https://dmi.gov.in/Schemeamigs.aspx>

13.4.2 National Agriculture Market (e-NAM)

i) Ministry of Agriculture & Farmers' Welfare, Department of Agriculture & Farmers' Welfare (DA&FW), has mandated Small Farmers' Agribusiness Consortium (SFAC) as the Lead Implementing Agency of e-National Agriculture Market (e-NAM).

National Agriculture Market is a pan-India electronic trading (e-trading) portal which seeks to network the existing physical APMCs through a virtual platform to create a unified national market for agricultural commodities. e-NAM is a "virtual" market, but it has a physical market (mandi) at the back end. The Portal provides a single window service for all APMC related information and services. This includes: commodity arrivals, quality & prices, buy & sell offers, provision to respond to trade offers and electronic payment settlement directly into farmers' account, among other services. While material flow (agricultural produce) shall continue to happen through mandis, the online marketing portal will reduce transaction costs, bridge information asymmetry and help in expanding the market access for farmers.

ii) Scheme Design:

Under the scheme a robust common e-market platform has been set up and deployed in 1000 regulated wholesale markets in 18 States & 03 Union Territories by May 2020.

Department of Agriculture & Farmers Welfare grants onetime fixed cost subject to the ceiling of Rs.75.00 lakhs per mandi for related equipments / infrastructures. Initially Rs. 30.00 lakhs per mandi was allotted as onetime fixed grant for computer hardwares, internet facilities, assaying equipments. While, additional Rs.40.00 lakhs per mandi was

sanctioned for creation of facilities such as sorting, grading, cleaning and packaging etc further for bio-composting unit per mandi Rs.5.00 lakhs were allocated.

Besides providing free software to trade on e-NAM platform, one-year ground support for hand holding of the mandi staff is provided. In addition, two trainings & awareness camps are organised for the benefit of farmers, Farmer Producer Organisations, traders, commission agents & mandi officials by the Strategic Partner.

iii) Marketing Reforms Mandatory for Joining e-NAM:

e-NAM mandates 3 reforms in State APMC act as a pre-requisite for joining the scheme:

- i. Provision for e-auction/e-trading as a mode of price discovery;
- ii. Single point levy of market fee across the state; and
- iii. Single trading license to be valid across the state.

iv) Objectives of e-NAM:

Main objectives of the scheme are:

- i. To integrate markets first at the level of the States and eventually across the country through a common online market platform, to facilitate pan - India trade in agricultural commodities;
- ii. To streamline marketing / transaction procedures and make them uniform across all markets to promote efficient functioning of the markets;
- iii. To promote better marketing opportunities for farmers / sellers through online access to more buyers / markets, removal of information asymmetry between farmer and trader, better and real-time price discovery based on actual demand and supply of agri-commodities;
- iv. To establish quality assaying systems for

quality assurance to promote informed bidding by buyers; and

- v. To promote stable prices and availability of quality produce to consumers

v) Benefits to Farmers:

- i. Farmers can access prevailing commodity prices information on e-NAM mobile application prior to even going to mandi.
- ii. e-NAM facilitates direct trade between buyers/ traders and farmers across the country.
- iii. Farmers may sell their produce in more than one market.

- iv. Facility of pre-registration of lot is available through mobile app., to facilitate quick gate entry of the lot, benefiting during peak season.

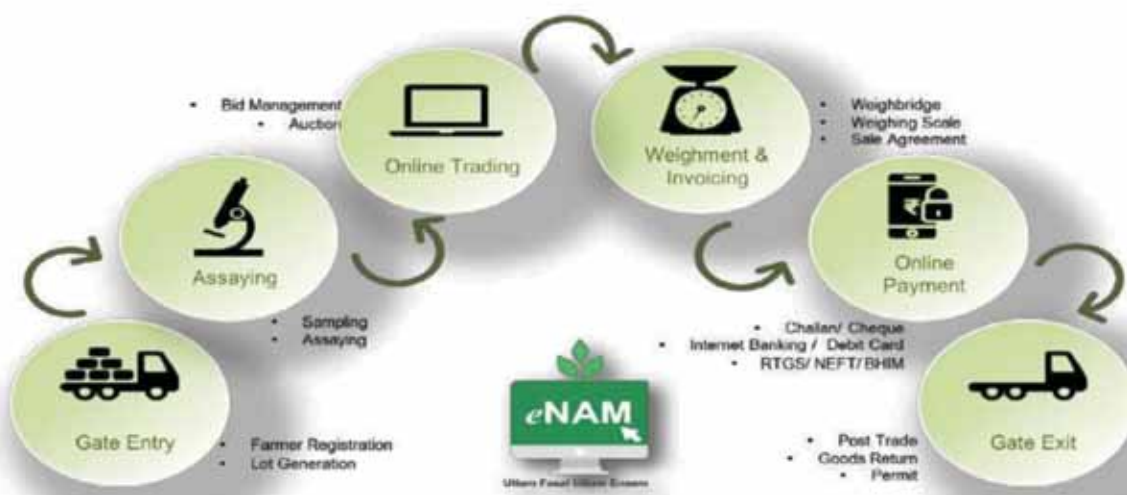
- v. Farmers can see live online bid for their produce (lots) through e-NAM mobile application.

- vi. Details of final bid price of commodity to farmers are received through SMS.

- vii. Prices are determined based on quality assayed parameters.

Online payment gateway is available for transfer of bid value directly to bank accounts of farmers.

vi) e-NAM Process Flow



vii) e-NAM coverage

S. No	State/ UT	Mandis Integrated
States		
1	Andhra Pradesh	33
2	Bihar	20
3	Chhattisgarh	14
4	Goa	7
5	Gujarat	122

6	Haryana	108
7	Himachal Pradesh	26
8	Jharkhand	19
9	Karnataka	2
10	Kerala	6
11	Madhya Pradesh	136
12	Maharashtra	118
13	Nagaland	7
14	Odisha	54
15	Punjab	79
16	Rajasthan	145
17	Tamil Nadu	127
18	Telangana	57
19	Tripura	7
20	Uttar Pradesh	125
21	Uttarakhand	16
22	West Bengal	18
Union Territory (UT)		
23	Chandigarh	1
24	J&K	11
25	Puducherry	2
TOTAL		1260

viii) Key Features of e-NAM

1. Multilingual website and mobile app:

e-NAM Website and Mobile App are multilingual i.e. are available in 12 languages (English, Hindi, Bengali, Marathi, Gujarati, Tamil, Telugu, Punjabi, Odiya, Dogri, Malayalam and Kannada).

2. Mobile application:

Mobile app of e-NAM is available for Android and iOS and can be downloaded from Google Play Store (play.google.com) and Apple Store, respectively.

Facilities to Farmers on Mobile Application are:

- Multilingual (12 languages)
- Locate Mandis in nearby vicinity (100 km) along with route map
- Price information of nearby e-NAM mandis & non-eNAM mandis

- Advance Gate Entry
- Lot Progress Tracking
- Sampling and Assaying Facility
- Online Payment Facility-RTGS/NEFT, UPI, Debit Card and Net Banking
- SMS Alert regarding Registration, Update of mobile number, Final Bid Price acceptance, Sale Agreement & Receipt of Payment.

3. Shopping Cart Feature:

This feature enables a trader to choose preferred lots from the displayed list of lots available for auction. Once added using 'Add to Shopping Cart', the trader can bid on these selected lots easily and save time.

4. Unified Licensing System or Intra-State Trade

This feature has been created for traders to apply for intra-state trade license via e-

NAM and complete necessary documentary compliance.

5. Online Payment

e-NAM facilitates direct online payment from traders to farmers/FPOs. Online payment can be done by the trader through multiple modes i.e., Challan (RTGS/NEFT), UPI, Debit Card and Internet Banking. The payment is then directly remitted into the bank account of the farmer via NEFT/RTGS/IFT.

6. Bunching of Multiple Invoices

This feature enables the trader to make online payment of multiple invoices with a single payment transaction.

7. Online Part Payment Feature

Online Part Payment of invoice enables a trader to help the farmer in case of any immediate cash needs by allowing part cash and part online payment to farmer. This feature provides option of making Partial Online Payment with Mandi Fee or without Mandi Fee.

8. e-payment Incentives/discounts

To incentivize adoption of e-payment, various State Governments may propose incentives/discounts on digital transactions. e-NAM application allows for configuration of such discounts/ incentives via application administrator of the State login.

9. MIS Dashboard

MIS Dashboard provides insight into the performance of each mandi in terms of arrival and trade. This helps the Mandi Board officials, State level officers to compare the performance of trade carried out in the mandis on daily, weekly, monthly/quarterly and 'Year on Year' Basis.

10. Grievance Redressal Management System (GRMS):

This system helps Mandi Secretary to raise their software/technology issues related to portal/ software and its operations. It also

enables tracking the status of grievance and its redressal online. Further, a toll-free number: 1800 270 0224 is also available for all stakeholders to address complaints and queries regarding e-NAM.

11. FPO & Farmgate Module:

FPO can directly sell their produce from collection centers by uploading produce details with picture/quality parameters online, without the need to physically bring the produce to the mandis, provided the collection center is declared as "deemed mandi" by respective State Govt. / UT. Farmgate module facilitates the farmers to upload lot- wise details of their produce with picture/quality parameters and avail the bidding facility for trade on e-NAM, without the need to physically bring the produce to the mandis.

12. Logistic Module:

Logistic module of e-NAM enables logistics service providers to create their profile with details including Name of the company, area of service, number of vehicles available, base rate etc. Logistics module is currently available in the trader's dashboard enabling them to choose and finalise logistics for movement of their produce.

13. Integration of eNWR with e-NAM

Warehousing Development and Regulatory Authority (WDRA) accredited ware houses have been integrated with e-NAM for trade of Electronic Negotiable Warehouse (eNWR). eNWR issued for deposited stock by farmers at WDRA accredited warehouse is translated to e-NAM as tradable "lot". The WDRA registered warehouses are listed as 'notified market area' or 'deemed mandi' hence, Farmers do not have to bring the produce at mandi physically.

14. Interoperability between e-NAM and UMP (ReMS)

Interoperability with UMP plat form of Re

MS (Karnataka) has been done to establish SSO (Single Sign-On) between e-NAM and ReMS (UMP). This enables the traders of both platforms to access more markets and commodities. Traders with respective login credentials can freely navigate to the other platform, without the need for separate login credentials for the other platform.

ix) Onboarding Farmer Producer Organization (FPO) on e-NAM Platform:

As on 31.12.2022, total 2389 FPOs have been on boarded on e-NAM platform from 22 States/UTs.

The State-wise list of the FPOs registered on e-NAM is as under:

S.No.	State/UT	No. of FPOs
1	Andhra Pradesh	191
2	Bihar	1
3	Chandigarh	0
4	Chhattisgarh	23
5	Gujarat	129
6	Haryana	244
7	Himachal Pradesh	72
8	Jammu & Kashmir	13
9	Jharkhand	144
10	Karnataka	13
11	Kerala	7
12	Madhya Pradesh	109
13	Maharashtra	277
14	Odisha	248
15	Puducherry	3
16	Punjab	13
17	Rajasthan	223
18	Tamil Nadu	109
19	Telangana	75
20	Uttar Pradesh	279
21	Uttarakhand	45
22	West Bengal	171
Total		2389

x) Progress and Achievements of e-NAM Modules launched:

a) **e-NAM Platform of Platforms** – e-NAM Platform of Platforms (PoP) was launched on 14th August 2022 by Hon'ble Union Minister of Agriculture & Farmers Welfare, during State Agriculture & Horticulture ministers meet at Bengaluru, Karnataka. Platform of Platforms (PoP) is a new framework developed under e-NAM ecosystem which aims to integrate various Service Provider Platform like Trading, Assaying, Transportation, Warehousing, Fintech, Market Information, Sorting and Grading, Agri Input & Advisory Services, which will enable Farmers, FPO, Traders, and other stakeholders to access larger market ecosystem through a single window.

b) **Coffee Table Book** - It was launched on 14th August 2022 by Hon'ble Union Minister of Agriculture & Farmers Welfare, during State Agriculture & Horticulture ministers meet at Bengaluru, Karnataka. The Coffee Table Book (CTB) exhibits the attempt and journey of e-NAM in bringing transparency and efficiency in trading of agricultural produce in India through innovation and technology.

c) **e-NAM Blog** – A blog page has been created on e-NAM website to showcase achievements, news clips and events related to marketing and promotion of e-NAM.

d) IMD eather Forecast for Mandis

Integration of Weather forecast information from Indian Meteorological Department (IMD) with e-NAM, providing minimum & maximum temperatures along with “current day” forecast for e-NAM mandis and nearby areas. This weather information will help farmers in planning farm operations and marketing decisions.

e) Real Time Price Dissemination System

'Market Information Page' designed as a single source of information providing farmers with the current price of the commodities being

traded in e-NAM mandis of the respective states.

f) Cooperative Module

Cooperative Trading module facilitates Cooperatives to register themselves on eNAM and to trade their produce directly from their collection centre/warehouses without bringing the produce to the APMCs.

g) e-NAM Directory

A directory with compiled information on eNAM processes and respective mandi information.

13.4.3 Marketing Research & Information Network (MRIN)

Under the MRIN scheme an e-Governance portal has been developed for connecting the farmers to their markets "It is advantageous to have a network down to the mandi level to begin with. This can be progressively extended to villages and household level. Presently, electronic connectivity provided to 3356 markets in the country. More than 300 commodities and 2000 varieties are reported on daily basis on agmarknet portal. However, more than 300 commodities and 2000 varieties are reported on daily basis on AGMARKNET Portal. This is one of the largest Market Information System in the world and having richest data base available.

Objective:

- To establish a nation-wide information network for speedy collection and dissemination of market information.
- To facilitate collection and dissemination of information for better price realization by the farmers.
- To sensitize and orient farmers to respond to new challenges in agricultural marketing by using Information and Communication Technology (ICT).
- To improve efficiency in agricultural marketing through regular training and extension for reaching region-specific farmers in their own language.

- Linking of all important agricultural markets of the country.
- Daily prices and arrivals of more than 300 commodities and 2000 varieties are reported on the portal.

Assistance under the Scheme:-

- Provision of financial support for organizing training, research, awareness and sensitization campaign to state govt. organization.
- Provision of financial incentive @Rs.1000/- per month to the marketing personnel for uploading data in the portal for more than 20 days in a month.

Dissemination of Mandi Information:

Latest mandi price information is disseminated from the Agmarknet portal through Agmarknet portal (<http://agmarknet.gov.in>), Kisan Suvidha App, UMANG App, DD Kisan Channel, Kisan Call Center etc.

13.4.4. Strengthening of Agmark Grading Facilities (SAGF):

- a) Quality Control Division (QC Division) of Directorate of Marketing & Inspection (DMI) implements Agricultural Produce (Grading and Marking) Act, 1937 (as amended up to 1986) and other provisions as mandated by Food Safety Standards Regulations 2011 under Food Safety and Standards Act 2006. The agricultural produce are certified under AGMARK if they conform to grade standards under Agricultural Produce (Grading Marking) Act, 1937, General Grading and Marking Rules, 1988 (as amended up to 2009) and specific commodity Rules notified by DMI, Department of Agriculture, Cooperation and Farmers Welfare, Ministry of Agriculture & Farmers Welfare. These standards differentiate between quality and 2-3 grades are prescribed for each commodity. Agmark standards for 231 agricultural commodities have been notified so far under the provisions of the APGM Act 1937 with an aim to provide premium quality products to the consumers, graded raw

materials to processor/ manufacturers/ packers and remunerative prices to the farmers. These 231 agri-commodities includes Food grains & allied products, Fruits & Vegetables, Spices & Condiments, Edible Nuts, Oil Seeds, Vegetable Oils & Fats, Oil Cakes, Essential Oils, Fiber Crops, Livestock, Dairy & Poultry products & other products, like Honey, Dates, Lac, Tobacco, Jaggery, Tamarind, Tapioca Sago, Amla Dried, Forest produce, etc.

b) Mandatory Agmark certification: Food Safety and Standards (Prohibition and Restriction on Sale) Regulations 2011 & Food Safety and Standards (Packaging and Labelling) Regulations, 2011 have prescribed compulsory Agmark certification for two (2) food products i.e. Multi Source Edible Oil/Blended Edible Vegetable Oil and Fat Spread.

c) Export: European Union has notified vide commission regulation No 1580/2007 dated 21 December 2007, Agricultural Marketing Adviser to the Government of India as Official Authority and DMI as Inspection Body for checks on conformity of fresh fruits and vegetables for export to Europe from India. In line to that Directorate General of Foreign Trade (DGFT) has notified DMI as inspection and certification body for exports of fruits and vegetables to EU countries. DMI has approved 16 private commercial labs to issue Certificate of Agmark Grading (CAG) for fruits and vegetables (Green chillies, Curry leaves, Okra, Grapes, Pomegranate and Onions etc) for export.

d) Implementation & Monitoring: The Agmark certification scheme is implemented by 11 Regional Offices, 27 Sub Offices, 11 Regional Agmark Laboratories (RALs) and a Central Agmark Laboratory (CAL) out of which 10 RALs and apex Lab i.e. CAL have been accredited with the National Accreditation Board for testing and Calibration Laboratories (NABL) following International Standard ISO 17025. RALs Chennai, Kanpur, Kochi and Mumbai have been strengthened with Gas Chromatography equipment each.

e) Agmark online certification: In order to fulfil Hon'ble Prime Minister's Digital India dream, the application/approval processes related to Agmark certification was envisaged to make online and user friendly from offline mode. The software requirement specification (SRS) was prepared to bring physical processes to online mode with several modules. While developing the online software, the application forms were appropriately reoriented to make online filing process simple, fast, transparent, 24x7 and paperless with a facility to upload scanned /PDF documents. There is a provision of online receipt of fees and e-signing at relevant stages in new online application. On 26.09.2018, the then Hon'ble Union Minister of Agriculture and Farmers Welfare Shri Radha Mohan Singh has launched the online software on agmark online. dmi.gov.in web portal for Agmark Certification.

- The software sends SMS/ emails to the applicants/officers/users at relevant stages. Through the Agmark online system, certificate of authorisation (domestic), permission of printing press, permission of laboratories (domestic) and services related to laboratory information management system are provided online.

In compliance of the policy of Government to minimize the regulatory compliances and for ease of doing business, to minimize burden on industry and to minimize human interface, AGMARK certification procedure has been simplified and all the action points/activities identified for simplification in Phase-I (9 items) and Phase-II (7 items) have been completed in due time. Major Identified and completed activities are:

1. Renewal of Certificate of Authorization, Printing Press permission and Commercial lab-filing of application: Only intimation to DMI offices for intention to continue required.
2. Printing Presses and Commercial Laboratory (domestic) approval/ renewal Approval/ Renewal with validity for 5 years earlier it

was for 2 years.

3. Inspection of labs for approval for domestic /export grading required: No Inspection is required if the lab is NABL accredited/ISO certified.
4. Requirement of grading minimum quantity during validity period of CA for renewal of CA under Agmark is dispensed with.
5. Training of sponsored Chemists of CA holders / commercial laboratories was provided in physical mode which now changed into online mode.
6. Self generation of Agmark replica serial numbers by CA holder instead of numbers issued by DMI: Present physical system changed in to Online Self generation model by C.A. holders themselves through AQCMS software.
7. Sponsored Agmark chemists having degree with 03 years experience in requisite field be exempted from Agmark training, earlier No such provision was existed.
8. Unique number for each CA holder in Replica serial numbers: Running replica serial numbers are more than 15 digits which are issued to CA holders by the concerned DMI office on the request of the CA holders: Provision made in AQCMS software for Online self generation of Replica Serial Number by CA holders themselves in which first 4 digits are unique to each CA holders.

13.4.5 CCS National Institute of Agricultural Marketing (CSS NIAM)

Introduction

Chaudhary Charan Singh National Institute of Agricultural Marketing (CCS NIAM) is an autonomous organization of the Ministry of Agriculture and Farmers' Welfare, Government of India. It was set up as a registered Society in 1988 to strengthen Agricultural Marketing in India and South East Asian Countries. The Institute is

mandated to carry out academic activities i.e. Training, Research, Consultancy, Policy Advocacy, International Programs and Education in Agricultural Marketing.

The Institute is playing a pivotal role in creating awareness amongst farmers, farmers' organizations, cooperatives, Agri-Business companies, Agri-Startups, Agripreneurs, officials of Agricultural Marketing Departments, allied Departments, building capacity of wide range of other stakeholders, undertaking research on contemporary Agricultural Marketing issues, providing consultancy services to decision makers in government, cooperative and private sectors on Agricultural Marketing, policy support to the Government and Non-Governmental Organizations and preparing techno- managers to serve Agri-Business sector through education Programs.

Hon'ble Union Minister for Agriculture and Farmers' Welfare, GoI is the President of the Society. Hon'ble Minister of State for Agriculture and Farmers' Welfare, GoI who is dealing with the society is the Vice-President of the Society Secretary, Department of Agriculture and Farmers' Welfare, GoI is the Chairman of Executive Committee. Standing Committee of Academics of CCS NIAM guides the academic activities of the Institute. Director General of CCS NIAM is the Chairman of the Committee.

Objectives of CCS NIAM

- ❖ To undertake and promote the study of Applied and Operational research in problem areas of Agricultural Marketing and to act as a national level nodal point for co-ordination of various research studies and dissemination of technologies relevant to Agricultural Marketing in the country.
- ❖ To impart training to personnel working at various levels of organizations involved in Agricultural Marketing activities such as State Agricultural Marketing Boards (SAMB), State Development Departments like Agriculture, Horticulture, Animal Husbandry, Fisheries, Forestry, Sericulture,

State Agricultural Universities, Co-operative Marketing Societies, Commodity Boards, Input Agencies, Progressive Farmers and Entrepreneurs etc.

- ❖ To conduct research on long-term projects, policy formulation; prepare status paper on leading issues; case studies in specific marketing problems, processing industries, export management etc., which have a direct bearing on the national economy.
- ❖ To offer consultancy services to State and Central Departments, public-sector undertakings, co-prepare Master Plans for States, Export Institutions, Traders and Farmers.
- ❖ To develop human resources by providing long-term structured courses in Agricultural Marketing through Diploma/ Degree courses.
- ❖ To help State Government to generate self-employment for educated youth by exploring local potential resources.
- ❖ To assist Government to formulate policies on emerging issues in Agricultural Marketing.
- ❖ To cover wide information network in the country in Agricultural Marketing for the benefit of all concerned to evolve efficient, innovative and competitive marketing process.
- ❖ To develop as a 'Centre of Excellence; in the field of Agricultural Marketing by establishing adequate networking with International organizations.

13.5 Central Sector Scheme for Formation and Promotion of 10,000 Farmer Producer Organizations (FPOs)

The Government of India had launched the Central Sector Scheme for “Formation and Promotion of 10,000 Farmer Producer Organizations (FPOs)” on 29th February, 2020 with the main focus on leveraging economies of scale in production and

marketing with a view to enhance productivity through efficient, cost effective and sustainable resource use for ensuring sustainable income oriented farming, thus helping in reduction of cost of farm production and increase in farmers' income. The scheme has a total budgetary outlay of Rs.6865 Crores.

Implementing agencies (IAs) have been approved under the scheme for formation & promotion of FPOs. FPOs are to be developed in produce clusters, wherein agricultural and horticultural produces are grown / cultivated for leveraging economies of scale and improving market access for members.

Salient features of the Scheme:

- a) FPOs will be formed by Cluster Based Business Organizations (CBBOs) and handholding and professional support will be provided for a period of five years to make them economically sustainable. The CBBOs will be supported with five categories of specialists from the domain of Crop husbandry, Agri. marketing/Value addition, and processing, Social mobilization, and IT/ MIS in agriculture & agriculture marketing.
- b) **FPO Management Cost of Rs.18 lakh per FPO** will be provided towards for salary of staffs, registration of FPO, office rent and utility charges, minor equipment cost, travel & misc. expenses etc.
- c) **Equity Grant** will be provided in the form of matching grant upto Rs. 2,000 per farmer member of FPO subject to maximum limit of Rs.15.00 lakh fixed per FPO.
- d) **Credit Guarantee** cover per FPO will be limited to the project loan of Rs.2.00 crore. In case of project loan up to Rs.1 crore, credit guarantee cover will be 85% of bankable project loan with ceiling of Rs. 85.00 lakh; while in case of project loan above Rs.1.00 crore and up to Rs.2.00 crore, credit guarantee cover will be 75% of bankable project loan with a maximum ceiling of Rs.150.00 lakh.
- e) At national level, National Project Management

Agency (NPMA) will be responsible for providing overall project guidance, data maintenance through integrated portal and information management and monitoring. The NPMA will be equipped with the technical team with five categories of specialization in Agriculture/Horticulture, Marketing and Processing, Incubation Service, IT/MIS and Law & Accounting to provide overall guidance at the national level.

- f) Training Support** - The Bankers Institute of Rural Development (BIRD), Lucknow promoted by NABARD is designated as nodal training institution at national level for FPOs promoted by NABARD and SFAC and other allowed/designated Implementing Agencies whether incorporated under Part IX A of Companies Act or registered under Co-operative Societies Act. The BIRD will work in partnership with other reputed organisations like NIRD, MANAGE, NIAM, NIFTEM, VAMNICOM and such other national and regional institutions such as IRMA, Anand and ASCI, Hyderabad, State and Central Government Agriculture Universities, National Level Skill Development Universities, KVKs and other National Level Management and Skill Development Institutions etc.

g) Direct Financial Support to FPOs:

- FPOs will be provided financial assistance upto Rs 18.00 lakh per FPO for a period of 03 years.
- In addition to this, provision has been made for matching Equity Grant upto Rs. 2,000 per farmer member of FPO with a limit of Rs. 15.00 lakh per FPO and
- A credit guarantee facility upto Rs. 2 crore of project loan per FPO from eligible lending institution to ensure institutional credit accessibility to FPOs.

- h)** While adopting cluster-based approach for produce or produce mix, formation of FPOs will also focus on “One District One Product” approach for development of product specialization, in case

the focused agriculture produce has been declared for that district, to promote better processing, marketing, branding & export by FPOs. Further Agriculture value chain organizations forming FPOs and facilitating 60% of market linkages for members produce.

13.6 Achievements:

(a) Agri Marketing Reforms:

- In order to induce competition through development of multiple marketing channels, improve farmer-market linkages, transparency in trading and encourage investment in development of post-harvest management and marketing infrastructure Marketing Division in consultation with NITI Aayog and States formulated a model legal framework titled as Model Act “The --- State/ UT Agricultural Produce and Livestock Marketing (Promotion & Facilitation) Act, 2017”, popularly called model APLM Act, in April, 2017. The said Model APLM Act was circulated to States/UTs for adoption of its farmers' friendly, facilitative provisions. Moreover, the essence of the Model APLM Act, 2017 is to provide complete freedom to the cultivators and livestock rearers to sell their produce, livestock and its product to the buyers and through the marketing channel of their choice offering the better bids. So far, States of Arunachal Pradesh, Assam, Goa, Gujarat, Karnataka, Manipur, Meghalaya, Rajasthan and Tripura have completely adopted the Model APLM Act, 2017. States of Andhra Pradesh, Chhattisgarh, Haryana, Maharashtra, Tamil Nadu and Uttar Pradesh have also adopted model APLM Act, 2017, though not fully and also in the customized way. State of Jharkhand as completely denotified the agriculture produce.
- De-regulation of marketing of Fruits & Vegetables – Existing marketing system of

fruits & vegetables through network of APMC markets is attributed towards high post-harvest losses, long intermediation in supply chain and low return to the farmers. In order to address this issue, Department has been advocating with the States to provide complete freedom to the farmers as well as buyers and investors to invest in development of marketing infrastructure and supply chain outside the market yards so as to facilitate emergence of various channels of marketing. So far, States of Andhra Pradesh, Arunachal Pradesh, Assam, Chhattisgarh, Goa, Gujarat, Himachal Pradesh, Jharkhand, Karnataka, Madhya Pradesh, Maharashtra, Manipur, Meghalaya, Nagaland, Odisha, Rajasthan, Tripura, Uttar Pradesh, West Bengal and NCT of Delhi have adopted this policy.

- Considering the importance of integrating farmers including fruits and vegetable growers with agro-industries with the objectives to mitigate market and price uncertainties, reduce post-harvest losses and create rural employment, Department formulated and released a model Act; “The -- State/ UT Agricultural Produce and

Livestock Contract Farming & Services (Promotion & Facilitation) Act, 2018”. The model Act not only provides the facilitative eco-system for contract produce output but also for services all along the agri. food value chain starting from pre-harvest, harvest and post-harvest including marketing.

(b) Agricultural Marketing Infrastructure (AMI):

- Since inception of scheme up to 31.12.2022, a total number of 42,164 storage infrastructure projects (Godowns), with storage capacity of 74.04 million MT were sanctioned under the scheme and subsidy of Rs. 3436.82 crore has been released. Similarly, 19,547 other marketing infrastructure projects have also been sanctioned and subsidy of Rs.1930.31 crore has been released so far.

© National Agriculture Market (e-NAM):

- So far, 1260 regulated wholesale markets (APMCs) have been integrated to the e-NAM platform in 22 states and 3 UTs.
- *Performance at a glance (As on 30th September, 2022):*

Sl. No	Particulars	FY (2022-23)	Since inception to 31 st Dec. 2022
a.	Stakeholders Registration		
	No. of farmers Registered on e-NAM	1.55 (Lakhs)	1.74 (Cr)
	No. of traders Registered	18,356	2.39 (Lakhs)
	No. of Commission Agents Registered	4,853	1.08 (Lakhs)
	No. of FPO registered	288	2389
b.	Trade Recorded		
	Total Trade recorded in volume (Cr. MT)	1.43	7.07
	Total Trade recorded in numbers (Cr)	7.17	20.88
	Total Trade recorded in value (Rs. Cr.)	55,023	2,42,969
c.	Tradable parameters of notified commodities (nos.)	28	203

*Betel leaf, Coconut, Bamboo, Sweet Corn & Lemon

Major Success Story during FY 2022-23**1. National Agriculture Market (e-NAM) won**

Platinum Award (1st) in Digital India Award 2022 under the category “Digital Empowerment of Citizens”

Dr. N. Vijaya Lakshmi, Joint Secretary, Department of Agriculture & Farmers Welfare, received the award from Hon'ble President of India, Smt. Droupadi Murmu in Vigyan Bhawan, New Delhi on 07th Jan, 2023.

**2. Kesamudram APMC – Telangana Honoured with PM Award for “Excellence Public Administration”**

Agriculture, an integral part economic activity of Telangana, decides the direction of the State in terms of socio-economic development. Technology has taken over lives in the States and farming is no exception; the State has moved from traditional farming to use of automated methods. Encouraged by the Government's proactive policies to enable agriculture as a big contributor to GDP of the State, the field of agriculture has shown more promises by the day. Rice is the major food crop and staple food of the state. Other important crops are tobacco, mango, cotton, and sugar cane. Through e-NAM, Department of Agricultural Marketing, Telangana is encouraging uniformity in agriculture marketing, removing information asymmetry in the market

and encouraging real-time price discovery.

Kesamudram APMC – Telangana received the award from Hon'ble PM of India for “Excellence in Public Administration- 2019”, on Civil Service Day, dated 21st Apr 2022. It is nothing less than an absolute honour for the APMC, that is actively promoting e-NAM in the mandi.

3. Thattanchavady APMC- Puducherry received the award from Hon'ble PM of India for “Excellence in Public Administration- 2019”, on Civil Service Day, dated 21st Apr'22.

Puducherry, a French colonial settlement in India until 1954, is now a Union Territory (UT) town bounded by the south-eastern Tamil Nadu State. The Union Territory of Puducherry lies in the southern part of the Indian Peninsula. Principal food crops in the UT are rice, maize, ragi and pulses.

Cash crops here include oilseeds, sesame, ground nuts and splices chillies.

Thattanchavady APMC- Puducherry received the award from Hon'ble PM of India for "Excellence in Public Administration- 2019", on Civil Service Day, dated 21st Apr'22. e-NAM is playing a pivotal role in the mandi for bringing transparency in trade, real time price information, more buyers for the local farm produce, along with other benefits to farmers and traders. Getting the PM Award recognizing its effort is a matter of joy for the Dept. It is a great honour for the Dept. to receive this special award, and the Dept. is thankful to farmers and traders who believe in e-NAM and joined the scheme in its unforgettable journey.

4. Fruit Mandi Solan, conferred with the prestigious Prime Minister Award under Hilly-region category

The Solan-based Agriculture Produce Marketing Committee (APMC) was honoured with the Prime Minister's award for excellence in Public Administration, 2019, for the successful implementation of the e-National Agriculture Market (NAM) scheme.

The award was received by Deputy Commissioner Kritika Kulhari and APMC Solan secretary Ravinder Sharma on the occasion of the 15th Civil Services Day in Delhi. A cash award of Rs 10 lakh has also been awarded to the APMC along with certificate of excellence.

(d) CCSNIAM:

- **Training Programs:** In 2021-22, 365 Training Programs have been completed and 14239 stakeholders were trained through programs. 22 Farmers and 160 Numbers of students were visited in CCS NIAM during the year.
- **Educational Program** of CCS NIAM- Preparing Future Agribusiness Managers: CCS NIAM has one flagships program under the domain of education as a two-year residential Post Graduate Diploma in Management (Agri-Business Management)

PGDM (ABM). The USP of the program is to develop techno-managerial competence among the pass outs to enable them to serve the Agriculture value chain. It is a financially self-sustaining program with an affordable fee structure. The program is approved by AICTE being run since 2001 with 100% placement. A Batch of 63 students passed out in June 2022 and achieved 100% placements in 22 companies with an average CTC of Rs. 10.15 lakhs per annum. The other activities carried out during 2021-22 include organizing Agrovon-B-Fest, Alumni Meet, Publication of Farm to Fork quarterly newsletter, mentoring of summer internship projects by CCS NIAM faculty, Conduct of student seminars and knowledge series lectures by industry experts, NCDEX workshop, Agri Value Chain workshop by SDAMUNATI, Webinar on Digital Marketing, Panel discussion on Union Budget, Organized Managers Cricket League and NIAM Premier League, Me and My Plantation drive. Nine interactions with Industry leaders were organized. In addition, several cultural and sports events were organized by the students. All 60 students of the 2021-23 Batch were successfully placed in Summer Internship in 22 companies.

- **RKVY RAFTAAR PROGRAMME OF CCS NIAM: PROMOTING AGRI-STARTUPS:** CCS NIAM is working as a "Knowledge Partner" for Ministry of Agriculture and Farmers' Welfare, is assisting Department of Agriculture, Farmers' Welfare (DAC&FW) in smooth and efficient Execution of RKVY-RAFTAAR Scheme. CCS NIAM has established NIAM Agri-Business Incubator (NABI) in January 2019 to provide handholding and incubation support to RKVY-RAFTAAR Agri-Business Incubators (RABIs) situated in five states in the country namely National Rice Research Institute, Cuttack, Odisha, Sri Karan Narendra Agriculture University, Jobner, Rajasthan; Indian Institute of Technology,

Kharagpur, West Bengal and Bihar Agriculture University, Sabour, Bhagalpur, Bihar. During the financial year 2021-22, Institute has conducted 365 training programs covering 20 states and Union Territories. Total of 14239 stakeholders were trained. During the year, 2 research projects were completed under the consultancy head, 60 programs of varied nature, 47 academic activities under the RKVY-RAFTAAR program were conducted. CCS NIAM has successfully run two years residential course approved by AICTE and achieved 100% placement of students in 22 companies. Total funds of Rs. 450.00 Lakhs received by the Institute during the year 2021-22. Out of which, Rs. 906.43 were utilized by the Institute.

(e) Central Sector Scheme for Formation and Promotion of 10,000 Farmer Producer Organizations (FPOs)

- So far, 10,000 FPO producer clusters have been allocated to IAs which includes FPO produce clusters on Area based approach- "One Block One FPO", Organic FPO produce clusters, Oil seeds FPO produce clusters, Bamboo FPO produce clusters, Agro-forestry based FPOs, Bee keepers FPOs, Special

Category FPOs with value chain development. Out of the total allocation 4,280 FPOs have been registered across India as on 31st December, 2022. Further, 1500 special category FPOs have been allotted to various Agri Value Chain/Industry.

- As per scheme mandate, at national level, M/s Ernst & Young LLP has been appointed by SFAC as a National Project Management Agency (NPMA) through a tendering process for providing overall project guidance, data maintenance through integrated portal/MIS, information management and monitoring. SFAC is acting as a Central Nodal Agency (CNA) and one of the Implementing Agencies under the Central Sector Scheme for Formation and Promotion of 10,000 Farmer Producer Organizations.
- Equity grant of Rs 55.34 crore has been released to 1,469 Farmer Producer Organizations (FPOs) promoted by all Implementing Agencies (IAs) across India. Credit Guarantee Cover has been issued to 504 FPOs worth guarantee coverage of Rs 97.56 crore.
- There are 385 unique CBBOs empanelled under the 10,000 FPOs scheme.

13.7 Success Stories of Farmer Producer Organizations promoted by SFAC **Bhairabi Women Agro Producer Company Limited**

Date of Registration	26 th Aug, 2016
State	Odisha
District	Ganjam
RI	Access Development Services
Shareholder Farmers (Nos)	220
	Small Farmers and marginal farmers -220
	Women Farmers: 220 Tribal Farmers: 2
State Category	Plain Area
Share Capital (INR- Lakh)	220 Lakh
Business Activities (Summary)	35 Lakhs Turnover (Organic fertilizers, pesticides, output marketing of rice and vegetable)

Area of Success*:	Organic Farming, seed production (indigenous varieties)
Board of Directors	Female: 05

Angul Farmers Producer Company Limited

Date of Registration	23rd Apr, 2021
Scheme	Central Sector Scheme of Formation and Promotion of 10,000 FPOs
State	Odisha
District	Angul
Block	Angul Sadar
CBBO	BASIX Krishi Samruddhi Limited
Shareholder Farmers (Nos)	365
	Small Farmers: 23 Marginal Farmers: 342
	Women Farmers: 71 Tribal Farmers: 0
State Category	Plain Area
Share Capital (INR-Lakh)	7.3 Lakh
Business Activities (Summary)	Input- Bio Products, Seeds, Lemon grass Slips, Mentha Slips and Output- Lemon Grass Oil, Mentha Oil
Area of Success*:	The FPC has done business transactions of Rs.69.50 Lakh (Sales Input/Output)
Board of Directors	Male: 8 Female: 2

Hulsoor Mahila Kisan Millets Producer Company Limited

Date of Registration	02nd Mar, 2021
Scheme	Central Sector Scheme of Formation and Promotion of 10,000 FPOs
State	Karnataka
District	Bidar
Block	Hulsoor
CBBO	ICAR-IIMR
Shareholder Farmers (Nos)	308
	Small Farmers: 120 Marginal Farmers: 170
	Women Farmers: 308 Tribal Farmers:
State Category	Southern plateau and Hills
Share Capital (INR-Lakh)	6.16
Business Activities (Summary)	16.50 Lakh Turnover (Input Sales, Output Sales, Machinery Services,
Area of Success*:	Supply of Quality Agri Inputs, Agri output Access to Production and Post-Harvest Machinery, Market Linkages
Board of Directors	Male: 0 Female: 10

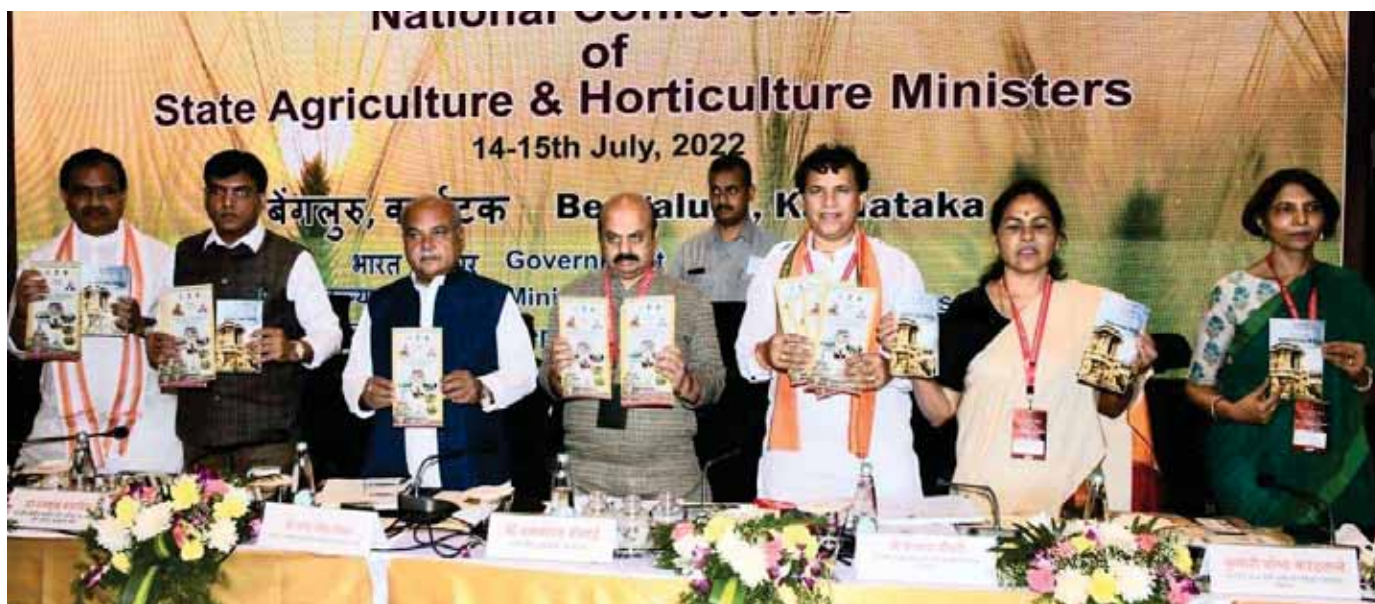
13.8 Meetings to promote Inter State trade under e-NAM



Dr. N. Vijaya Lakshmi, Joint Secretary, Department of Agriculture & Farmers Welfare, Chaired the Inter-State trade meet between Southern States held in Hyderabad, Telangana on 30th June, 2022.



Dr. N. Vijaya Lakshmi, Joint Secretary, Department of Agriculture & Farmers Welfare, Chaired the Inter-State trade meet between Northern States held in Panchkula, Haryana on 16th May, 2022.

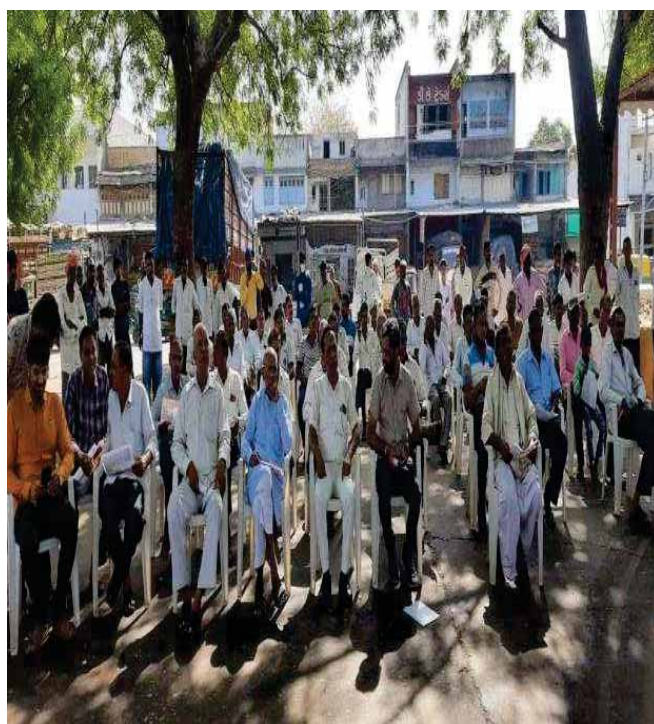


Launch of Platform of Platforms and Coffee Table Book on e-NAM during State Agriculture and Horticulture Ministers' Conference in Bengaluru, Karnataka on 14th July 2022.

13.9 Training of Stakeholders under e-NAM



ANDHRA PRADESH



GUJARAT, MEHSANA

Ministry of Agriculture & farmers Welfare organized a campaign from 25th to 30th April 2022 as a part of ongoing celebration of Azadi Ka Amrit Mahotsav. "Kisan Bhagidari Prathmikta Hamari" campaign is being dedicated to strengthening the farming community. More than 800 e-NAM Mandis saw active participation of about 1 lakh farmers in this campaign



Telangana, Sadashivpet



Rajasthan, Hindaun City



Maharashtra, Akola

13.10 National & Regional conferences conducted for FPO Stakeholders



National Level Conference at Delhi for creating awareness among the FPOS and to review the work of CBBOs and open discussion session for various issues/ suggestions



Regional Level Conferences at Jaipur, Panchkula & Bengaluru for creating awareness among the FPOs and to review the work of CBBOs and Open discussion session for various issues/ suggestions

Chapter-14

AGRICULTURE TRADE POLICY, PROMOTION AND LOGISTICS DEVELOPMENT

14.1 Overview

Agriculture Trade Policy, Promotion and Logistics Development Division of this Department is entrusted with the responsibility of making policy recommendations on export, import and logistics development of agriculture sector and formulation of strategy for boosting international trade in Agri commodities. It is the nodal Division of the Department for coordinating/formulating responses on World Trade Organization's (WTO) Agreement on Agriculture (AoA), matters relating to Preferential Trade Agreements (PTAs)/Free Trade Agreements (FTAs) and agro logistics with the Department of Commerce (DoC), matters relating to the modification in the Custom duty and Goods and Services Tax (GST) on agricultural commodities with the Department of Revenue (DoR).

14.2 India's Agriculture Trade

14.2.1 Agri-Export:

Export of agricultural commodities has helped producers to take advantage of wider international market which, in turn, has incentivized their domestic production. Crops exported in large quantities viz. rice, sugar, and spices have witnessed significant increase in area coverage and growth rate of production. India has emerged as a significant Agri-exporter in crops like rice, spices, cotton, oil meal cake, castor oil, coffee,

cashew, tea, fresh vegetables and sugar.

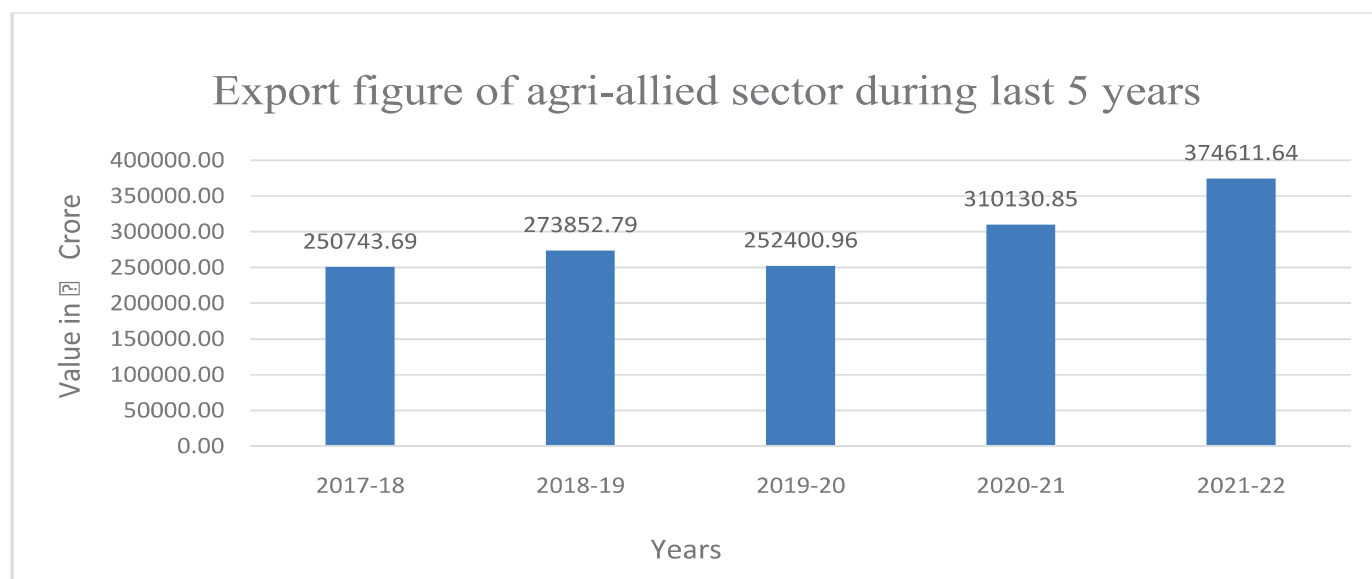
As per available WTO's Trade Statistical Review (2022), the share of India's agricultural exports and imports in the world agriculture trade in 2021 were 2.4% and 1.7%, respectively. India was in the top 10 ranking of the global Agri exporters.

The share of agricultural exports in India's total merchandise exports was 11.90% in 2021-22.

As compared to previous year (2020-21), the Agri and Allied exports in the year 2021-22 increased by 20.79% to Rs. 3,74,611.64 crores. The increase in Agri and Allied exports during 2020-21 was primarily on account of increased exports of commodities like Wheat (279.71%), Dairy Products (98.40%), Guergam Meal (71.41%), Sugar (66.17%), Cashew Nut Shell Liquid (64.84%), Other Cereals (56.00%), Cotton Raw Includ. waste (50.39%), Milled Products (48.54%), Coffee (42.59%), Misc Processed Items (36.11%) and Pulses (36.66%), which witnessed high growth in the year 2021-22 as compared to previous same period.

Major destinations of exports for India's Agri and Allied commodities were Bangladesh, United States of America, China, Vietnam, United Arab Emirates, Indonesia, Saudi Arabia, Malaysia, Nepal, Egypt, Sri Lanka, Netherlands, Iran, Iraq, United Kingdom, Japan and Thailand.

The export of Agri-allied sector during last 5 years is as below:



Source: Department of Commerce, Government of India.

India's top 10 agricultural export commodities (in terms of value) for the year 2017-18 to 2021-22 are given in the Table-1 below:

Table 1: India's Exports of Top-10 Agricultural Commodities

[Value in Rs. Crores, Quantity in '000' Tonnes]

S. No	Commodity	2017-18		2018-19		2019-20		2020-21		2021-22		2022-23 till December 2022	
		Qty	Value	Qty	Value	Qty	Value	Qty	Value	Qty	Value	Qty	Value
1	MARINE PRODUCTS	1432	47646	1672	47665	1329	47618	1168	44176	1398	57910	1286	50157
2	RICE(OTHER THAN BASMOTI)	8819	23437	7648	21171	5056	14400	13149	35557	17289	45725	13172	37158
3	SUGAR	1758	5226	3990	9523	5799	13982	7518	20669	10457	34345	8257	31693
4	SPICES	1096	20085	1134	23218	1193	25642	1607	29529	1428	29039	925	21923
5	RICE-BASMOTI	4057	26871	4415	32804	4455	31026	4630	29848	3944	26390	3197	26590
6	BUFFALO MEAT	1350	26035	1233	25091	1152	22661	1086	23460	1175	24613	870	18994
7	COTTON RAW INCLD. WASTE	1101	12200	1143	14628	658	7540	1214	13968	1259	21007	196	4001
8	WHEAT	323	624	227	424	220	444	2155	4173	7245	15845	4656	11728
9	CASTOR OIL	697	6730	619	6170	594	6324	734	6802	715	8754	469	7169
10	MISC PROCESSED ITEMS	0	3549	0	4613	0	4587	0	6403	0	8715		8122
	TOTAL AGRI & ALLIED EXPORTS		250744		273853		252401		310131		374612		310291

Source: Department of Commerce, Government of India.

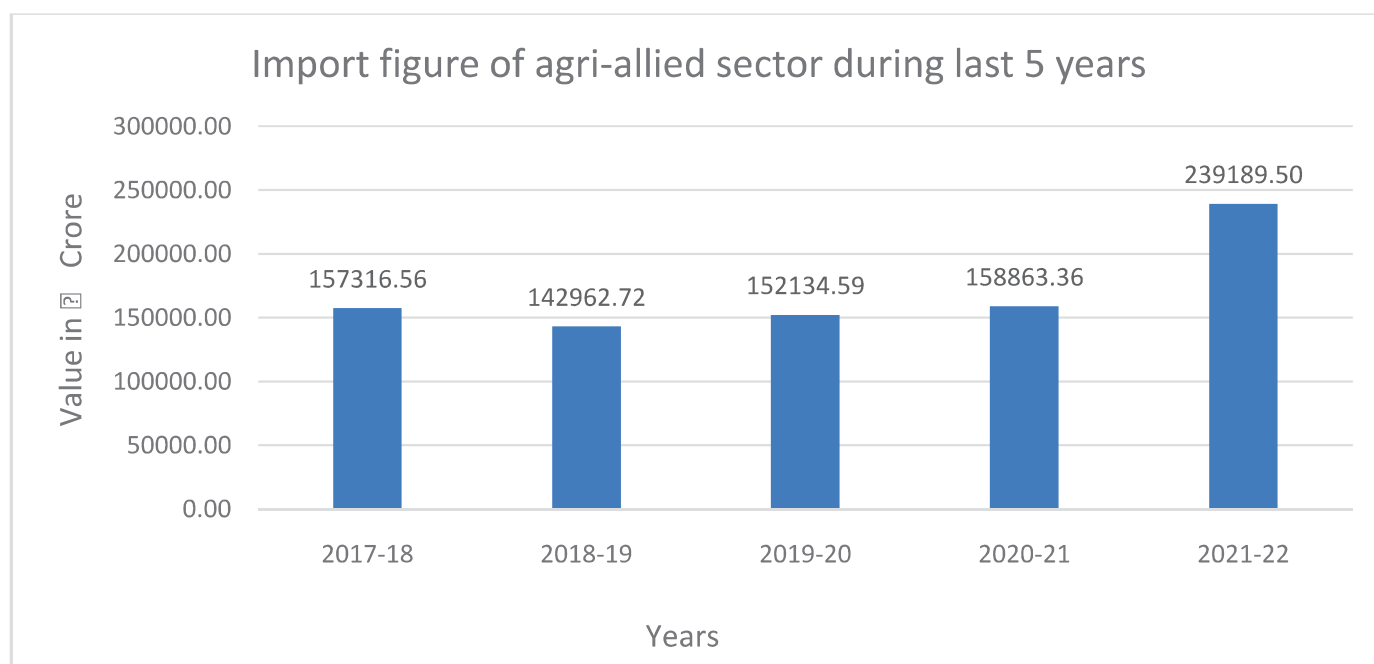
14.2.2 Agri - Imports:

As compared to previous year (2020-21), the Agri and allied imports in the year 2021-22 increased by 50.56% to Rs.239189.50 crore. Increase in value of Agri and Allied imports during 2020-21 were primarily on account of increase in imports of Vegetables Oil (72.34%), Fresh Fruits (16.35%), Pulses (39.29%), Spices (20.00%), Cashew (24.66%), Natural Rubber (66.73%), Oil Meals (346.33%), Other Oil Seeds (98.94%), Cotton Raw Includ. Waste (45.72%), Misc Processed Items (50.15%), Cocoa Products (34.27%), Cereal Preparations (26.04%), Coffee (17.07%),

Processed Fruit and Juices (50.51%), Jute Raw (150.66%), etc. Similarly, the total merchandise imports increased more significantly, therefore the share of Agri and Allied imports has decreased from 5.45% in 2020-21 to 5.23% in 2021-22.

Major sources of import of India's Agri and Allied commodities are Indonesia, Malaysia, Argentina, Ukraine, United States of America, Brazil, Nepal, Thailand, Myanmar, Singapore, Afghanistan, Tanzania, Vietnam, United Arab Emirates, Bangladesh, China, Canada, Netherlands, Sri Lanka and Australia.

The import of agri-allied sector during last 5 years is as below:



Source: Department of Commerce, Government of India.

India's top 10 agriculture import commodities in terms of value for the year 2017-18 to 2021-22 are given in the Table 2 below:

Table 2: India's Imports of Top-10 Agricultural Commodities

[Value in Rs. Crores, Quantity in '000' Tonnes]

S. No	Commodity	2017-18		2018-19		2019-20		2020-21		2021-22		2022-23 till December 2022	
		Qty	Value	Qty	Value	Qty	Value	Qty	Value	Qty	Value	Qty	Value
1	VEGETABLE OILS	15361	74996	15019	69024	14722	68558	13540	82123	14278	141532	11705	128337
2	FRESH FRUITS	995	12525	1124	13932	994	14137	1212	15765	1552	18342	1062	14856
3	PULSES	5608	18749	2528	8035	2898	10221	2466	11938	2700	16628	1714	10948

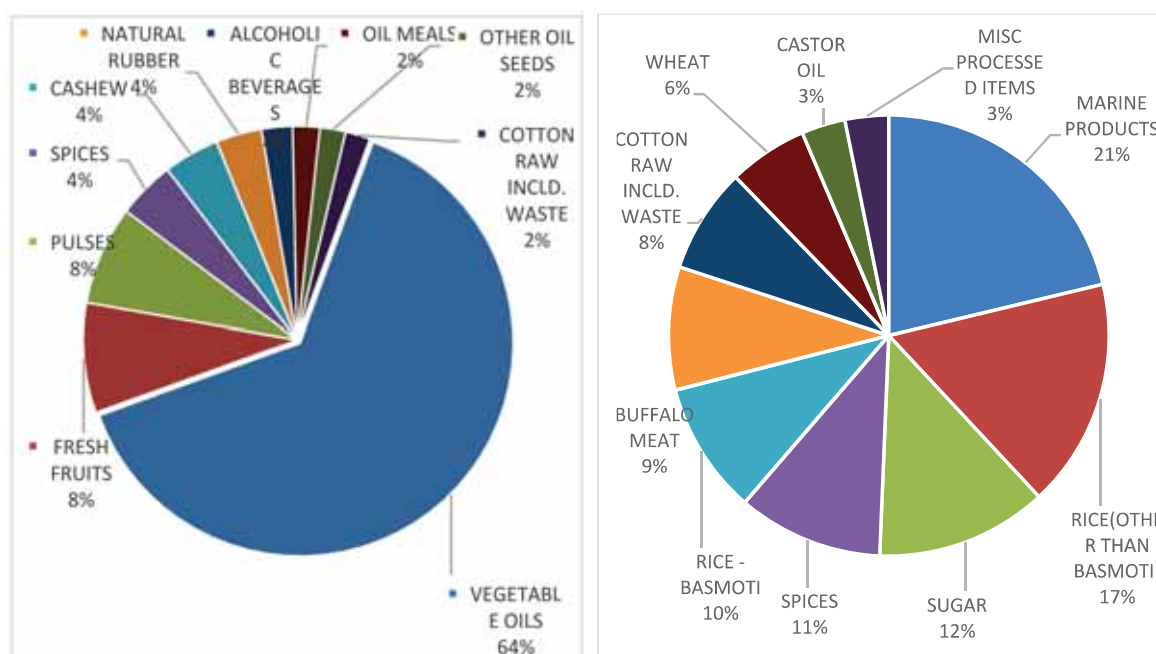
4	SPICES	222	6385	241	7933	321	10187	344	8071	364	9685	317	8163
5	CASHEW	654	9134	840	11162	941	9026	834	7491	939	9338	1204	13006
6	NATURAL RUBBER	470	5344	582	6128	457	4927	410	4620	546	7703	420	6196
7	ALCOHOLIC BEVERAGES		3876		4679		4644		4037		5182	252	4921
8	OIL MEALS	486	747	504	870	860	1519	510	1018	1302	4542	421	1464
9	OTHER OIL SEEDS	127	365	220	745	411	1528	507	2165	701	4308	368	2407
10	COTTON RAW INCLD. WASTE	469	6307	299	4383	744	9371	231	2861	224	4169	404	10529
	TOTAL AGRI & ALLIED IMPORTS		157317		142963		152135		158863		239190		218533

Source: Department of Commerce, Government of India

Share (in value terms) of top 10 exported and imported agricultural commodities during 2021-22. Agriculture sector posted positive balance of

payment like earlier years. The import was dominated by single commodity namely vegetable oil.

Import share in 2021-22 (Top-10 Items) Export share in 2021-22 (Top-10 Items)



Source: Department of Commerce, Government of India

14.3. EXIM Policy of Agricultural Commodities:

14.3.1 EXPORT:

- ❖ At present, export of most of the agricultural commodities (excluding allied products) is free i.e. without any restriction. Only export

of Seeds is under restriction and Mustard Oil is permitted for export only in branded consumer packs of upto 5 kgs with a Minimum Export Price (MEP) of USD 900/MT.

14.3.2 IMPORT:

In the agriculture sector, import of moong, refined palm oil, potato and some seeds of vegetables/spices/cereals/oilseeds, only are under restriction and other commodities (excluding allied products) are free for import.

Details of Restriction:

- ❖ To protect the interest of domestic growers/farmers and their livelihood from cheap import of the commodity and also to take care of consumer interest, GoI notified some import restrictions in consultation with Department of Agriculture & Farmers Welfare, Department of Commerce, Department of Consumer Affairs, Department of Food & Public Distribution and Department of Revenue during 2019-20 and 2020-21:

- ✓ Minimum Import Price (MIP) has been imposed on import of the following items to check their cheap imports.
 - MIP of Rs 500/kg on Pepper (w.e.f. 06th December, 2017)
 - MIP of Rs 680/kg on Cashew Kernel, Broken (w.e.f. 12th June, 2019)
 - MIP of Rs 720/kg on Cashew Kernel, Whole (w.e.f. 12th June, 2019)
 - MIP of Rs 200/kg on Peas (w.e.f. 18th December, 2019)
 - MIP of Rs 150/kg on Desiccated Coconut (w.e.f. 08th January, 2020)
- ✓ Free Import for Tur /Pigeon Peas and Urad was extended up to 31st March 2024. However, import of moong has been kept in restricted category.
- ✓ Export of wheat of was prohibited from 13.5.2022.

- ✓ Government of India vide Notification dated 4th July, 2022 allowed import of Potatoes (HS code 0701 90 00) from Bhutan without license upto 30th June, 2023.
- ✓ Again, to support Areca nut Industry of Bhutan, Government allowed import of 17,000 MT of Fresh (Green) Arecanut from Bhutan without Minimum Import Price.
- ✓ The nil Customs duty of Crude soybean oil, crude palm oil and crude sunflower seed oil has been extended upto 31.3.2024.
- ✓ The AIDC on Crude soybean oil, crude palm oil and crude sunflower seed oil at the rate of 5%, 7.5% and 5% respectively has been extended upto 31.3.2024.
- ✓ 20% Export duty applied on rice in the husk, husked (brown) rice, semi-milled or wholly milled rice.

14.4. Goods and Services Tax

GST envisages a single tax on supply of goods and Services or both, by amalgamating all the central indirect taxes (excise duty, countervailing duty and service tax) and state indirect taxes (VAT, luxury tax, entry tax, octroi, etc).

GST rates on most of the raw agricultural items are at 0% (zero per cent). Apart from this, most of the agricultural activities and services are also exempted from imposition of GST. However, for primary processed agriculture items, GST rate is 5% and for secondary/tertiary processed products, the GST rate is 12%. On some farm machinery/component and fertilizers, the GST rate is in the range of 12-18%.

Considering the representations/inputs from various stakeholders/ firms/ associations/ farmers etc, this Division has been taking up GST related issues with the GST council, Department of Revenue, Ministry of Finance from time to time.

14.5. Trade Agreement:

14.5.1 FTA/CECA/CEPA/CECPA

Free Trade Agreements/ Preferential Trade Agreements/ Comprehensive Economic Cooperation Agreements/ Comprehensive Economic Partnership Agreements/ Comprehensive Economic Cooperation & Partnership Agreements provide opportunities for exports with the trading partners at preferential duties. India has signed agreements with number of regional trading blocs/ countries namely, South Asia Free Trade Area (SAFTA), Asia Pacific Trade Agreement (APTA), Association of South East Asian Nations (ASEAN), Afghanistan, MERCOSUR (trade block of countries viz. Argentina, Brazil, Paraguay and Uruguay), Japan, South Korea, Malaysia, Singapore, Thailand, Bhutan, Nepal, Chile, and Sri Lanka. The recently concluded Trade agreements are with UAE and Australia.

The trade agreement negotiations with European Union, Thailand, BIMSTEC, Peru, Israel, Iran, Mauritius, New Zealand, Canada, UK, Korea and Indonesia are also in various stages of discussion.

14.6 WTO Meetings/Notifications:

14.6.1 WTO Meeting: The Committee on Agriculture oversees the implementation of the Agreement on Agriculture. Its key responsibility is to monitor WTO member's compliance to their commitments/obligations. The committee, composed up of all WTO members, usually meets three or four times a year. Officers of Trade Division participate in the Meetings of the Committee on Agriculture (CoA) at World Trade Organisation in Geneva, Switzerland. Issues related to India's Pulses Policy, short-term loan, inputs subsidies and Minimum Support Price (MSP) were responded in coordination with Department of Commerce.

14.6.2 WTO Notifications: As part of India's commitments to the WTO, India needs to notify any new or modified domestic agricultural support measures applied by India during a year and this needs to be notified to the WTO on an annual basis in the form of Domestic Support-1 and Domestic

Support-2 Notifications. In this regard, DA&FW has provided requisite inputs to Department of Commerce for preparation and filing of India's DS notification to WTO. The filed/submitted notifications are available online and can be assessed at the WTO website <http://agims.wto.org/>.

14.6.3 Trade Policy Reviews under WTO: To conducts Trade Policy Review of its members at regular intervals with a view to reviewing member country's trade policies and practices under multilateral trade disciplines, to make an assessment of compliance with country obligations. India's last Trade Policy Review was held in 2020. The review is an extensive exercise requiring inter-ministerial coordination and detailed preparation. The submission of report is followed by detailed question answer sessions which require compilation of huge trade related documents/data. DA&FW is required to furnish relevant inputs/information to Department of Commerce for compilation and forwarding to the WTO Secretariat as a part of India's Trade Policy Review (TPR) at WTO.

14.7. Strengthening India's Agri Export –Creation of Agri-Cells in nations abroad

At the insistence of DA&FW, Agri-cells were created, by Ministry of External Affairs, in 15 Indian Missions viz., Vietnam, USA, Bangladesh, UAE, China, Saudi Arabia, Iran, Malaysia, Japan, Nepal, Indonesia, Argentina, Singapore, Ukraine and Brazil to help bring focus on agricultural exports and optimize potential available in those countries for Indian products. The Agri Cells also compile information on demand supply of various commodities in the host countries which could be utilized by the exporters.

14.8 Export Promotion Forum (EPF):

Product specific Export Promotion Forums (EPF) for eight agri products i.e. Grapes, Mango, Banana, Onion, Rice, Dairy Product, Pomegranate and Floriculture have been created by DOC under the aegis of APEDA at the insistence of DA&FW. They

will work on promoting the export of identified potential products in a focused manner.

Each Export Promotion Forum is having exporters of the related commodity as its members along with official members from DOC, DA&FW and MOFPI along with relevant expert institutions and State Governments. Presently, Chairman APEDA is the chairman of each of these forums. The forums are required to meet regularly to discuss/ make

recommendations on issues pertaining to export of the respective commodity and invite experts etc. to the meeting for interaction, as required. The Forums will constantly monitor and identify/anticipate developments in the external/internal situation pertaining to the production and export of their respective commodity and recommend /intervene for taking the necessary policy/ administrative measures.

Chapter-15

RASHTRIYA KRISHI VIKAS YOJANA (RKVY)

15.1 Overview

Rashtriya Krishi Vikas Yojana (RKVY) was launched as a flagship scheme of the Department of Agriculture & Farmers' Welfare (DA&FW) in 2007-2008 to incentivize States to draw up comprehensive agriculture development plans, taking into account agro-climatic conditions, natural resources and technology for ensuring more inclusive and integrated development of agriculture and allied sectors. The scheme was implemented as a State Plan Scheme till the end of the financial year 2013-14 and is being implemented as a CSS (State Plan) scheme thereafter. In accordance with the directions of the Ministry of Finance, the funding pattern of the scheme from 2015-16 onwards has been altered from 100% funding by the Central Government to in the ratio of 60:40 between the Centre and States (90:10 for North-Eastern and Himalayan States). However, funding pattern to UTs continued as 100% by the Central Government.

The Scheme has been revamped as the Rashtriya Krishi Vikas Yojana - Remunerative Approaches for Agriculture and Allied Sector Rejuvenation (RKVY-RAFTAAR) for implementation from 2017-18 with a major focus on pre & post-harvest infrastructure, besides promoting agri - entrepreneurship, innovations & value addition with the approval of the Union Cabinet on 01.11.2017. A State Level Sanctioning Committee (SLSC) constituted under the Chairmanship of the Chief Secretary of the concerned State/UT is empowered to approve projects under the scheme. The State Agriculture Department is the nodal Department for implementation of the scheme in the State. The scheme is available for the various activities of agriculture & allied sector such as crop development, horticulture, agricultural mechanization, marketing, pre & post-harvest management, integrated pest management, organic farming, research, extension

etc.

As per recommendation of Expenditure Finance Committee, RKVY has re-structured as RKVY Cafeteria Scheme from 2022-23 onwards merging some schemes of Department of Agriculture & Farmers Welfare which includes Soil Health & Fertility, Rainfed Area Development, Paramparagat Krishi Vikas Yojana (PKVY), National Mission on Natural Farming, Per Drop More Crop, Agriculture Mechanization (including Promotion of Agricultural Mechanization and Management of Crop Residue (CRM), Village Haats & GRAAMS and Crop Diversification Programme. RKVY cafeteria scheme has 3 components Annual Action Plan (AAP), Detailed Project Report (DPR) and Administration, Monitoring and Evaluation including startup. Out of the total allocation of RKVY Cafeteria, a minimum of 65% will be allocated for Annual Action Plan (AAP) component, a maximum of 30% for Detailed Project Report (DPR) component and up to 5% for Administration, Monitoring and Evaluation purposes including start-ups.

15.2. Objectives of RKVY-RAFTAAR scheme

The objectives of the scheme are:

- i. To strengthen the efforts of farmers through creation of pre & post-harvest agricultural infrastructure that increases access to quality inputs, storage, market facilities etc and enable farmers to make informed choice.
- ii. To provide autonomy, flexibility to States to plan and execute schemes as per local/ farmers' needs.
- iii. To promote value chain addition linked production models that will help farmers increase their income as well as encourage production/productivity

- iv. To mitigate the risk of farmers with focus on additional income generation activities - integrated farming, mushroom cultivation, bee keeping, aromatic plant cultivation, floriculture etc.
- v. To empower youth through skill development, innovation and agri-entrepreneurship based agribusiness models that attract them to agriculture.

15.3 Funding pattern under RKVY-RAFTAAR:

The cost norms specified in various Central Government Schemes of Department of Agriculture, & Farmers Welfare (DA&FW), and other Ministries will be applicable for the activities/components to be supported under DPR based component of RKVY. It is a gap filling component, excluding AAP component.

15.4. District and State Agricultural Plans: RKVY guidelines recognize the need for convergence and integration of the various programmes implemented at district / State level through District Agriculture Plans (DAPs) and State Agriculture Plans (SAPs). Revised operational guidelines of RKVY also mandate each State to prepare a State Agriculture Infrastructure Development Programme (SAIDP) in a similar manner to that of DAPs and SAP for identifying a shelf of projects for RKVY.

15.5. Income/Production and Target/Achievement

RKVY fund is provided to the States/UTs as grant in aid. There is no physical target set for any States at the Central level. Projects under the scheme are approved and implemented by the States in various agriculture and allied sectors as per their priorities and available resources to meet the needs of farmers for the holistic development of this sector. The state-wise allocation and release of funds and the sector-wise cost of projects approved by States under the scheme during the last two years and current year are given respectively at **Annexures- 15.1 & 15.2.**

15.6 Innovation & Agri-Entrepreneurship programme:

A new programme called "Innovation and Agri-Entrepreneurship Development" has been launched under Rashtriya Krishi Vikas Yojana (RKVY-RAFTAAR) in 2018-19 with the objective to promote innovation and agripreneurship by providing financial support and nurturing the incubation ecosystem. Start-ups pertaining to agriculture and allied sectors are being encouraged in order to contribute directly and indirectly to enhancing the income of farmers by providing opportunities to them and to provide employment to youth. In this connection, five (5) Knowledge Partners (KPs) and twenty four (24) Agribusiness Incubators (R-ABIs) have been appointed by this Department to advise on smooth and efficient execution of this programme in various States across the country.

Around 3500 entrepreneurs have been trained during 2019-20 to 2022-23 (as on 31.12.2022) under agri-entrepreneurship programme. Out of these trained entrepreneurs, 1102 start-ups operating in various areas of agriculture & allied sectors have been given financial support. A sum of Rs. 66.83 crore has been released in installments to respective KPs and RABIs for funding to these start-ups.

A Management Information System (MIS) has been developed and launched for monitoring the progress of implementation of Agri-Entrepreneurship Programme of RKVY by KPs and R-ABIs. The link of portal is <http://rkvystartups.nic.in>. All KPs and R-ABIs are required to upload information on various parameters of this programme on MIS portal for transparency.

15.7. Success Stories

Some of the success stories reported by the States under RKVY scheme and by Agri business Incubators under Agri-Entrepreneurship Programme of RKVY are given as under:

I. Title: Stable Prices with Onion Storage

Category: Agriculture



Background & Objectives

Storage of onion, especially in the long gap between the Rabi crop and next Kharif crop, can help farmers and consumers by evening out the supply and demand position. Onion, with appropriate scientific storage, can be stored for up to six months. Maharashtra accounts for majority of onion produced in the country. Ahmednagar, Nasik and the neighboring districts are the major onion producing districts of the State. Districts in Maharashtra harvest three crops of onion- during Kharif, late Kharif and during Rabi/ summer season. Planting of Kharif onion starts in June and it arrives in the market during Sept – November. The late Kharif onion planted in August arrives in the market during December- January. Onions of both these cycles are not very suitable for storage. It is the main Rabi crop which arrives in March-June which, besides being the largest crop, is also most suitable for storage. Since the bulk of Rabi Onion is harvested during April – May, just before the onset of the monsoon, the prices of onion decline during this period while the same shoot up during the rainy season. If the farmers had enough storage facilities to store and release the onion to the market evenly, the prices would be less volatile and benefits would accrue to both farmers and

consumers. Conventional storage of onion at the farm level has many pit falls. These temporary structures do not protect the produce from seepage of humidity and lack aeration leading to high levels of sprouting and rotting of bulbs, thus resulting in high losses, neutralizing the advantages of higher price realization during off season. It was, therefore, realised that it would be essential to provide proper storage facility for this important food item to reduce post-harvest losses.

Intervention

Government of Maharashtra launched a scheme to provide subsidy to the farmers on the cost of construction for Scientific Onion Storage under RKVY. Maharashtra State Agricultural Marketing Board (MSAMB) was entrusted with the responsibility of implementing the scheme in the state. To cover all categories of farmers, especially small and marginal farmers, storage having less capacities was planned and promoted under the scheme. The scheme was launched with a publicity campaign involving local press, leaflets, and radio and T.V. footages and with the active involvement of the APMCs in the State. There was an overwhelming response from the farmers in the State. Onion storage structures have come up in large numbers with huge capacity in Nasik and Ahmednagar districts. Such storage facilities have been created in many districts of Maharashtra. Storage capacity created so far can provide storage facility for minority of Rabi harvest. Some of the Agriculture Produce Mandi Samitis (APMCs) have also started constructing onion storage in their premises. Very tiny and marginal farmers have constructed onion storage godowns by forming Self Help Groups (SHGs).

Outcome

The onion storage scheme has benefitted both consumers at large and farmers in particular. Farmers have benefitted with storage losses reducing as compared to traditional storage. Consumers have benefitted from less volatility in the prices of Onion due to even arrival in the market. Onion Storage has also facilitated

promotion of onion exports from India. A commendable contribution of the scheme is illustrated from the experience of Hiware Bazaar village in Ahmednagar. Many farmers have erected onion storage structures having small capacity each, released their stock in the market during the off season fetching a good price against the price prevalent during the harvest season. With onion cultivation turning profitable for the farmers of Hiware Bazaar, reverse migration has started. Farmers now find their agriculture lands providing better living to them compared to doing manual labour in Mumbai. This pioneering initiative in Maharashtra has truly proved a game changer for onion farmers.

II. Agri-Startup Success Story under the Agri-entrepreneurship programme of RKVY

Daybest Research Private Limited

Daybest Research Private Limited - Chhatisgarh based startup (Founder – Sh. Devesh Jha) has developed fully autonomous, high precision enabled SPRAYING DRONE- KRISHAKTI with Auto Adjusting Nozzle & Sprinkling System for spraying of various type of liquid fertilizers, pesticides,

herbicides & insecticides.



Startup is working to resolve the problem of Crop loss due to biotic and abiotic stress and excessive use of pesticides. The unique Selling Proposition of startup is mainly Prediction Intelligence, Low-Cost & High-Efficiency, Pay Per Use, Early Stage Disease Detection, 70% efficiency etc.

The startup is working in the field of Precision Agriculture / AgriFintech/ Blockchain. So far, over 200000 farmers have been benefitted from Daybest Research Private Limited startup. This startup has generated employment for 243 persons at present.

Chapter-16

DROUGHT MANAGEMENT

Overview

16.1 In accordance with the Government of India (Allocation of Business) Rules, Department of Agriculture and Farmers Welfare (DA&FW) is mandated to coordinate relief measures necessitated by **drought, hailstorm, pest attack and cold wave/frost**. Spatial distribution and quantum of rainfall during South West Monsoon (June-September) mainly determines the incidence of drought in the country, as South West Monsoon (SWM) accounts for more than 70% of annual rainfall. DA&FW closely monitors progress of SWM in the country, in coordination with India Meteorological Department (IMD), Ministry of Earth Sciences, and keeps a watch over deficient/large deficient rainfall conditions.

16.2 State Governments initiate necessary relief measures in the wake of natural calamities from State Disaster Response Fund (SDRF), which is readily available with them. Contribution to SDRF is made by Central and State Governments in the ratio of 3:1 for 18 General Category States namely, Andhra Pradesh, Bihar, Chhattisgarh, Goa, Gujarat, Haryana, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Odisha, Punjab, Rajasthan, Tamil Nadu, Telangana, Uttar Pradesh and West Bengal and in the ratio of 9:1 for 10 Special Category States namely, North Eastern States of Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura and hilly States of Himachal Pradesh and Uttarakhand. Government of India supplements the efforts of the State Governments by providing requisite financial and logistic support in the wake of natural calamities. Additional financial assistance over and above SDRF is considered from the National Disaster Response Fund (NDRF) for natural calamities of severe nature, as per the established

procedure and extant items and norms for assistance from SDRF/NDRF. Allocation under SDRF is made on the basis of recommendations of the Finance Commission and allocation under SDRF is for State Governments only.

16.3 During the year 2022-23, the State Government of Jharkhand has submitted memorandum seeking financial assistance from NDRF for drought in the State during Kharif-2022. Inter-Ministerial Central Team (IMCT) has been constituted to visit the State for assessing loss/damage to crops etc. and recommend appropriate financial assistance from NDRF.

16.4 DA&FW has reviewed and updated the Crisis Management Plan (CMP) for Drought during the current year i.e. 2022. The Plan defines the roles and responsibilities of various agencies involved in crisis management, including media management during drought. CMP, 2022 was circulated to all States/Union Territories for preparation of State Crisis Management Plan.

16.5 Central Research Institute for Dryland Agriculture (CRIDA), under Indian Council of Agricultural Research (ICAR), has developed detailed district-wise contingency plans to provide a broad advisory to farmers. These contingency plans prescribe alternate strategies in the event of climate variability by factoring in crops/livestock/aquaculture practices/pattern, soil characteristics, infrastructural facilities, etc. These plans have been developed based on certain simulated models for different weather conditions like occurrence of flood, drought, cyclone, cold wave/frost, etc. CRIDA has so far prepared Contingency Plans for **650** districts of the country.

16.6 Every Ministry/Department is mandated to prepare a Disaster Management Plan under

Sections 36/37 of the Disaster Management (DM) Act, 2005. A National Agriculture Disaster Management Plan (NADMP) has been prepared by the Department. NADMP is designed as a practical guidance document, a work agenda, and a roadmap to include key aspects of Disaster Risk Reduction (DRR) into the sustainable development agenda of

agriculture, especially for crop production, sustainable land management and post-harvest management. The plan seeks the synergy of resources and efforts to holistically address disaster risk reduction, climate change adaptation, and sustainable development goals related to the agriculture sector.

Chapter-17

INTERNATIONAL COOPERATION

17.1 Overview

Mandate and Nature of Work: The mandate of International Cooperation Division is to foster mutually beneficial partnerships with other countries of the world in bilateral as well as multilateral formats. Bilateral Agreements, Memoranda of Understanding (MoUs), Protocols and Work Plans with countries of strategic interest are signed and implemented for furthering cooperation in the field of Agriculture & allied sectors in coordination with the Ministry of External Affairs, other concerned ministries and departments and the Indian Missions abroad. The International Cooperation Division also handles the work related to collaboration with the Food & Agriculture Organization (FAO) and World Food Programme (WFP) of the United Nations, the Department of Agriculture & Farmers Welfare being the Nodal Department in India.

The Office of Minister (Agriculture), Embassy of India, Rome: The Indian Ambassador to Italy, Rome is the Permanent Representative of India to the FAO, IFAD and WFP for the purpose of maintaining liaison and coordination with these three Rome Based Agencies (RBAs). Keeping in

view the specialized nature and the increasing volume of interactions with the UN agencies and their associated bodies, an agriculture wing headed by an officer of the rank of Joint Secretary to the Government of India with the designation of Minister (Agriculture), EoI, Rome has been set up as a subordinate office under the administrative control of the DA&FW. The Minister (Agriculture), EoI, Rome has been designated as India's Alternate Permanent Representative (APR) to the three Rome Based Agencies. The Minister (Agriculture), EoI, Rome represents India's interests, particularly in the field of agriculture and allied sectors at the meetings of the three Rome based UN Agencies.

17.2 Bilateral Cooperation

17.2.1 MoU/MoC/Agreements/Work Plans: Department of Agriculture and Farmers Welfare has entered into 71 MoUs/MoCs/Agreements with 66 countries in the field of agriculture. A Memorandum of Understanding (MoU) with Fiji was signed on 22.06.2021 for cooperation in Agriculture sector.

As a follow up to the various MOUs, meetings of the following Joint Working Groups (JWGs) were held in 2022:

Sl. No	Event and country	Date	Venue
1.	2nd meeting of India -Russia Working Group on Agriculture under the framework of India -Russia Inter-Governmental Commission on Trade, Economic, Scientific, Technological and Cultural Cooperation(IRIGC-TEC)	09.06.2022	Through Video Conferencing
2.	2nd Joint Working Group(JWG) meeting between India and Suriname	29.12.2022	Through Video Conferencing

17.3 Cooperation with International Organizations:

17.3.1 FOOD & AGRICULTURE ORGANIZATION (FAO):

FAO collaborates with India through provision of trainings, consultancy services, equipments and materials in the field of agriculture and allied sectors under its Technical Cooperation Programme (TCP). FAO, India has formulated a Country Programming Framework (CPF) for India for the period 2019-2022 in line with the UN Sustainable Development Goals (SDGs) within the framework of the United Nations Sustainable Development Framework (UNSDF) and the same has been agreed upon and signed between FAO India and the Government of India.

Major projects currently under implementation in States with FAO's assistance:

- I. **Technical Assistance to strengthen capacity of national stakeholders in spice value chain:-** To improve capacity of national stakeholders in the spices value chains to improve the safety and quality of Indian spices.(Rajasthan, Andhra Pradesh, Madhya Pradesh, Gujarat)
- II. **Strengthening institutional capacity in surveillance and monitoring of antimicrobial resistance and antimicrobial use in the animal health sector:-**To strengthen the national monitoring and surveillance of antimicrobial usage in animals and share data with various stakeholders in true spirit of One Health. (PAN India)
- III. **TCPF: Assessment of Data Systems for Food and Agriculture related SDG Indicators in select States of India:-**To enable select states of India to implement and monitor additional SDG indicators under FAO custodianship and produce a how-to guide for other states in the country and other custodian agencies to understand how to undertake a similar innovative

approach in supporting states to compile and publish SDG indicators. (PAN India)

- IV. **Technical support to develop forecasting/ predictive techniques to assist vulnerable farmers and planners at district and state level to make informed decisions on crop choices and plans for rainfed agriculture:-**The proposed TCP envisages developing forecasting/predictive techniques and tools using 01-05-2021 multiple data points and big data analytics to aid vulnerable farmers and planners to make informed decisions on crop choices, particularly in rainfed areas. The TCP proposes to train local resource persons/rural extension workers in utilizing the tool for deployment with rainfed farmers.(Assam, Himachal Pradesh, Karnataka, Maharashtra)
- V. **TCPF: Enabling organizational capacity for enhancing farm livelihoods including PGS & Agri-Nutri-garden:-**To provide detailed technical guidance to the DAY-NRLM to finalize a training material on Participatory Guarantee Scheme (PGS) certification and Agri-Nutri-garden as well as develop a compendium of best practices on-farm livelihoods and success stories of CRPS for the use of DAY-NRLM. (PAN India)
- VI. **Strengthening capacities of the Government of Andhra Pradesh to support farmers to adopt sustainable agri-food systems:-**To develop methodology and framework for sustainable agri-food systems and build capacities of Farmer Facilitation Centres and key stakeholders. (Andhra Pradesh)
- VII. **Building capacity of policy makers to mobilize investment for resilient and low emission agri-foods in India under Article 6 of the UNFCCC Paris Agreement & Voluntary Carbon Markets:-**To address information barriers associated with harnessing public and private investment to

scale-up priority Nationally-Determined Contributions (NDC) actions and longer-term action towards resilient and low emission agrifood systems.(PAN India)

VIII. Green-Ag: Transforming Indian agriculture for global environmental benefits and the conservation of critical biodiversity and forest landscapes:

Transforming Indian agriculture for global environmental benefits and the conservation of critical biodiversity and forest landscapes, aims to catalyze transformative change for India's agricultural sector to support achievement of national and global environmental benefits and conserve critical biodiversity and forest landscapes. (Mizoram, Rajasthan, Uttarakhand, Odisha, Madhya Pradesh)

IX. Transforming Rice - Wheat Food Systems in India (PPG):-

To design full project proposal on Sustainable Food System and Landscape Restoration in India, entitled "Transforming Rice-Wheat Food Systems in India" under GEF 7 cycle. (Punjab, Haryana, Odisha, Chhattisgarh)

X. MTF Strengthening spice value chain in India and improving market access through capacity building:-

The objective is to build the capacity of stakeholders in the spices value chain to improve the safety and quality of three seed spices (cumin, fennel and coriander) and black pepper in order to increase market access. (Rajasthan, Andhra Pradesh, Madhya Pradesh, Gujarat)

XI. Technical assistance for animal health systems to minimize the impacts of antimicrobial resistance in Asia:-

To provide technical assistance to the countries to support animal health system to minimize antimicrobial resistance. (PAN India)

Important FAO events/meetings:

- i. 36th Session of the FAO Conference for Asia and the Pacific (APRC) was held during 8-11

March, 2022 in Dhaka, Bangladesh in hybrid mode. Ms. Subha Thakur, Joint Secretary (Crops) and Dr. P. K. Meherda, Joint Secretary (IT) from DA&FW participated virtually in the Session.

- ii. Ms. Shubha Thakur, JS, Crops Division participated in FAO's Regional Knowledge Platform on OCOP for Asia and Pacific food system symposium held at Bangkok from 5th to 7th Oct, 2022

17.3.2 World Food Programme (WFP):

Set up in 1963, the WFP seeks to provide emergency feeding in places facing acute food insecurity due to natural calamities and man-made causes. WFP has presence in India since 1963, however its role has evolved over time from providing direct food distribution to providing technical support to the Government of India in achieving food and nutrition security guided by the SDG2. WFP collaborates with the Government of India through the Country Strategic Plans. The current Country Strategic Plan (CSP: 2019-2023) was approved in the 2nd Regular Session of the WFP Executive Board Meeting in Rome during 26-29 November, 2018 followed by a Memorandum of Understanding (MoU) between GoI and the UNWFP to implement the same.

The UN World Food Programme in India has been instrumental in supporting the Government of India in the National Policy on rice fortification and its implementation in PDS, MDM and ICDS. In addition, the model for local production of nutritious fortified take home rations by women's self help groups, which was developed in Kerala, is being rolled out in Uttar Pradesh, Odisha and Rajasthan. WFP has also supported the national portability of the PDS through the One Nation One Ration Card and has introduced innovations such as the 'Annapurta' which is an automated grain dispensing machine which is linked to the Point of Sale Device in fair price shops and will allow 24/7 access to grain entitlements by PDS beneficiaries, especially migrants in urban areas. WFP is also introducing mobile storage units (500 MT capacity) as an alternative to the 'cover and plinth' mode

which reduces post-harvest losses. Their work with women's self-help groups in partnership with the Mission Shakti on value chain development and marketing will result in women's empowerment and increased income. WFP is working with the Development Monitoring and Evaluation Office (DMEO) of NITI Aayog to support national evaluation capacity development. Besides, it is also supporting the evaluation of key pilot interventions to generate evidence around it. WFP has also partnered with the Odisha Millet Mission to promote millet production and consumption and share best practices and has begun work around building climate resilience capacity of government and small holder farmers in the state.

The present share of Government of India towards WFP Pledge Contribution is US \$ 1.92 million for a biennium which is used to support the WFP India Country Programme. Besides, GoI makes an annual payment of Rs. 30 Lakh to UNWFP Country Office towards their Local Operating Cost (LOC). India was a member of the Executive Board in 2020 and 2021.

Important meetings:

- Meeting of the Hon'ble Agriculture and Farmers Welfare Minister with Mr. David M. Beasley executive director, WFP was held on 18th July, 2022.
- The meeting of Secretary (DA&FW) with Nepal Study Mission and WFP India was held on 2 June 2022 at Krishi Bhawan, New Delhi. The objective of the meeting was to learn from India on the successful implementation of National Food Security Act (NFSA).
- UNWFP's Country Programme Advisory Committee (CPAC) meeting under the chairmanship of Secretary (DA&FW) held on 16.09.2022.

17.3.3 International Fund for Agriculture Development (IFAD)

India is a founder member of IFAD and a key

contributor among the member countries. IFAD funds are derived from member contributions (made in replenishment cycles), investment incomes and special funds. Department of Economic Affairs is the nodal department for IFAD in India.

17.3.4 Other International Organizations: In addition to the FAO, WFP and IFAD, the Department of Agriculture & Farmers' Welfare represents India in the following International Organizations (IOs):

1. Trust Fund of FAO for Desert Locust in Eastern Region.
2. Trust Fund for International Desert Locust.
3. Organization for Economic Cooperation & Development (OECD).
4. Asia and Pacific Coconut Community (APCC).
5. Asia and Pacific Plant Protection Commission (APPPC).

17.3.5 USAID: National Institute of Plant Health Management (NIPHM), Hyderabad has been collaborating with United States Agency for International Development (USAID) for training purposes and capacity building programmes. The National Institute of Agricultural Extension Management (MANAGE) Hyderabad had collaborated with USAID for implementation of Feed The Future Indian Triangular Training Programme (FTFITT), in which officials from 20 African and Asian countries were imparted Advanced Agriculture Technology Training. 1144 Officials representing Afghanistan, Bangladesh, Cambodia, Lao PDR, Sri Lanka, Nepal, Mongolia, Myanmar, Vietnam countries from Asia and Botswana, Democratic Republic of Congo, Ghana, Kenya, Liberia, Malawi, Mozambique, Sudan, Rwanda, Tanzania, Uganda countries of Africa participated in this India-USAID Trilateral Collaborative Programme.

17.4 STRATEGIC GROUPS:

India is a member of multilateral groupings such as

G-20 - a forum for global cooperation on international economic and financial issues; **BRICS** (Brazil, Russia, India, China and South Africa); **IBSA** (India, Brazil and South Africa); **SCO** (Shanghai Cooperation Organization); **SAARC** (South Asian Association for Regional Cooperation); **ASEAN** (Association of South East Asian Nations); **BIMSTEC** (Bay of Bengal Initiative for Multi-Sectoral Economic & Technical Co-operation) etc. The Department of Agriculture and Farmers' Welfare represents India in all events related with agriculture and allied sectors.

G 20 : G20 is an international forum comprising of 19 individual countries and EU. India will get the Presidency of G20 from 1st December 2022 to 30th November 2023. India, Indonesia (outgoing President) and Brazil (Future President) together will form a Troika. A troika is formed to ensure the continuity of agenda items. In G20 all issues on agriculture are discussed under the Agriculture Working Group (AWG). After India gets the Presidency, Ministry of Agriculture and Farmers Welfare, will organize under the Agriculture Working Group (AWG), one Agriculture Ministers' Meeting, four Agricultural Deputies Meetings, and one Meeting of Chief Agricultural Scientists (MACS). The consensus arrived at in AMM is published as AMM communiqué, which acts as the base document for the agriculture related discussions at G20 Leaders' Summit.

The Agriculture Ministers Meeting (AMM) under the G20 Agriculture Working Group (AWG) was held in Bali, Indonesia on September 27 to 29, 2022. The Agriculture Ministers successfully reached a consensus on the following:

- i. The urgency to accelerate the transformation to more resilient and sustainable agriculture and food systems that have the ability to withstand shocks and stresses, striving to ensure food availability and accessibility in a manner consistent with our continued effort to achieve the Sustainable Development Goals (SDGs).
- ii. To underscore the importance of strengthen-

ing the rule-based, open, fair, predictable, transparent, non-discriminatory, inclusive, equitable, and sustainable multilateral trading system with the World Trade Organization (WTO) at its core. This will enhance market predictability, minimize distortions, increase business confidence, and allow agriculture and food trade to flow smoothly.

- iii. Recognize that research, innovation, technical progress, and the use of digital technology in agriculture carry the potential to further revolutionize food systems by contributing to improve resilient and sustainable food production. We acknowledge the gaps in respect of technology viability, accessibility, and affordability. We highlight the importance of collaboration among national and international research institutions and adequate funding to develop and scale innovations, including digital agriculture technology, through private and public pathways to give farmers around the world the widest range of options to achieve their aspirations.

Shanghai Cooperation Organization (SCO): The Shanghai Cooperation Organization (SCO), is a Eurasian political, economic, and security alliance. India officially joined SCO as a full Member on 9 June, 2017 at a summit in Astana, Kazakhstan.

Important SCO events/meetings:

7th Meeting of Ministers of Agriculture of the SCO Member States was held on 25th July 2022. India highlighted the importance of food security, nutrition security, supply chains, and fulfillment of SDG goals, in the meeting. The national level programmes launched by India, such as: Direct Income Support, Parampra Krishi Vikas Yojna, Farmers Producers Organisations, Pradhan Mantri Fasal Bima Yojna, Agriculture Infrastructure Fund, National e- Governance Plan in Agriculture, National e- governance Plan in Agriculture, Agri-stack & India Digital Eco System for Agriculture (IDEA), National

Mission on Sustainable Agriculture (NSMA), were highlighted in the meeting.

17.4.1 BRICS (Brazil, Russia, India, China, South Africa):

Important events/meetings:

- i. Meeting of BRICS Working Group on Agriculture was held on 27-28th April, 2022 (Virtually) under the Chairpersonship of Dr. Geetha Meetina, JS(IC) DA&FW in Krishi Bhawan, New Delhi.
- ii. The 12th BRICS Agriculture Ministers Meeting was held virtually on 08.06.2022 under the BRICS chairship of China. The meeting was attended by the Ministers for Agriculture of China, South Africa, Brazil, Russia and India. The Union Minister of State for Agriculture & Farmers Welfare, Ms. Shobha Karandlaje, participated and led the Indian Delegation in the meeting. In meeting, the Minister highlighted the National Mission on Food & Nutrition with focus on development of nutri-cereals and bio-fortified varieties of crops and also highlighted importance of millets in food and nutrition security and climate resilience. The Minister called for support and celebration of International Year of Millets, 2023 by the BRICS nations. The BRICS Agriculture Ministers also adopted a Joint Declaration of the 12th Meeting with the theme "Strengthening BRICS Cooperation for Coordinated Agricultural and Rural Development".

17.4.2 External Assistance:

There are various projects in the agriculture sector which are being implemented in different States of India with the help of external assistance provided

by foreign agencies/countries such as World Bank, International Fund for Agricultural Development (IFAD), JICA, GEF, Asian Development Bank (ADB) etc.

17.4.3 World Bank Assisted Projects:

Currently following projects in the agriculture sector are being implemented by the State governments with assistance from the World Bank through DEA:

1. Integrated Project for Source Sustainability and Climate Resilient Rain-fed Agriculture in HP;
2. Chhattisgarh Inclusive Rural and Accelerated Agriculture Growth Project;
3. National Agricultural Higher Education Project;
4. Odisha Integrated Irrigation Project for Climate Resilient Agriculture;
5. AP Integrated Irrigation & Agriculture Transformation Project;
6. Assam Agribusiness and Rural Transformation Project;
7. State of Maharashtra's Agribusiness and Rural Transformation Project;
8. Tamil Nadu Irrigated Agriculture Modernization Project;
9. Himachal Pradesh Horticulture Development Project;
10. Maharashtra Project on Climate Resilient Agriculture.

17.4.4 Japan International Cooperation Agency (JICA):

Himachal Pradesh Crop Diversification Promotion Project is being implemented with support from JICA.

Chapter-18

INTEGRATED SCHEME ON AGRICULTURE CENSUS & STATISTICS

18.1 Overview

Agriculture Census is conducted in the country at five yearly intervals. It aims at collecting information related to structural characteristics of operational holdings in the country. Periodic Census is the main source of information on number, area and other basic characteristics of operational holdings such as land use, cropping pattern, irrigation, tenancy status, input use etc. So far, ten Agriculture Censuses have been conducted since 1970-71 and the current Agriculture Census with reference year 2021-22 is 11th in the series.

The constituent activities of the Agriculture Census Programme are carried out in three distinct Phases which are statistically linked together. The Agriculture Census data is collected following a Census-cum-Sample Survey approach, after completion of the reference year. During Phase-I of the Census, data on primary characteristics of operational holdings, like number of holdings and area operated by different size class (marginal, small, semi-medium, medium and large), social groups (SC, ST, Others), gender (male/female), types of holding (individual, joint and institutional), etc. are collected. The second Phase of the Census collects data on detailed characteristics of operational holdings such as land use, irrigation status, tenancy particulars, cropping pattern etc.

Phase-III of Agriculture Census, (referred as Input Survey) is conducted as a follow up survey to the Agriculture Census (reference year as next Agriculture year to that of the Agriculture Census) to collect data on input use pattern of operational holdings in the country. Time series data generated through the Agriculture Census provides valuable information on structural changes that take place over time in agriculture sector. The results of Agriculture Census are published in the form of reports and are placed on the website of the Department (<http://agcensus.nic.in>) for public use.

18.2 Main activities undertaken during 2022-23: Details of main activities undertaken during the year 2022-23 are given as under:

- The 11th Agriculture Census 2021-22 was launched by Hon'ble Union Minister of Agriculture & Farmers Welfare, GoI on 28th July, 2022 in New Delhi. During the event, Hon'ble Union Minister released the handbook on Operational Guidelines for Agriculture Census 2021-22 and also launched the data collection portal/App & monitoring portal for Phase-I.
- "All India Conference on Training of Master Trainers" for Phase-I of the 11th Agriculture Census 2021-22 was organized on 10.08.2022 at Pusa Complex, New Delhi wherein Master Trainers of all States/UTs were trained on the concepts & definitions, methodology and use of web & android based data collection software. During the Conference, the Manual of Instructions for data collection schedule (Phase-I) was released by Additional Director General, DA&FW.
- All States/UTs organized their respective State level training programme for field functionaries under the supervision/guidance of Agriculture Census Division, DA&FW.
- Meetings/Virtual meetings with States/UTs on extraction of land revenue records and implementation status of the 11th Agriculture Census under the Chairmanship of Deputy Director General & Agriculture Census Commissioner, DA&FW have been organized from time to time.
- Village master of all States/UTs as well as their digitized land records data where available was extracted and uploaded into server; and made available to States/UTs

as pre-filled in the data collection app/portal.

- All States/UTs commenced the data collection work for Phase-I of Agriculture Census 2021-22 through use of hand-held devices like Smartphone/Tablet/ Laptop/ Personal Computer.

18.3 New Initiatives undertaken in the ongoing 11th Agriculture Census 2021-22: To further improve the coverage, data quality and timeliness in publication of census results, following new initiatives have been undertaken which are as under:

- Collection of data through App/Software

using hand-held devices like Smartphone/ Tablet/ Laptop/ Personal computer.

- Use of digitized land records depending on the status of maintenance or availability of land records.
- Complete enumeration of all 100% villages in Phase-I (in Non-Land record States as in Land Record States).
- Dissemination of data for Phase-I at village level.
- Real time monitoring of progress and uploading/downloading of data/software through web portal.

18.4 Furnishing Information on Action Taken Note as per format of Department of expenditure in Appendix-II:

Sl. No.	Year	No. of Paras/PA reports on which ATNs have been submitted to PAC after vetting by Audit	Details of the Paras/PA reports on which ATNs are pending		
			No. of ATNs not sent by the Ministry even for the first time	No. of ATNs sent but returned with observations and Audit is awaiting their resubmission by the Ministry	No. of ATNs which have been finally vetted by audit but have not been submitted by the Ministry to PAC
So far as Agriculture Census is concerned nothing is pending.					



Launching of the 11th Agriculture Census 2021-22 by Hon'ble Union Minister of Agriculture & Farmers Welfare on 28.07.2022 at Krishi Bhawan, New Delhi.



Release of handbook on Operational Guidelines of the 11th Agriculture Census 2021-22 and launching of data collection portal/app by Hon'ble Union Minister of Agriculture & Farmers Welfare on 28.07.2022 at Krishi Bhawan, New Delhi.



Organising the "All India Conference on Training of Master Trainers" for Phase-I of the 11th Agriculture Census 2021-22 on 10.08.2022 at Pusa Complex, New Delhi.

Chapter-19

SUB-MISSION ON AGRICULTURAL EXTENSION (SMAE)

Agriculture Extension:

19.1 Overview

The Sub Mission on Agricultural Extension (SMAE) under Green Revolution – *Krishonnati Yojana* is being implemented with an objective to restructure and strengthen the agricultural extension machinery with a judicious mix of extensive physical outreach of personnel, enhancement in quality through domain experts & regular capacity building, interactive methods of information dissemination, Public Private Partnership, pervasive & innovative use of Information & Communication Technology (ICT) / Mass Media, Federation of groups and convergence of extension related efforts under various Schemes and programmes of Government of India and the State Governments. The SMAE aims to appropriately strengthen, expand and upscale existing Extension Schemes. The ongoing Extension Schemes include the Central Sector and Centrally Sponsored Schemes being implemented by the Extension Division/ Directorate of Extension. Even in the case of Central Sector Schemes which have been subsumed within the Mission, a greater role has been envisaged for the States through their active involvement in planning, implementation and monitoring.

19.2 Objectives and Achievement of Major Schemes

19.2.1 SUPPORT TO STATE EXTENSION PROGRAMMES FOR EXTENSION REFORMS SCHEME (ATMA SCHEME)

The Scheme '**Support to State Extension Programmes for Extension Reforms (ATMA)**' implemented since 2005 has now been included as a Centrally Sponsored component of the Sub-Mission on Agriculture Extension (SMAE) under *Krishonnati Yojana*. Presently, it is under implementation in **704 districts of 28 States & 5 UTs** of the country. The Scheme promotes decentralized farmer-driven and

farmer accountable extension system through an institutional arrangement for technology dissemination in the form of an Agricultural Technology Management Agency (ATMA) at district level. Under the Scheme grants-in-aid is released to states with an objective to support State Governments efforts of revitalization of the extension system and making available the latest agricultural technologies in different thematic areas to increase agricultural production through extension activities viz. Farmers Training, Demonstrations, Exposure Visits, Kisan Mela, Mobilization of Farmers Groups and Setting up of Farm Schools. Through these activities, latest agriculture technologies are disseminated to farmers of the country.

In order to promote key reforms under the Scheme, ATMA Cafeteria 2018 continues to support activities in line with the following policy parameters:

- **Multi-agency extension strategies:** **Atleast 10%** of allocation on recurring activities at district level is to be used through non-governmental sector viz. NGOs, Farmers' Organization (FOs), Panchayati Raj Institutions (PRIs), para-extension workers, agri-preneurs, input suppliers, corporate sector, etc.
- **Farming system approach:** The activities specified in the cafeteria are broad enough to promote extension delivery consistent with farming systems approach and extension needs emerging through Strategic Research and Extension Plan (SREP).
- **Farmer centric extension services:** The cafeteria provides for group-based extension and it has necessary allocation for activities related to organizing and

supporting farmer groups. In order to supplement these efforts, a provision for rewards and incentives to the best organized farmer groups has also been provided.

- **Convergence:** The SREP and SEWP would also be mechanisms for ensuring convergence of all activities for extension. At present, resources for extension activities are being provided under different Schemes of Centre/State Governments. It is mandated that the SEWP, submitted by the State Governments for funding under the Scheme shall explicitly specify the activities to be supported from within the resources of other ongoing Schemes as well as from this Scheme.
- **Mainstreaming gender concerns:** It is mandated that **atleast 30%** of resources on programmes and activities are utilized for women farmers and women extension functionaries.

Implementation Status:

- Institutional arrangements viz. Inter Departmental Working Group (IDWG)/ in 28 States and 5 UTs, ATMA Core Committees – Governing Board (GB) & ATMA Managing Committee in 704 Districts; Block Technology Team (BTT) in 6092 Blocks & Block Farmer Advisory Committees (BFACs) reconstituted in 5025 Blocks; District FACs have been constituted in 537 districts and State Level FACs in 20 States.
- SEWPs of 28 States/5 UTs have been prepared and approved based on District Agriculture Action Plans of 704 ATMA districts. Since the inception of the Scheme in 2005-06 up to 31st December, 2022 has been to the tune of **Rs.6850.71 crore released to States under the scheme. During 2022-23**, against the B.E. of Rs.710.96 crores, an amount of **Rs.288.76**

crore has been released to the States up to 31st December, 2022 for implementation of the Scheme.

- Physical performance of the Scheme since its inception in 2005-06 (April 2005 to 31st December, 2022) is as below:
 - ✓ Over 63199574 farmers including 17088741 farm women (27.04%) have participated in farmer oriented activities like Exposure Visits, Trainings, Demonstrations, Farm Schools & Kisan Melas.
 - ✓ Over 388121 Commodity based Farmer Interest Groups (CIGs)/ FIGs have so far been mobilized under the Scheme.
 - ✓ Over 194872 Farm Schools have been organized on the fields of outstanding farmers.
- Progress of implementation during 2022-23 (up to 31st December, 2022):
 - ✓ 1920496 farmers including 589944 farm women (30.72%) have been reportedly participated in farmer oriented activities like exposure visits, trainings, demonstrations & kisan melas.
 - ✓ 9544 CIGs/ FIGs organized.
 - ✓ 7649 Farm Schools organized.
 - ✓ 15700 specialists & functionaries have been reported as deployed under ATMA upto 31st December, 2022.
 - ✓ 117485 Farmer Friends also identified by the states.

19.2.2 MASS MEDIA SUPPORT TO AGRICULTURAL EXTENSION

This Scheme is utilizing countrywide infrastructure and networks of All India Radio and Doordarshan and focusing dissemination of latest farm practices through Radio and Television networks. The Prasar Bharati, a 'National Public Service Broadcaster' is

implementing this Scheme. The objective of the Scheme is to enhance and boost the Agriculture Extension system in the present scenario. At present the farmers need technology, investment, better quality inputs, real time information and most of all the latest know-how for sustaining commercial and cost effective sustainable agriculture. A major shift in the methodology of delivering knowledge to the farm has taken place. Radio and TV have the advantage of reaching a wide audience at a very low cost.

Telecast of Krishi Darshan Programmes on Doordarshan: Under this Scheme, a 30 minute programme is being telecast 5 days a week through 01 National, 18 Regional Kendras of Doordarshan. Similarly, 96 Rural FM Radio Stations of all India Radio are being utilized to broadcast 30 minutes of programme namely, Kisan Vani (6 days a week) and 03 programmes namely – Krishi Darshan (30 minutes), Hello Kisan (60 minutes) and Choupal Charcha (30 minutes) (5 days a week) on DD Kisan – 24 hour dedicated Channel for agriculture and farming community. A programme 'Kisan Ki Baat', on the lines of Kisanvani is being broadcast from news on AIR (Erstwhile FM Gold channel) Delhi, since September 2018.

Broadcast of Kisan Vani Programme on All India Radio: Under this component, 96 FM/AM stations of All India Radio are broadcasting 30-minute programme six days a week from 6.30-7.00 PM. Each station is broadcasting separate programme in respective dialects/languages.

Telecast/Broadcast of spots/jingles advisories under 'Free Commercial Time (FCT)' on AIR and DD: In addition to above regular programmes, the Free Commercial Time (FCT) available under Krishi Darshan and Kisanvani programme is being utilized for dissemination of Advisories on Rabi / Kharif season, Jingles on Cooperatives, spots on Kisan Call Centers, Judicious use of fertilizers, safe use of Pesticides, Machinery and Technology, Farm School, NFSM, Kisan Credit Card and Agri -Clinic and Agri -Business Centers (ACABC), package of practices available to the farmers under National

Food Security Mission (NFSM), and other important flagship programmes like Neem Coated urea, Pradhan Mantri Krishi Sichai Yajana, Crop Insurance Scheme, National Agriculture Market, Soil Health Card, Bee Keeping, NHM, Parampagat Krishi Vikas Yojana and Organic Farming etc and contingency plan developed by State Governments and emergent issues like Drought, Flood etc.

Focused Publicity & Awareness Campaign through other media platforms: Besides above, the '**Focused Publicity & Awareness Campaign**' which would cut across all the Divisions of the Ministry was launched on July 5, 2010 to create awareness about the assistance available under various Schemes of the Department of Agriculture & Farmers Welfare. This campaign continued being in an aesthetic, professional and politically neutral manner. Video Spots and Audio spots are being broadcast/telecast through AIR, DD, Lok Sabha TV and also on Private TV Channels. The above spots are being broadcast/telecast through AIR/DD and private national and regional TV channels during news and entertainment programmes. In addition to this, Ministry is using various multimedia platforms i.e. railway panels/ stations, bus panels, exhibitions through Directorate of Field Publicity, web based digital platforms, hoardings etc. for media campaign on above flagship programmes.

Technical Support to DD Kisan Channel: Recently launched DD Kisan, a 24 hour agriculture based channel is catering the requirements of the farming community inclusive of research updates, extension advisories, market rates and weather updates and is also utilized extensively under the MMSAE for dissemination of information.

Support to Community Radio Stations (CRS): To promote agriculture extension through mass media at community level, the Ministry of Agriculture & Farmers Welfare is also providing support for setting up of Community Radio Stations (CRS), which would make a major contribution to agricultural extension by utilizing the reach of radio transmitter and disseminating information and knowledge, produced locally and having relevance

for a specific area in local dialects/languages. As on date, 8 CRS are operational in KVKs and NGOs under this Scheme and broadcasting agriculture programmes.

Print Media/Social Media: Awareness is also created through print advertisements in leading newspapers across the country. Besides, social media platforms viz. Facebook, twitter, youtube etc. are also being utilized. The national and regional newspapers are being utilized based on their circulation figures.

Physical and Financial Progress:- During 2022-23 (up to December, 2022), 4095 programmes were telecasted on DD and 22698 broadcasted through All India Radio During the year 2022-23, out of Rs.173.50 crore (BE), an amount of Rs.84.60 crore has been incurred upto 31.12.2022 under Central Sector Scheme 'Mass Media Support to Agriculture Extension' for Krishi Darshan and Kisan Vani Programmes being implemented through Prasar Bharati including 'Focused Publicity and Awareness Campaign' through Radio/ TV /Print and other outdoor media platforms.

Projections for the period January - March, 2023: 1335 programmes are projected to be telecast on Doordarshan and 7439 programmes broadcast through All India Radio.

19.2.3 ESTABLISHMENT OF THE AGRI-CLINICS AND AGRI-BUSINESS CENTRES (AC&ABC)

The AC&ABC Scheme is under implementation since April, 2002. The Scheme aims at creating gainful self-employment opportunities to unemployed agricultural graduates, agricultural diploma holders, and intermediate in agriculture apart from science graduates with post-graduation in agriculture related courses for supporting agriculture development and supplementing the efforts of public extension. **National Institute of Agricultural Extension Management (MANAGE)** is the implementing agency for training component under the Scheme through a network of identified Nodal Training Institutes (NTIs) in various states. National Bank for Agriculture and Rural

Development (**NABARD**) is implementing subsidy component under the Scheme on the behalf of Government of India and is monitoring credit support to Agri-Clinics and Agri-Business Centres through Commercial Banks. The credit linked back-ended subsidy @ 36% of the Total Financial Outlay (TFO) capital cost of the project funded through bank loan is available under the Scheme. This subsidy is 44% in respect of candidates belonging to SC/ST, Women and all categories of candidates from North-Eastern and Hill States. Now, benefits of MUDRA Scheme loans also are made available to the entrepreneurs establishing agri-ventures under the Scheme.

The Scheme has been on-boarded with DBT Bharat Mission on 18-04-2017 and Aadhaar particulars have been made mandatory for getting benefits under the Scheme. Online process for training programme has been rolled out on 01-01-2018 through the module www.acabcmis.gov.in. Subsidy disbursement details are also captured online since 01.01.2019. Benefits of Mudra Loan Scheme have been extended for ACABC Ventures. Provision of Extension service to farmers by these agri-preneurs has been made a mandatory component of the Scheme. AC&ABC programme has been on onboarded on PRAYAS portal DIKSHA portal. Details of the Scheme may be seen at www.agriclinics.net.

So far, 83810 candidates have been trained and 36543 agri-ventures have been established in the country during the period of implementation of the Scheme upto December, 2022. Out of the ventures established since inception, 3405 have been subsidized as on December, 2022. During the year 2022-23, starting from April, 3821 candidates have been trained, 1903 agri-ventures have been established and 215 ventures were subsidized upto December, 2022.

Projections for the period January - March, 2023:

- 904 Numbers of Candidates are projected to be trained.
- 460 Numbers of Ventures are projected to be established

19.2.4 KISAN CALL CENTERS (KCC)

The KCC Scheme was launched on 21st January 2004 to provide answer to farmers' queries on agriculture and allied sectors through toll free telephone lines. A country wide common eleven digit number '1800-180-1551' has been allocated for KCC. The replies to the queries of the farming community are being given in 17 local languages. KCCs operate from 21 locations in the country covering all the States and UTs. Calls are attended from 6.00 am to 10.00 pm on all 7 days of a week.

In order to make farmers aware of this facility, audio and video spots on Kisan Call Centres have been broadcasts/telecast through All India Radio, Doordarshan and channels. A Kisan Knowledge Management system (KKMS) has been created at the backend to capture details of the farmers calling KCCs. Modified call Escalation Matrix has also been put in place. If the queries are not answered by FTA, it is escalated to concerned Officer for replying the query through KKMS interface within the given time frame.

The restructured Kisan Call Centre programme has many good number of unique features viz. all in one PCs; 100% call recording; call barging; voice mail service; customized IVRS; call conferencing through the experts; feedback at the end of each call; playing state specific advisories during call wait time and SMS to caller farmers giving a gist of answers given by the KCC Farm Tele Advisor, CCTVs and Biometric attendance system at each KCC location, PRI lines with capacity to handle requisite number of incoming and outgoing lines, call holding time less than 30 seconds. The farmer calling KCC can also register for receiving SMSs from experts on the subject area. With these modernized facilities at each KCC location, there has been encouraging response from farmers.

Since inception of the Scheme till December, 2022; over 598.21 lakh calls have been registered in the KCCs. During the current year, around 24.51 lakh calls have been received upto December, 2022.

Projections for the period January - March, 2023:

Expected number of calls to be answered from KCCs are 25,49,000.

19.2.5 Human Resource Development (HRD) SUPPORT:

Department of Agriculture & Farmers Welfare has strengthened a network of training institutions in the country by supporting the National Institute of Agricultural Extension Management (MANAGE) at Hyderabad; four Regional Extension Education Institutes (EElIs) at the regional level and the State Agricultural Management & Extension Training Institutes (SAMETIs) at the State level.

National Institute of Agricultural Extension Management (MANAGE) is providing training support to senior and middle level functionaries of the State Governments. It is also providing necessary support to the states in implementation of Extension Reforms (ATMA) Scheme. Against 400 training courses planned for 2022-23, MANAGE has conducted 330 training programs (up to 31st December, 2022) in which 26253 participant have been participated during current year. Against BE of Rs.19.00 crore, an amount of Rs.14.25 crore has been released till 31st December, 2022. The implementation of self-financing professional courses viz. two-year Post Graduate Program in Agri-Business Management, one-year 'Post Graduate Diploma in Agricultural Extension Management' in distance learning mode and one year Diploma in Agricultural Extension Services for Input Dealers (DAESI) by MANAGE (organized on weekends/weekly holidays) are being continued during the year 2022-23.

Extension Education Institutes (EElIs): Four Extension Education Institutes namely, Nilokheri (Haryana), Hyderabad (Telangana), Anand (Gujarat), Jorhat (Assam) are functioning at the Regional Level. The objectives of EElIs are to improve the skills and professional competence of middle level extension field functionaries of agriculture and allied departments of the State/UTs in the areas of

(a) Extension Education; (b) Extension Methodology; (c) Information and Communication Technology; (d) Training Methodology; (e) Communication; (f) Market led Extension; etc. During 2021-22, a total of 220 training programmes have been planned, out of which the EEIs have conducted 215 training programmes with 8045 participants during 2021-22. Against the budget grant of Rs.19.10 crore, an amount of Rs.7.78 crore has been released to the EEIs during 2022-23 till December, 2022 and during 2022-23, 152 training programme have been conducted with 5010 participants till December, 2022.

Projections for the period January - March, 2023:

The projection of EEIs to conduct 78 training programmes to train 1560 participants from January-March, 2023 with total expenditure of Rs.1555.00 lakh upto March, 2023.

Diploma in Agricultural Extension Services for Input Dealers (DAESI): DAESI is of one year (expanded to 48 weeks) regular course launched in October, 2015 with an objective to impart education in agriculture and other allied areas to the Input Dealers so that they can establish linkage to their business with extension services, besides discharging regulatory responsibilities enjoined on them. This programme was earlier implemented through MANAGE @Rs.20,000 per candidate in self-financial mode in Andhra Pradesh, Maharashtra, Tamil Nadu, Odisha, Jharkhand & West Bengal. It has been decided to implement DAESI programme across the country through SAMETIs with involving Agribusiness Companies, ATMAs, KVKs, Agril. Colleges & NGOs. So far 44984 input dealers have been trained upto 2020-21. During 2022-23, 98 batches of DAESI programme have been conducted and 3920 input dealers trained till December, 2022.

Projections for the period January - March, 2023:

The projection estimates of DAESI are to conduct 202 training programmes to train 8080 input dealers from January-March, 2023 with total expenditure of Rs.1200.00 lakh upto March, 2023.

19.2.6 National Gender Resource Centre in Agriculture (NGRCA)

The National Gender Resource Centre in Agriculture (NGRCA) of the Department of Agriculture & Farmers Welfare established in Extension Division supported under the component of 'Extension Support to Central Institutes/ Directorate of Extension' of 'Sub-Mission on Agricultural Extension'. The NGRCA acts as a focal point for convergence of all gender related activities and issues in agriculture and allied sectors within and outside DA&FW; addressing gender dimension to agriculture policies and programmes; rendering advocacy/ advisory services to the States/UTs to internalize gender specific interventions for bringing the farm women in the mainstream of agriculture development.

Being a Nodal Agency for Women in Agriculture in DA&FW, Ministry of Agriculture & Farmers Welfare; the Centre is actively involved in the revision of guidelines of various beneficiary oriented schemes/programmes of DA&FW to ensure allocation of resources and flow of benefits to the women farmers in proportion to their participation in agricultural activities.

Major activities undertaken by NGRCA:

Mahila Kisan Diwas-2022-

The National Gender Resource Centre in Agriculture (NGRCA), Directorate of Extension, Department of Agriculture & Farmers Welfare in collaboration with National Institute of Agricultural Extension Management (MANAGE), Hyderabad ; an autonomous organization under Ministry of Agriculture and Farmers Welfare (MoA&FW) celebrated '**Mahila Kisan Diwas**' or '**International Rural Women Day**' on 15th October, 2022. As the year 2023 has been declared as the 'International Year of Millets' by the United Nations (UN), the theme of Mahila Kisan Diwas was '**Millets: Empowering Women and Providing Nutritional Security**'. The inaugural event was organized on 15.10.2022 through Video Conferencing under the guidance of Hon'ble Union Agriculture Minister and the technical session of the

programme was organized at MANAGE, Hyderabad with the technical support provided by Indian Institute of Millet Research (IIMR), Hyderabad. A book titled **“Evidences based Gender Inequality in Agriculture and Food Systems in India”** was also released on the occasion of Mahila Kisan Diwas. The Senior and middle level extension functionaries, women farmers and agri-entrepreneurs and resource persons from various States/ Institutes/ Start-ups training institutes participated in the event and an exhibition was also showcased at MANAGE, Hyderabad by women Start-ups. The successful women entrepreneurs from various States also shared their views and experiences on the occasion during the event.

PRE-SEASONAL DA & FW-ICAR INTERFACES:

The Extension Division of DA&FW has been organizing Pre-Seasonal Interfaces before Kharif & Rabi every year involving Technical Division of Department of Agriculture & Farmers Welfare

(DA&FW) and Indian Council of Agricultural Research (ICAR). The effort is aimed at understanding the key issues - both from Research and Development perspective in agriculture and allied sectors and evolving joint strategies to address those issues in the ensuing Kharif/ Rabi season. The issues so emerged warranting actions by States are than flagged in the National Conference on Agriculture for Kharif / Rabi and are discussed with the States for its execution at field level.

The Pre-Kharif 2022 and Pre -Rabi 2022 DA&FW-ICAR Interface was organized on 6th April, 2022 and 6th September, 2022 and the group recommendations of the said interface were shared with the Senior Officers of the Agriculture Department of States / UTs.

PROGRAMMES OF NORTH-EASTERN STATES:

The status of implementation of Schemes in the North Eastern Region is as follows:

a. Support to State Extension Programme for Extension Reforms:

S.No.	Name of the State	No. of ATMA Registered
1.	Arunachal Pradesh	25
2.	Assam	33
3.	Manipur	09
4.	Mizoram	08
5.	Meghalaya	11
6.	Nagaland	12
7.	Sikkim	06
8.	Tripura	08
Total:		112

During the current financial year 2022-23, Budget estimate of Rs.79.31 crore was earmarked for North Eastern States for implementing the Scheme whereas, an amount of Rs.33.91 crore has been released to North Eastern States – Arunachal Pradesh (Rs.3.25 crore), Assam (Rs.14.25 crore), Manipur (Rs.2.25 crore), Meghalaya (Rs.4.50 crore), Mizoram (Rs.0.00 crore), Nagaland (Rs.6.26 crore), Tripura (Rs.1.50 crore) and Sikkim (Rs.1.90 crore) till 31st December, 2022.

Establishment of Agri-Clinics and Agri-Business Centres (AC&ABC): Candidate from North-Eastern States are entitled for an additional benefit of 44% subsidy on the Total Financial Outlay (TFO) as against to 36% for General Category Candidates. Details of candidates trained and venture established from since the inception to till December, 2022 is given below:

S.No.	State	Candidates Trained	Ventures Established
		Since Inception	Since Inception
1.	Arunachal Pradesh	48	03
2.	Assam	844	264
3.	Manipur	522	135
4.	Meghalaya	37	03
5.	Mizoram	52	00
6.	Nagaland	187	22
7.	Sikkim	09	01
8.	Tripura	06	02
	Total	1705	430

Kisan Call Centers (KCCs): The KCC located at Guwahati caters to the needs of Arunachal Pradesh, Assam, Manipur and Nagaland; and KCC located at Agartala caters to the needs of Tripura, Mizoram and Meghalaya. For Sikkim, the KCC is located at Kolkata (West Bengal). Queries are replied in different languages depending upon the area from where the query is received. Since the beginning of Scheme, the calls registered from various states of North-Eastern Region upto December, 2022 are, Arunachal Pradesh (12,639), Assam (3,95,611), Manipur (35,939), Meghalaya (20,120), Mizoram (10,644), Nagaland (6,705), Sikkim (20,820) and Tripura (57,470). The calls registered from these states during current year up to December, 2022 are Arunachal Pradesh (257), Assam (19,334), Manipur (510), Meghalaya (815), Mizoram (465), Nagaland (371), Sikkim (1,046) & Tripura (1,609).

Extension Education Institute (EEI): EEI set up at Jorhat (Assam) in 1987 has been providing training support at the regional level to the middle level field

functionaries of in 8 States of North Eastern Region and West Bengal. During the year 2022-23, 21 courses have been organized with 671 participants trained till December, 2022. An amount Rs.178.00 lakhs has been released to EEI Jorhat during 2022-23 as against the budget estimate of Rs.324.58 lakh till December, 2022.

Projections for the period January – March, 2023:

The projection estimates of EEI Jorhat are to conduct 16 training programmes to train 320 participants from January-March, 2023 with total expenditure of Rs.290.00 lakh upto March, 2023.

Mass Media Scheme in NE Region: The programmes under the Scheme are being disseminated throughout the country including NE region benefiting the farmers of the area. In the NE Region, the programmes are being disseminated in regional languages & local dialects through Six FM station and One Regional Kendras.

Chapter-20

SUB-MISSION ON SEED AND PLANTING MATERIAL (SMSP)

20.1 Overview

The mandate of Seeds Division is to promote production and multiplication of quality seeds of all crops so that the required quantities of seeds can be made available in time to farmers in the country. Functions/responsibilities include:-

- Formulation and implementation of policy and programmes on quality seed production.
- To recommend proposals for import and export of seeds and planting material.
- To supplement the efforts of States/ Union Territories in production and distribution of certified / quality seeds.
- To deal with matters relating to Intellectual Property Rights in Agriculture, Biodiversity, International Treaty on Plant Genetic Resources for Food and Agriculture, UPOV Convention, Import / Export of seeds.
- Matters relating to Central PSU - National Seeds Corporation.
- Matters relating to Protection of Plant Varieties & Farmers' Rights (PPV&FR) Authority – an autonomous organization and National Seeds Research & Training Centre (NSRTC), Varanasi, Uttar Pradesh– a subordinate office.
- Matters relating to International Rice Research Institute (IRRI) South Asia Regional Centre (ISARC), Varanasi, Uttar Pradesh.

20.2 Major Schemes – Objectives

(i) Sub-Mission on Seed and Planting Material (SMSP): Sub Mission on Seed and Planting Material (SMSP) is under implementation with the objective to develop/strengthen the seed sector and to enhance production and multiplication of high yielding certified/ quality seeds of all agricultural crops and making it available to farmers at affordable prices and also place an effective system for protection of plant varieties, rights of farmers and plant breeders to encourage development of new varieties of plants. The existing components of the SMSP scheme are as under:

Sl no.	Intervention
i.	Strengthening for seed quality control
ii.	Strengthening of Grow Out Test(GOT) facilities
iii.	Support to seed certification agencies
iv.	Seed Village Programme
v.	Certified seed production of oilseeds, pulses , fodder and green manure crops through Seed Villages
vi.	Seed processing facilities
vii.	Seed storage facilities
viii.	Transport subsidy on movement of Seeds to NE States etc

ix.	National Seed Reserve
x.	Assistance for boosting seed production in the private sector
xi.	Support to Sub-Mission Director and survey / studies
xii.	PPV&FRA

(ii) Production of Breeder, Foundation and Certified/Quality Seeds: Seeds are the basic and critical input for agricultural production. The Indian Seeds programme recognizes three generations of seeds, namely breeder, foundation

and certified seeds. The details of production of breeder, foundation and certified seeds from 2011-12 to 2022-23 are shown in the following table:-

YEAR	Production/Availability of Seed (Metric Tonnes)		
	Breeder Seed (Production)	Foundation Seed	Certified / Quality Seed
2011-12	12338	222681	3536200
2012-13	11020	161700	3285800
2013-14	8229	174307	3473130
2014-15	8621	157616	3517664
2015-16	9036	149542	3435248
2016-17	11071.44	220907	3802904
2017-18	10508.59	195415	4194111
2018-19	10426	180096	3988767
2019-20	9269.21	222504	4310095
2020-21	9115.62	241207.00	4836632.00
2021-22	9353.65	213969	4988286.5
2022-23	7602.89(target)	238813.80 (Tentative)	5142583.00

(iii) Strengthening of Seed Quality Control Organizations (State Seed Certification Agencies and State Seed Testing Laboratories): -The responsibility of execution of various provisions of the Seeds Act, 1966, the Seeds Rules, 1968 and the Seeds (Control) Order, 1983 vested with State Department of Agriculture. The Seed Inspectors have been appointed under the Act can inspect the premises of seed selling, marketing, processing and seeds storage to draw the samples for seeds testing to ensure seeds standards as per the Indian Minimum Seed Certification Standards, 2013. Appropriate action/legal proceedings may initiate against the offenders selling sub-standard seeds as per the provisions of the Seeds Act/Rules and Seed (Control) Order. These Seed Inspectors

are also authorized to stop the sale of sub-standard seeds and to seize their stocks. Seed Inspectors have also been provided with powers of enforcement under the Environment (Protection) Act, 1986 to regulate the quality of Genetically Modified (GM) crops and also control /curb the sale of unapproved GM event of other crops.

(iv) Notification of New Crop Varieties: The 369 no. of new varieties of Agricultural Crops and 100 varieties of Horticultural Crops were released and notified for cultivation in different agro-climatic zones of the Country during the year 2021-22.

(v) Policy on Export/Import of Seeds and Planting Materials: - The export /import of seeds has increased with rationalization and simplification

of the export/import regime. This has benefited Indian farmers, the seed industry and entrepreneurs. During the year 2021-22, 313 cases of export and 142 cases of import have been recommended to make available the best seed and planting material to farmers.

(vi) Use of Bt. Cotton Hybrid Seeds: In order to provide an effective system for fixation of a uniform maximum price and to ensure the availability of Bt. Cotton hybrid seeds to farmers at fair, reasonable and affordable prices, the Government of India issued a Cotton Seeds Price (Control) Order (CSPCO), 2015 on 07.12.2015 under section 3 of the Essential Commodities Act, 1955. Accordingly, the Government has regulated the sale of Bt. Cotton seed by evoking the provisions of the EC Act. The price of seeds of Bt. Cotton has been fixed at Rs.635/- for BG-I and for BG-II, Rs.810/- for a packet of 450 grams the year 2022.

(vii) National Seed Reserve:- In order to meet the requirement of seeds of short and medium duration crop varieties during natural calamities and unforeseen conditions, the National Seed

Reserve (NSR) a component of Sub-Mission on Seeds & Planting Material is being implemented by 22 implementing agencies in the country namely National Seeds Corporation, State Seed Corporations and State Department of Agriculture, Jharkhand, Tamil Nadu, Himachal Pradesh and Jammu & Kashmir.

Under the scheme, financial assistance is provided to the implementing agencies for revolving funds (Cost of Seeds), maintenance cost to maintain certified and foundation seeds of short and medium duration crop varieties and price differential for left over stock of seeds. Financial assistance is also provided for construction of seed godown, establishment of seed processing plant, cost of material handling equipment, cost of out sourced service and computerization & networking facilities. If a contingency situation occurs, the implementing agencies make available seeds to farmers for re-sowing purpose at a reasonable cost.

The targets, achievements and amount released to the implementing agencies during last three years are as under:-

S. No.	Year	Physical Targets (in lakh qtls.)	Physical Achievements (in lakh qtls.)	Amt. Released (Rs. lakh)
1.	2018-19	3.71	3.14	1149.64
2.	2019-20	3.73	2.70	937.13
3.	2020-21	3.73	2.88	1721.31
4.	2021-22	3.67	3.9	1602.12
5.	2022-23 (as on 27.01.2023)	3.66	2.26	376.00

(viii) GM Crop in India

Bt. Cotton is the only genetically modified crop approved for commercial cultivation by Genetic Engineering Appraisal Committee (GEAC) of the Ministry of Environment, Forests & the Climate Change (MoEF&CC) in the major cotton growing States viz. Andhra Pradesh, Telangana, Tamil Nadu,

Karnataka, Maharashtra, Madhya Pradesh, Gujarat, Rajasthan, Haryana and Punjab. The area under Bt. cotton has expanded from 29,000 ha in 2002-03 (0.34% of total cotton area) to about 111.90 lakh hectare in 2021-22 (95% of total cotton area) and production of cotton has increased from 86.21 lakh bales in 2002-03 to 312.92 lakh bales in 2021-22.

(ix) Saarc Seed Bank:

India signed an Agreement on establishment and maintenance of a SAARC Regional Seed Bank in November, 2011 at the XVII SAARC summit held at Maldives in 2011 with the objective to provide regional support to national seed security efforts; address regional seed shortage through collective actions, foster inter-country partnerships, to promote increase of Seed Replacement Rate (SRR) with appropriate varieties at a faster rate as far as possible so that the use of quality seed for crop production can be ensured and to act as a regional seed security reserve for the Member States.

Accordingly, the National Seeds Corporation Limited (NSC), New Delhi has been declared as the National Designated Agency to coordinate for establishment and maintenance of the SAARC Regional Seed Bank in India. The National Designated Agency (NDA) would be trusted with the task of establishing the SAARC Seed Bank as per provisions contained in the agreement. It will work as the National Focal Point also. National Seeds Corporation Limited, State Seeds Corporations and State Department of Agriculture are declared as implementing agencies for establishment and maintenance of the SAARC Regional Seed Bank in the country.

In addition, the Government of India constituted a National Technical Committee to coordinate all related activities i.e working out modalities and technicalities of participation in the SAARC Regional Seed Bank in the country.

(x) Seed Village Programme: - In order to upgrade the quality of farmer saved seeds which is about 60-65% of the total seeds used for the crop production programme, the following interventions are made:

- a) 50% assistance for seeds of cereal crops and 60% for oilseeds, pulses, fodder and green manure crops is provided for distribution of foundation/certified seeds required for one-acre area per farmer.
- b) Farmers' Trainings: Financial assistance of Rs.15000 per group (50-150 farmers each group) is provided for training of farmers on seed production and post-harvest seed technology (Rs.0.15 lakh)
- c) Seed treating/dressing drums: Financial assistance for treating seeds produced in the Seed Village is available @ 3500 per seed treating drum of 20kg capacity and Rs. 5000 per drum of 40 kg capacity.
- d) Seed storage bins: To encourage farmers to develop storage capacity of appropriate quality, financial assistance is available to farmers for purchasing seed storage bins. The rate of assistance is as under:

@33% for SC/ST farmers for 10qtls. Capacity upto a maximum of Rs. 1500 @ 33% for SC/ST farmers for 20 qtls. Capacity upto a maximum of Rs.3000@25% for General farmers for 10qtls. capacity upto a maximum of Rs.1000@25% for General farmers for 20qtls. capacity upto a maximum of Rs.2000

Assistance for purchase of only one seed bin for each identified farmer is available in the Seed Village Programme. The implementing agency may also distribute smaller seed bins as per demand of farmers and financial assistance is reduced accordingly.

The year-wise physical progress of the programme since 2011-12 is as under: -

Year	Number of Seed Village Organized	Quantity of Seed Produced (In Lakh Quintals)
2011-12	89,244	199.28
2012-13	78,943	116.708
2013-14	68455	145.14
2014-15	51345	198.20
2015-16	30793	93.40
2016-17	25962	77.76

2017-18	132010	117.14
2018-19	104600	219.89
2019-20	77534	187.49
2020-21	65939	244.54
2021-22	79731	256.52
2022-23* (as on 30.01.2023)	38149	60.87

*The progress from most implementing agencies is yet to be received after crop harvest.

(xi) Boosting Seed Production in the Private Sector: - Under this component of credit linked back ended subsidy, @40% of the capital cost of the project in general areas and 50% in case of hilly and scheduled areas subject to an upper limit of Rs 150 lakhs per project is funded. Two percent (2%) of the total fund utilized under the component is provided as administrative charges to the nodal agency. So far, **651** such projects have been sanctioned for small entrepreneurs in **18** States with **160.52** lakh qtls. Seed processing capacity and storage capacity of 60.06 lakh qtls (as on 31.10.2022).

(l) Programme being implemented in the North-Eastern States:-Details of the programmes being implemented in the NE region is at **Annexure-20.1**.

20.3 Modifications in new policy on Seed Development:-

The National Seed Policy, 2002 provides that all imports of seeds and planting materials etc. promoted subject to EXIM Policy Guidelines and the requirements of the Plants, Fruits and Seeds (Regulation of import into India) Order, 1989 and amendments thereon. The import of parental lines of newly developed varieties will also be encouraged. The policy also ensure that imported seeds and planting materials should meet the minimum seed standards of seed health, germination, genetic and physical purity as prescribed. All importers will make available a small sample of the imported seed to the Gene Bank maintained by the National Bureau of Plant Genetic Resources (NBPGR). In order to harmonize the New Policy on Seed Development, 1988 with the National Seed Policy, 2002, the following two modifications have been made in the

new Policy on Seed Development, 1988:

- (i)** Seeds of wheat and paddy – In order to provide to the Indian farmer the best planting material available in the world to increase productivity, the import of seeds of wheat and paddy may also be allowed as per provisions of the Plant Quarantine Order, 2003 as amended from time to time for a period not exceeding two years by companies, which have technical/financial collaboration agreement for production of seeds with companies abroad, provided the foreign supplier agrees to supply parent line seeds/nucleus or breeder seeds/ technology to the Indian company within a period of two years from the date of import of the first commercial consignment after its import has been recommended by DAC. For trial and evaluation of the variety sought to be imported by eligible importers, 16 kg. seed in case of wheat and 5 kg. in case of paddy will be given to ICAR or farms accredited by ICAR for sowing. After receipt of satisfactory results of trial/evaluation, an eligible importer may apply for bulk import of such seeds to the Department of Agriculture and Farmers' Welfare.
- (ii)** Similar procedure of trial/evaluation has been recommended for import of seeds of coarse cereals, pulses and oil seeds. Further, Seeds Division has simplified the forms for export and import of seeds and planting material.

20.4 Implementation of OECD Seed schemes in India: The objective of the Organization for Economic Co-operation and Development (OECD) Seed Schemes is to encourage the use of seeds of consistently high quality in participating countries. The scheme authorizes the use of labels and

certificates for seeds produced and processed for international trade according to OECD guidelines. The scheme also facilitates the import and export of seeds, by the removal of technical trade barriers through internationally recognized labels. India's participation in OECD schemes aims to enhance seed export capabilities and probabilities. The Department of Agriculture & Farmers Welfare has become a member of the OECD Seed Scheme from 23 October, 2008 and 260 varieties in more than 20 crops have been offered for enlistment in OECD list of varieties since the inception of the scheme. A National Task Force on OECD Scheme has also been constituted to enhance India's share of seed export through this scheme.

20.5 Gender perspective in agriculture: Sub-Mission for Seeds and Planting Material (SMSP) is under implementation w.e.f. 01.04.2014 with the view to develop/strengthen the seed sector and to enhance production and multiplication of high yielding certified/ quality seeds of all agricultural crops and making it available to farmers at affordable prices and also place an effective system for protection of plant varieties, rights of farmers and plant breeders to encourage development of new varieties of plants.

Financial assistance/ subsidy benefits are equally available/open to all farmers including women farmers. Implementing States/UTs/ agencies have been requested to allocate sufficient funds and ensure participation of women farmers.

The Government is implementing a Seed Village Programme to upgrade the quality of farmer's saved seeds under the Sub-Mission on Seeds and Planting Material (SMSP). Under this programme, financial assistance for distribution of foundation/certified seeds at 50% cost of the seeds for cereal crops and 60% for pulses, oilseeds, fodder and green manure crops for production of quality seeds is available for one acre per farmer. The benefits/financial assistance are equally available/open to all farmers including women farmers. Fund/budget exclusively for women farmers is not provided under the scheme, however states are requested to cover an adequate number of women farmers under the scheme.

20.6 Organisations under the Seed Division

(i) Protection of Plant Varieties and Farmers' Rights Authority (PPV&FRA)

Implementation of Protection of Plant Varieties and Farmers' Rights

The Department provides administrative support to the Statutory Organization Protection of Plant Varieties and Farmers' Rights Authority functioning as per the provisions of the **Protection of Plant Varieties and Farmers' Rights (PPV&FR) Act in 2001 (53 of 2001)**. The Authority was set up in 2005.

In all proceeding under this act, the Authority or the Registrar, as the case may be, shall have all the powers of a civil court for the purposes of receiving evidence, administering oaths, enforcing the attendance of witnesses, compelling the discovery and production of documents and issuing commissions for the examination of witnesses and any such order shall be executable as a decree of a civil court.

1. Objectives of the PPV & FR Authority

- To establish effective system for protection of plant varieties, rights of farmers and plant breeders and to encourage the development of new varieties of plants;
- To recognize and protect the rights of the farmers in respect of their contribution made at any time in conserving improving and making available plant genetic resources for development of new plant varieties;
- To protect plant breeder's rights to stimulate investment for research and development both in the public and private sector for the development of new plant varieties to ensure availability of high quality seeds and planting material to the farmers.

2. Registry Branches of the PPV & FR Authority

The Head Office of PPV&FRA at New Delhi along with the five branch offices at different locations in India to facilitate breeders from different regions to approach the Registry with in their region at Pune

(Maharashtra), Shivamogga (Karnataka), Palampur (Himachal Pradesh), Ranchi (Jharkhand) and Guwahati (Assam).

3. Activities of the PPV & FR Authority

The Authority provides a system for IP protection on the plant varieties to the plant breeders, the rights of farmers either as cultivators of the varieties or plant breeders and to encourage the development of new varieties of plants. Any variety that essentially fulfills the criteria of distinctiveness, uniformity and stability (DUS) and novelty (in the case of new variety) is eligible for registration under the provisions of PPV&FR Act, 2001.

4. DUS Test Centers

DUS test centres are established in different agroclimatic zones in the country under the National Agricultural Research System (NARS). Each variety has to be evaluated for its being distinct at least in one of the many notified traits under the Guidelines of the species, over any existing variety anywhere in the world (Distinctiveness (D)), while remaining uniform through genetic purity (uniformity (U)) and remain unchanged over two cycles of reproduction for stability (S)) over two seasons (years) after raising at least one generation through sexual propagation in case of seed based varieties or notified vegetative propagation means of the crop species which do not

produce seeds. Morphological descriptor sets of characters as they vary crop-species-wise is notified for the species in Official Gazette of India with full guidelines published in Plant Variety Journal. So far, over the thirteen years of its existence, 172 crop species have been notified with guidelines printed on Plant Variety Journal as well as on website of the PPVFR. The total number of DUS Test Centre area round 150.

5. Plant Variety Journal of India

As provided in the PPV&FR Act (2001), the Authority publishes its official journal "Plant Varieties Journal of India" (PVJI) as a monthly publication.

6. Varieties Registrable in India

a. New Variety

b. Extant Variety

- Notified under Seeds Act, 1966
- Farmer's Variety
- Variety of Common Knowledge

c. Essentially Derived Variety of a Protected Variety

7. Duration of Protection of Varieties in India

Category	Period of Protection (No. of years)		
	Total	Initial	Extended
Trees & Vines	18 from date of registration	9 from date of registration	9 more years from the initial period of protection
Other Crops	15 from date of registration	6 from date of registration	9 more years from the registration
Extant Notified varieties	15 from date of notification of variety under the Seeds Act, 1966 by the Central Government.		

8. National Register of Plant Varieties

National Register of Plant Varieties has been kept at the head office of the Registry, containing the names of all the registered plant varieties

with the names and addresses of their respective breeders, the rights of such breeders in respect of the registered varieties, the particulars of the denomination of each registered variety, its seed or other propagating material along with

specification of salient features thereof and such other matters as may be prescribed.

9. National Gene Bank

PPV&FR Authority has established National Gene Bank to store the seed material including parental lines submitted by the breeders of the registered varieties. The seed lot is stored under low temperature conditions at 5° C for the entire registration period, and if necessary after few years of storage in the National Gene Bank, the seed lot will be rejuvenated and replenished at the cost of the applicant. The seed stored in the National Gene Bank will be used for dispute settlement or when an exigency arises for invoking compulsory licensing provision. Such a seed deposition in the National Gene Bank would dissuade market malpractices or violations as the sample in custody can be drawn to verify the facts. When the period of registration granted lapses, the material automatically moves to public domain.

10. National Gene Fund

A National Gene Fund has been established by the PPV&FR Authority to receive the contributions from:

- The benefit sharing received in the prescribed manner from the breeder of a variety or an essentially derived variety registered under the Act, or the propagating material of such variety or essentially derived variety, as the case maybe;
- the annual fee payable to the Authority by way of royalty, the compensation deposited by breeders, the contribution from any National and International organizations and other sources

The National Gene Fund shall be utilized for

- Benefit sharing
- Compensation payable to the farmer/ community of farmers

- Expenditure for supporting the conservation and use of insitu and exsitu genetic resources
- Strengthening the capacity of Panchayats (local elected government body of the village) in carrying out conservation and use of genetic resources
- Expenditure of the schemes relating to benefit sharing

11. Farmers Rights and Breeders Rights in India

Recognizing the role played by farmers in maintaining seed, selecting for variants in the traditional variety they have been cultivating in the past decades or sharing the seed with others the farmers of India play the role of growers of the variety as well as plant breeders by tradition, the PPV&FRA Act, (2001) as a large departure from plant variety protection systems in other countries, enables a farmer in the same manner as a plant breeder to breed and register the variety keeping value of novelty, distinctiveness, uniformity and stability of the new variety.

- **Farmers' rights:**
 - Right to bred new variety like any other plant breeder
 - Right to register farmer's varieties either as a community (in case of land races) or individually (in case of traditional variety or selection in a tradition variety)
 - Right to conserve plant varieties as land races or wild relatives of economic plant species as well as their improvement through selection and be entitled for recognition or reward from the Gene Fund
 - Entitled to save, use, sow, re-sow, exchange, share or sell his farm produce including seed of a variety protected under the Act. Farmer cannot sell

branded seed of a protected variety

the prescribed package of practices

- Right to seek compensation in the event a registered variety fails to return expected performance after following

- **Plant Breeders' Rights:** Entitled to produce, sell, market, distribute, import or export the variety

12. Details of applications received and Registration certificates issued:

Applications received from 01.04.2022 to 18.11.2022			
	Public	Private	Farmers
New	33	76	-
ExtantNotified	-	-	-
ExtantVCK	-	7	-
ExtantFarmer	-	-	49
EDV	3	-	-
Total:168			

Certificate Issued	
New	36
ExtantNotified	26
ExtantVCK	17
ExtantFarmer	85
EDV	-
Total	164

13. Indo-German Cooperation on Plant Varieties Protection

The details of Officers of PPV&FRA, Nodal Ministry and DUS Test Centre Official who visited Germany are as follows:-

A. Official Visits

SL	Name of the officer/Group	Visiting Period	Crops
1.	1. Dr. T.K. Nagarathna 2. Sh. Ravindra Singh Sengar 3. Sh. M. Gunasekaran 4. Dr. Arun Gupta 5. Dr. Charan Singh	20 th June to 24 th June, 2022	"DUS Testing on Wheat & Barley"
2.	1. Dr. Hariom Kumar Sharma 2. Dr. A. K. Singh 3. Dr. D. K. Srivastava	27 th June to 01 st July, 2022	"DUS Testing on Mustard and Rapeseed"
3.	1. Mr. Uma Kant Dubey 2. Dr. Javid Iqbal Mir 3. Dr. Wasim Hassan Raja	26 th Sept to 30 th Sept, 2022	"DUS testing on Apple/Pear"

B. Workshop

- A workshop was held on 16.11.2022 under the Indo-German Cooperation. Both the sides made elaborate presentation.

- Dr. K. V. Prabhu, Chairperson attended a meeting with German delegation at PPV&FR, Authority on 18.11.2022.

(i) National Seed Research and Training Centre (NSRTC), Varanasi: The National Seed Research and Training Centre (NSRTC) Varanasi, Uttar Pradesh has been functioning since October, 2005 and has been notified as Central Seed Testing and Referral Laboratory (CSTL) with effect from 01.04.2007. The objective of CSTL, NSRTC is to maintain uniformity in seed testing to ensure supply of quality seeds at National level. It also acts as Referral Laboratory under Court of Law for seed related issues. NSRTC is a premier institute for capacity building in relation to maintaining Seed Quality Assurance by offering HRD activities round the year. The CSTL working under ambit of NSRTC is member laboratory of International Seed Testing Association (ISTA) since 2007.

As per National programme to maintain uniformity in seed testing, during the year 2022-23 (till 15th November, 2022), NSRTC has received **16298** Nos. of seed samples under 5% re-testing programme, **216** Nos. of court referred seed samples and **06** Nos. of seed samples under PT programme from ISTA, Switzerland.

During 2022-23 (till 15th November, 2022), NSRTC has organized **04** National Training Programme and **01** Special Training Programme for ADO's of Government of Assam, on various seed related issues for the benefit of various stakeholders of Govt., Public and Private Sector etc.

(ii) International Rice Research Institute (IRRI), South Asia Regional Center (ISARC): IRRI South Asia Regional Centre (ISARC), Varanasi, India

IRRI South Asia Regional Centre (ISARC), Varanasi

Working along the lines of IRRI's vision & mission, directions of the Government of India and our members, and needs of regional and South-South stakeholders, ISARC is dedicated to reducing poverty and hunger, and to create sustainable rice-based agri-food systems that are in tandem with the changing climate, and to ensure nutrition & food security for a burgeoning population without putting undue pressure on an already degrading environment. This is done by direct/indirect collaborations with system

stakeholders, carrying out cutting-edge research, bridging the gap between lab to land findings, creating accessible platforms for learning, and knowledge dissemination & through capacity development programs.

Acknowledging the great contribution of ISARC in Phase-I (2017-22), the Government of India, through the Department of Agriculture and Farmers Welfare (DA & FW), and the International Rice Research Institute (IRRI) in the presence of Union Agriculture Minister Shri Narendra Singh Tomar signed an agreement on 12 July 2022 for the commencement of Phase-II Activities from April 2022 to March 2027. Mr. Manoj Ahuja, the Secretary of the Department of Agriculture and Farmers Welfare (DA&FW), Government of India, and Dr. Jean Balié, the Director General of the International Rice Research Institute signed the Agreement in the presence of the Union Minister of Agriculture and Farmers Welfare, Shri Narendra Singh Tomar and Sh. Ashwani Kumar, Joint Secretary (Seeds & GC). The financial support of USD 16.7 m to scale up the existing partnership for food and nutrition security in the South Asian region has been agreed by DA & FW. ISARC in the second phase will focus on enhancing income and nutrition from rice through value-added rice technologies (varieties and food products) for diet diversification and domestic and export market penetration under the **Centre of Excellence in Rice Value Addition (CERVA)**, developing and disseminating sustainable Agriculture practices through the **Centre of Excellence in Sustainable Agriculture (CESA)**, and digitalization and Innovation in Education through **Center of Education, Innovation, and Research for Development (CEIRD)**.

The efforts of the CERVA are of significant importance. CERVA through its relentless efforts has been continuously identifying premium quality, nutritious, and safer rice varieties & simultaneously developing & testing out products developed from such varieties for their acceptance in the market in comparison to regular rice-based products. These developments are an effort to provide farmers with means of greater income.

As pointed out, the larger vision is to enhance farmer income and upgrade their living standards by

pushing them to adopt on-farm practices that are also conducive to creating a healthy environment. Thus, sustainable agriculture is the best way forward and here the CESA through its exemplary research & fieldwork on agronomy, seed systems, breeding, soil & nutrient management, geospatial and remote sensing, digital agriculture & value chain & market research is developing best on-field practices.

In order to translate these research findings into actionable items for stakeholders, the CEIRD at ISARC is developing capacities of system stakeholders, upskilling them & introducing them to the most recent technological innovations in the field & assisting them for easy adoption of such technologies through regular training programs. In addition, the information dissemination arm is constantly upgrading itself to come up with customized, learner-centric courses & also creates appropriate channels (national & regional) to apprise them with timely & action-oriented information.

The salient achievements of the ISARC in the current year are mentioned below-

I. Centre of Excellence in Rice Value Addition (CERVA)

With the beginning of ISARC phase-II, the CERVA continued its key research activities aimed at exploring premium quality, nutritious, and safe rice along with a special focus on rice-based value addition, a few key highlights are:

- A new set of germplasm encompassing ~75 traditional rices has been acquired with 7 landraces already having the GI (geographical indicator) status. Furthermore, effectively utilizing the modelling approach, sets of Kalanamak accessions with high aroma, optimum appearance and milling quality (AMQ), and cooking and eating qualities (CEQ) have been identified. Potential models have been mapped for enabling effective distinction for aroma, AMQ, and CEQ with high prediction and accuracy. Moreover, selected Kalanamak accessions based on grain quality parameters are currently undergoing field-based evaluation (Kharif 2022) at key locations within geographical indications areas of Uttar Pradesh with the support of the seed system team.

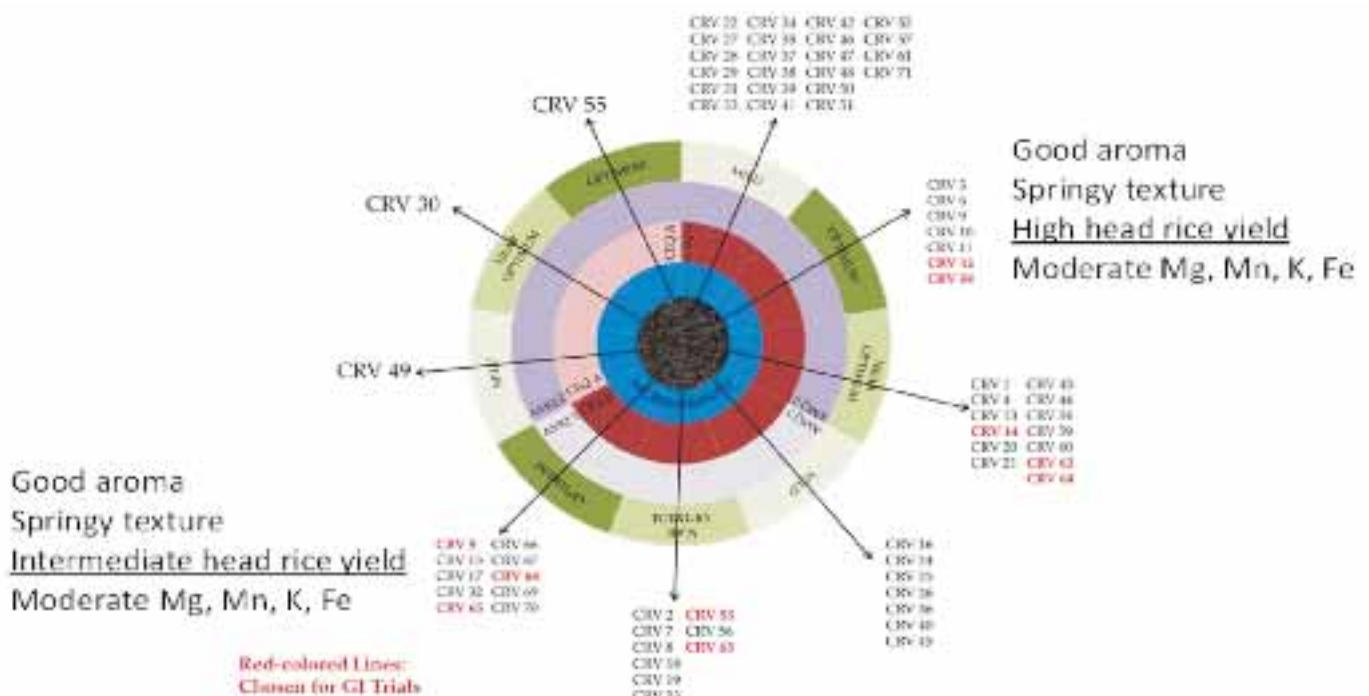


Figure: Modeling for grain quality and nutritional profiling of Kalanamak landraces

- CERVA successfully handed over already identified varieties with low and intermediate glycaemic index (GI) to key national partner-ICAR-Indian Institute of Rice Research (IIRR), Hyderabad for further evaluation and positioning in all India coordinated trials (AICRIP).
- Conversely, landraces were identified with enriched nutraceuticals encompassing higher levels of benchmark bioactive compounds under the phenolics and flavonoid categories known to possess higher antioxidant and anti-cancer activities. These entries are positioned now for in vivo testing in animal model systems and for developing rice-based value-added products. In addition, methods have been standardized and optimized for the 1) in vitro estimation of glycemic index using the microplate reader with optimized protocol, and 2) fatty acid profiling through GC-FID, given fatty acids are the key determinant in rice bran oil conferring health benefits.
- Kalanamak and black rice cookies developed from whole grain rice were examined with higher spread ratio (greater width), good shelf life indicators, and other key traits matching better consumer acceptability in comparison to the wheat-based cookies. Moreover, whole grain cookies were identified with high mineral content, flavonoid content, and possessing antioxidant activities, confirming their role in providing higher health benefits. Furthermore, sensory quality evaluations performed by developing sensory profile score cards after getting product tested by the panel confirmed the higher acceptance among consumer.
- Apart from this, CERVA continued providing services to stakeholders and creating awareness among government officials, policy-makers, private organizations, and expanding its reach to FPOs and rice-value chain stakeholders.

II. Centre of Excellence in Sustainable Agriculture (CESA)

ISARC nurtures core research conducted by IRRI and its partners in South Asia through its CESA unit. It functions through seven integrated sections

namely: Innovative Rice Breeding, Seed System and Product Management, GIS and Remote Sensing, Agronomy and Mechanization, Soil and Nutrient Management, Value Chain and Socio-economic Aspects, and Capacity Building.

2.1 Geospatial and Remote Sensing

The geospatial domain, under the CESA unit of ISARC, is involved in multiple cross-cutting themes of agronomy, nutrition, stresses, agro-advisories, yield modeling, and precision agriculture work. The salient achievements are mentioned below-

- Through the APART-Assam project, a web-GIS portal and rice fallow atlases were launched in September 2022.
- Mapping of direct-seeded rice (DSR) and transplanted rice for 5 districts of Odisha was completed; the team identified the spatial pattern of DSR and transplanted areas of 2021 and verified it with existing government statistics.
- Testing and standardizing imaging/agricultural drone and associated technologies for optimizing crop management and developing scalable models for further recommendations at farmer's field levels are being initiated. Standard Operating Procedures (SOP) are currently developed at the ISARC farm and at the BISA farm Samastipur, under a project for the Climate Smart Initiative funds of Government of Bihar.
- The geospatial team has, on advice of DA&FW, initiated the mapping of rice fallow areas in the states of West Bengal, Bihar, Jharkhand and Chattisgarh, with the goal to target the necessary interventions for increasing cropping intensity and diversification.
- In Mali - West Africa (AICCRA WB project) preliminary rice area maps were generated by analyzing Sentinel time series data for the 2022 wet season to monitor the rice yield responses in different ecosystems; historical flood and drought indicators are also being developed for disseminating climate smart technologies.

- Landsat and MODIS rice areas, and EVI phenology indicators were extracted and mapped for flood inundated Aman rice areas study districts of Bangladesh during 2001-2021 years, to analyze the benefits of flood tolerant rice varieties on crop growth.

2.2 Innovative Breeding: The aim of the breeding unit is to develop breeding lines/ varieties based on the breeding pipelines and market demands. It includes the collection and characterization of germplasm for identifying new donors, the sequencing-based trait mapping to find new genes, quantitative trait loci (QTLs), and marker traits associations (MTAs), the deployment of new discoveries through innovative breeding approaches such as Speed Breeding, and the building of National Agricultural Research and Extension System's (NARES's) capacity.

- The unit has expanded the OneIRRI breeding network across 38 locations in India for the effective dissemination and testing of IRRI-developed breeding materials. Of the 38 locations, 14 are in the early maturity group (274 test entries), 15 are in the medium maturity group (220 test entries), and 9 are in the late maturity group (165 test entries).
- A number of significant MTAs have been identified through sequencing-based trait mapping, including grain yield, yield under drought, brown plant hopper, and sheath blight resistance, while data analysis for submergence tolerance and grain quality are underway.
- Early generation near-isogenic lines (NILs) developed for stress and nutritional traits (yields, yield-related traits, iron, zinc, glycemic index, bacterial leaf blight, and blast) were advanced and were shared with 11 partners for further testing. As part of OneIRRI regional breeding, 2500 lines have been developed for multiple stress tolerance under transplanted puddled condition (TPR) conditions and 1000 lines have been developed for dry DSR conditions.
- Several promising stress tolerance lines are being tested in multi-locations for TPR (60 test entries) and DSR (71 test entries). Breeding to enhance grain zinc content is in progress, and promising lines (90 test entries) are being tested in multi-location trials.
- Early-generation breeding lines are being developed for low GI. A breeding material developed for landrace improvement through cross-breeding/mutation breeding is being used to find high-value lines with improved plant types.
- Under the Indian rice genome sequencing project, 450 genotypes were selected for whole genome re-sequencing, and the team mapped all the new genomes with standard genome reference Nipponbare, N22, IR64, 9311, and PR106 for variant call analysis. Further downstream analysis for single nucleotide polymorphism (SNP)/INDEL annotation, trait link structural variation, domestication pattern, haplotype analysis, gene family analysis, LD decay, and population diversity analysis are under process.
- Presently ISARC is establishing Artificial Intelligence (AI)-based pipelines to predict the phenotypic performance of large diverse lines for new donor identification, trait mapping, genomic selection, and rapid offspring selection.

Two advanced facilities, SpeedBreed and Next-Gen Computational Biology for high-end research and capacity building of NARES, have been established. A state-of-art Speed Breeding (SpeedBreed) Facility was established at ISARC and was virtually inaugurated by **Honorable Prime Minister Shri Narendra Modi Ji** on 23 December 2021. This facility has full control over all the crop growth parameters like photoperiod, light intensity and spectrum, temperature, CO₂, and nutrient condition and has the capacity to grow ~40,000 plants at a single time. Similarly, Next-Gen Computational Biology Facility has been established at ISARC. This facility is equipped with high-end workstations, 200Tb+ Network Attached Storage (NAS), and Cloud computing architecture. This facility is

engaged in computational biology-related research like whole genome sequence analysis, AI-based trait mapping, and capacity development of plant breeders of NARES.

2.3 Seed System and Product Management

- The seed system initiatives under CESA have worked across India and South Asia to streamline major market segments that also define pipelines or upcoming products from breeding programs.
- Working closely with NARES breeding pipeline leads and networks, promising products are systematically pooled and validated in an expanded network of trialing organized through extension stakeholders. A total of 76 products nominated by different NARES partners, and 32 varieties under different market segments were trialed in On-Farm-Trial (OFT) mode in six states in Eastern India. The project conducted 700 trials and suitability of these varieties was assessed based on production and market linked parameters.
- The unit significantly expanded its reach by working and strengthening the capacities of stakeholders that represented state agricultural universities (SAUs), the Krishi Vigyan Kendras (KVKs) network, and various ground-level private and civil society partners. Data-driven OFT systems have led to the screening of the most competitive varieties (products) to be scaled in seed systems. We collaborated with 26 KVKs and 12 CBOs in six states for OFT and seed scaling activities. The initiative also facilitated provisioning of early generation seeds of best-evaluated varieties for seed multiplication agencies such as state seed corporations, farmers' collectives etc. Bina dhan 11, Swarna Samridhi, Bina dhan 17, Swarna Shreya are some of the best-fit varieties where EGS linkages happened significantly.
- Cross-border knowledge exchange and NARES capacity-development efforts have been strengthened through organized training and capacity building at ISARC and at partners' locations. Twenty-three workshops on quality

seed production covering ~1000 participants and one on Seedequal (one-CGIAR initiative) were organized in India and Bangladesh. At ISARC, a three-day capacity development program was also facilitated for the delegation of seven scientists and researchers from Nepal. The participants were oriented on different thematic areas of advanced rice production.

- The Seeds Without Borders (SWB) policy (referring to the 'Siem Reap Protocol') has been leveraged by IRRI and taken forward by the Government of India with the support of the SAARC Governments in terms of cross-border release of varieties. In 2021-22 SWB enabled import of 21 varieties to India from Bangladesh for adaptability validation followed by the release of 3 varieties in India. Similarly, 3 varieties were imported to Nepal from India and released. A Workshop on Seed Without Borders will be held in Thimphu, Bhutan from 22nd to 23rd November 2022. Enhancing the impact of SWB, 3 promising new varieties (2 high Zn and 1 low input responsive) have been released in India and 1 low input responsive variety in Nepal, paving a robust way forward to scale these promising nutrient-rich, high yielding and resource-conserving germplasm for benefiting both the farmers and consumers.

2.4 Crop and Natural Resource Management:

The agronomy and soil unit of CESA under ISARC has developed strong partnerships with different NARES partners and international research institutes/organizations, including CG centers for developing, evaluating and scaling sustainable soil and crop management practices. The major highlights of the year are:

- A total of 45 field experiments (36 on-station and 9 on-farm) were conducted with 21 partners across 14 Indian states to evaluate different inbreds/hybrids, weed and nutrient management, spraying of herbicides through drone technology on direct seeded rice. Also, a total of 10 experiments with 9 NARES partners were conducted to develop crop and nutrient management practices for newly released stress-tolerant varieties. ISARC with IFFCO

testing nano-urea in rice-wheat systems in UP and rice in Assam since 2021 and a total of 21 on-station and on-farm experiments laid out this year in both states.

- The General Lab has been upgraded with MIR Spectroscopy for innovative and cutting-edge research on dry chemistry-based soil analysis. Conventional soil analysis based on wet chemistry methods is expensive and time-consuming. It requires chemical reagents, and soil samples are destructive and cannot be reused. Hence, MIR spectroscopy-based soil analysis was introduced at ISARC. It is faster (only 30 seconds per sample for all soil properties instead of more than 12 hrs in case of traditional method), cost-effective (10 times cheaper), environmental-friendly, non-destructive, and soil samples can be stored for future use. Procedures and protocols are being developed in collaboration with national partners.
- ISARC has been implementing a new project for scaling of DSR in 6 districts of Odisha since 2021. A total of six types of experiments in 158 locations on risk-reducing agronomic practices were evaluated. This year, drill-DSR was promoted in 1000 ha involving 1340 farmers. Also, integrated weed management practices were promoted in 1200 ha in mechanized DSR with 1300 farmers.
- Advisories (20% women) were sent on rice production practices in Bihar under the Cereal System Initiative for South Asia (CSISA) project which is implemented jointly by IRRI, International Maize and Wheat Improvement Center (CIMMYT) and International Food Policy Research Institute (IFPRI) with NARES partners. Outreach material on best bet agronomy of precision DSR (~2000 copies) were disseminated to Odisha farmers under CSISA project.
- ISARC provides technical support to evaluate and scaling of sustainable rice production in Assam through Assam Agribusiness Rural Transformation (APART) Project funded by the World Bank. Around 203 demonstrations on

mechanical rice transplanting (MTR) and 118 on direct seeded rice (DSR) were conducted in the Sali season 2022. Also, a total of 12286 beneficiaries benefited through 424 capacity-building activities on mechanized crop establishment methods.

- ISARC is leading a Direct Seeded Rice Consortium (DSRC) in South Asia, under which two patents for farm implements have been done in collaboration with Jawaharlal Nehru Krishi Vishya Vidyalaya (JNKVV), Jabalpur, MP:
- Patent no: 20 2022 103 192.4, German Utility Model for 'Precision Hill Seeder with Urea Deep Placement Applicator for Rice',
- Patent no: 20 2022 105 647, German Utility Model for 'E-Seeder for Rice'.
- For the Soil and Nutrient management work, three on-station strategic experiments, and 10 on-farm adaptive trials are being conducted for precise nutrient management and pathways to improve soil health. Under regenerative agriculture (RA), 0.5 t/ha system yield increased over conventional systems. Also, the labile carbon fraction increased under RA as compared to benchmark soil conditions.
- Deploying integrated nutrient management, showed 0.4 t/ha grain yield gain while reducing 25% of N-P-K. Average net profit gain in integrated nutrient management (INM) over farmers' fertilizer practice (FFP) was USD 100-150 /ha/season. Crops and varieties responded differently to natural and organic systems. For instance, mustard is highly susceptible to aphid attack and mentha is highly suitable for organic systems. Indigenous rice varieties like Kalanamak and Kalamegha varieties and Basmati rice responded better than hybrids under organic systems. Low-input responsive rice varieties are better suited & need to be screened for RA systems. The use of ecological engineering and crop diversification under alternative farming offers additional income to the farmers.
- The team reached out to about 5000 farmers for precise nutrient management recommenda-

tions through the rice-wheat crop manager (RWCM) in Eastern UP and trained more than 500 farmers to use RWCM. Understanding the soil microbiome is crucial for enhancing soil health, therefore we are using metagenomics for the soil microbiome study.

2.5 Value Chain and Market Research

Through the Value Chain and Market Research domain of CESA, ISARC aims for positioning premium quality and specialty rice and rice value-added products across different market segments and strengthening the value chain through inclusive approaches in South Asia. ISARC is working on developing climate-resilient, nutraceutical, and other improved rice varieties & technological solutions and services. Their impact evaluation, adoption, socio-economic analysis, and scaling aspects play a major role in generating databases and feedback that enable co-development or development of demand-driven solutions, scaling pathways, and policy outcomes towards increasing farmers' income and food security and achieving Sustainable Development Goals (SDGs). Therefore, the domain is also carrying out impact evaluation and adoption research using experimental, quasi-experimental, and other approaches.

- ISARC evaluated the effectiveness of institutionalized advisory services in Bihar under CSISA and Excellence in Agronomy (EiA) initiatives, particularly to women farmers and the adoption of technologies.
- ISARC conducted an experiment on farmers' willingness to accept an incentive amount for environmental services of mechanized DSR adoption in Odisha. Presently, data processing and analysis are being carried out.
- The team initiated designing and implementing value stream mapping, food environment, market linkage activities in Bihar under 'Transforming Agri-Food Systems in South Asia' (TAFSSA) initiative to understand how to improve the access of nutritious food for people from lower socio-economic backgrounds. A census survey was conducted in Odisha as a part of the Market Intelligence and Product

Profiling for Impactful Breeding Initiative (MIPPI) initiative of One CGIAR.

- The team expanded value chain activities of premium quality rice varieties in Bangladesh for better price realization to farmers and other value chain actors by ensuring premium quality. The main targeted varieties are BRRI dhan50, BRRI dhan63, BRRI dhan75, and BRRI dhan87.

III. Centre of Education, Innovation & Research for Development (CEIRD)

CEIRD has been playing a pivotal role in bolstering the rice-based agri-food systems by building the capacities of the ecosystem stakeholders through education, capacity development and knowledge dissemination activities. The center's five verticals are an all-encompassing CapDev approach to facilitate tackling the present-day challenges around rice-based agri-food systems. Moving forward with its mandate, the center achieved significant milestones under each of its verticals in 2022.

- 360 trainees (policymakers, researchers, scientists, extension officials, private sector professionals, and farmers) benefitted through 10 short-term courses (online, blended, face-to-face) at ISARC. Out of that 19% (69) were female participants.
- A total of 63 scholars including 38 interns, 13 Ph.D. Scholars and 12 MS Students from South Asia have benefitted through the scholars and youth engagement program. The program included a portfolio of capacity development initiatives like scholarships for MS and Ph.D. students, on-the-job training (OJT), and internships around rice-based Agri-food systems.
- The online learning program is developed to enhance subject-specific knowledge and upgrade their skills while learning at a self-regulated pace. More than 35 experts approved Micro modules were developed and were made available this year through learning management system (<https://mylearning.irri.org/micromodules>). More than 10 Massive Open Online Courses (MOOCs) are prepared to

enhance the knowledge and skills of different stakeholders to help them tackle global challenges on a larger scale.

- CEIRD has also developed the beta version of the Moodle platform and testing is being done and features have been enhanced as per our needs. Moodle with 68 million users world wide is the world's one of best learning management system (LMS).
- CEIRD disseminates IRRI's research findings and recent technological innovations through Knowledge platforms. Till date, Rice Knowledge Bank (RKB) had a total of 3,922,781 page views from different parts of the world). Targeting the cropping system, CEIRD is also developing Rice-based Cropping System Knowledge Bank (RCSKB) for Assam following the "Consultative", "Collaborative" "Adopting Mixed Methods", and "Capacity Development for Outreach" approaches.

Facility Development

ISARC's state-of-art facilities have been further upgraded. An automatic weather station has been added with additional sensors for soil moisture and temperature, sunshine, PAR, and pressure. A tractor-mounted compost turner, developed by IRRI, was imported from Vietnam. It can efficiently convert paddy straw to compost in 45 days instead of 120 days normally taken under the conventional system. The machine can be hauled by a 30-35 HP tractor with a capacity of 25-30 t/hr per each pass of turning and fuel consumption is 0.1-0.15 l diesel per ton of compost. The farm machinery hub has been strengthened with the pneumatic planter for precise seed and fertilizer placement at a certain depth with uniform spacing, smart seeded for in-situ straw management, and multi-crop raised bed planter for sowing on raised beds. Following new initiatives have been taken during the year related to facility development of the main campus and research farm.

- Work on PVC flooring of staircases, waterproofing of roof tops, development of a cabin for the support staff to the Director's office have been initiated.

- Staff strength at ISARC has been increased substantially and requires additional sitting space. A separate admin block is being created on the first floor with a removable partition to accommodate the staff and provide them with an improved work environment.
- A considerable number of labour is regularly working at ISARC experiment farms and require an adequate sitting space for off time with toilet facilities. Installation of an overtop shade with ladies and gents toilets is in progress.
- Additional air-conditioning units have been installed in all labs to control the humidity and ensure safety of sophisticated equipment. Thermal insulation of the central air-conditioning system is completed to stop leakage and enhance the efficiency and effectiveness of air-conditioning in the entire building.
- Additional air-conditioning units have been installed in the seed storage room to maintain the optimum temperature inside the room.
- All the conference halls have been equipped with the latest audio-visual systems. Advanced wall mounted display units, sound system and conferencing devices have been installed.
- Annual maintenance of assets and services has been completed for the safety and preventative maintenance of the assets, equipment, machinery, and services to enhance the efficiency and effectiveness of the system at ISARC.
- Large number of machines and equipment, and sophisticated supporting utility equipment in the various labs and office premises have been bought.
- Extension of the safety and security system up to the farm office is in progress that includes CCTV camera coverage and IT connectivity. It will help strengthen the safety and security system in the entire campus including experiment farms.

Events, Meetings, and Strategic Visits

1. Visit of Shri Durga Shanker Mishra, Chief Secretary to the Government of Uttar Pradesh

Shri Durga Shanker Mishra visited ISARC on 18 February 2022. He showed his interest in emerging geospatial technologies and emphasized on harnessing the latest remote sensing technologies such as high-resolution satellite images for crop type mapping and their area estimation in near real time. He also indicated to develop research methodology to standardize the technicalities of spraying fertilizers/pesticides through drones in the agriculture field. He was also very much satisfied with the value-added products being developed and suggested to develop a business plan for scaling-up rice-value added products, cookies and other products through an incubation centre.

2. Fifth ISARC Coordination Committee Meeting

The 5th ISARC Coordination Committee (CoCo) Meeting was held on 14 March 2022 at ISARC, Varanasi under the Chairmanship of Dr. Jean Balié (Director-General, IRRI) and Shri Sanjay Agarwal (Co-Chair of Coordination Committee, and Secretary, Department of Agriculture and Farmers Welfare, Govt. of India). The meeting's key agenda was to present the progress status in the year, formulate the plan for the year 2022 and discuss the way forward.

3. Cereal Systems Initiative for South Asia (CSISA) regional meeting

ISARC hosted a four-day meeting of CSISA in integration with the Excellence in Agronomy (EiA) and Transforming Agri-Food System in South Asia (TAFSSA) project teams from 14-17 March. The scientists from IRRI, CIMMYT, IFPRI, and Cornell University actively participated and discussed the project's impact, plans, and potential convergence programs for the region.

4. Signing of MoU with Chaudhary Charan Singh Haryana Agricultural University, Hissar, Haryana and Annamalai University, Chidambaram, Tamil Nadu

IRRI signed a MoU with two well-reputed universities, Chaudhary Charan Singh Haryana

Agricultural University (CCSHAU) Hisar and Annamalai University (AU) Chidambaram in the presence of IRRI DG Dr. Jean Balié and honorable Vice-chancellors of CCSHAU Hisar, Dr. B.R. Kamboj and Annamalai University, Dr. R.M. Kathiresan on 11 July 2022. The aim of this MoU is to strengthen scientific and technical collaboration in rice research and extension for improving the livelihoods of rice farmers, promote environmental sustainability, and strengthen the rice value chain. It is ushering a new beginning in the science-based and research-driven collaboration with a stronger and wider partnership for advancing rice research and production so as to cater to the needs of the farmers and value chain partners, while the Universities are boosting its research capabilities and facilities, technological developments and innovations, and education and training services in the rice sector.

5. Visit of Shri Amarendra Pratap Singh, Honorable Minister of Agriculture, Govt. of Bihar

Shri Amarendra Pratap Singh visited ISARC on 27 July 2022 and inaugurated a three-day capacity development program of BAU Scientists. He highly appreciated the joint efforts of Govt. of India and International Rice Research Institute (IRRI) for the establishment of the State-of-the-Art Research Facilities at ISARC, Varanasi for catering to the needs of farmers across South Asia as a whole, eastern India in particular, and especially Bihar and eastern Uttar Pradesh. He emphasized the longer-term collaboration of IRRI with State Government for the welfare and prosperity of farmers as well as researchers from Bihar. He urged for the development of short-duration rice varieties with both drought and flood tolerance that suit stress-prone environments as well as area-specific soil and agro-climatic conditions, and also provide better nutrition for common people.

6. Visit of Shri Surya Pratap Shahi, Honorable Minister of Agriculture, Govt. of Uttar Pradesh

Shri Surya Pratap Shahi visited ISARC on 7 August 2022. Appreciating the research, extension, and educational activities of the ISARC, and the state-of-the-art research facilities, Shri Shahi ji expressed his

keen interest in developing a strong collaboration and partnership between the ISARC, State agricultural universities and state govt with a view to develop and promote high-yielding, nutritionally rich, and climate-resilient as well as low GI and other specialty rice varieties having higher market value and demand, along with dissemination of improved production technologies for the betterment of rice growers and consumers.

7. Visit of Shri Manoj Ahuja, Secretary, Ministry of Agriculture and Farmers' Welfare (MA&FW), Government of India

Shri Manoj Ahuja visited ISARC on 13 August 2022. During a day-long visit to different facilities at ISARC, Ahuja Ji expressed his views on various aspects. While appreciating the state-of-the-art facilities at ISARC, he urged for need-based and market-driven research for resolving issues of farmers and delivering the right products and services for the public and private sector stakeholders, especially given the recent developments in improving the nutritional quality of grains, crop and water productivity, and profitability in rice-based systems. He advised to innovate, promote and popularize input- efficient, cost-effective, and regenerative agricultural practices for rice-based food production systems.

8. Visit of Dr. Abhilaksh Likhi, Additional Secretary, Ministry of Agriculture and Farmers Welfare (MA&FW), Government of India

Dr. Abhilaksh Likhi visited ISARC and National Seed Research and Training Centre (NSRTC) on 22 September 2022. He appreciated the ongoing activities of both centers and emphasized on increasing the farmers' outreach for enhancing their productivity and profitability with the use of advanced tools and technologies. He also inaugurated a National Workshop on Role of Agri Start-ups in Honey Value Chain that was organized by National Bee Board (NBB), MA&FW in collaboration with IRRI and NSRTC under Prime Minister Shri Narendra Modi's clarion call towards creating AtmaNirbhar Bharat, focusing on nurturing potential budding Agri-startups and FPOs.

9. IRRI's participation in Agro-climatic Kissan Mela at Patherdewa, Deoria

A three-days Agro-climatic Kissan Mela and Exhibition was organized by Govt. of UP from 18-20 Oct 2022 at Patherdewa, Deoria. ISARC established an exhibition stall and displayed the ongoing research, product, and by-product development using the Kalanamak rice. Hon'ble Union Minister of Agriculture, GoI, Shri Narendra Singh Tomar, UP Chief Minister Shri Yogi Adityanath, Deputy Chief Ministers Shri Brajesh Pathak and Shri Keshaw Prasad Maurya, Agriculture Minister, GoUP Shri Surya Pratap Shahi, his deputy state Agriculture minister Shri B. S. Aulak visited the ISARC stall and praised the progress made by ISARC in a short span of time. Dr. Sudhanshu, Director, ISARC, delivered a lecture and briefed the audience about the on-going research activities at the center. Rice based products specially cookies prepared using Kalamank and black rice had caught the attention of policy makers and public as well.

(iv) National Seeds Corporation: The National Seeds Corporation Limited is a Schedule-B Central Public Enterprise under the administrative control of the Department of Agriculture and Farmers' Welfare. It enjoys Mini Ratna (Category-I) status with ISO9001:2005 & 14001:2015 certification. The performance of NSC during 2021-22 is as under: -

During 2021-22, NSC has produced 12.80 lakhs quintals seeds. NSC is undertaking seed production of more than 621 varieties/hybrids/lines including parental lines of about 80 crops consisting of cereals, millets, oilseeds, pulses, fibers, green manure, potato and wide range of vegetable crops. During the financial year 2021-22 NSC has distributed 11.22 lakhs qtls of seed in the country. NSC earned Profit After Tax (PAT) of Rs. 10.76 crores during 2021-22.

The company is producing all kinds of seeds i.e. Test Stock, Breeder Seed, Foundation Seed and Certified Seed. Seed is being produced in the Company's own farms and through seed growers. In addition to seed, the company is providing saplings of fruits & forestry trees and fish seeds to farmers. Focus is to increase production of Oilseeds, Pulses and Vegetables.



Figure: Signing of the ISARC Phase-II

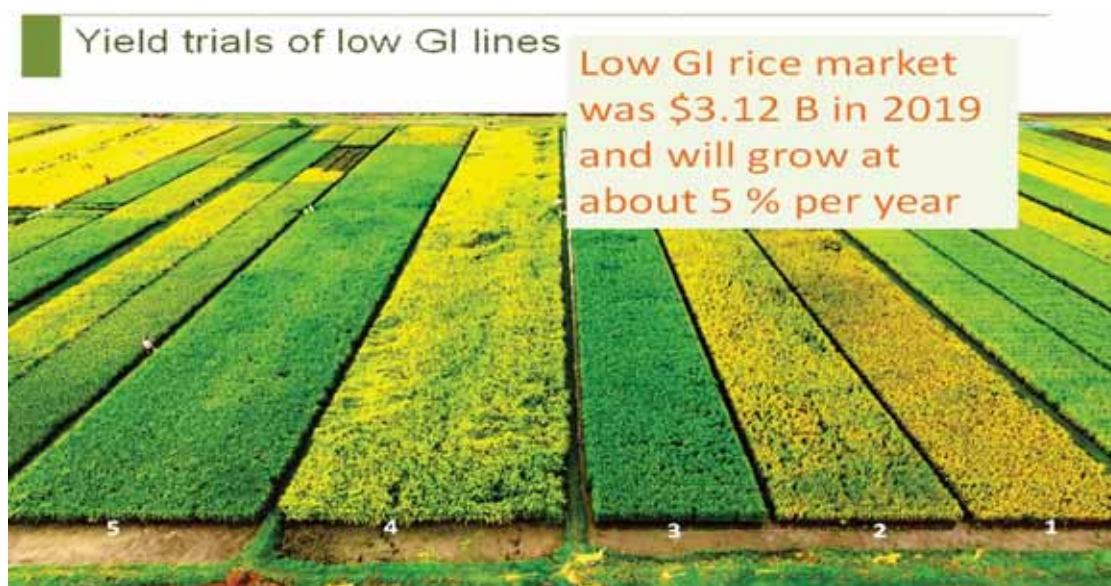


Figure: Large-scale yield trials and seed multiplication of low GI high-yielding varieties in IRRI Headquarters.



Figure: Kalanamak and Black rice whole grain butter cookies



Figure: Shri Atul Bora, Honorable Minister of Agriculture, Horticulture, Animal Husbandry, and Veterinary, Government of Assam launching Web-GIS portal



Figure: Field view of TPR Breeding lines being advanced at ISARC experimental fair



Figure: Photograph (a-b) of Speed breeding facility inaugurated by Honorable Prime Minister Shri Narendra Modi Ji and (c-d) new Computational Biology facility



Figure: DSRC Cultivar Cafeteria under direct-seeded condition during Kharif 2022 at ISARC



Figure: Different stakeholders in the seed system are evaluating trialed varieties at a crop cafeteria at ISARC, Varanasi.



Figure: An endline survey with a woman farmer on impact of advisory service



Figure: Participants' Group Photo & on-field demonstration during the training program



Figure: IRRI's online learning platform (mylearning.irri.org)



Figure: Beta version of Open Source Learning Management System



Figure: A Weather station protected by solar fencing and Mechanized windrow-composting with compost-turner (Vietnam-fabricated) at ISARC, Varanasi



Figure: Shri Durga Shankar Mishra, Chief Secretary, Govt. of Uttar Pradesh with ISARC team



Figure: 5th ISARC Coordination Committee (CoCo) Meeting at ISARC, Varanasi



Figure: CIMMYT, IFPRI, and Cornell university team during CSISA regional meet at ISARC, Varanasi



Figure: Signing of MoU with Chaudhary Charan Singh Haryana Agricultural University (CCSHAU), Hissar, Haryana, and Annamalai University (AU), Chidambaram, Tamil Nadu



Figure: Shri Amrendra Pratap Singh, Honorable Minister of Agriculture, Govt. of Bihar interacting with scientists during lab visit



Figure: Shri Surya Pratap Shahi, Honorable Minister of Agriculture, Agricultural Education and Research, Govt. of Uttar Pradesh interacting with ISARC scientist during lab visit



Figure: Shri Manoj Ahuja interacting with ISARC's scientists during SpeedBreed facility visit



Figure: Dr. Abhilaksh Likhi interacting with ISARC and NSRTC scientists



Figure: Honorable Agriculture Minister Shri Narendra Singh Tomar, Government of India and Honorable Uttar Pradesh Chief Minister Shri Yogi Adityanath visiting the IRRI stall in Agro-climatic Kissan Mela at Patherdewa, Deoria, Uttar Pradesh

Chapter-21

SUB MISSION ON AGRICULTURAL MECHANIZATION (SMAM)

21.1 Overview

- Agricultural Mechanization is one of the key driver for sustainable development of agriculture sector which helps in increasing production, productivity & house hold income by better & efficient management of the inputs like seeds, fertilizers, water, labour etc; to enhance the productivity of inputs, reduce the losses, operational time, and of costly inputs and reduce drudgery associated various farm operations. Agriculture Mechanization also helps in improving safety and comfort of the agricultural worker, improvements in the quality and value addition of the farm produce and also enabling the farmers to take second and subsequent crops making Indian agriculture more attractive and profitable. It also helps the Indian farming to become commercial instead of subsistence.
- Therefore, there is a need to increase the existing availability of farm power from 2.49 kW per ha (2018-19) to 4.0 kW per ha by the end of 2030 to cope up with increasing demand of food grains

21.2 Government Initiatives

Sub Mission on Agricultural Mechanization : Ministry of Agriculture & Farmers Welfare is already promoting Agricultural Mechanization through various schemes and programmes. But in order to lay a special emphasis on farm mechanization and to bring more inclusiveness, a dedicated scheme on Sub-Mission on Agricultural Mechanization was implemented from 2014-15 with the following objectives:

- Increasing the reach of farm mechanization to small and marginal farmers and to the regions where availability of farm power is low;

- Promoting 'Custom Hiring Centers' to offset the adverse economies of scale arising due to small landholding and high cost of individual ownership;
- Creating hubs for hi-tech & high value farm equipments;
- Creating awareness among stakeholders through demonstration and capacity building activities;
- Ensuring performance testing and certification at designated testing centers located all over the country.

This SMAM scheme, not only includes the traditional component of training, testing, demonstration of agricultural machinery and procurement subsidy but also includes- subsidy components for establishment of Custom Hiring Centers, Farm Machinery Banks & Hiring, Hi-Tech High Hubs through which the small & marginal farmers can access to the high cost & appropriate machinery as per their requirements on affordable rental charges/rates. The another Components Farm Mechanization in selected villages included in the Scheme with a view to increase the for enhancing productivity and creating ownership of appropriate farm equipments among small & marginal farmers from the areas with low level of mechanization. For Strengthening of Agricultural Mechanization in North Eastern States of the country, a dedicated component is also in place in the SMAM Scheme.

For quality control of the agricultural machinery, four FMT&TIs and 38 designated Testing Centers at State Agricultural Universities/ Institutions/ State Government are engaged in testing and certifying agricultural equipments and implements.

21.3 Financial assistance in SMAM under its various components:

The financial assistance as cost subsidy to the tune of 40% of the cost of the agricultural machinery is being provided for the individual ownership of the farm machinery which is also applicable for farm machinery component under RKVY, NFSM, NHM & NMOOP schemes for different categories of Machinery & Equipment. This subsidy is permissible @ 50% of the cost of the agricultural machinery for the farmers from SC, ST, Women, Small and Marginal and from NE States categories. The financial assistance @40% is provided for establishment of farm machinery banks, Custom Hiring Centers & Hi Tech Hubs to provide Agricultural Farm Machinery on the rental basis to the farmers, specifically small & marginal farmers who cannot afford the ownership of costly of agricultural machinery. Under the component 6 of

SMAM-to promote the mechanization in selected village with low level of farm mechanization, financial assistance @80% of the project cost for farm machinery banks is given to the group of minimum 8 farmers. Under the Component 8 of SMAM, Promotion of Mechanization in N.E States, 100% subsidy is admissible to the farmers for the Agricultural Machinery upto the cost of Rs 1.25 lakhs and **95%** of the cost of the machinery Implement up to Rs 10 lakhs per farm Machinery bank for the establishment of Farm Machinery Banks with a minimum of 8-10 farmers respectively.

As a result of different programmes implemented by the Government of India over the years and equal participation from Private Sector, the farm mechanization has been increasing steadily over the years which is evident from Year wise sale of tractors and power tillers in **Table 1**.

Table 1: Year wise sale of tractors and power tillers.

Year	Tractor Sales (NOS.)	Power tiller Sale (Nos.)
2017-18	7,96873	51,680
2018-19	8,72265	51,523
2019-20	7,81065	46,476
2020-21	1,015829	54,175
2021-22	9,70902	53,653
2022-23 till December 2022	8,34134	34,471

Average farm power availability for the cultivated areas of the country has been increased from 0.48 kW/ha in 1975-76 to 1.84 kW/ha in 2012-13 and reached 2.49 kW/ha in 2018-19.

21.4 The Financial and Physical Achievement under the SMAM: The Physical & financial progress is shown in the Table 2 as under:

Financial & Physical achievement under SMAM WEF APRIL,2014 (As on December 2022)									
	Allocation of funds			Achievements					
year	Funds Allocated	Revised Allocation	Expenditure	Total Trainees Trained	Total Machines Tested at FMTTI & designated Test Centers of DA&FW	Total Agricultural Machinery Distributed	Total Custom Hiring Centers Established	Total Hi-Tech Hubs Established	Total Farm Machinery Banks Established at Farmers Level
	(Rupees in Crore)			(In Numbers)					
2014-15	208.3	194.87	181.35	13406	1319	69021	663	14	436
2015-16	177.85	153.1	151.74	15160	1429	87545	268	13	218

2016-17	180	373	363.63	9423	1346	151164	1458	13	1877
2017-18	577.58	804.1	791.04	9689	1272	269062	1818	39	1942
2018-19	1200	930.1	1126.77	11260	1557	384911	3871	106	1481
2019-20	1033.34	1044.57	992.19	10065	1213	201769	2155	60	1964
2020-21	1033.09	1050.34	1026.63	11103	1447	132402	3979	55	5453
2021-22	1080.66	879	844.38	13575	1180	92340	4612	103	3420
2022-23	914.73	914.73	543.06	12139	1064	67587	2804	67	1515
Total	6405.55	5429.08	5940.25	105820	11231	1446011	21573	410	17982

21.5 Activities in the North-Eastern States: A dedicated FMTTI has been established at Biswanath Chariali in the Sonitpur district of Assam, to cater to the needs of human resource development in the field of agricultural mechanization and also to assess the quality and performance characteristics of different agricultural implements and machines in the region. During **2021-22 total 1547** trainees were trained at this NERFMTTI at Biswanath Chariali, Assam against the target of 1000 and have tested **30** nos. of agricultural implements and machinery against the annual target of 30. Under the Component 8 of SMAM Scheme, “**Promotion of Farm Machinery and Equipment in North-Eastern Region**” farmers from NE States are provided the financial assistance is provided @ 100 of the total cost of the machine for procurement of Agricultural Machinery with maximum cost of Machinery limited to Rs 1.25 lakhs. For the machinery exceeding the cost of 1.25 lakhs, the subsidy is provided @ 50% of the cost of the Machinery under the component 3 of the SMAM scheme. Financial assistance for establishment of Farm Machinery Banks are provided @ 95% of the cost of the machinery/Implements up to Rs 10 lakhs per farm Machinery bank for the with a group of minimum of 8-10 farmers. During the year 2021-22, cost subsidy of Rs.86.78 crores were released to the NE States under SMAM Scheme. During the year 2022-23 till December, 2022, cost subsidy of

Rs.93.94 crore has already been released to the NE States.

21.6 Training of Farmers & Technicians: To supplement the efforts for promotion of agricultural mechanization in the country, the Department has established four Farm Machinery Training & Testing Institutes at Budni (MP), Hisar (Haryana), Anantapur (Andhra Pradesh) and Biswanath Chariali (Assam). These institutes are engaged in skill development training programmes in the field of farm mechanization for different categories of beneficiaries like farmers, technicians, under graduate engineers, entrepreneurs and the foreign nationals nominated under international exchange treaty. Apart from Training, Testing and evaluation of agricultural machines and equipments is also one of the major activities of the abese institute to ensure the quality of the Agricultural machines and equipments, including tractors, Power tiller, combine harvester and other agricultural machines in the regular commercial production in the country. Field demonstration on new & advances agricultural machinery & equipment at farmers fields are also organized as part of training activities, with view to induct new technology in the agricultural production system.

The Farm Machinery Training & Testing Institutes (FMTTIs) located at Budni (Madhya Pradesh), Hisar (Haryana), Garladinne (Andhra Pradesh), and Biswanath Chariali (Assam), as per details given below are imparting training.

1.	Central Farm Machinery Training & Testing Institute, Tractor Nagar, P.O.Budni - 466455, Distt. Sehore (MP)								
	Phone : 07564-234729 E-Mail : fmti-mp@ nic.in								
	Website: http://fmttibudni.gov.in/								

2.	Northern Region Farm Machinery Training & Testing Institute, Sirsa Road, Hisar (Haryana)-125001	
	Phone : 01662-276984	E-Mail : fmti-nr@nic.in Website: http://nrfmtti.gov.in/
3.	Southern Region Farm Machinery Training & Testing Institute Tractor Nagar, P.O. Garladinne-515731 Distt. Anantpur (Andhra Pradesh)	
	Phone : 08551-286441	E-Mail : fmti-sr@hub.nic.in Website: http://srfmtti.dacnet.nic.in/
4.	North Eastern Region Farm Machinery Training & Testing Institute P.O. Biswanath Chariali -784176, Distt. Sonitpur, (Assam)	
	Phone : 03715-222094	E-Mail : fmti-ner@hub.nic.in Website: http://nerfmtti.nic.in/

Despite of the COVID pandemic, during the year 2021-22, total 13575 trainees were trained till 31st March, 2021 against the annual target of 9000 in different courses. To supplement the efforts of the FMTTIs, outsourcing of the training through the identified Institutions, ICAR Institutions, ATMA Institutions, National innovation Foundation, training programmes are funded as per norms

prescribed by Ministry of Skill Development and Entrepreneurship. During the year 2021, as a special drive for Skilling the Migrant Labourers in the area of agricultural machinery under the “*Aatma Nirbhar Bharat Abhiyan*” of the Government of India, 1080 migrant labourers were trained at FMTTI Budni & Hisar. During the year 2022-23, total 12139 trainees have been trained until December 2022.



Training at CFMTTI, Budni



Training on overhauling of Stationary engine at SRFMTTI, Anantapur

21.7 Demonstration of Newly Developed Agricultural / Horticultural Equipment:

To support and encourage the Agriculture mechanization at field level and to bring the awareness of new technologies among the farmers, demonstrations of newly developed agricultural equipment including Post harvesting, horticultural equipment have been included under component 1

& 2 of the SMAM scheme. Under these components, 100% financial assistance as Center Sector Scheme is provided for procurement of advance agricultural machines and equipments and also for the field demonstration of farm machinery and post harvesting technology/equipments on farmer's field. Total 458 field demonstrations have been conducted by the FMTTIs during the financial year 2021-22. During the year 2022-23 till

December 2022, total 389 demonstrations were conducted.



Demonstrations Activities at the SRFMTTI, Anantapur

21.8 Gender Friendly Equipment for Women: Under the component 1 of SMAM, Agricultural Mechanization through Training, Testing, and Demonstration, a total 7937 women have been trained during the Financial Year 2021-22, whereas, during 2022-23 total 6882 women have been trained till December, 2022. A list of

about 30 identified gender-friendly tools and equipment developed by the Research and Development Organization for use in different farm operations has already been sent to all states and UTs for popularizing them. State governments have been directed to earmark 30 per cent of total funds allocated under SMAM for women beneficiaries.



Field Deom for women at NRFMTTI , Hisar



Field Demo for women at CFMTTI, Budni

21.9 Testing and Evaluation of Farm Machinery & Equipment: The Farm Machinery Training and Testing Institute at Budni are engaged in conducting commercial tests on tractors Power tillers, combine harvesters and other agricultural machines as per relevant BIS test codes. CFMTTI is also National designated authority for testing of tractors as per OECD codes in the country and is also one of the authorized Testing agency of MoRTH to test tractors and power tillers under

CMV Rules 1989. The FMTTI institute at Hisar is fully equipped to conduct commercial tests on all type of combine harvesters, plant protection equipments, agricultural implements and other machines as per relevant BIS codes. Hisar institute is also one of the designated testing centers of MoRTH to issue the CMVR certificate for combined harvesters under CMVR 1989. The Institute at Garladinne is has been specialized to test power tillers and conduct tests on various agricultural

implements & equipments. The institute at Biswanath Chariali (Assam) tests bullock drawn implements, manually operated equipment, tractor drawn implements, self-propelled machines and small hand tools which are widely used and available for North Eastern States. During the financial year

2021-22, the four FMTTIs altogether have tested 382 machines of various categories, including tractors, power-tillers, combine harvesters, and other machinery and equipments, till 31st March, 2021 against the target of 320. During the year 2022-23 till December 2022, total 269 machines were tested.



Water proofing test of tractor at CFMTTI, Budni



Emission Test of Power Tiller

To cope up with the ever increasing demand of testing of agricultural machines and equipments, DAC&FW has designated 38 testing centers till date. These Centers have been established at State Agriculture Universities, Central Agriculture Universities, State Agriculture Departments, ICAR institutions etc. During 2021-22, CSIR-Central Mechanical Engineering Institute (CMERI), Durgapur (West Bengal) and Farm Machinery Testing centre at Choudhary Charan Singh Haryana Agricultural University (CCSHAU), Hisar, Regional Research Station, Uchani, Karnal, Haryana were approved as designated testing centers of DA&FW to Test all type of animal, tractor and Power tiller operated Agricultural machinery. Apart from this, the Collage of Agricultural Engineering & Technology (CAET), Choudhary Charan Singh Haryana Agricultural University (CCSHAU), Hisar, Haryana was also authorized to test the All types of Plant protection equipments *i.e.* Sprayers, Dusters, blowers etc in addition to other agricultural machinery. During 2022-23 the 38th Farm Machinery test center Machinery test Center Zonal Agricultural & Horticultural Research Station (ZAHRS), Babbur Farm, Hiriyur under Keladi Shivappa Nayaka University of Agricultural & Horticultural Sciences (KSNUAHS), Shivamogga, Karnataka has been authorized to Test all manual animal, tractor and Power tiller operated farm machinery.

To promote mechanization and ensure availability of tractors, testing of tractors used for agricultural purpose has been reduced from 9 months to just 75 working days with effect from August 15, 2022.

21.10 Custom Hiring Centres: To make the cost of machinery affordable and to make them available to all farmers, Govt. of India under Sub-Mission on Agricultural Mechanization (SMAM) is promoting establishment of 'Custom Hiring Centers' Farm Machinery Banks and Hi-tech Hub for custom hiring with the objectives of offsetting the adverse economies of scale arising due to small landholding and high cost of individual ownership of machines.

Under the components 4,5 & 6 of the SMAM total 3420 Farm machinery Banks, 103 Hi Tech and 4612 Custom Hiring Centers were established the country, where as, during the year 2022-23 till December, 2022, total 1515 Farm machinery Banks, 67 Hi-Tech hub and 2804 Custom Hiring Centers have been established.

21.11 Farm Mechanization Programmes under Other schemes of DA&FW, Ministry of Agriculture and Farmers Welfare: Financial Assistance in the form of subsidy at the rate of 40-50 percent under RKVY, NFSM & NHM, NMOOP is applicable as per guidelines of SMAM to the farmers for individual ownership of agricultural equipment

including hand tools, bullock-drawn/ power-driven implements, planting, reaping, harvesting and threshing equipment, tractors, power-tillers and other specialized agricultural machines.

21.11.1 Digital India: Centralized Farm Machinery Performance Testing Portal As an initiative of digital India & in line with the Government Policies of “Ease of doing business”, the Ministry of Agriculture and Farmers Welfare has taken an initiative and developed a “**Centralized Farm Machinery Performance Testing Portal**” in line with the requirements of the Testing Centers and Agricultural machinery manufacturers for online submission of testing application and monitoring of testing & related activities. This Portal is launched and available for both Testing Centers and manufacturers.

21.11.2 State Agro Industries Corporations: The Government of India had advised the State Governments in the year 1964, to set up State Agro Industries Corporations (SAICs) in the public sector to act as catalysts in providing access to industrial inputs to farmers, for their use in agriculture. Thus, 17 SAICs were set up in the joint sector with equity participation of the Government of India and the respective State Governments of Andhra Pradesh, Assam, Bihar, Gujarat, Haryana, Himachal Pradesh, Jammu and Kashmir, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Punjab, Rajasthan, Uttar Pradesh, Tamil Nadu and West Bengal during 1965 to 1970. Many of the State Governments have increased their equity participation as a result of which the Government of India, at present, is a minority shareholder. SAICs have since expanded their basic functions by commencing manufacture and marketing of agricultural inputs, implements, machines, after-sales service, promotion and development of agro-based units/industries. The Government of India is implementing a policy of disinvestment of its shares in SAICs with a view to give greater decision making power to the State governments by allowing transfer of its shares to state Governments. At present only 10 SAICs are in function which has Government of India equity.

21.11.3 Promotion of Agricultural Mechanization for In-Situ Management of Crop Residue

in the States of Punjab, Haryana, Uttar Pradesh and NCT of Delhi (CRM).

Objectives of the Scheme

- I. Protecting environment from air pollution and preventing loss of nutrients and soil micro-organisms caused by burning of crop residue.
- II. Promoting in-situ management of crop residue by retention and incorporation into the soil through the use of appropriate mechanization inputs.
- III. Promoting Farm Machinery Banks for custom hiring of in-situ crop residue management machinery to offset the adverse economies of scale arising due to small land holding and high cost of individual ownership.
- IV. Creating awareness among stakeholders through demonstration, capacity building activities and differentiated Information, Education and communication strategies for effective utilization and management of crop residue.

Components of Scheme

1. The Scheme has the following components (100% Central Share)
 - i. **Establish Farm Machinery Banks for Custom Hiring of in-situ crop residue management machinery** - financial assistance @ 80% of the project cost is provided to the Co-operative Societies of farmers, FPOs, Self-Help Groups, registered Farmers Societies / farmers groups, Private Entrepreneurs, Group of women farmers or self-help groups for establishment of farm machinery banks or custom hiring centers of in-situ crop residue management machinery. Groups of farmers / Individual farmers having their own tractor / combine harvester would be preferred for establishing Custom Hiring Centre (CHC). Old established CHCs, with Non-Crop Residue Machinery, will also be eligible for a fresh project under the scheme.

- ii. **Financial Assistance to farmers for Procurement of Agriculture Machinery and Equipment for in-situ crop residue management-** financial assistance @ 50% of the cost of machinery/equipment is

provided to individual farmers for purchase of machinery/equipment for crop residue management. The list of machinery identified by the Task Force for in-situ crop residue management is given in hereunder:



- iii. **Information, Education and Communication for awareness on in-situ crop residue management** - financial assistance is provided to the State Governments, KVKs, ICAR Institutions, Central Government Institutions, PSUs etc. for the activities to be undertaken towards Information, Education and Communication (IEC). The activities will involve mass awareness campaigns through

short and long films, documentaries, radio and TV programmes, demonstration camps at various levels, capacity-building programmes, advertisements in print media, star campaigning, award for village/ gram Panchayat for achieving zero straw burning, panel discussions on Doordarshan, DD Kisan and other private channels, etc.

Financial Progress under Crop Residue Management Scheme: -

Year	CROP RESIDUE MANAGEMENT SCHEME							
	Allocation of funds (Rupees in Crore)							
	Allocation	RE	Funds Released					
			Punjab	Haryana	UP	NCT Delhi	ICAR	Total
2018-19	591.80	591.80	269.38	137.84	148.60	0.00	28.51	584.33
2019-20	600.00	600.00	273.80	192.06	105.28	4.52	18.48	594.14
2020-21	600.00	600.00	272.50	170.00	120.20	0.00	8.00	570.70
2021-22	700.00	700.00	331.94	193.35	159.59	0.00	5.00	689.88
2022-23 (Dec 2022)	700.00	700.00	278.83	223.46	180.00	1.53	14.18	698.00
Total	3191.8	2491.80	1426.45	916.71	713.67	6.05	74.17	2439.05

Physical Progress under Crop Residue Management Scheme

State/ Agency	Number of Machines delivered to the individual farmers and Custom Hiring Centres						No. of Custom Hiring Centres Established					
	2018-19	2019-20	2020-21	2021-22	2022-23	Total	2018-19	2019-20	2020-21	2021-22	2022-23	Total
Punjab	27747	23068	24500	31970		107285	3888	5138	12100	0	21024	110175
Haryana	10627	14078	15350	3141		43196	1194	1685	1345	1017	8896	68003
Uttar Pradesh	23305	7171	12087	1469		44032	2300	1650	1661	6	5274	63981
NCT of Delhi	0	111	51			162	0	0	0	0	0	162
Total	61679	44428	51988	36580		194675	7382	8473	15106	1023	35194	242322

Impact of implementation of the scheme Promotion of Agricultural Mechanization for In-Situ Management of Crop Residue in the States of Punjab, Haryana, Uttar Pradesh and NCT of Delhi has been seen very positive impact on in-situ management of crop. In this scheme Super straw management, Happy Seed Drill, Chopper/ Shredder, Reversible Mould Board Plough, Zero Seed Drill, Shrub Master and Mulcher has been used by farmers.

Promotion and Adoption of Agricultural Drones:

In line with the Budget Announcement for 2022-23, Ministry of Agriculture and Farmers Welfare is promoting the use of **Kisan Drones** to promote the technology for modernizing the Agriculture sector. To achieve this, intensively this Ministry have already taken the following steps:

- I. Brought out a **generic Standard Operating Procedure (SOP)** for use of Kisan Drones **with pesticides & crop nutrient** to ensure the effective and safe use of Kisan Drones in different crops. Preparation of crop wise Standards Operational Procedure are under way and a Committee of the experts members from SAUs, ICAR and Concerned Divisions/ Departments of this Ministry has already been constituted vide this Ministry's O.M. No No 13-22/2022-M&T (I&P) dated 29th July, 2022
- II. **KISAN DRONES**, included in the **Operational Guideline of Sub Mission on Agricultural Mechanization (SMAM)** with following provision of Financial assistance under different components of the Scheme:
 - For promotion of "KISAN DRONES" through

field demonstrations, subsidy for procurement of Kisan drones & its attachments is provided @ 100% of actual cost of Kisan drones & its attachments or to the maximum limit of of Rs. 10 lakhs, whichever is less, to the Farm Machinery Training and Testing Institutes (FMTTIS), ICAR Institutes, Krishi Vigyan Kendras (KVKs) & State Agriculture Universities, State & Central Government Institutions, PSUs of Government of India.

- For FARMERS PROGRESSIVE ORGANIZATIONS, these subsidies limited to 75% of the actual basic cost of drones & its attachments or maximum limit of 7.5 lakhs, whichever is less.
- Additionally, a contingency fund @ Rs.6000/ hectare is being provided for hiring Drones for field demonstrations from Hi Tech Hubs/manufacturers/ Startups to the implementing agencies who are not willing to procure drones.
- The implementing agencies, those have availed the grants for procurement of Drones & its attachments, are provided contingency funds @ Rs 3000/hectare to conduct the field demonstrations
- Financial assistance @ 40% of the basic cost of **Drones & its attachments** or to the maximum limit of 4.0 lakhs whichever is less is being provided to Cooperative Societies of Farmers, FPOs, and Rural entrepreneurs is provided for establishment of new/ up gradation of CHC or Hi Tech hubs under SMAM, RKVY or any other Scheme of

this Ministry. For agricultural graduated it is provided @50% of the basic cost of drones & its attachments or maximum subsidy limit is Rs 5.0 lakhs , whichever is less.

- Individual farmers are also eligible for procurement of Kisan Drones with Subsidy/financial assistance @ 40% of the basic cost of **Drones & its attachments** or to the maximum limit of 4.0 lakhs, whichever is less. whereas, the farmers from SC/ST/ Women Farmers/small & marginal farmers/ Farmers from NE States categories, are eligible for financial assistance @50% or of the basic cost of **Drones & its attachments** or to the maximum limit of 5.0 lakhs, whichever is less.
- III. Ministry of Agriculture and farmers' Welfare, New Delhi has organized one day National on “PROMOTION OF KISAN DRONES: ISSUES, CHALLENGES AND WAY FORWARD” on 2nd May, 2022 in A.P. SHINDE SYMPOSIUM HALL, NASC COMPLEX, PUSA, NEW DELHI. More than 360 participants/stake holders physically attended

the conference and about 1500 participants, joined the conference through the weblinks

- IV. During 2021-22 and 2022-23 total 69 field Demonstrations on Kisan drones have been organized by 4 Farm Machinery Training and Testing Institutes of DA&FW. Total 13652 nos of farmers, rural youth, and other beneficiaries from Government Departments representatives from Drone manufacturers & pesticides etc; have participated in these Demonstration
- V. Ministry of Agriculture & Farmers Welfare, vide its Office Order No 13-15/2020-M&T (I&P) dated 27th of December, 2021, has established a “DRONE FACILITATION CENTRE” to address the broader issue of all Stake holder related to Drones registration, procurement of Kisan Drones, Training, Type approval, operation, after sale services, and other safety & regulatory affairs etc;
- VI. Status of Funds released to the States & other implementing agencies of SMAM for Procurement of Drones to promote of Kisan Drones & field Demonstration, is as under:

STATE/IMPLEMENTING AGENCY	FUNDS RELEASED SPECIFICALLY FOR DRONE	DEMONSTRATION		INDIVIDUAL SUBSIDY	STRENGTHENING OF ESTABLISHED CHC
		PROCUREMENT	DEMONSTRATION		
	(RS. IN LAKHS)	(IN NOS.)	(IN HA)	IN NOS)	IN NOS
2021-22					
KERALA	225	14	4000		
IGFRIA, JHANSI	11.15	1	50		
IWBR, KARNAL	20.6	2	20		
TOTAL	256.75	17	4070		
2022-23					
ICAR	5250	300	75000		
KERALA	80			20	
MP	500			100	
UP	400			92	
UTTRAKHAND	8			2	
PUDUCHERRY	12.5			5	
ARUNACHAL	10			2	
ANDHRA	5900				1475
CHATTISGARH	40				10
NAGALAND	8				2
BIHAR	25			5	
KARNATAKA	93			13	7
Maharashtra	100				25
Manipur	16				04
TOTAL	12442.5	300	75000	239	1523



Demonstration of Kisan Drone at NRFMTTI, Hisar



Demonstration of Kisan Drone at CFMTTI, Budni

VIP Visits to FMTTIs



Visit of Ms Shomita, CFMTTI, Budni Biswas, Joint Secretary, DA & FW to NRFMTTI, Hisar

Visits of Shri Manoj Ahuja Secretary, DA&FW

Chapter-22

SUB-MISSION ON PLANT PROTECTION AND PLANT QUARANTINE (SMPPQ)

22.1 Overview

The Plant Protection Division performs regulatory, monitoring, surveillance and Human Resource Development functions through a scheme called Sub Mission on Plant Protection and Plant Quarantine (SMPPQ).

(A) Directorate of Plant Protection Quarantine & Storage, Faridabad

Directorate of Plant Protection Quarantine and Storage has mandate to minimize loss to quality and yield of agricultural crops from the ravage of insect pests, diseases, weeds, nematodes, rodents etc. and to shield our bio-security from the incursions and spread of exotic plant pests. The DPPQ&S implements the following activities-

- (i) Plant Quarantine.
- (ii) Promotion of Integrated Pest Management.
- (iii) Registration of Pesticides through CIB&RC.
- (iv) Quality control of Pesticides through CIL & RPTLs.
- (v) Desert locust control.

(i) Plant Quarantine:

The objective of Plant Quarantine primarily is to prevent introduction of exotic pests diseases and weeds which are likely to be introduced through import of agricultural commodities or plant material into India and similarly fulfill obligation of the International Plant Protection Convention (IPPC) carrying out phytosanitary certification to

prevent introduction of pests, diseases and weeds in other countries through exports of such materials.

The Plant Quarantine (Regulation of Import into India) Order, 2003 issued under provisions of the Destructive Insects and Pests Act, 1914 (DIP Act) regulates import of plant & plant materials into India. Post entry quarantine inspection is undertaken in case of propagating plant material. Phytosanitary Certificates (PSCs) are issued for export as per International Plant Protection Convention (IPPC), 1951 of the Food and Agricultural Organization (FAO). These functions are being discharged by 73 Plant Quarantine Stations (PQS's) functioning under Directorate of Plant Protection Quarantine & Storage (DPPQ&S) Faridabad at various international airports, seaports and land frontier stations across the country to facilitate international trade of agricultural products.

During the year **2022-23** Pest Risk Analysis (PRA) was conducted for 36 agricultural commodities to determine potential bio-security risk if imported. In which 07 agriculture commodities PRA completed and 29 agriculture commodities PRA are under process. Whereas 04 agriculture commodities granted market access for import and 05 for export have been notified. During the period Import Release Order (IROs) were issued for 79816 nos. consignment of plant and plant materials and Phytosanitary Certificates (PSCs) issued for 297213 nos. of consignments of export.

Table 1. Details of Export /Import inspection & Certification

S.No.	Details	2022-23 (01.04.22-21.11.22)
1.	Import Quantity (Mt)	9834334
2.	Export Quantity (Mt)	27025657

3.	Import Permit Quantity (MT)	64693
4.	No. of Imported (IRO) consignment	79816
5.	No. of Exported (PSC) consignment	297213
6.	No. of Import Permit (IP)	176
7.	Revenue by Import Inspection (in Lakhs Rs.)	20357
8.	Revenue by Export Inspection (in LakhsRs.)	172
9.	Revenue by issuance of Import Permits(in LakhsRs.)	2
10.	Total Revenue (in LakhsRs.)	20531

Table 2. Status of PRA and market access 2022-2023 till date (01.04.22-21.11.22)

Sl. No.	Continent	PRA		Market access	
		Under Process	Completed	Granted (Import)	Gained (Export)
1.	Africa	8	5	-	1
2.	North & South America	3	-	-	2
3.	Asia & Oceania	07	-	4	2
4.	Europe	11	2	-	-
	Total	29	07	04	05

Table 3. Details of agencies/facilities accredited during 2022-2023 and total till date (01.04.22-21.11.22)

S.No.	Agencies for fumigation/treatment	2022-2023	Total till date
1.	Methyl Bromide(MBr) under NSPM-12	56	753
2.	Aluminum Phosphide(ALP) under NSPM-22	47	670
3.	Forced Hot Air Treatment (FHAT) under NSPM-09	58	712
4.	Hot Water Immersion Treatment (HWIT) of Mango under NSPM-15	08	48
5.	Irradiation under NSPM -21,	00	04
6.	Vapour Heat Treatment (VHT) under NSPM -20	00	09
7.	Heat Treatment of Niger seed (HT)- under NSPM-18	00	02
8.	Modified atmospheric treatment (MAT)-for organic products	03	03

Table 4. Details of Pack houses/processing units registered 2022-2023 (01.04.22-21.11.22)

S.No.	Pack houses/processing units	2022-2023	Total till date
1.	Export of Rice to USA,	17	195
2.	Export of Rice to China	23	124
3.	Processing units for export of peanut	07	124
4.	Dry chilli Warehouses	00	157
5.	Pack houses for fresh fruit and vegetables export to European Union,	10	114
6.	Mango Pack house for USA	3	19
7.	Farm Units for Export of Cut flower to Australia and	00	04
8.	Pack house for export of pomegranate fruits to Australia.	00	03
9.	Pack house for export of pomegranate Aril to Australia.	01	02

Plant Quarantine stations played an important role in bio-security of the country and intercepted **Quarantine/Non Quarantine pests in commodities imported from** various countries during 2022-23. List of intercepted plant quarantine pests were mentioned below.

Details of the pest interception during the period 2022-2023 (01.04.22-12.12.22) : Import

Sl. No.	Commodity (Common/Scientific Name)	Plant Part	Country of origin	Number of Quarantine pest intercepted
1.	Cashewnuts (Raw)	Nuts	Cote De Ivory	340
			Ghana	305
			Mozambique	15
			Tanzania	16
			Togo	129
			Nigeria	269
			Senegal	75
			Burkina Faso	80
			Benin	206
			Ivory coast	169
			Guinea	76
			Uganda	1
			Indonesia	7
			Mali	1
			Gambia	53
2.	Pinus	wood	Uruguay	8
			USA	6
3.	Kiwi	Fruits	Italy	1
			Greece	1
4.	Dates	Fruits	UAE	35
			Oman	1
			Iraq	13

5.	Fig	Fruits	Afghanistan	5
6.	Okoume wood	Wood	Gabon	1
7.	Teak logs	Wood	Equador	27
			Colombia	10
			Brazil	1
			Cameroon	12
			Cote D Ivory	1
			Nigeria	1
			Panama	1
8.	Lentils	Pulses	Canada	1
9.	Red Oak logs	Wood	USA	1
10.	Dried Cocoa Beans	Cocoa	Uganda	6
			Tanzania	1
			Madagascar	1
11.	Pigeon pea	Grains	Sudan	1
12.	Dragon fruit	Fruits	Vietnam	1
13.	Padauk Logs	Wood	Cameroon	9
			Congo	7
			Belgium	14
14.	Yeman wood	Nuts	Ghana	1
15.	Mora wood	Wood	Suriname	3
16.	Mersawa wood	Wood	Malaysia	1
17.	Resak	Wood	Malaysia	1
18.	Yamane woods	Wood	Ghana	2
19.	Walnut wood	Wood	USA	1
20.	Keruing	Wood	Malaysia	9
21.	Sal	Wood	Malaysia	12
			Indonesia	3
22.	Kapur	Wood	Malaysia	8
23.	Wooden logs	Wood	USA	2
			Malaysia	1
24.	Fresh Cherry	Fruits	Afghanistan	1
25.	Fresh grapes	Fruits	Afghanistan	2
26.	Plum	Fruits	Afghanistan	3
27.	Almond	Nuts	Afghanistan	3
			USA	7
28.	Roasted pine nuts	Nuts	Afghanistan	3
29.	Raisins	Dry fruit	Afganistan	2
30.	Fresh pomegranate	Fruits	Afghanistan	2
31.	Cinnamon		Vietnam	2
32.	Coffee	Beans	Congo	4
			Honduras	7
			Indonesia	23
			Uganda	10
33.	Arecanut	Nut	Indonesia	1
Total				2022

(ii) IPM Division

IPM is an eco-friendly approach, which aims at keeping pests below economic threshold level by employing all available alternate pest control methods and techniques such as cultural, mechanical and biological with greater emphasis on use of bio-pesticides. The use of chemical pesticides is advised as a last resort when pests cross the economic threshold level (ETL). The Central Government has established 36 Central Integrated Pest Management Centres (CIPMCs) of the Directorate of Plant Protection, Quarantine & Storage (DPPQ&S) in 28 States and 2 UTs. The mandate of these Centres is to monitor insects, pests and diseases for forewarning, conservation of natural enemies in farmers' fields, production and field release of bio-control agents, promotion of eco-friendly IPM inputs like bio-pesticides/plant based pesticides and Human Resource Development in IPM by imparting training to extension officers and farmers through Farmers Field Schools (FFSs) and IPM programs.

IPM activities are propagated through Farmers Field Schools (FFSs). This is a form of "learning by doing" concept evolved from the concept that farmers learn optimally from field observations and experimentation. FFSs are organized to empower farmers to take appropriate crop protection measures on their own. These FFSs are conducted both in Kharif and Rabi seasons and each FFS lasts for 14 weeks.

During 2021-22, 282 No's of Farmer Field Schools were conducted in which 9870 number of farmers were participated and 80 No's of 2 Days Human Resource Development programs were conducted in which 4368 No's of farmers, pesticide dealers and State extension officials were oriented about Integrated Pest Management. During 2022-23 (up to October 2022) a total number of 127 No's of Farmer Field Schools and 56 No's of two days Human Resource Development programs were allocated among all CIPMCs out of which 126 No's of FFS were successfully conducted in which 4410 No's of farmers were trained & 53 No's of 2 Days HRD programmes were conducted till date, in

which 2824 No's of farmers, pesticide dealers and State extension officials were trained about Integrated Pest Management techniques. Proposal for conducting 104 No. of FFS, 59 No. of 2 Day HRD & 06 No. of 5 Day HRD Programmes has already been submitted to DA&FW for the Season Rabi 2022-23

Apart from conducting FFS, the CIPMCs carry out pest/disease monitoring, production, release and conservation of bio-control agents. During 2022-23 (up to October 2022), the pest and disease situation was surveyed covering 485.47 thousand hectares area. A total of 1577.24 million bio-control agents were mass produced in laboratories and released against targeted insect-pests in various crops. Augmentation and conservation was taken up in 443.46 thousand hectares.

Fall Army Worm (FAW) is a trans-migratory pest affecting Asia & Pacific region. India is lead country among the South-East Asian region to promote sustainable FAW management/ Control measures under FAO- Global initiative for FAW management. Regular surveys, surveillance and monitoring were conducted by the Central Integrated Pest Management Centres (CIPMCs) in collaboration with State Departments of Agriculture, SAUs and ICAR etc. Awareness cum training programmes was conducted on management of FAW in different States. Due to continue efforts of DPPQ&S the % area of Maize affected by FAW was decreased significantly from 2019-20 to 2021-22 (11.7% to 6.6%).

During 2021-22 IPM Division Prepared 7 Packages of Practices for producing quality fruits for exports. Four POP's for Banana, Pineapple, Grapes and Turmeric are approved and uploaded on DPPQS website, two POP for Mango and Apple are approved by DA & FW and to be uploaded in DPPQS website while 1 POP on Pomegranate is awaited for review from ICAR.

IPM Division in collaboration with ICAR & SAU published booklet on "Monitoring, Diagnosis & Management of South East Asian Thrips *Thripsparvispinous* in Chilli" which will be handy document for extension functionaries of central/ state Government & farmers for management of

Chilli thrips in upcoming years.

During 2022-23, IPM Division issued 15 Nos. of advisories/forewarnings on various pest/disease up to October 2022. Under the celebration of 75th AzadiKaAmritMahotsav during 2021-22 IPM Division Organized 52 KisanGoshthis, 42 IPM Exhibitions & 75 Seed Treatment Campaigns in 28 States and 2 UTs. A total of 6232 farmers participated in these programmes.

“Healthy seed-Healthy produce”- Seed treatment and Grow Safe Food (GSF) programmes were also taken up under IPM FFSs programmes. Seed treatment is the application of chemical and biological agents on seeds to control primary soil and seed borne infestation of insects and diseases, which are serious threats to crop production. Since 2006, a seed treatment campaign is taken up every year by Department of Agriculture and Farmers Welfare (DA&FW) during Kharif and Rabi seasons involving State Departments of Agriculture and CIPMCs.

Participation of Women Farmers in IPM activities:-

1835 numbers of women farmers were participated in FFS & 2 Day HRD training programmes conducted by 36 CIPMC's during 2022-23 (till date).

Officers of IPM Division delivered talks in DD Kisam on the topics. Sh. O.P.Verma, JD(PP), IPM delivered talk on Introduction of CIPMC's/IPM, Introduction on FFS, Cultural/Mechanical Techniques under IPM. Dr. Sunita Pandey, Deputy Director (E) has delivered on Introduction on Bio-control agents & Information on HRD programme under IPM.

(iii) CIB & RC

The Secretariat of CIB & RC is entrusted with the processing of applications for grant of registration of pesticides, including scrutiny of applications as per the guidelines and issuing of certificates of registration after approval by the Registration Committee and also dealing the cases of inclusion of new insecticides in Schedule to the Act. It processes Pre-registration matters of insecticides, issues import permits for the import of sample quantities of insecticides for research, test and trail purposes.

S. No.	Requested information	Inputs of Secretariat of CIB & RC
1	Activities during the quarter	<p>Significant activities in the Secretariat of CIB & RC:</p> <ol style="list-style-type: none"> 18,581 certificates of registration were issued by the Sectt. of CIB & RC till 31st October, 2022. New online portal in the place of old NIC portal, namely Comprehensive Registration of Pesticides (CROP) for online registration of pesticides, became functional to speed up the process of registration in a transparent and hassle free manner. The board objectives of the CROP portal are envisaged to be an advanced IT solution developed on modern Technical Platforms and practices and deployed on advanced technical infrastructure. The existing process have been reengineered in order to achieve the desired benefits to improve the service delivery through integrated IT solution for Comprehensive Registration of Pesticides with the following objectives: <ul style="list-style-type: none"> To develop a real time user friendly IT solution without any manual intervention To integrate with all the stakeholders in the system for efficiency

		<p>To develop a Dashboard at various levels of hierarchies for the Speedy delivery of services.</p> <p>MIS reports based on the day-to -day requirements of the Ministry, Department, CIB & RC and other stakeholders of the system.</p> <p>4. Guidelines/data requirements proposed for registration of new formulation indigenous manufacture for post-harvest (fruit ripening only) of already registered molecules u/s 9(3) were approved in 440th RC meeting.</p> <p>5. 13 new molecules have been added in the Schedule to Insecticide Act.</p> <p>6. 138 permits for import / indigenous manufacturing of Non- insecticidal use were issued.</p>
2	Recent Publications	NIL
3	Important photographs with suitable caption	<p>1. “Har Ghar Tiranga” campaign was organized under the aegis of “Azadi ka Amrit Mahostav” and National Flag distributed to every Officer/Official of CIB & RC</p> <p>2. On 15th August, 2022 the Independence Day was celebrated with grandeur, gaiety, fervor and enthusiasm in CIB & RC campus. The National Flag hoisted by Hon’ble PPA, Dr.J.PSingh, Dte. of PPQ&S, Faridabad</p> <p>3. Plantation of trees campaign was also organized to spread awareness for conservation of environment, thereby making a contribution to mitigate climate changes on earth and preserve natural environment.</p>
4	Dignitary visits in the division during the quarter	<ul style="list-style-type: none"> • Visit of Two IAS Officers along with Plant Protection Adviser. • Visit of Vigilance Team.

(iv) Central Insecticides Laboratory (CIL)

Pesticides are inherently toxic in nature, they are more likely to affect the health of human beings, particularly in agriculture sector. In India there is a comprehensive legislation known as **Insecticides Act, 1968** which regulates the import, manufacture, sale, transport, distribution and use of insecticides with a view to prevent risk to human beings, animals and the matters connected therewith. By virtue of the Section 16 of the said Act, the Central Government has established a **Central Insecticides Laboratory** with the major objectives of pre and post registration verification of the properties performance and hazards of pesticides and the proposed use claimed by the

manufacturers.

Central Insecticides Laboratory, Faridabad has the following four divisions:

1. Chemistry Division
2. Bioassay Division
3. Medical Toxicology Division, and
4. Packaging and Processing Division

NABL Accreditation of CIL:

CIL is accredited with NABL as per ISO/IEC 17025:2017 in the field of Biological and Chemical tests with the validity permission up to 27.08.2022 in the field of Biological and Chemical testing.

The progress reports of various Divisions of CIL are as under:

A. Chemistry Division

The achievements of Chemistry Division, CIL for the duration April 2022 to October 2022 are

summarized as below:

Analysis of samples for Quality Control under Insecticides Act, 1968 received from Courts of Law/ Competent Authorities, PRV and Investigational samples:

Year	Annual Capacity	Achievements/Samples analysed (Includes all three categories of samples: PRV, Referral & Investigational)*	
April, 2022- October, 2022	1600	Referral samples	541
		PRV samples	264
		Investigational samples	19
		Total	824

B. Bioassay Division

Year	Annual Capacity	Achievements/Samples analysed (Includes all three categories of samples: PRV, Referral & Investigational)*	
April, 2022- October, 2022	60	Chemical pesticides (5D) Bio-pesticides (5D)	41
	Not Fixed	PRV samples	268
		Total	319

C. MEDICAL TOXICOLOGY DIVISION

The **Medical Toxicology Division** is created in CIL in order to verify the safety claims made by the manufacturers of pesticides in the field of Toxicity Study which is also approved by EFC. This Division has to generate data and advice to the Government to take suitable course of action. In such cases, there is a need for adopting the risk management

strategy in order to reduce the hazards to the human beings and the environment. For this purpose, various objectives were decided to undertake earlier like Acute, Oral/Dermal LD 50 study, Short term studies/Sub-acute/sub-chronic toxicity study, Chronic toxicity study, Health monitoring study training to Medical doctors on Diagnosis, Management and Treatment of Pesticide Poisoning.

Name of study	Annual Capacity	Achievements	Remarks
Acute Oral LD50 Study	20	13	-

Sent the analysis report of the samples received from different State Directors of Agriculture.

D. Packaging & Processing Division

YEAR	Annual Capacity	Achievements
April, 2022- October, 2022	150	10

Brief of achievements of CIL

Year	Achievements/Samples Received and analysed	
April, 2022-October, 2022	Chemistry Division	824
	Bioassay Division	319
	Medical Toxicology Division	13
	Packaging & Processing Division	10
	Total	1166

- The Central Insecticides Laboratory has already received the Certificate of Accreditation by National Accreditation Board for Testing and Calibration Laboratories (NABL) for Chemical & Biological testing & renewal for further subsequent years up to 2024 is under progress
- ISO 17025-2017 Training of officers of CIL has been completed
- Referred Samples: Legal prosecution is launched by the Central/State Insecticide Inspectors for misbranded samples of pesticides for which test report being furnished by CIL within 30 days
- PRV samples: Analytical Test report of CIL is one the pre-requisites for grant of Registration of pesticide(s) for use in the country.
- Investigational samples: CIL provide test report based on pesticide samples received from various government bodies like Directorate of Revenue Intelligence, Customs, etc. for taking legal action against revenue evasion by falsified import/export of pesticides under the garb of other chemicals/intermediates.
- Undertaken experimental trials on bioefficacy, phytotoxicity and quality parameters of pesticides at CIL premise.

Techno-Legal Cell

A Techno-Legal Cell is a component of the implementation of the Insecticides Act and its main objective is to make concerted efforts to ensure timely availability of quality pesticides to the farming community by ensuring effective implementation of the provisions of the Insecticide Act, 1968. The Techno-Legal Cell also coordinates with States, RPTLs, SPTLs, BPTLs and provides technical and legal expertise to SPTLs, RPTLs and Insecticide

Inspectors of Central and State Govt. starting from drawl of samples up to launching of prosecution in case of misbranded samples and illegal practices adopted by any manufacturer/ importer. A total Number of 191 officers of the Directorate has been notified as Central Insecticide Inspectors (CIIs) vide Gazette notification GSR 745(E) dated 18.10.2021. State Governments have also notified 11080 Insecticide Inspectors respectively to check the quality of pesticides. Insecticide samples are drawn on a regular basis and analyzed in 70 State Pesticide Testing Laboratories for chemical pesticide testing and 6 Bio-Pesticide Laboratories for Bio-pesticide sample testing with annual capacity of 77975 (conclusively) and two Regional Pesticide Testing Laboratories with annual capacity of 3100. Total 1456 samples were analyzed by both RPTLs of which 9.5% found to be misbranded.

During 2022-23 (till October) by States/UTs notified insecticide inspectors drew 37186 pesticide samples; 28050 samples were analyzed in SPTLs, out of which 741 were found to be misbranded, prosecution has been launched in 307 cases against firms which were found to be involved in manufacturing and selling of misbranded pesticides and 33 firms were convicted. Moreover total 128 samples were drawn by CIIs of which 206 analyzed, found 14 samples misbranded, 08 prosecutions have been launched for violations of provisions of Insecticide Act, 1968.

As a special drive for conducting inspection of minimum infrastructure, machinery and quality control laboratory as per the guidelines of CIB&RC and sample drawl for checking the active ingredient, teams of CIIs were deputed by PPA in the month of June to September-2022. A total of 106 manufacturing premises were covered in Maharashtra, Madhya Pradesh, West Bengal, Punjab,

Tamil Nadu, Uttarakhand, Karnataka and Jammu & Kashmir.

(V) Locust Control and Research

Locust is a trans-boundary migratory pest. It has the ability to fly hundreds of kilometers collectively in swarms. Found in Africa, the Middle East and Asia, they can inhabit some sixty countries and can cover one-fifth of Earth's land surface. Desert locust plagues can threaten the economic livelihood by destroying crops. Swarms of locusts come to India from spring breeding areas of Africa, Middle East and South West Asia during the monsoon season for summer breeding in Scheduled Desert Area of Rajasthan and Gujarat. The Locust Control and Research is being implemented through an Organization known as Locust Warning Organization (LWO) established during 1939 and later merged with the Directorate of PPQ&S in 1946. The Locust Warning Organization (LWO) monitors locust development and its activities over an area of 2.00 lakh sq km of the Scheduled Desert Area (SDA) mainly in the states of Rajasthan and Gujarat and partly in Haryana. The Locust Control and research is being executed through 10 Locust Circle Offices (LCOs) located at Bikaner, Jaisalmer, Barmer, Jalore, Phalodi, Nagaur, Suratgarh, Churu in Rajasthan and Palanpur & Bhuj in Gujarat, Locust Warning Organisation (LWO) Field Headquarters at Jodhpur and Locust Division at Central Headquarter Faridabad (Haryana). Besides, there is one Field Station for Investigation on Locust (FSIL) situated at Bikaner.

To strengthen locust monitoring and forecasting and

as per the recommendations made during the 28th Session of the FAO Commission in 2014 for Controlling the Desert Locust in South-West Asia (SWAC), an advanced device named eLocust3 and software RAMSES V4 has been made functional in LWO from January, 2016 with the cooperation of FAO. LWO has a wireless network for exchanging information on locust survey and control between various field offices and Head quarter. Faridabad. Satisfactory locust control potential is being maintained in the form of pesticides, plant protection equipment, wireless sets, GPS, eLocust3 and trained manpower.

Regularly survey is being carried out in the scheduled desert area to monitor the presence of locust, ecological conditions and also to determine whether locust population has crossed the economic threshold level [adults more than 10,000 per km. and 5-6 hoppers per bush] that may require control. Intensive & Extensive Surveys are undertaken in Desert Locust Active Season as well as in Desert Locust Calm Season.

After recent upsurges during 2019-20 & 20-21, the effective control measures & timely survey for monitoring the locust activity, NO Locust activity is reported during 2021-22 (April-March) & 2022 (October), which is an achievement.

Survey target and achievement for the year 2022-23 (upto Oct) Locust Control

As per survey schedule 2022-2023, 104.925 lakh./Hac. Target was desired by October 2022, instead of this survey on 112.733 lakh./Hac. is achieved by LWO/LCOs which is an **achievement**.

Survey Target and Achievement for the year 2022-23 Locust Control

S.No.	Parameter	Survey Target 2022-23	Achievement up to October, 2022
1	Locust Surveillance (area in Lac ha.)	150.035	112.733
2	Desert Locust Bulletin issued (Nos.)	24	14
3	Indo-Pak Border Meeting June to November (Nos.)	06	6*

*SWAC meetings

International Co-operation:

Desert Locust is a trans-boundary pest; it breeds in 30 countries and can migrate to more than 60 countries. Therefore International Cooperation with different countries is essential for effective mitigation of swarms.

(i) Indo-Pak meetings: The desert in Sindh province of Pakistan and Thar Desert in the states of Rajasthan and Gujarat are ideal grounds for summer breeding of Desert Locust. Regular participation is maintained in the Indo-Pak Border meetings (June to November) for exchange of information on locust situation between two Countries for effectively monitoring the situation ensuring preparedness to tackle the emergence of locust threat, if any.

(ii) SWAC-TOC: FAO Desert Locust Commissions has three Regional Commissions for Desert Locust Control i.e. Western Region, Central Region and Eastern Region. **FAO Commission for Controlling the Desert Locust in South-West Asia (SWAC)** is FAO's oldest regional locust commission and has 4 member countries: Afghanistan, India, Iran and Pakistan. The Senior Locust Forecasting Officer at FAO HQ acts as the Executive Secretary. Mr. Keith Cressman is Senior Locust Forecasting Officer, FAO (Rome) & Chairman of SWAC. SWAC includes representatives each from Afghanistan, Iran, India and Pakistan. The Senior Locust Forecasting Officer organizes the meetings on monthly basis on virtual mode for sharing current locust situation in the region. India participates regularly in monthly meetings for sharing current desert locust situation of the country. From May 2022 to October 2022, six (6) virtual meetings were organized.

(iii) Joint Survey: Under recommendations from SWAC a joint survey was carried out by representatives from Iran and India (Dr. P.B. Salunke APPO & DLIO) jointly in the spring breeding areas of I.R.Iran during 11-18 April, 2022. The report with observations was submitted to FAO.

Desert Locust Bulletin:

Desert Locust Situation Bulletins released fortnightly on the basis of information received from FAO on international situation and Desert Locust Survey data conducted by LWO & LCOs. The bulletin provides information on weather parameter, rainfall, swarm movement, breeding, hoppers and Scattered/ Isolated adult/Adult group; global information of locust in India & world, Ecological condition for locust breeding, it forecasts locust situation for next 15 days well in advance. Desert Locust Bulletin released, shared among stakeholders viz., State Agriculture/ Administration of Rajasthan, Gujarat, Haryana and Punjab and SWAC countries. During the period from April 2022 to October 2022, fourteen (14) nos. of Bulletins are issued against target of 14 nos.

To strengthen the capabilities:

To further strengthen the ground control efforts, Ministry of Agriculture in collaboration with Ministry of Defense five (05) CDA atomizer kits has been procured from M/s. Micron, U.K. for installation with Mi-17 helicopter as customer furnished equipment, two nos. CDA atomizer has arrived. Installation, Demonstration & trials are under process for these received CDA atomizer kits under IAF, Chandigarh.

Desert Locust survey and for real-time reporting using satellites enabled online tools:

• eLocust3m:

This is an Android smartphone app developed in 2020 (iOS soon). There are two options for data collection: BASIC and PRO. Basic data is only Locust Type, Area (ha), and Control (yes/no). Pro data is the complete data like eLocust3 tablet. The data is submitted with a photo. Data are saved to the phone and sent whenever there is cell network connection to the National Locust Centre. Data are also shared with other eLocust3m users in the country by Chat. It is free to use. Features: basic and complete data, photo, video, chat, multi-language, cell network, near real-time Plant Village: <https://plantvillage.psu.edu>.

- **eLocust3g:**

This is a GPS app developed in 2020 for Garmin inReach Explorer+ GPS. It can only be used on this specific GPS. It collects the basic set of data like the eLocust3m BASIC option. There are no photos or chat. The data are sent via the Iridium satellite network in real time to the National Locust Centre. Like eLocust3, it can be used anywhere, no need for cell network. A monthly subscription is required. Features: basic data, tracking, cell network not required, real-time Garmin Explore: <https://explore.garmin.com>. 65 nos. of e-locust 3g from FAO have been procured.

Evaluation of fungal pathogen *Metarhizium acridum* as biopesticide against Desert Locust:

Metarhizium acridum is a fungal pathogen of Locust and it is explored and used as biopesticides for control of Desert Locust in Africa specifically in Somalia. FAO recommended the use of *M. acridum* with dose rate of 50 gms dissolved in 1 litre of diesel per hectare for aerial spray and the dose of 2.5gms $\times 10^{12}$ CFU dissolved in 2 litres of diesel per hectare for vehicle mounted and knapsack sprays.

The FAO facilitated the import of 3 kg *M. acridum* from Morocco for its potential use in India. Trials have been conducted at FSIL on bio-efficacy of *M. acridum* against Desert Locust. Mortality rate of 95-100% were observed @50 gm / liter. The cultures are also shared with RCIPMCs for maintaining and multiplication purpose.

Women farmers participation in Farmers Field Schools & OTP



FFS KHARIF 22-23 WADAKKANCHERY, THRISSUR



FFS KHARIF 22-23 SHORNUR, PALAKKAD DISTRICT



FFS KHARIF 22-23 BISONVALLEY, IDUKKI



FFS KHARIF 22-23 KARUMALLOOR,



FFS RABI 21-22 PARASSALA



FFS RABI 21-22 MALA THRISSUR DISTRICT



FFS RABI 21-22 PULAMANTHOL,
MALAPPURAMDISTRICT



FFS RABI 21-22 KADUTHURUTHI,
KOTTAYAMDISTRICT



FFS RABI 21-22 KONNATHADI, IDUKKI
DISTRICT



FFS RABI 21-22 VADAVANNUR, PALAKKAD
DISTRICT



FFS KHARIF 21-22 VECHOR,
KOTTAYAM DISTRICT



FFS RABI 20-21 SULTHANBATHERI,
WAYANAD DISTRICT

(B) National Institute of Plant Health Management (NIPHM): National Institute of Plant Health Management (NIPHM) is established with the objective of human resource development in plant protection technology, plant quarantine and bio-security with special emphasis on crop oriented Integrated Pest Management approaches. It also, trains personnel in analysis of pesticide formulations and pesticide residues for monitoring the residue levels in the agricultural produce. *NIPHM also provides policy support to Central Government in implementation of the Insecticides Act, 1968 and the Insecticides Rules, 1971.*

It is mandated to function as a nodal agency for exchange of knowledge on plant protection technology, gain overall insight into Plant Protection and Food Security Measures and Policies together with operational problems and constraints. NIPHM, is also conducting programme oriented research in the area of Plant Protection, Integrated Pest Management, Pesticide Management, Plant Quarantine and Pesticide delivery systems and residues.

National Institute of Plant Health Management (NIPHM), as part of its mandate has trained a total of 5,105 agricultural officials and farmers in the past 6 months. NIPHM is also conducting research through program oriented projects.

During the year 2022-23 (for the period from April to October, 2022), 117 regular training programs

and 2 educational programs were conducted, and the details are as follows,

No. of training programs conducted :	119
No. of trainees attended :	4833
No. of webinars Conducted:	0
No. of participants:	0
Exposure Visits	3
No. of Visitors	272
Total no. of trainees	5105
	(as on Oct 2022)

Training & Educational Programs

- **PGDPHM** (for Agricultural Officers from Kerala)
 - KERALA PGDPHM: The III semester examinations for the V batch (2019-21) was organised at SAMETI, Trivandrum during 6th to 8th April 2022.
 - KERALA PGDPHM: The 4 semester theory classes for Plant Health Management were organized at SAMETI Kerala from 5th to 7th May, 2022 and the practical classes were organised at NIPHM from 16th to 20th May, 2022. Total 25 officers from the Kerala Agricultural Department

attended the programme. Apart from the theory class the participants were taken to Fruit Research Station (Sangareddy), Varsha Bio Tech Pvt. Ltd., Poly house flower cultivation

(Chevella) for practical exposure.

- 4th semester end exams of V Batch were conducted on 05.07.2022 at SAMETI, Kerala.



• Massive Open Online Course (MOOCs)

1. Plant Biosecurity

- The course consists of 24 lecture notes in 3 modules (one module / month). The duration of the course is 3 months.

- Seventh batch was commenced on April, 2022 and twenty four participants completed the course successfully.
- Eighth batch was commenced on September, 2022 and twenty nine participants are undergoing the course



Video lecture delivered by guest speaker



Video lecture delivered by faculty

2. Rodent and Household Pest Management

V Batch: The course consists of 21 chapters (Seven modules / month). The duration of the course is 3 months. V Batch started from April – June, 2022: Online examination was conducted on 09.07.2022. Out of 40 participants 32 have passed out the examination.

VI Batch: Registration for 6th batch has been initiated. Total 10 participants are attending the course.

Projects:

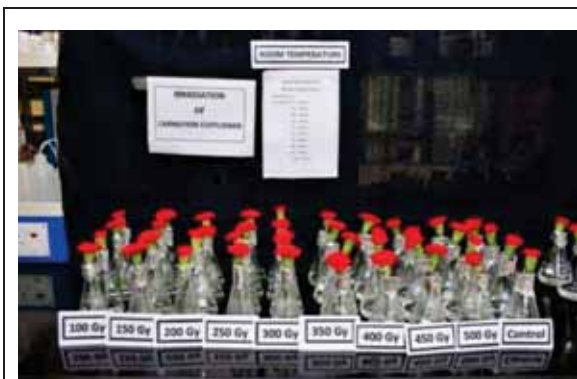
Externally funded (BRNS sponsored) research project:

- **Commercial scaling up of irradiation protocol as phytosanitary measure for major cut flowers:**

A 3 years project with total funding of Rs. 29.5 lakhs got sanctioned from Board of Research in Nuclear Science, BARC, Mumbai. The cut flowers Rose and Carnation were irradiated at 0,

100,150, 200, 250, 300, 350, 400, 450 and 500 Gy and kept under room and refrigerated condition. The parameters viz., flower weight, flower diameter, flower freshness and petal discoloration were observed in rose. The irradiated roses kept at room temperature were

there for 7 days (50% longevity) and under refrigerated condition, the observation is going on. The dark red colour carnation also got irradiated and kept under room and refrigerated condition and the observation is in progress.



Irradiated Carnations kept under room temperature



Irradiated Carnations kept under refrigerated condition

- **Survey and field evaluation of Sterile Insect Technique (SIT) for the management of Oriental fruit fly, *Bactrocera dorsalis* (Diptera: Tephritidae) infesting economically important fruit crops:**
- **AICRP projects**

A 3 years project with total funding of Rs. 35 lakhs got sanctioned from Board of Research in Nuclear Science, BARC, Mumbai. The traps for survey were installed in mango garden of Ranga Reddy District and at regular intervals, readings have been taken.

I. Studies on biodiversity of natural enemies in maize ecosystem

The project having the following objectives of- survey surveillance and collection of natural enemies in maize field.



Different natural enemies recorded in maize ecosystem

II. Evaluation of NIPHM white media for the production of *Nomuraearileyi* (*Metarhizium rileyi*) NIPHM MRF-1 strain for management of Maize Fall Armyworm (*Spodoptera frugiperda*)

Mass production and evaluation of *Nomurea riley* NIPHM MRF-1 strain against Fall Armyworm using different grains.



Internally funded and Institutional Farm Research Activities

- **Hot Water Immersion Treatment:** The in-house project on Effect of Hot Water Immersion Treatment (HWIT) on storage quality and disinfestation of fruit flies and sucking pests in vegetables viz., bitter gourd, green chilies and capsicum preliminary study was completed. The vegetables were treated at different temperatures viz., 42°C, 44°C, 46°C,

48°C, 50°C, 52°C for 3 minutes in 3 replications along with control. The outcome indicated that HWIT is not an effective phytosanitary measure against fruit flies and this is contrary to the available APEDA standard for bitter gourd (42°C for 3 minutes). However, HWIT was effective against sucking pests and borers. Storage quality was intact for 15 days and 7 days for bitter gourd and capsicum / chillies, respectively.

1. NIPHM Farm

- Adopting Agro-ecosystem Analysis (AESAs) based Plant Health Management (PHM) in conjunction with Ecological Engineering for Pest Management (EPPM)
- The NIPHM field contains the IPM and Non IPM technologies amongst which in the earlier technique consists of growing the horticultural crops majorly vegetable crops viz. okra, brinjal, tomato, chilli, cluster beans, ridge gourd and bottle gourd and field crops viz. paddy, groundnut, black gram, sesame, maize along with the Ecological Engineering plants like marigold, sunflower, castor, ocimum, chrysanthemum will be cultivated following the good agricultural practices with timely management and giving the organic manures, *Trichoderma* and *Pseudomonas*, VAM, Mycorrhiza and the biocontrol agents like predators and parasitoids for the efficient plant growth and insect pest management.
- All IPM practices of like ecological engineering, AESA observation, usage of traps and lures, bio agents are done.



NIPHM Polyhouse:

- The protected cultivation contains the different PHM technique consists of growing the horticultural crops majorly vegetable crops viz. cucumber, tomato, cherry tomato, capsicum, cabbage, cauliflower, broccoli and leafy vegetable cultivated following the good agricultural practices such as integrated nutrient and pest management practices with scheduled time intervals.
- In INM & IPM for polyhouse, NIPHM bio-products such as vermicompost, vermiwash, *Trichoderma* and *Pseudomonas*, Phosphate Solubilizing Bacteria and Mycorrhiza and the biocontrol agents like EPN, NPV, EPF, predators and parasitoids for protecting the plants from nutrient deficiency and pest attack are used.
- Under promotion of protected cultivation, training programme on 'Plant Health Management in Protected Cultivation' was conducted.



- **Construction and Evaluation of Zero energy cool chamber**

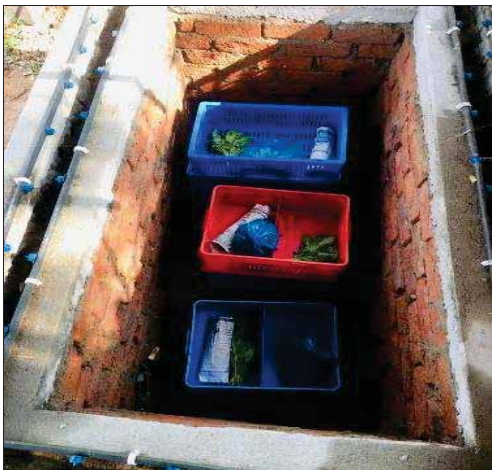
Zero Energy Cool Chamber is an eco-friendly storage system that doesn't require any type of energy to be adopted. A cool chamber was designed and constructed for the purpose of demonstration to trainees.

The performance evaluation of ZECC is under process to optimize the parameters of the chamber. The following are the parameters are measured to evaluate the ZECC.

- 1. Outside temperature and RH**

- 2. Inside temperature and RH**

For performance evaluation of ZECC, the shelf life of commodities for various vegetables such as tomato, amaranths leaves, okra, ridge guard, curry leave, coriander, Keera, Sorel, Roselle plant, spinach, Ivy guard were selected for control, refrigeration and ZECC. The commodity selected is at three different conditions normal, wrapping in paper and placed plastic cover. In ZECC, the trays were placed 1 in row, 2 in a row and 3 in a row to study the shelf life of commodities with different conditions and trials were conducted.



Leafy vegetables stored in ZECC

• **Feasibility study of treated sewage water irrigation of vegetables**

The spinach crop was irrigated time to time based on the soil moisture stress. The tensiometer was installed in the designated field

for regular monitoring the moisture level in root zone. Based on that irrigation water has been supplied as flood irrigation. Further, the harvesting has been started when the crop reaches to their full maturity level.



Plot-1 Single filter water



Plot-2 Fresh Water

The Physical, Chemical and biological parameters of Soil, crop and water were evaluated to see the actual impact of irrigation with treated water.



Single treated water produce



Double treated water produce



Fresh treated Water produce

- **Creation of spraying awareness & safe application of pesticides and their exposure to pesticide residue**

Survey for 625 farmers was carried out by the village level skilled persons. PHE officials

visited to YFA –KVK where all the hired person asked to gather for preliminary skilling about *eppicollect 5* for survey procedures. Doubts were cleared by creating WhatsApp group.



Glimpses of Visit and explaining the survey procedures

- **Nozzles wear study:**

Second phase study was continued. Readings were taken for 0, 10, 25 and 50 hours using 7 different nozzles (Hollow cone – brass, stainless steel, plastic; Flat fan – stainless steel, plastic; flower – brass, plastic) with Hexaconazole 5% EC with bore water as carrier.

After continuation running of 50 hours test rig, sample of 0 h, 25 h and 50 hours are sent for analysis.

Testing / Analysis Activities

- **Chemical Testing Analysis**

Pesticide Formulation and Residue Analytical Centre (PFRAC) is accredited by National Accreditation Board for Testing and Calibration Laboratories (NABL) in the field of chemical analysis as per the ISO/IEC 17025:2017. The laboratory is well equipped with sophisticated analytical equipment like GC-MS/MS, LC-MS/MS, GC-TOF & LC-TOF, GLC and HPLCs besides IR & UV-VIS Spectrophotometers.

- Monitoring of Pesticide Residues at National Level:** The division is a participating laboratory under GOI funded Central Sector Scheme “Monitoring of Pesticide Residues at National Level”. The division collects various market and farm gate samples of different agricultural

commodities and analyze for pesticide residues, on monthly basis.

- Central Insecticides Laboratory (CIL):**

Ministry of Agriculture, Government of India, vide Gazette Notification No: 132, March 12, 2013, in exercise of powers conferred by proviso to Section 16 of the Insecticide Act, 1968, declared NIPHM, to perform the functions of Central Insecticides Laboratory (CIL) to analyse the samples of bio-pesticides for presence of chemical pesticides under the provisions of Insecticide Act.

- **Pesticide Formulation and Residue Analytical Centre (PFRAC)**

- Monitoring of Pesticide Residues at National Level:**

NIPHM is one of the participating centers under the Central Sector Scheme “Monitoring of Pesticide Residues at National Level” funded by Govt. of India. Under the scheme samples of fruits, vegetables, cereals, pulses etc. are collected in every month from markets including organic produce and farmer’s fields. Field samples were collected from different Farmer’s field located in various districts of Telangana. Market samples were collected from different local markets of Hyderabad (Telangana).

Monthly analysis reports are submitted to Project coordinator to identify crops and regions having preponderance of pesticide residues in order to focus extension efforts for

Integrated Pest Management (IPM) and Good Agriculture Practices (GAP). The detail of types of commodities collected and analyzed during period is presented in **Table 2**.

Table 2: Commodities collected under the Project “Monitoring of Pesticide Residues at National Level” (MPRNL)

S. No.	Type of Commodity	Types of samples
1.	Vegetables	Brinjal, Cabbage, Capsicum, Okra, Cauliflower, Green Chilli, Tomato, Cucumber etc.
2.	Fruits	Apple, Banana, Grapes, Guava, Mango,
3.	Cereals	Rice (Basmati and others), Wheat
4.	Pulses	Bengal gram, Green gram and Red gram
5.	Milk	Packaged milk
6.	Spices	Red chili powder and Curry leaves
7.	Water	Surface

A total of 467 samples were analyzed during April to September 2022. Each sample was tested for presence of about 200 pesticides using validated method based on QuEChERS and confirmatory analysis was carried on GC-MS/MS and LC-MS/MS. The limit of quantification for most of the pesticides is 0.01 mg/Kg. Summary of analysis for different categories of samples are given in Table 3.

Additionally, a total of 383 samples (fruit and vegetables) were received from ANGRAU (a sample collection centre under MPRNL) and analyzed during the period under MPRNL scheme (Table 4). The Laboratory also received 115 water samples from CSIR-NEERI for pesticide residues analysis by LC-MS/MS under MPRNL scheme (Table 5).

Table 3: Summary of samples analyzed under MPRNL during April, 2022 to September, 2022

Sl. No.	Commodity	No. of Samples analyzed	Samples detected with residues		Samples with residues > MRL	
			Number	Percentage	Number	Percentage
Market sample						
1	Vegetables	62	22	35.48%	1	1.6%
2	Fruit	66	22	33.33%	0	0
3	Red chilli	18	11	61.11%	0	0
4	Curry leaves	15	8	53.33%	0	0
5	Cereals	36	12	33.33%	9	25.0%
6	Pulses	24	3	12.50%	0	0
7	Milk	4	0	0	0	0
Water sample						
8	Surface Water	11	0	0	0	0
Organic sample						
9	Organic	84	27	32.14%	2	2.4%
10	Imported	4	1	25.00%	0	0

Farmgate sample						
11	Farmgate vegetables	143	23	16.08%	0	0
	Total	467	129	27.62%	12	2.57%

Table 4: Summary of analysis of samples collected by ANGRAU under MPRNL (April, 2022 to September, 2022)

Sl. No.	Commodity	No. of Samples analyzed	Samples detected with residues		Samples with residues > MRL	
			Number	Percentage	Number	Percentage
Market sample						
1.	Vegetables	72	31	43.06%	14	19.44%
2.	Fruit	66	16	24.24%	7	10.61%
3.	Cereals	37	6	16.22%	3	8.11%
4.	Pulses	5	1	20.00%	0	0
Farmgate sample						
11	Farmgate vegetables	83	24	28.92%	6	7.23%

Table 5: Summary of NEERI-CSIR samples analyzed under MPRNL

Sl. No	Commodity	No. of Samples analyzed	Samples detected with residues		Samples with residues > MRL	
			Number	Percentage	Number	Percentage
1.	Surface Water	115	16	13.91%	0	0



Fig: Pesticide Residue analysis laboratory

ii) Analysis of Customers Samples

a) Analysis of samples of Tobacco Board:

Pesticide Management Division, NIPHM received tobacco samples from Tobacco

Board every year during the tobacco leaf collection and auction season. During April to September, 2022 a total of **169 samples** were received from Tobacco Board and analyzed for pesticide residues. The

detected pesticide residue levels were compared with the Guidance Residue Levels (GRL, CORESTA Guide no. 1) and results were submitted to Tobacco Board.

b) Analysis of samples received from FSSAI and other Customer:

Pesticide Management Division, NIPHM is a notified FSSAI Referral Laboratory and the

Laboratory received 17 samples of fruits during the year. All the samples were analyzed and reports were submitted to the FSSAI through the portal.

The analytical facilities at NIPHM also utilized for analysis of samples received from customers (Govt. institute/ organization). The number of such samples analyzed during the period is furnished below:

Table 6: Details of Analysis of other Customers samples

Sl. No.	Name of the Customer	No. of Samples Received and analysed
1.	NIPHM sample (PHE)	14
2.	FSSAI (Fruit sample)	17

:iii) Analysis of Bio-pesticide samples from Insecticide Inspector (Gazette Notified CIL activity):

Ministry of Agriculture, Government of India, vide Gazette Notification No: 132, March 12, 2013, declared NIPHM to perform the functions of Central Insecticides Laboratory (CIL) to analyse bio-pesticides for presence of chemical pesticides. The laboratory is well equipped with latest analytical equipment like GC-MS/MS, LC-MS/MS, GC-Q-TOF & LC-Q-TOF,

GLC and HPLC to screen the samples for presence of registered and unregistered chemical pesticides at trace levels.

A total of **75 samples** received from Insecticide Inspectors of various State Departments of Agriculture and Central Insecticide Inspectors were analyzed during the period. The analysis reports were submitted to the concerned department. The details of bio-pesticides analysed and the frequently detected pesticide in bio-product/bio-pesticide are presented below.

Table 7: Details of Bio product sample analysed during April to Sept 2022

Sl. No.	Description	No. of Samples Analysed	No. of Samples detected with pesticides >0.01 %	Per cent of positives (%)
1.	Andhra Pradesh	1	0	0.0
2.	Gujarat	5	3	60.0%
3.	Bihar	33	4	12.12%
4.	Madhya Pradesh	1	1	100.00%
5.	Tamil Nadu	19	7	36.84%
6.	Karnataka	2	0	0.0
7.	Maharashtra	6	3	50.0%
8.	Kerala	7	0	0.0
9.	Haryana	1	0	0.0
	Total	75	18	24.0%

Table 8: Frequently Detected pesticide in Bio product sample

Sl. No.	Pesticides	Pesticides
1	Abamectin	Imidacloprid

2.	Chlorantraniliprole	Carbendazim
3.	Alpha-Cypermethrin	Hexaconazole
4.	Acetamiprid	Emamcetin Benzoate



Fig: Sample preparation and analysis of Bio product Sample

iv) Analysis of Pesticide Formulations:

Samples of pesticide formulations are received under Inter laboratory comparison programs and as part of Homogeneity and stability studies of Proficiency Testing items sent by Proficiency

Testing Centre. The samples were analyzed for active ingredient content and other parameters as per the BIS methods. During the period **41 samples** were analyzed under different categories as given in the Table below.

Table 9: Details of analysis of formulation samples, April to September, 2022

Sl. No.	Description	Samples Analyzed
1	Customer	2
2	ILC	7
3	PT samples-internal	32
	Total	41

• Proficiency Testing

The purpose of PT is to evaluate the performance of participating Laboratory and it

is achieved by comparing participant's results to the assigned value through statistical analysis ('Z'score').

i) Table 10 : PT - Pesticide Residue Analysis:

S. No.	Matrix / Item	Month	No. of Pesticides Spiked	No. of Participants
1.	Mango	May 2022	06	29
2.	Wheat	May 2022	07	34
				Total -63

**Table 11: Laboratory performance assessment of PT Program on Mango
(PTC/PR/01/22-23):**

Sl. No.	Pesticide	No. of labs with satisfactory "Z" score	No. of labs with Questionable "Z" score	No. of labs with Unsatisfactory "Z" score	No. of labs not Submitted Report
1.	Dimethoate	19(90.47%)	02	00	08
2.	Fenpropathrin	19(90.47%)	01	01	08
3.	Imidacloprid	18(100.00%)	00	00	11
4.	Lambda Cyhalothrin	20(90.91%)	01	01	07
5.	Quinalphos	19(90.47%)	01	01	08
6.	Thiamethaxom	15(93.75%)	00	01	13

Note: No. of participants Laboratory is 29; Percentage of satisfactory z-score is derived considering the number of laboratories submitted the results.

**Table 12: Laboratory performance assessment of PT Program on Wheat
(PTC/PR/02/22-23):**

Sl. No.	Pesticide	No. of labs with satisfactory "Z" score	No. of labs with Questionable "Z" score	No. of labs with Unsatisfactory "Z" score	No. of labs not Submitted Report
1.	Alpha Cypermethrin	17 (89.47%)	01	01	15
2.	Buprofezin	16 (84.21%)	01	02	15
3.	Chlorpyrifos	27 (93.10%)	02	00	05
4.	Deltamethrin	22 (91.67%)	01	01	10
5.	Dimethoate	19(86.36%)	01	02	12
6.	Quinalphos	22 (84.62%)	03	01	13
7.	Tricyclazole	17 (100.00%)	00	00	17

Note: No. of participants Laboratory is 34; Percentage of satisfactory z-score is derived considering the number of laboratories submitted the results.



Fig: PT item preparation for Mango & Wheat (PTC/PR/01& 02/22-23)

ii) PT - Pesticide Formulation Analysis:

Three PT programme on **Pesticide Formulation Analysis** were conducted in the area of quality control of pesticide formulations during the period. The details is given below:

S. No.	Item	Month	Test Parameters	No. of Participants
1.	Cypermethrin Technical	April 2022	Active Ingredient	50
2.	Imidacloprid SL	April 2022	Active ingredient, Acidity as H ₂ SO ₄	48
3.	Quinalphos EC	April 2022	Active ingredient, Emulsion Stability	40
				Total - 138

The Laboratories performance assessments are presented below in Table 13.

Table 13: Laboratory performance assessment of PT PFA programs April to Sept 2022

Sl. No.	PT Program Name	PT Program Number	No. of labs with satisfactory "Z" score	No. of labs with Questionable "Z" score	No. of labs with Unsatisfactory "Z" score	No. of labs not Submitted Report
1.	Cypermethrin Technical	PTC/PF/01/22-23	40 (93.02%)	02	01	07
2.	Imidacloprid SL	PTC/PF/02/22-23	44 (100.00%)	00	00	04
3.	Quinalphos EC	PTC/PF/03/22-23	30 (93.75%)	00	02	08

Note: Percentage of satisfactory z-score is derived considering the number of laboratories submitted the results.



Fig: PT PFA items preparation (Weighing, Packing and Packaging)

Accreditation Activity

i) Accreditation of Testing (PFRAC): ISO/IEC 17025:2017

Pesticide Formulation and Residue Analytical Centre (PFRAC) was accredited by National Accreditation Board for Testing and Calibration Laboratories (NABL) as per ISO/IEC 17025:2005 in the field of chemical analysis since May, 2012 and the accreditation status was updated to comply as per ISO/IEC 17025:2017. The accreditation certificate (T-5338) is valid upto 12.01.2024. The scope of Pesticide Formulation and Residue Analytical Centre (PFRAC) is presented in following table.



Table 14: Number of pesticides under Scope of Accreditation of PFRAC

S. No.	Area of Analysis	Tests under Accreditation
1.	Pesticide formulation analysis(PFA)	34 pesticides technical 44 pesticide formulation
2.	General tests of Pesticide Formulations (PFA)	9 test parameters
3.	Pesticide Residue Analysis (PRA)	105 pesticides in fruits, Vegetables 137 pesticides in cereals, pulses, spices, condiments 40 pesticides in Water
4.	Screening of Bio pesticides for presence of chemical pesticides (Gazette Notified CIL activity)	105 pesticides

ii) Accreditation of Proficiency Testing centers (PTC):ISO 17043:2010

The Proficiency Testing Centre (PTC) of NIPHM is accredited in accordance with the standard ISO/IEC 17043:2010 as Proficiency Testing Provider in the field of Chemical Testing by NABL w.e.f. 24-05-2016 and the PT activity conducted by PTC, NIPHM is recognized internationally. The PT activity is continuously audited by NABL team every year. The certificate (TC-1013) is valid till 23-05-2023. The Scope of accreditation of Proficiency Testing Centre as given in the Table below:



Table 15: Number of pesticides under Scope of Accreditation of PTC

S. No.	Area of Analysis	Test
1.	Pesticide Residues in Water	25 pesticides
2.	Pesticide Residues in Fruits, Vegetables	36 pesticides
3.	Pesticide Residues in Cereals and Pulses	22 pesticides
4.	Pesticide Technical analysis	11 technical
5.	Pesticide formulation analysis	20 formulations
6.	Physicochemical tests in formulation analysis	8 test parameters

iii) Conducting / Participation in Inter Laboratory Comparison (ILC) and Proficiency Testing (PT) programs:

As a part of the improvement of laboratory management system towards quality assurance and to assess the competence of the

analysis, PFRAC, PMD has conducted and participated in the Inter Laboratory comparison (ILC) and Proficiency Testing (PT) programs in Quality Control Analysis of Pesticide Formulations and pesticide residue analysis during the period.

Table 16: ILC programs participated in Pesticide Formulation Analysis:

S. No.	Name of the organization	Name of the pesticide	Parameters	'Z' score
1.	Central Insecticide Laboratory, Faridabad	Atrazine 50% WP	Active Ingredient	Result Awaited
		Propiconazole 94-99%	Active Ingredient	
2.	State Pesticide Testing Laboratory, Shivamoga, Karnataka	Chlorpyrifos 20% EC	Active Ingredient	Result Awaited
		Quinalphos 25% EC	Active Ingredient	
		Imidacloprid 17.8% SL	Active Ingredient	
		Carbendazim 50% WP	Active Ingredient	

PT/ILC in Pesticide Residue Analysis: The PFRAC, PMD has participated one PT programs in Pesticide

Residue Analysis in chilli powder during the period. The details of ILC program participated is presented in the following table

Table 17: PT programs in Pesticide Residue Analysis participated by PFRAC, PMD:

Sl. No.	Name of the organization	Commodity	Name of the pesticide	'Z' score
1.	Aashvi Proficiency Testing & Analytical Services, Hyderabad	Chilli Powder	Azoxystrobin	The performance of PFRAC, PMD laboratory is found satisfactory based on 'Z' Score
			Chlorfenpyr	
			Diafenthuron	
			Difenconazole	
			Monocrotophos	

The Proficiency Testing Centre (PTC) of NIPHM is accredited in accordance with the standard ISO/IEC 17043:2010 (*Conformity Assessment-General requirements for Proficiency Testing*) as Proficiency Testing Provider by NABL and regularly conducting Proficiency Testing (PT) Programs in the field of Pesticide Formulation and Residue Analysis.

Special programs:

Special training programs were organized based on the request from different States/ stakeholders

other than the regular programs.

- Phytosanitary Certificate Issuing Authorities of Telangana State:**

A special program was conducted from 18.04.2022 to 21.04.2022. Five officers from Horticulture and Agriculture Department of Telangana and NBPGR-RS, Hyderabad attended the training which focused on phytosanitary regulations and phytosanitary certification system for issuance of phytosanitary certificate.



The scientist explains phytosanitary requirements for germplasm export at NBPGR-RS, Hyderabad



Exposure visit to PQS, Hyderabad

- International Programme on Plant Health Approaches, Plant Biosecurity and Food Safety:**

NIPHM organized 15 days training from 07.06.2022 to 20.06.2022 for the officials of various countries with partnership of Indian

Technical and Economic Cooperation (ITEC) under the Ministry of External Affairs (MEA), Govt. of India. A total of 13 officials from Sudan, Mauritius, Bangladesh, Tajikistan and Nigeria were trained on vital aspects of plant health management, plant biosecurity, detection and diagnostics of pests and food safety measures.

**Technical Session****Field Demonstration****Practical Exposure****Valedictory Session**

- **Warehouse Management and Scientific Storage for Incharge / Manager/ Supervisors/ representatives of Warehouseman of the PACS:**

Two programmes were organized at NIPHM from 22.08.2022 to 05.09.2022 and 26.09.2022-30.09.2022 with an objective to create awareness and to train the officials

involved in storage of food grains at warehouse level and to understand the activities of WDRA and to improve the technical efficiency in maintenance of the grain storage and other technical quality control aspects at storage godowns with respect to Prophylactic and Curative treatments (Fumigation with ALP) and 41 participants attended the programme.

**Inaugural Session****Technical Session**

- **Stored Grain Pest Management for Food Corporation of India (FCI) QC officials:**

Five days Training was organized from 12 -16,

September, 2022 for Food Corporation of India (FCI) - Quality Control officials and 26 participants attended the training from different states of the country.



Inaugural Session

- **Level 1 training on Urban Pest Management for Technicians-** Payment programme for Technicians was organized from 20th to 22nd June 2022. Total 16 participants attended the training from various states. During the programme the topics covered were; biology and ethology of rodents, mosquitos, termites, cockroaches, bedbug and flies etc. and their

management practices. In addition other important topics like safe and judicious use of pesticides, Code of conduct for pest management were also covered. The participants were taken to pest control industry for exposure visit in pest control business.



Special programs were organized exclusively for the North Eastern States Tripura, Meghalaya, Assam, Arunachal Pradesh, Sikkim, Manipur, Nagaland and Mizoram on export promotion.

- **Export promotion and Sanitary and Phytosanitary measures of agriculture and horticulture commodities in North Eastern states:** The North East Region (NER) of India has an ocean of opportunity, resources and unexplored potential when it comes to agriculture. The region possesses several

comparative advantages like fertile soils, favourable climatic conditions, rich biodiversity, forest wealth, educated manpower as well as a geographically strategic location acting as a gateway to the South East Asian countries and China. However, due to multitude of challenges at several levels, the true potential of the region

is not getting harnessed and the region has not grown on par with the rest of the regions in the country. Realizing the same, NIPHM jointly with Agricultural & Processed Food Products

Export Development Authority (APEDA) organized training on Export promotion of agriculture and horticulture crops.



Tripura



Meghalaya



Assam



Arunachal Pradesh



Sikkim



Manipur



Nagaland



Mizoram

Training to Pest Monitors on Field Diagnosis for IPM under CROPSAP (Maharashtra) conducted training programme from 20.06.2022 to 24.06.2022 with 39 participants.



A 21 days special student training program on 'Plant Health Management for Sustainable Agriculture' was organized at NIPHM from 10th to 30th August, 2022. In this program total of 30 students from different campuses of ANGRAU viz., Agricultural College, Bapatla (10 students), S.V. Agricultural College, Tirupati (8 students), Agricultural College, Mahanandi (5 students) and Agricultural College, Naira (7 students) participated



Training cum demonstration on use of Biopesticides and Biofertilizers in FCV tobacco

Organised one day off campus training program at six villages in the Mysore region (Kottegala, APF 62, Chilkunda, Sannenahally, APF 02, Hunsur, Shirenahally, APF 03, Hunsur, Marur, APF 64, Hunsur, Vasahalli, APF 1 H.D.kote, Kattemanuganahalli, APF 1 H.D.kote)



Organised one day off campus training program at five villages in the Mysore region [under the Periyapatna region and Ramanathapura regions (Budnahelli village, Periyapatna, Sanyasipura village, periyapatna, Hunsekoppalle, periyapatna, Basavarj village, Ramnathpura, Mundluru village, Ramanathapura)]



Plant Health Management in Tobacco crop for officials of tobacco board

Organised one day off campus training on "Plant Health Management in Tobacco crop" was organized at Mysore on 12.07.2022. In this programme total of 23 field officers from different auction platforms of Tobacco Board, Karnataka state



e- ITEC – programme on Production Protocol for Biofertilizers and Biocontrol agents

An International training programme on **e-ITEC programme on Production Protocol for biofertilizers and biocontrol agents** was organized by NIPHM through virtual mode from 25.07.2022 to 29.07.2022 (5 days) with collaboration under Ministry of External Affairs, GOI, India. A total of 25 participants from different countries are participated.



e- ITEC – MEA training program on Production Protocol for Biofertilizers and Biocontrol agents

NIPHM is the training partner with the Indian Technical and Economic Cooperation (ITEC) under the Ministry of External Affairs (MEA), Govt. of India. An international e-ITEC training program on "Sustainable soil Management Practices to increase crop Productivity from 19.09.2022 to 23.09.2022 (5 days) for the officials of various countries



- **Certificate Course on PHM in Organic farming**

(In Technical Collaboration with ICAR- Indian Institute of Farming System Research) a training programme on 'Certificate course on Plant Health Management in Organic Farming' is scheduled to be conducted from December, 2022 to March, 2023 at NIPHM.

Others

- **Vermicompost Unit**

About 6.9 tonnes quantity of vermicompost has

been produced for the NIPHM field to enrich the soil / polyhouse vegetable production during the reporting period.

- **Plant Health Services through Plant Health Clinics**

Mainly to enable farmers with timely advices to manage all types of plant health related problems (insects, diseases, mites, nematodes *etc*) for sustainable and profitable agriculture.

Farmers from different places are visiting the clinic



Queries are being raised and answered on,

- Natural farming,
- Organic farming
- IPM on different crops
- Bio-fertilizers, Biopesticides, Biocontrol agents
- Fodder crop cultivation practices
- Fruitfly problems in orchards/Vegetables crops
- Nematode Management
- Roof house Gardening
- Vermicomposting

• **Program Title: International Day of Plant Health 2022 at NIPHM**

In collaboration with India Post, NIPHM released a special postal cover on the occasion of International day of Plant Health at NIPHM, on 12.05.2022. About 80 participants from NIPHM, neighbouring ICAR institutes and State Agriculture University attended the program



• **Workshop**

Annual conference for members of Pest Management Professionals Welfare Association, Mumbai (PMPWAM): This program was

conducted in association with PMPWAI (Mumbai) from 07.04.22 to 09.04.22. Total 120 participants attended from different parts of the country. The deliberations were related to management of urban pests.



23.1 Overview

Women farmers play an important role in the agriculture sector and development of rural economy. Agriculture, the single largest production endeavour in India and contributing substantially to the GDP, is increasingly becoming a female activity. Agriculture sector employs 80% of all economically active women; they comprise 33% of the agricultural labour force and 48% of self-employed farmers. Women play a significant and crucial role in agricultural development including, main crop production, livestock production, horticulture, post-harvesting operations, agro/social forestry, fishing etc. Increasing percentage of female operational holders during different Agriculture Censuses indicates participation of more and more women in operation and management of agricultural holdings in the country.

National Policy on Farmers, 2007 has included ***“mainstreaming the human and gender dimensions in all farm policies and programmes”*** as one of the major policy goals. Accordingly, Gender Mainstreaming initiatives are being promoted in the Department of Agriculture & Farmers Welfare (DA&FW), Ministry of Agriculture & Farmers Welfare, by way of building their capacities and improving their access to inputs, technologies and other farming resources. Mainstreaming of gender concerns is being addressed by (i) earmarking 30% of funds for women under various major schemes/programmes and development interventions; (ii) taking pro-women initiatives to help women derive the benefits of beneficiary-oriented components of various programmes/ schemes and missions. Focus is also being given on formation of women Self Help Groups (SHGs), capacity building interventions, linking them to micro credit, enhancing their access to information and ensuring their representation in decision making bodies at various levels.

To fulfill the mission of gender mainstreaming in agriculture & allied sectors, the National Gender Resource Centre in Agriculture (NGRCA) in Extension Division is working as a focal point for convergence of all gender related activities and issues within and outside DA&FW; addressing gender dimension to agriculture policies and programmes; rendering advocacy/ advisory services to the States/UTs to internalize gender specific interventions. NGRCA aims at forging effective functional linkages with other related departments, agencies and institutions for women empowerment.

23.2 CURRENT INITIATIVES OF NGRCA

Being a Nodal Centre for Women in Agriculture in DA&FW, the centre is actively involved in the following activities:

- An e-book on the **Success Stories of Progressive Women Farmers and Agripreneurs** is being prepared by NGRCA collating best practices and success stories of women farmers and agripreneurs. This book will help the extension functionaries and officials at State, District and Block Level in making women farmers aware of interventions and best practices facilitating them to derive benefits of the tailor made provisions of various Schemes/Programmes of the Ministry.
- **Mahila Kisan Diwas-2022-** The National Gender Resource Centre in Agriculture (NGRCA), Directorate of Extension, Department of Agriculture & Farmers Welfare in collaboration of National Institute of Agricultural Extension Management (MANAGE), Hyderabad ; an autonomous organization under Ministry of Agriculture and Farmers Welfare (MoA&FW) celebrated '**Mahila Kisan Diwas**' or '**International Rural Women Day**' on 15th October, 2022. As the year 2023 has been declared as the

'International Year of Millets by United Nations (UN), the theme of Mahila Kisan Diwas was **'Millets: Empowering Women and Providing Nutritional Security'**. The inaugural event was organized on 15.10.2022 through Video Conferencing under the chairmanship of Hon'ble Union Agriculture Minister Shri. Narendra Singh Tomar and the technical session of the programme was organized at MANAGE, Hyderabad with the technical support provided by Indian Institute of Millet Research (IIMR), Hyderabad. A book titled **"Evidences based Gender Inequality in Agriculture and Food Systems in India"** was also released on the occasion of Mahila Kisan Diwas. The Senior and middle level extension functionaries, women farmers and agri-entrepreneurs and resource persons from various States/ Institutes/ Start-ups training institutes participated in the event and an exhibition was also showcased at MANAGE, Hyderabad by women Start-ups. The successful women entrepreneurs from various States also said their views and experiences on the occasion during the event.

- Undertaking macro/micro level studies in critical thrust areas including assessing the gender contents and impact of various on-going schemes/programmes of DA&FW & make recommendations, if required, on appropriate improvements in their strategy and design to incorporate gender factor into them.
- Collecting, analyzing the documenting successes of Women farmers and the participatory material developed/ innovative strategies followed to address gender concerns in women specific programmes of the Department.
- Generating 'gender disaggregated data' in respect of various schemes & programmes of different divisions of DA&FW.
- Developing Gender Sensitization Module for programme implementers at district, sub-division and cutting-edge level along with

organizing model sensitization workshops for the sensitization and capacity building of programme implementers in selected States.

- A Gender Budgeting Cell (GBC) located in the NGRCA is looking into the budgetary commitments of various schemes/programmes of DA&FW to ensure proportionate flow of funds and benefits to women farmers.
- As a part of its networking strategies, the NGRCA is committed to initiate appropriate action and collaborations and convergence with Ministries/Departments/ eminent institutions working for the issues of women in agriculture.

23.3 MAINSTREAMING EFFORTS OF VARIOUS DIVISIONS OF DA&FW

The important mainstreaming and gender budgeting efforts within various Subject Matter Divisions of DA&FW are given as under:

A. AGRICULTURE EXTENSION

Support to State Extension Programs for Extension Reforms (ATMA): The Scheme **"Support to State Extension Programs for Extension Reforms (ATMA)"** implemented since 2005 has now been included as a Centrally Sponsored components of the Sub-Mission on Agriculture Extension (SMAE) under Green Revolution – Krishonnati Yojana. It is now under implementation in 704 districts of 28 States & 5 UTs of the country. The Scheme promotes decentralized farmer-driven and farmer accountable extension system through an institutional arrangement for technology dissemination in the form of an Agricultural Technology Management Agency (ATMA) at district level. Under the Scheme grants-in-aid is released to States with an objective to support State Governments efforts of revitalization of the extension system and making available the latest agricultural technologies in different thematic areas to increase agricultural production through extension activities viz; Farmers Training, Demonstration, Exposure visit, Kisan Mela, Mobilization of Farmers Groups and Setting up of

Farm Schools. Through these activities, latest agriculture technologies are disseminated to farmers in the country.

The gender mainstreaming efforts under the Scheme include

- minimum 30% of resources meant for programmes and activities are required to be allocated to women farmers and women extension functionaries with specific documentation of expenditure and performance for women being maintained;
- women farmers are to be involved in different decision making bodies at district and block level such as (ATMA) Governing Board and ATMA Management Committee at district level;
- women are represented in Farmers Advisory Committees (FACs) set up at Block/ District and State level; more women are involved as 'Farmer Friends' under the newly introduced mechanism for extension delivery below the Block level through a 'Farmer Friend'; and
- Farm Women's Food Security Groups (FSGs) @ at least 2 per block to be formed annually for ensuring household food and nutritional security providing assistance of Rs. 10,000/ per group.

Since inception of the Scheme in 2005-06 (April 2005 to 31st December, 2022), a total 1,70,88,741 farm women (27.04% of the total benefited farmers) have participated in farmer oriented activities like Exposure Visits, Trainings, Demonstrations, Farm Schools & Kisan Melas. During FY 2022-23 (upto 31st December, 2022); 19,20,496 farmers including 5,89,944 farm women (30.72%) have reportedly participated in farmer oriented activities like Exposure Visits, Trainings, Demonstrations & Kisan Melas.

Mass Media Support to Agriculture Extension Scheme (MMSAE):

The primary objective of the Mass Media Support to Agriculture Extension Scheme (MMSAE) since its inception in 2004-2005 is to create awareness/

publicity of schemes /missions/ government new initiatives/ advisories /modern technologies related to agriculture and allied sector for the welfare of farming community through Electronic & Print Media & later Social Media added to harness the potential & growth in spread of mobiles & internet usage even in the rural areas.

The scheme is being implemented through Doordarshan, DD Kisan and All India Radio to telecast & broadcast the sponsored agriculture and allied sector programmes. Under the scheme, a Krishi Darshan programme of 30 minutes (05 days a week) (5.30 – 6.00 PM) being telecast through 18 Regional Kendras of Doordarshan, 03 programmes namely Krishi Darshan (30 minutes) (5.30 – 6.00 PM), Hello Kisan (60 minutes) (6.00 – 7.00 PM) and Choupal Charcha (30 minutes) (9.00 – 9.30 AM) (05 days a week) on DD Kisan & 30 minutes of programmes namely Kisan Vani (06 days a week) (6.30 – 7.00 PM) through 96 Rural FM Radio Stations of All India Radio are being utilized to broadcast. Since, September 2018 a new agriculture programme “Kisan Ki Baat” was being broadcast on FM Gold Channel, Delhi, (3.10 – 3.40 PM), on the lines of Kisan Vani programme.

In addition to above, the 'Focused Publicity & Awareness Campaign' through Audio-Video Spots are also being broadcast/telecast through DD, AIR and Private TV-Radio Channels operating at National & Regional Level for the benefits of the farming community. Besides, publicity & awareness is also carried out through Outdoor Publicity as well as through print advertisements in leading newspapers across the country. In view of growth in spread of mobiles and internet usage even in the rural areas, social media platforms viz Facebook (www.facebook.com/agrigoi), Twitter (www.twitter.com/agrigoi), instagram (instagram.com/agrigoi) and youtube (www.youtube.com/agrigoi) etc are also being utilized for the publicity. DD/AIR have been requested to produce and telecast/broadcast the women specific programmes for their benefits/awareness on pro-women provisions available in the various schemes of DA&FW besides publicity on Gender interventions through electronic and social media.

Establishment of Agri-Clinics and Agri-Business Centres (AC&ABC) : Under the scheme Agricultural Extension of Krishonnati Yojana of Extension Division of Department of Agriculture & Farmers Welfare, a Central Sector component, **“Establishment of Agri-Clinics and Agri-Business Centres (AC&ABC)”** has been under implementation since April, 2002 to supplement the efforts of public extension, support agricultural development and create gainful self-employment opportunities to unemployed youths with qualification in agriculture and allied sectors.

The programme promotes involvement of agripreneurs trained under the AC&ABC scheme in providing advisory and extension services to the farmers in agriculture and allied areas through agriventures established with financial supports. These agripreneurs are actively involved in providing advisory and extension services to the farmers on various technologies including soil health, cropping practices, plant protection, post harvest technology etc.

The National Institute of Agricultural Extension Management (MANAGE), Hyderabad is the implementing agency for Training Component and National Bank for Agriculture and Rural Development (NABARD) is the implementing agency for Subsidy Component of AC&ABC scheme.

Under the scheme, residential training of 45 days duration is imparted to unemployed candidates in the age group of 18-60 years who possess degree/diploma in agriculture and allied subjects, intermediate in agriculture, science graduates with PG in agri related courses and graduates in life sciences and environmental sciences through selected Nodal Training Institutes (NTIs) in various parts of the country. The NTIs also provide hand-holding to the trained candidates for establishment of agri-ventures in agriculture and allied areas and facilitates in providing loan assistance from banks and subsidy support through NABARD.

There is a provision of credit linked back-ended upfront composite subsidy on the bank loan availed by trained candidates under the programme. **The subsidy is 44% in respect of women, SC/ST and**

all categories of candidates from North-Eastern and Hill States and 36% in respect of other categories. The subsidy is admissible for loans up to Rs.20 lakhs in case of individuals (Rs. 25 lakhs if the project is extremely successful) and Rs.100 lakhs in case of Group Projects (for ventures set up by a group of 5 trained candidates).

During the current year (2022-23), 3821 candidates have been trained and 1903 have established their ventures which include 562 and 216 women candidates respectively. Since inception of the scheme, 83,810 candidates have been trained and 36,543 agri-ventures have been established in the country till 31.12.2022. Out of these 7,345 and 2,450 respectively are women candidates. Among the ventures established, 3,406 have been granted with subsidy as on 31.12.2022 which includes 194 ventures established by women candidates. During the current year, subsidy was extended to 41 women candidates. To attract women candidates, there is provision to co-obligate parents/husband while availing loans from banks. Also there is provision for exclusive awards to women candidates. The agriventures established under the programme are acting as active supplementary institutions for Government Extension mechanism in the States/UTs.

Recently, benefits of MUDRA loan scheme have been inducted under AC&ABC programme. Also, the programme has been on-boarded with DBT Bharat Mission for implementation of Direct Benefit Transfer (DBT) and Aadhaar particulars have been made mandatory for getting benefits under the scheme. Online process has been rolled out on 01.01.2018 through <https://acabemis.gov.in> for training programmes under the scheme and details of subsidy distribution are captured on the online portal.

Details of the programme may be seen at the website www.agriclinics.net

Extension Education Institutes (EElIs): Ministry of Agriculture and Farmers Welfare has established four Extension Education Institutes on regional basis at Nilokheri (Haryana); Hyderabad (Telangana); Anand (Gujarat) and Jorhat (Assam) to

cater to the training needs of middle-level field extension functionaries working under agriculture and allied departments of States/UTs of respective regions. The programmatic activities of EEIs include organization of on-campus/off-campus trainings, workshops, conferences etc. in the areas of communication technology, extension methodology, training management, Agriculture Knowledge Information System (AKIS) and Information Technology. During 2022-23 (upto December, 2022), the Extension Education Institutes (EEIs) conducted training courses with 5010 field extension functionaries including 1461 women extension functionaries.

Diploma in Agricultural Extension Services for Input Dealers (DAESI): DAESI is of one year (spread in 48 weeks; 1 day per week) diploma programme for agri-input dealers launched in October 2015. The National Institute of Agricultural Extension Management (MANAGE) is implementing DAESI Programme in all States through State Agricultural Management & Extension Training Institutes (SAMETIs), Krishi Vigyan Kendras & State Agricultural Universities. There is a course fee is Rs.20,000/- per candidate, out of which Rs.10,000/- is borne by DA&FW and Rs.10,000/- is to be contributed by input dealer. The GOI provides Rs.4.00 lakh for one batch of DAESI Programme @ Rs. 10,000/- per candidate for a batch of 40 input dealers. The objective of DAESI is to impart education to the input dealers to upgrade their knowledge on latest technologies in agriculture and allied sectors, rules and regulations for sale of agri-inputs and transform them into para extension workers for providing better extension services to the farmers. During 2022-23 (upto December, 2022) under DAESI programme;

training was provided to 3920 input dealers including 181 women candidates.

Skill Training of Rural Youth (STRY): The component aims at training rural youths, rural artisans (blacksmiths, carpenter etc. designing/manufacturing farm implements) including farm women across the country. The training under this component would be of 7 days duration for 15 trainees per batch and would focus on specific vocational areas in agriculture & allied sectors. Both public and private/ Non-Governmental Institutions including Vocational Training organisations, Youth Organisations (like Nehru Yuva Kendra) will be actively involved in implementation of this programme. Under STRY, there is a provision of Rs. 42,000/- for one batch of skill training for 15 candidates as per the cost norms of ATMA cafeteria @ Rs.400/- per farmer per day. During the year 2022-23, a total number of 1291 women were trained under STRY.

B. AGRICULTURE CENSUS

Agriculture Census is conducted at five yearly intervals to collect data on structural characteristics of operational holdings in the country. Since 1995-96, gender dis-aggregated data is being collected in Agriculture Census. The scope of collection of gender dis-aggregated statistics is restricted to number of operational holdings, corresponding operated area by different size classes of holdings, social group (SC, ST and others) and types of holdings (individual, joint and institutional).

Percentage of female operational holdings by size classes as per results of latest Agriculture Census 2015-16 and 2010-11 is given in the following table-

Sr. No.	Size Group	2010-11	2015-16
1	Marginal (Below 1.00 ha.)	13.63	14.68
2	Small (1.00-2.00 ha.)	12.15	13.44
3	Semi-Medium (2.00-4.00 ha.)	10.45	11.76
4	Medium (4.00-10.00 ha.)	8.49	9.76
5	Large (Above 10.00 ha.)	6.78	7.88
	All Size Groups	12.78	13.96

The increase in percentage of female operational holders during the different Agriculture Censuses indicates participation of more and more women in operation and management of agricultural holdings in the country.

A. AGRICULTURAL MARKETING

Agricultural Marketing Infrastructure (AMI) sub scheme of the Integrated Scheme for Agricultural Marketing (ISAM)- “To promote creation of Agricultural Marketing Infrastructure including storage infrastructure at village level, Directorate of Marketing and Inspection (DMI); an attached office of DA&FW, Ministry of Agriculture and Farmers Welfare is implementing “Agricultural Marketing Infrastructure (AMI)” sub scheme of the integrated Scheme for Agricultural Marketing (ISAM) with revised guidelines from 22.10.2018.

The main objective of the scheme is to promote creation of scientific storage at village level to meet the requirements of farmers for storing farm

produce, processed farm produce and agricultural inputs etc. to improve their marketability and prevention of distress sale immediately after harvest.

Under the scheme the subsidy @ 25% for plain areas and 33.33% for NER, hilly area, women/ SC/ST promoters and FPOs etc. is available for development of Agricultural Marketing Infrastructure Projects including storage infrastructure. In order to promote women farmers and entrepreneurs including women Self Help Groups (SHGs), the assistance in the form of subsidy is provided to all the women beneficiaries at a higher rate i.e. @ 33.33% instead of 25%.

The details of women beneficiary under AMI sub-scheme of ISAM (including erstwhile Grameen Bhandaran Yojana (GBY) and Agricultural Marketing Infrastructure Grading & Standardization (AMIGS) since inception till September, 2022 is shown below:

Sl. No.	Name of the State	Storage Infrastructure Projects			Marketing Infrastructure Projects (other than storage)	
		No. of Women beneficiaries	Capacity created (MT)	Subsidy released (Rs. In lakh)	No. of women beneficiaries	Subsidy released (Rs. In lakhs)
1.	Adhra Pradesh	569	2779574.17	15556.252	48	402.197
2.	Assam	45	140557.0554	1468.71477	0	0
3.	Bihar	127	204881.5144	1203.721	0	0
4.	Chhattisgarh	37	45396.5363	832.029	9	180.029
5.	Gujarat	1461	1209118.262	7190.157	38	345.3725
6.	Haryana	281	1976707.534	13974.54	0	0
7.	Himachal Pradesh	7	6173.83	74.7	0	0
8.	Jammu & Kashmir	1	5000	25	0	0
9.	Jharkhand	6	29046.304	121.5195	0	0
10.	Karnataka	652	809480.918	3960.379	47	421.3275
11.	Kerala	2	3625.25	18.25612	20	158.24

12.	Madhya Pradesh	1289	5862112.617	29113.332	184	4195.313
13.	Maharashtra	285	676958.4401	2044.331	110	1049.252
14.	Meghalaya	2	5155.28	34.36	0	0
15.	Odisha	86	220039.2716	1119.614	0	0
16.	Punjab	144	1255759.677	9558.924	0	0
17.	Rajasthan	294	967144.4886	4856.87	86	1467.4
18.	Tamil Nadu	123	567811.0244	2828.7	51	125.643
19.	Telangana	185	1088998.38	7476.212	69	303.98
20.	Uttar Pradesh	96	506688.5253	4136.58	0	0
21.	Uttarakhand	96	336796.5762	1872.139	0	0
22.	West Bengal	22	53462.648	296.469	0	0
	TOTAL	5809	18750488.34	107762.7994	662	8648.754

Under the Central Sector Scheme for Formation and Promotion of FPOs, as per the guideline, special focus may be provided to include small, marginal and women farmers/ women SHGs, SC/ST farmers and other economically weaker categories etc. as members to make FPOs more effective and inclusive.

Minimum 50% of its shareholders are small, marginal and landless tenant farmers as defined by the Agriculture Census carried out periodically by the Ministry of Agriculture & Farmers Welfare. Women Farmers' participation as its shareholders is to be preferred. Also, in the Board of Directors (BoD) and Governing Body (GB), as the case may be, there shall be adequate representation of women farmer member(s) and there should be minimum one woman member". Additionally, 307 women-centric FPOs have been registered under the scheme as on 26th September 2022.

D. CROPS

The National Food Security Mission (NFSM) is being implemented in identified districts of 28 states & 2 Union Territories (UTs) viz. Jammu & Kashmir and Ladakh in the country to increase production of rice, wheat, pulses, coarse cereals and nutri-cereals through area expansion and productivity enhancement in a sustainable manner. Under the

scheme assistance is being provided to all category of beneficiary farmers including women farmers is given through state governments for interventions like cluster demonstrations on improved package of practices, demonstrations on cropping system, Seed production and distribution of HYVs/ hybrids, improved farm machineries/ resource conservation machineries/tools, efficient water application tools, plant protection measures, nutrient management/soil ameliorants, processing & post-harvest equipments, cropping system based trainings to the farmers etc. The programme is being implemented on 60:40 sharing basis between GOI and state government in general states and 90:10 sharing basis for North Eastern states, Hilly states, states and 100% (GOI share) for Union Territories. As per the operational guidelines of NFSM, at least 30% allocation of the fund is to be made for women farmers.

E. FARMERS WELFARE

- **Pradhan Mantri Kisan Samman Nidhi (PM-KISAN):**

The Pradhan Mantri Kisan Samman Nidhi (PM-KISAN) is a Central Sector Scheme being implemented since 1st December, 2018. The Scheme aims at providing financial assistance to landholding farmer families across the country,

subject to certain exclusion criteria, to enable them to take care of expenses related to agriculture and allied activities as well as domestic needs. Under the Scheme, an amount of Rs. 6000/- per year is transferred in three 4-monthly installments of Rs.2000/- directly into the bank accounts of the farmers.

Under the PM-KISAN Scheme, the responsibility to identify the beneficiaries and upload their correct and verified data on PM-KISAN portal lies with the respective State/UT Government. Thereafter, these data go through various levels of verification and validation including Aadhaar / PFMS / Income Tax database. Subsequent to such verification and validation, the benefit of the Scheme is passed on to eligible beneficiaries directly into their bank accounts through DBT.

Under PM-KISAN Scheme, any landholding farmer irrespective of gender can get the benefit of the Scheme subject to exclusion criteria related with higher income status. The total number of unique eligible paid women beneficiaries under PM-KISAN since inception of Scheme 09.01.2023 is 3,05,00,102.

- **Pradhan Mantri Maan Dhan Yojana (PM-KMY):**

Pradhan Mantri Kisan Maan Dhan Yojna (PMKMY), a Central Sector Scheme is being implemented in order to provide social security net for the Small and Marginal Farmers (SMF) by way of pension, as they have minimal or no savings to sustain their livelihood during their old age and to support them in the event of consequent loss of livelihood. Under this scheme, a minimum fixed pension of Rs. 3,000/- will be provided to the eligible small and marginal farmers, subject to certain exclusion clauses, on attaining the age of 60 years. The Scheme is a voluntary and contributory pension scheme, with entry age of 18 to 40 years. The beneficiary can opt to become member of the Scheme by subscribing to a Pension Fund. The beneficiary would be required to contribute Rs

100/- per month at median entry age of 29 years. The Central Government shall also contribute to the Pension Fund in equal amount. Contribution shall be made to a Pension Fund managed by the Life Insurance Corporation which will be responsible for pension pay out.

Under PM-KMY Scheme, any small and marginal farmer having cultivating land-holding upto 2 hectares and falling in the age group of 18 to 40 years, can enroll themselves irrespective of gender. **The total number of women beneficiaries registered under PMKMY year-wise, from inception of Scheme to 09.01.2023 is 7,69,371.**

F. HORTICULTURE

Mission for Integrated Development of Horticulture (MIDH)

Mission for Integrated Development of Horticulture (MIDH) is a Centrally Sponsored Scheme for the holistic growth of the horticulture sector covering fruits, vegetables, root & tuber crops, mushrooms, spices, flowers, aromatic plants, coconut, cashew and cocoa. MIDH consists of 5 schemes on Horticulture viz. (i) National Horticulture Mission (NHM), (ii) Horticulture Mission for North East and Himalayan States (HMNEH), (iii) National Horticulture Board (NHB), (iv) Coconut Development Board (CDB), (v) Central Institute of Horticulture (CIH), Nagaland. The MIDH aims at promoting holistic growth of the horticulture sector through area based regionally differentiated strategies.

Under MIDH, Government of India (GOI) contributes 60%, of total outlay for developmental programmes in all the States except States in North East and Himalayas, 40% share is contributed by State Governments. In the case of North Eastern and Himalayan States, GOI contributes 90%. In case of National Horticulture Board (NHB), Coconut Development Board (CDB), Central Institute for Horticulture (CIH), Nagaland and the National Level Agencies (NLA), GOI contributes 100%.

The schemes of Horticulture Division are area/project based and are targeted to benefit farmers especially small and marginal farmers. The MIDH aims at promoting holistic growth of the horticulture sector through area based regionally differentiated strategies and the Annual Plans received from the State Implementing Agencies were finalized for implementation in selected Districts adopting cluster approach for each fruit and vegetable crop. Keeping in mind the overall social objectives that funds have to be targeted for the benefit of Women, the State Horticulture Missions/Implementing Agencies under MIDH has been instructed to target at least 30% of the funds for Women farmers/beneficiaries while giving subsidy as well as for training purposes for development of skills for growing horticulture crops. The flow of funds for Women farmers is being determined on rational basis duly keeping in view the nature of the programme, its area of operation, the proportion of these categories of population in the operational area.

Horticulture Division is making efforts to stipulate in each and every administrative approval to provide for a pro-women allocation of at least 30% and the implementing agencies has been asked to ensure that the said funds are given to women beneficiaries/entrepreneurs as far as possible.

Further, in the Operational Guidelines of MIDH more incentives are being given to women farmers under the component 'Horticulture Mechanization'.

G. INTEGRATED NUTRIENT MANAGEMENT

Organic Farming is being promoted under the Schemes **Paramparagat Krishi Vikas Yojana (PKVY)** and **Mission Organic Value Chain Development for North Eastern Region (MOVCDNER)** and States are advised to earmark 30% of Budget allocations for women beneficiaries/farmers under Soil Health Card/Soil Health Management Schemes. States may prefer

Women farmers/women Self Help Groups (SHGs) formed under Ministry of Rural Development while choosing the organic farming areas.

H. MECHANIZATION AND TECHNOLOGY

For recognizing the need to mechanize the marginal and small farmers, and for inclusive growth of farm mechanization Sector in the country a **Sub Mission on Agricultural Mechanization (SMAM)** was launched in the year 2014-15 with the following objectives:

- Increasing the reach of farm mechanization to small and marginal farmers and to the regions where availability of farm power is low;
- Promoting Custom Hiring Centres' to offset the adverse economies of scale arising due to small land holding and high cost of individual ownership;
- Creating hubs for hi-tech & high value farm equipments;
- Creating awareness among stakeholders through demonstration and capacity building activities;
- Ensuring performance testing and certification at designated testing centres located all over the country.

The SMAM provides a suitable platform for converging all activities for inclusive growth of agricultural mechanization by providing a 'single window' approach for implementation with a special focus on women farmers with the following provisions:

- State Governments have been directed to earmark 30 per cent of total funds allocated under SMAM for women beneficiaries.
- 10% more assistance for women beneficiary to procure Agricultural Machinery, implements and equipment including PHT.
- In order to reduce the drudgery and increasing efficiency in farm operations,

number of agricultural implements and hand tools suitable for farm women has been developed by Research & Development organizations under ICAR. The list of gender friendly equipment has been sent to all States/UTs for popularizing them through various schemes of Government.

Training and Demonstration of Gender Friendly Equipment for Women:

All the 4 Farm Machinery Training and Testing Institutes at Budni in Madhya Pradesh, Hisar in Haryana, Anantapur in Andhra Pradesh, Biswanath Chariali in Assam are imparting the training to the women farmers on identified 30 gender-friendly tools and equipments through customised Training programmes and field demonstrations as well. The duration of the training varies from 2-5 days for which they are paid to and for travelling charges as per training norms & Rs 200 per trainee per day towards boarding Charges. Free lodging facility is also available in women hostel within the premises of FMTTIs.

A list of 30 identified gender-friendly tools and equipment developed by the Research and Development Organisation for use in different farm operations, has also been sent to all states and UTs for popularising the same. State Governments have been directed to earmark 30 per cent of total funds allocated under SMAM for women beneficiaries.

A total number of 6822 women received training at the FMTTIs during the FY 2022-23 (up to December, 2022).

I. NATURAL RESOURCE MANAGEMENT

Sub-Mission on Agro forestry (SMAF) under National Mission for Sustainable Agriculture (NMSA) is under implementation since 2016-17 to encourage tree plantation on farm lands along with crops/cropping system as part of the recommendation of the National Agroforestry Policy, 2014. Agroforestry helps in creating additional source of income to the farmers including woman farmers. Under the Mission,

multipurpose tree species with short, medium and long term returns are encouraged, so that both the male and female farmers get additional income at regular intervals.

Women farmers are associated at every level of SMAF activities and as per SMAF Operational Guidelines, at least 50% of the allocation is to be utilized for small, marginal farmers of which at least 30% should be women beneficiaries/ farmers associated with the scheme.

National Bamboo Mission (NBM): The restructured National Bamboo Mission (NBM) was launched during 2018-19.

The objectives of the restructured National Bamboo Mission are:

- To increase the area under bamboo plantation in non-forest Government and private lands to supplement farm income as well as fulfill quality raw material requirement of industry.
- To improve post-harvest management through establishment of innovative primary processing units near the source of production, primary treatment and seasoning plants, preservation of technologies and market infrastructure
- To promote product development in the bamboo sector through entrepreneurship & business models at micro, small and medium levels
- To rejuvenate the ailing bamboo industry as a global force to reckon with
- To promote skill development, capacity building, awareness generation for development of the bamboo sector
- To realign efforts to reduce dependency on import of bamboo and bamboo products by way of improved productivity and suitability of domestic raw material for industry so as to enhance the income of primary producers.

NBM focuses on development of the complete value chain of the bamboo sector to link growers with consumers starting from planting material, plantation, creation of facilities for collection,

aggregation, processing marketing, micro, small & medium enterprises, skill development and brand building in a cluster approach mode. 10 major commercially important bamboo species namely *Bambusa tulda*, *B. bambos*, *B. balcooa*, *B. cacharensis*, *B. polymorpha*, *B. nutans*, *Dendrocalamus asper*, *D. hamiltonii*, *Thyrostachys oliveri*, *Melocanna baccifera* etc have been identified so as to have market ready plantations.

The scheme is being implemented in non-forest Government land or lands of private farmers in the States where it has social, commercial and economic advantage. The NBM implementing States are Assam, Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, Tripura, Madhya Pradesh, Maharashtra, Chhattisgarh, Odisha, Karnataka, Uttarakhand, Bihar, Jharkhand, Andhra Pradesh, Telangana, Gujarat, Tamil Nadu, Kerala, Uttar Pradesh and Himachal Pradesh. The Union Territory of Jammu & Kashmir has also been included under NBM in the year 2020-21.

Gender outlook

Women are equally encouraged to benefit from the implementation of all components of the National Bamboo Mission. States are advised to earmark 30% of the allocated budget for women beneficiaries / farmers under NBM. Most of the states have taken initiatives to encourage women in the Bamboo sector to improve their economic status through generating employment, establishment of primary processing units, bamboo agarbatti units, handicrafts etc.

J. PLANT PROTECTION

'Sub-Mission on Plant Protection and Plant Quarantine' is under implementation through which regulatory, monitoring, surveillance and capacity building functions are undertaken with regard to Plant Protection and Plant Quarantine. Under this mission, Integrated Pest Management (IPM) with a mandate to popularize adoption of IPM through training and demonstration in crops, inter-alia promotion of biological control approaches in crop protection technology. Under this scheme, farmers are being made aware about the judicious use of chemical pesticides and use as per the

prescriptions given in the label and leaflets. It encompasses pest control techniques such as cultural, mechanical and biological with minimum dependence on chemical pesticides. The Government has established 35 Central Integrated Pest Management Centres (CIPMC) in 28 States and 02 Union Territories in the country. These Centers impart field oriented training to extension functionaries and farmers through Farmers' Field Schools, 2 days Human Resource Development programmes to promote IPM. Seed treatment campaign in 28 States and 2 UTs regularly in which women farmers are actively participating and gaining knowledge on various IPM technologies. 1835 member of women farmers were participated in FFS and 2-day HRD Training programmes conducted by 36 CIPMC's during 2022-23 (till date).

Major emphasis is given on judicious use of chemical pesticide, safety in use of pesticides, alternate tools for pest management viz; cultural, physical, mechanical methods of pest control as well as use of bio-pesticides and bio-control agents, effects of pesticides on natural enemies of pests, do's and don'ts of pesticide including proper application equipment and technique.

Keeping into consideration changes in various parameters like pests, disease, registration of new pesticides, Agro Eco-System Analysis (AESA) based technology for pest management and regional variations, IPM packages have been developed. During the last 8 years (2014-15 to 2021-22), 22096 women farmers have been trained on latest IPM technology in various crops.

National Institute of Plant Health Management (NIPHM), Hyderabad is regularly conducting training programmes for Agricultural Officers, Extension officers, Faculty members from various Universities and colleges across India for then capacity building in plant health management.

K. POLICY

The **National Policy for Farmers, 2007 (NPF)** announced by the Government envisages the following measures aimed at women's empowerment:

- Asset reforms under land, water and livestock for an equitable share to women farmers.
- Better access to inputs and services, science and technology, implements, credit and support services like creches, child care centres, nutrition, health and training.
- Encouragement to women for participating in group activities aimed at achieving economies of scale through farming groups.
- Involvement of women in conservation and development of bio-resources.

The Policy provisions, inter alia, include asset reforms in respect of land, water, livestock, fisheries, and bio-resources; support services and inputs like application of frontier technologies; agricultural bio-security systems; supply of good quality seeds and disease-free planting material, improving soil fertility and health, and integrated pest management systems; support services for women like crèches, child care centers, nutrition, health and training; timely, adequate, and easy reach of institutional credit at reasonable interest rates, and farmer-friendly insurance instruments; use of Information and Communication Technology (ICT) and setting up of farmers' schools to revitalize agricultural extension; effective implementation of MSP across the country, development of agricultural market infrastructure, and rural non-farm employment initiatives for farm households; integrated approach for rural energy, etc. Many of the provisions of the NPF are being operationalised through various schemes and programmes which are being implemented by different Central Government Departments and Ministries.

L. RAINFED FARMING SYSTEMS (RFS)

Under the **National Mission for Sustainable Agriculture (NMSA) and Pradhan Mantri Krishi Sinchai Yojana-Per Drop More Crop (PMKSY-PDMC)**; **at least 50% of the allocation is to be utilized for small and marginal farmers of which** at least 30% are women beneficiaries/farmers.

M. RASHTRIYA KRISHI VIKAS YOJANA (RKVY)

RKVY is a Centrally Sponsored Scheme (State Plan) scheme which provided flexibility and autonomy to State Governments in selection, planning, approval and execution of projects in agriculture and allied sectors as per their priorities under this scheme. Hence, RKVY scheme does not set any specific target for women beneficiary under the scheme at the central level. Further RKVY is primarily a project oriented scheme, the benefit of which is available to all sections of the farming community. However, it is the responsibility of the State Government to ensure that adequate coverage is given to women in case they are implementing beneficiary oriented schemes under the scheme.

Under Innovation and Agri.-entrepreneurship programme of RKVY, a total of 1102 start-ups have been selected in various areas of agriculture and allied sectors for providing financial support through Knowledge Partners and Agri Business Incubators. Out of these selected agri start-ups, 256 are led by women entrepreneurs.

N. SEEDS

Seeds Division, Department of Agriculture & Farmers Welfare is implementing **Sub-Mission on Seeds & Planting Materials (SMSP)** from the year 2014-15 to promote production and multiplication of quality seeds of agricultural crops, so that the required quantities of seeds could be made available to farmers in the country. The financial assistance under the components Seed Village Programme and Certified Seed Production through Seed Village of SMSP is provided to the farmers including women farmers. The number of women farmers benefited under the SMSP during the year 2021-22 is 6.94 lakhs.

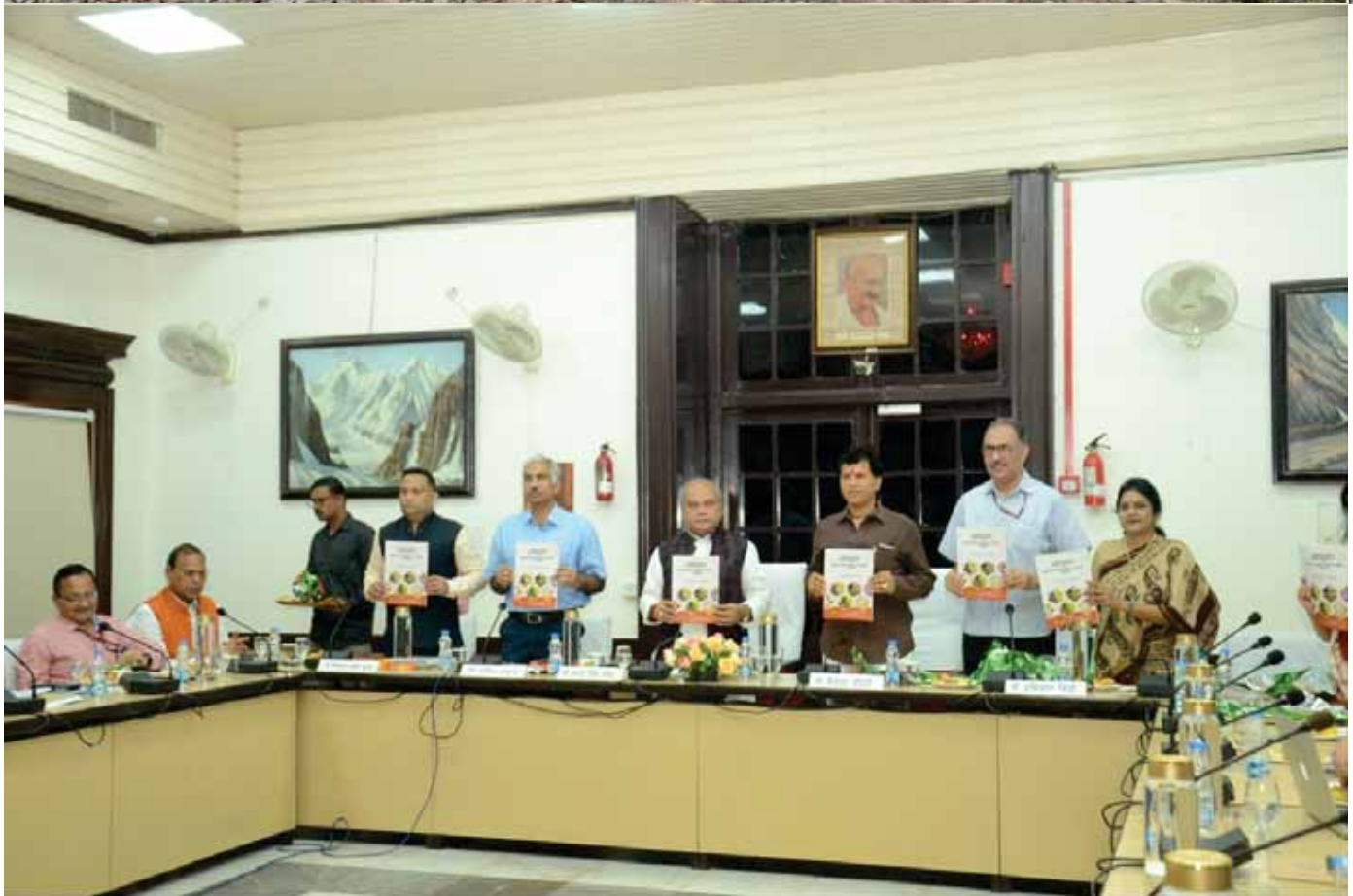
THE WAY FORWARD:

National Sample Survey (NSS) data shows, that there has been a steady decline of men in agriculture over the last three decades. This trend can be conveniently termed as "Feminization of Indian Agriculture". As more and more men have moved to non-farm work in the industrial and service sectors, women have remained in

agriculture in substantive manner. Keeping in view women's' contribution in farming; the need of the hour is greater inclusion of women farmers in planning schemes & programmes, and also in developing strategies to successfully implement them.

Realizing the present feminized agriculture scenario, women farmers contribution in agriculture and understanding that it is 'Gender' that differentiates the roles, responsibilities, resources, constraints and opportunities of women and men in agriculture, precise gender information is the need of the hour. Incorporating gender into agricultural development is the required for articulating gender perspectives in development activities.

In line with the National Agricultural Policy-2000, provisions under National Policy for Farmers-2007 and recommendations of the Report on Doubling of Farmers Income, the strategy of the Government is to focus on women farmers' empowerment and development welfare by making farming viable both for men and women. This may improve farm women's access to productive resources including agricultural extension services thereby bringing overall improvement in the lives of rural women. This may not only enhance the production and productivity of agricultural sector and improve overall national food security but would also smoothen the transition of women from being beneficiaries of the Programmes & Schemes to their active participation in shaping the empowerment.





Chapter-24

SUMMARY OF AUDIT PARAS/ OBSERVATIONS

Rashtriya Krishi Vikas Yojana (RKVY)

No audit para pertaining to RKVY Division is pending. However, Performance Audit of Rashtriya Krishi Vikas Yojana (RKVY) was conducted for the period 2007-08 to 2012-13

(ending March 2013) by C&AG and it submitted the report in both the Houses of Parliament on 5th May 2015. Final comments of DAC&FW on the vetting comments of C&AG have been submitted to PAC on 10.10.2019. The details in this regard are given below.

Sl. No	Year	No. of Paras/PA reports on which ATNs have been submitted to PAC after vetting by Audit	Details of Paras /PA reports on which ATNs are pending		
			No. of ATNs not sent by the Ministry even for the first time.	No. of ATNs sent but returned with observations and Audit is awaiting their resubmission	No. of ATNs which have been finally vetted by Audit but have not been submitted by the Ministry to PAC.
1	2015	Performance Audit of RKVY has been done by C&AG for the period 2007-08 to 2012-13 (ending March 2013) and the report was submitted in both the Houses of Parliament on 5 th May 2015. The Draft ATN on the observations made in the report were furnished to Audit on 27.06.2016 and the revised ATN were furnished on 22.05.2018 on the basis of vetting remarks offered by C & AG on the first ATN. The vetting remarks of C & AG on the revised ATN have been received on 2.10.2018 and the same have been circulated to all the concerned States. Final comments of DAC&FW on the vetting comments of C&AG have been submitted to PAC on 10.10.2019.	-	-	-

Chapter-25

DEPARTMENTAL ACCOUNTING ORGANIZATION

Overview

25.1.1 Accounting Organization of Department of Agriculture and Farmers Welfare:

The Secretary as Chief Accounting Authority in the Department of Agriculture and Farmers Welfare discharges his functions with the assistance of Financial Adviser and Chief Controller of Accounts.

25.1.2 As per Rule 70 of GFR 2017, the Secretary of a Ministry/Department as Chief Accounting Authority of the Ministry/ Department shall:

- (i) Be responsible and accountable for financial management of his Ministry or Department;
- (ii) Ensure that the public funds appropriated to the Ministry or Department are used for the purpose for which they were meant;
- (iii) Be responsible for the effective, efficient, economical and transparent use of the resources of the Ministry or Department in achieving the stated project objectives of that Ministry or Department, whilst complying with performance standards;
- (iv) Appear before the Committee on Public Accounts and any other Parliamentary Committee for examination;
- (v) Review and monitor regularly the performance of the programmes and projects assigned to his Ministry to determine whether stated objectives are achieved;
- (vi) Be responsible for preparation of expenditure and other statements relating to his Ministry or Department as required by regulations, guidelines or directives issued by Ministry of Finance;

(vii) Ensure that his Ministry or Department maintains full and proper records of financial transactions and adopts systems and procedures that shall at all time afford internal controls;

(viii) Ensure that his Ministry or Department follows the Government procurement procedure for execution of works, as well as for procurement of services and supplies, and implements it in a fair, equitable, transparent, competitive and cost-effective manner;

(ix) Take effective and appropriate steps to ensure his Ministry or Department:-

- (a) Collects all moneys due to the Government and
- (b) avoids unauthorized, irregular and wasteful expenditure.

25.1.3. As per Para 1.3 of Civil Accounts Manual, the Chief Controller of Accounts for and on behalf of the Chief Accounting Authority is responsible for :-

- (a) Arranging all payments through the Pay and Accounts Offices/Principal Accounts Office except where the Drawing and Disbursing Officers are authorized to make certain types of payments.
- (b) Compilation and consolidation of accounts of the Ministry/ Department and their submission in the form prescribed, to the Controller General of Accounts; preparation of Annual Appropriation Accounts for the Demands for Grants of his Ministry/ Department, getting them duly audited and submitting them to the CGA, duly signed by the Chief Accounting Authority.
- (c) Arranging internal inspection of payment

and accounts records maintained by the various subordinate formations and Pay and Accounts Offices of the Department and inspection of records pertaining to transaction of Government Ministries / Departments, maintained in Public Sector Banks.

25.1.4. The Chief Controller of Accounts, Ministry of Agriculture and Farmers Welfare performs his duties with the assistance of two Controller of Accounts and one Assistant Controller of Accounts, three Pr. Accounts Officers at HQ and 09 Pay and Accounts Offices. Four Pay and Accounts Offices are located in Delhi/NCR, One each in Mumbai, Chennai, Cochin, Kolkata and Nagpur. All payments pertaining to the Department/Ministry are made through PAOs/CDDOs attached with respective PAOs. DDOs present their claims / bills to the designated PAOs/CDDOs, who issue cheques /releases e- payment after exercising the necessary scrutiny as per provisions contained in Civil Accounts Manual, Receipt and Payment Rules and other order issued by Government from time to time.

25.1.5. As per Para 1.2.3 of Civil Accounts Manual, Principal Accounts Office at HQ functions under a Principal Accounts Officer who is responsible for :-

- a) Consolidation of the accounts of the Ministry/Department in the manner prescribed by CGA;
- b) Preparation of Annual Appropriation Accounts of the Demands for Grants controlled by Ministry/Department, submission of Statement of Central Transactions and material for the Finance Account of the Union Government(Civil) to the Controller General of Accounts;
- c) Payment of loans and grants to State Government through Reserve Bank of India and wherever this office has a drawing account, payment there from to Union Territory Government/ Administrations;
- d) Preparation of manuals keeping in view the

objective of management accounting system if any, and for rendition of technical advice to Pay and Accounts Offices, maintaining necessary liaison with CGA's office and to effect overall coordination and control in accounting matters;

- e) Maintaining Appropriation Audit Registers for the Ministry/ Department as a whole to watch the progress of expenditure under the various Grants operated on by the Ministry/Department;

Principal Accounts Office/Officer also performs all administrative and coordinating function of the accounting organization and renders necessary financial, technical, accounting advice to department as well as to local Pay & Accounts offices and Out Station Pay & Accounts offices.

25.1.6. As per provisions contained in Civil Accounts Manual, Pay & Accounts offices make payments pertaining to respective Ministries/ Departments and in certain cases payments will be made by the departmental Drawing and Disbursing Officers (DDOs) authorized to draw funds, by means of cheques drawn on the offices/branches of accredited bank for handling the receipts and payments of the Ministry/Department. These payments will be accounted for in separate scrolls to be rendered to the Pay and Accounts Offices of Ministry/ Department concerned. Each Pay and Accounts Office or Drawing and Disbursing Officer authorized to make payments by cheques/e-payments, will draw only on the particular branch/branches of the accredited bank with which the Pay and Accounts Office or the Drawing and Disbursing Officer as the case may be, is placed in account. All receipts of the Ministry/Department are also be finally accounted for in the books of the Pay and Accounts Office. The Pay and Accounts office is the basic Unit of Departmentalized Accounting Organization. Its main function include:-

- a. Pre-check and payment of all bills, including those of loans and grants-in-aid, submitted by Non-Cheque Drawing DDOs.

- b. Accurate and timely payments in conformity with prescribed rules and regulations.
- c. Timely realization of receipts.
- d. Issue of quarterly letter of credit to Cheque Drawing DDOs and post check of their Vouchers/bills.
- e. Compilation of monthly accounts of receipts and expenditures made by them incorporating there with the accounts of the cheque Drawing DDOs.
- f. Maintenance of GPF accounts other than merged DDO and authorization of retirement benefits.
- g. Maintenance of all DDR Heads.
- h. Efficient service delivery to the Ministry/ Department through banking arrangement by way of e-payment.
- i. Adherence to the prescribed Accounting Standards, rules and principles.
- j. Timely, accurate, comprehensive, relevant and useful financial reporting.

25.1.7. The overall responsibilities of Departmental Accounting Organization in respect of Ministry of Agriculture and Farmers Welfare are:-

- a. Consolidation of monthly accounts of Ministry and its submission to the CGA.
- b. Annual Appropriation Accounts.
- c. Statement of Central Transactions.
- d. Preparation of "Accounts at a Glance".
- e. Union Finance accounts which are submitted to the CGA, Ministry of Finance and Principal Director of Audit.
- f. Payments of grants-in-aid to Grantee Institutions / Autonomous Bodies etc.
- g. Rendering technical advice to all PAOs and Ministry; if necessary in consultation with other organizations like DoPT, Ministry of Finance and CGA etc.
- h. Preparation of Receipt Budget.
- i. Preparation of Pension Budget.
- j. Procuring and supplying of cheque books for and on behalf of PAOs/Cheque Drawing DDOs.
- k. To maintain necessary liaison with Controller General of Accounts office and to effect overall co-ordination and control in accounting matters and accredited Bank.
- l. To verify and reconcile all receipts and payments made on behalf of Ministry of Agriculture and Farmers Welfare through the accredited Bank i.e. State Bank of India.
- m. To maintain accounts with Reserve Bank of India relating to Ministry of Agriculture and Farmers Welfare and to reconcile the cash balances.
- n. To ensure prompt payments.
- o. Speedy settlement of Pension/Provident fund and other retirement benefits.
- p. Internal Audit of the Ministry, subordinate and attached offices under Ministry of Agriculture and Farmers Welfare and its Grantee institutions, Autonomous Bodies etc.
- q. To make available accounting information to all concerned Authorities/Divisions.
- r. Budget co-ordination works of Ministry of Agriculture and Farmers Welfare.
- s. Monitoring of New Pension Scheme and revision of pension cases from time to time
- t. Computerization of Accounts and e-payment.
- u. Administrative and co-ordination function of the accounting organization.

- v. Roll out of PFMS under Central Sector Schemes in Grantee Institutions/ Autonomous Bodies.
- w. Non-Tax Receipt Portal (NTRP) in Ministry of Agriculture and Farmers Welfare.

25.1.8 Accounting information and data are also provided to the Financial Advisor and Chief Accounting Authority to facilitate effective budgetary and financial control. Monthly and progressive expenditure figures under various sub-heads/object-heads of the grant of the Ministry of Agriculture and Farmers Welfare are furnished to Budget Section of the Ministry including Senior officers. Progress of expenditure against budget provisions are also submitted weekly to the Secretary and Addl. Secretary & Financial Adviser as well as Heads of Divisions of the Ministry, controlling the grant for purposes of better monitoring of expenditure in last quarter of the financial year.

25.1.9 The Accounting organization also maintains accounts of long-term advances such as House Building Advance, Motor Car Advance and GPF accounts of employees of the Ministry.

25.1.10 The verification and authorization of pensionary entitlement of officers and staff members is done by the Pay & Accounts Offices on the basis of service particulars and pension papers furnished by Heads of Offices. All retirement benefits and payments like gratuity, cash equivalent to leave salary as well as payments under Central Government Employees Group Insurance Scheme; General Provident Fund etc. are released by Pay & Accounts Offices on receipt of relevant information / bills from DDOs.

25.2. Internal Audit Wing:

- a) The Internal Audit Wing carries out audit of accounts of various offices of the Ministry to ensure that rules, regulations and procedures prescribed by the government are adhered to by these offices in their day to day functioning. Internal Auditing is an independent, objective assurance and

consulting activity designed to add value and improve an organization's operations. It basically aims at helping the organization to accomplish its objectives by bringing a systematic, disciplined approach to evaluate and improve the effectiveness of risk management, control and governance processes. It is also an effective tool for providing objective assurance and advice that adds values, influence change that enhances governance, assist risk management, control processes and improve accountability for results. It also provides valuable information to rectify the procedural mistakes/deficiencies and thus, acts as an aid to the management. The periodicity of audit of a unit is regulated by its nature, volume of work and quantum of funds.

- b) The Internal Audit Wing working under the overall guidance of Chief Accounting Authority and Financial Advisor has focused on strengthening governance structures, Capacity building and leveraging technology in appropriate manner to ensure an efficient and effective Internal Audit practice.
- c) In pursuance of O/o Controller General of Accounts, Department of Expenditure, Ministry of Finance, OM no. G.25014/33/2015-16/MF.CGA/IAD/306-53 dated 15.05.17 and as per provisions contained in Generic Internal Audit Manual (Version 1.0) issued by O/o CGA, Audit Committee has been constituted in this Ministry under the Chairmanship of AS&FA (Agriculture & Farmers Welfare) with the approval of Secretary (Agriculture and Farmers Welfare) and terms of reference of Internal Audit Committee has been defined in O/o CCA OM No. Agri/IAW/Audit Committee(DAC)/2020- 21/158-195 dated 08.09.2020.
- d) During the financial year 2022-23, the focus

of Audit was to detect errors in fixation of Pay paid in excess as well as in short.

Status of Outstanding Internal Audit paras in the

Department of Agriculture and Farmers Welfare (DA & FW) as on 31.12.2022 are given below:-

Department	Outstanding Paras upto 31.03.2022	Paras Raised from 01.04.2022 to 30.06.2022	Paras Dropped from 01.04.2022 to 30.06.2022	Total Outstanding Paras as on 30.06.2022
DA & FW	791	205	63	933
TOTAL	791	205	63	933

Department	Outstanding Paras upto 30.06.2022	Paras Raised from 01.07.2022 to 30.09.2022	Paras Dropped from 01.07.2022 to 30.09.2022	Total Outstanding Paras as on 30.09.2022
DA & FW	933	81	99	915
TOTAL	933	81	99	915

Department	Outstanding Paras upto 30.09.2022	Paras Raised from 01.10.2022 to 31.12.2022	Paras Dropped from 01.10.2022 to 31.12.2022	Total Outstanding Paras as on 31.12.2022
DA & FW	915	74	82	907
TOTAL	915	74	82	907

25.3 Banking Arrangements:-

State Bank of India is the accredited bank for PAOs and its field offices in the Ministry of Agriculture & farmers Welfare. e-payments processed by the PAOs/CDDOs are settled through CMP, SBI, Hyderabad in favor of the bank account of vendors/beneficiaries. In some cases, Cheques issued by the PAOs/CDDOs are presented to the nominated branch of the accredited bank for payment. The receipts are also remitted to the accredited banks by the respective PAOs/CDDOs apart from Non- Tax-Receipt Portal (NTRP). Any change in accredited bank requires specific approval of Controller General of Accounts, Department of Expenditure, Ministry of Finance.

Principal Accounts Office has 09 (Nine) Pay & Accounts Offices. Four PAOs are located in Delhi/NCR, one each in Mumbai, Chennai, Cochin, Kolkata and Nagpur. All payments

pertaining to the Department/Ministry are made through PAOs/CDDOs attached with respective PAOs. Drawing and Disbursing Officers present their claims/bills to the designated PAOs/CDDOs, who issue releases e- payment after exercising the necessary scrutiny as per provisions contained in Civil Accounts Manual, Receipt and Payment Rules and other orders issued by Govt. from time to time.

25.4 Public Financial Management System (PFMS)

Public Financial Management System (PFMS) initially started as a Plan Scheme named CPSMS of the erstwhile Planning Commission in 2008- 09 as a pilot in four states of Madhya Pradesh, Bihar, Punjab and Mizoram for four Flagship schemes e.g MGNREGS, NRHM, SSA and PMGSY. After the initial phase of establishing a network across Ministries / Departments, It has been decided to undertake National roll-out of CPSMS (PFMS) to link the

financial networks of Central, State Governments and the agencies of State Governments. The scheme was included in 12th Plan initiatives of erstwhile Planning Commission and Ministry of Finance. Presently PFMS is the scheme of Department of Expenditure, Ministry of Finance and being implemented by O/o Controller General of Accounts across the country.

25.4.1. As per Rule 86 of General Financial Rules (GFR), 2017:

- (1) Public Financial Management System (PFMS), an integrated Financial Management System of Controller General of Accounts, Government of India, shall be used for sanction preparation, bill processing, payment, receipt management, Direct Benefit Transfer, fund flow management and financial reporting.
- (2) All the ministries sanctioning grant-in-aid shall register all implementing agencies till last level of implementation on PFMS to track fund flow and unspent balances.
- (3) All the payment, to the extent possible, shall be released 'just-in-time' by the Ministries through PFMS.
- (4) Detailed Demand for Grants (DDG), as approved, must be uploaded on PFMS at the start of each Financial Year.
- (5) All the re-appropriation orders, surrender order shall be generated through PFMS system.
- (6) All grantee institutions shall submit Utilisation Certificates on PFMS.

At present, all nine(09) Pay & Accounts Offices of M/o Agriculture & Farmer welfare, four (4) PAOs are located in Delhi/NCR, , One each in Mumbai Chennai, Cochin, Kolkata and Nagpur are functioning successfully on PFMS. All payments are routed through PFMS and e-payments being directly credited into the beneficiary's bank account.

I. Employees Information System (EIS) Module of PFMS: This Module has been implemented in all Drawing & Disbursing Offices of Ministry of Agriculture & Farmer Welfare.

II. CDDO Module of PFMS: CDDO module of PFMS has been rolled out in all Cheque Drawing and Disbursing Offices of Ministry of Agriculture & Farmer Welfare.

III. Online Portal (Bharatkosh) for collection of Non-Tax Revenue in the Ministry:

- The objective of Non-Tax Receipt Portal(NTRP) is to provide a one-stop window to Citizens/ Corporate /Other users for making online payment of Non-Tax Revenue payable to Government of India (GoI).
- Non-Tax Revenue of Government of India comprise of a large bouquet of receipts, collected by individual departments/ ministries. Primarily these receipts come from Dividends, Interest receipts, Spectrum charges, RTI application fee, purchase of forms/magazines by students and many other such payments by citizens / corporate/other users.
- The online electronic payment in a completely secured IT environment, helps common users /citizen from the hassle of going to banks for making drafts and then to Government offices to deposit the instrument for availing the services. It also helps avoidable delays in the remittance of these instruments into Government account as well as eliminates undesirable practices in the delayed deposit of these instruments into bank accounts.
- NTRP facilitates instant payment in a transparent environment using online payment technologies such as Internet Banking, Credit/Debit Cards.
- NTR Portal has been functional in new

Ministry of Agriculture & Farmer Welfare since inception in FY 2019-20.

- The collection of Non-Tax revenue of the Department of Agriculture & Farmers Welfare in the current Financial Year 2022-23 upto 31/12/2022 was Rs.356.45 Crores and of it Rs. 64.41 Crores have been collected through Bharat Kosh on NTR e-portal

IV. Expenditure, Advance and Transfer (EAT) Module of PFMS: All eight (08) Autonomous Bodies of Ministry of Agriculture & Farmer welfare have been on-boarded on Expenditure Advance Transfer (EAT) module of PFMS.

25.5 (a) Revised procedure for release of funds under Centrally Sponsored Schemes:

For better monitoring of availability and utilization of funds released to the States under the Centrally Sponsored Schemes (CSS) and to reduce float. The Department of Expenditure has modified the procedure for release of funds under CSS and Every State Government will designate a Single Nodal Agency (SNA) for implementing each CSS.

- Brief on Process Flow for SNA Model:
- ❖ Every State Government will designate 7a Single Nodal Agency (SNA) for implementing each CSS. The SNA will open a Single Nodal Account for each CSS at the State level in a Scheduled Commercial Bank.
- ❖ After opening of Single Nodal Account of the scheme and before opening zero balance subsidiary account of IAs or assigning them drawing rights from SNA's account, the IAs at all levels shall return all unspent amounts lying in their accounts to the Single Nodal Account of the SNA.
- ❖ The SNAs shall ensure that the interest earned from the funds released should be mandatorily remitted to the respective Consolidated Funds on pro-rata basis in

terms of Rule 230(8) of GFR, 2017.

- ❖ Funds available in the bank account of SNA should not be more than 25% of the amount likely to be released (including state share) under a CSS to a State for 2022-23.
- ❖ SNAs and IAs will mandatorily use the EAT module of PFMS or integrate their systems with the PFMS to ensure that information on PFMS is updated by each IA at least once every day.
- ❖ In case of CSS having no State share and where as per the scheme guidelines, funds are released by the Central Ministry/ Department directly to the districts/ blocks/Gram Panchayats/ Implementing agencies, the requirement of notifying a single Nodal Agency and opening of a Single Nodal Account at the State level may be waived by the Secretary of the Central Ministry/Department concerned in consultation with the Financial Adviser.

(b) Revised procedure for release of funds under Central Sector Schemes:

In supersession of all previous issued orders, Ministry of Finance, Department of Expenditure has issued an O.M. No. F.No. 1(18)/PFMS/FCD/2021 dated 09th March 2022 mentioning Guidelines/Procedure for flow of funds under Central Sector Schemes by designating Central Nodal Agency (CNA) regarding release of funds under the Central Sector Schemes. The procedure effective from 1st April, 2022 by the Ministries/ Departments of Government of India for flow of funds under the Central Sector Schemes have been divided in two Models:-

- ❑ **Implementation through Treasury Single Account (TSA) Model I-** This model will be applicable in case of Central Sector Schemes having annual outlay of more than Rs. 500 Crores and implemented without involvement of State agencies. It shall be mandatory to implement such schemes through the Treasury Single Account(TSA) Model.

❑ **Implementation through Scheduled Commercial Banks (SCB) Model II-** This

model will be applicable in case of Central Sector Schemes having (A) annual outlay of less than Rs. 500 crores or (B) the schemes are being implemented by agencies of the State Governments exclusively or in addition to the Central Agencies or (C) other schemes not covered in Model-1.

➤ **Brief on Process Flow for Central Sector Schemes:**

- ❖ Identification of Central Sector Schemes for Implementation through Model I or Model-II.
- ❖ Notification of ABs/CPSEs/Implementing Agencies as Central Nodal Agencies (CNA).
- ❖ Open Assignment Account with RBI (e-Kuber) for each scheme under Model I.
- ❖ Open an Account for each scheme in scheduled commercial banks (SCB) under model II.
- ❖ Listing & Closure of existing Bank Accounts of CNA & Sas.
- ❖ Balance in Account must be transferred to Consolidated Fund of India (CFI) under Model I and Unspent amount of the scheme is returned by all the Sub Agencies (SA's) to the CNA account under Model II.
- ❖ Interest earned from the funds is remitted to the Consolidated Fund of India (CFI) under Model II.
- ❖ Mandatorily use of REAT module of PFMS or integration of their systems with the PFMS.

25.6 New developments in the Ministry:

I) Consolidated instruction on various aspects of Security while using PFMS:

Ministry of Finance, Department of Expenditure,

Office of the Controller General of Accounts vide O.M. No. 1-17016/1/2022-ITD-CGA/10985/229 dated 30.09.2022 has issued consolidated instructions on various aspects of security while using PFMS:

a) Access Management:

- i) For new user registration of officials dealing with PAO and DDO module of PFMS, only NIC/GOV domain email id will be allowed. Same email-id and mobile number can be used maximum for four user ids within same PAO code and additional three user ids for across PAO codes keeping in view of multiple charges handled by users in different field offices.
- ii) A system of two levels approval for creation of user and e-mail/SMS alert on creation of users to approvers has been built into the system.
- iii) Marking of inactive user ids > 45 days as disabled is being enforced in PFMS.
- iv) At the time of relieving of any Group A & Group B Officer who is a user in PFMS viz. CCA level user, PAO type user, his/her digital signature & user id should be deactivated.
- v) A notification to alert the user for change is given in case user login in the system other than the system generally being used by the user.

b) Password Policy in PFMS:

- i) Password should be of length of minimum 8 characters.
- ii) Password mandatorily should include both special as well as Alpha numeric Characters.
- iii) Password should not have similarity with user name or part of the user name.

c) Processing of Payments:

- i) The I Key/DSC of the Pr. AO has to be invariably approved by the CCA level user,

whereas I Key/DSC of PAOs by the Pr. Accounts Officer level user and that of the CDDOs by the PAO level user. The Timeout procedure for inserting the I Key/DSC for every session has been made in PFMS.

- ii) PAOs may be advised strictly not to access the PAO/DDO module and not use digital signatures for making payment from the computers installed outside their office locations.
- iii) All guidelines stipulated to be followed for making payments should be strictly adhered to and verification against physical documents should be done at all levels unless stipulated by explicit directions for user of electronic mediums.
- iv) All Pay and Accounts Officers authorized for making payments shall verify each payment file of a batch with the corresponding physical bill/e-bill without fail before putting the digital signature.

d) Network Security:

- i) Always use genuine software, install the latest updates/patches for operating system, Antivirus and Application Software.
- ii) Enable firewall, Limit user privileges on the computer, Check and verify email sender IDs and web links before opening file attachments.
- iii) Use strong passwords, Protect against social engineering attacks.
- iv) Use only official supplied USB storage media.
- v) Users should be periodically briefed about Cyber Security measures.
- v) Avoid downloading and installing pirated software.

- vii) Internet-connected computers should not be used for drafting/storing sensitive official documents/correspondences.

(II) e-Bill Rollout:

The Hon'ble Union Minister for Finance & Corporate Affairs Smt. Nirmala Sitharaman launched the Electronic Bill (e-Bill) processing system, announced in Union Budget 2022-23, on the occasion of 46th Civil Accounts Day. This is part of 'Ease of Doing Business (EoDB) and Digital India eco-system' to bring in broader transparency and expedite the process of payments. It will enhance transparency, efficiency and faceless-paperless payment system by allowing suppliers and contractors to submit their claim online which will be traceable in real time basis.

Office of Controller General of Accounts, Department of Expenditure, Ministry of Finance vide O.M. No.-MF-I-17008/4/2020-CGA/153 dated 16.09.2021 started to initiate a module (e-bill) for end to end digitization of bill processing under development for implementation in Central Ministries/Departments. The new system has been implemented to entail processing of digital form of bills/claims from the HoD Authorized user up to PAO users. Further, Office of Controller General of Accounts, Department of Expenditure, Ministry of Finance vide O.M. No.TA-2-17002/(01)/17/2020-TA-II/(e-4426)/39 dated 01.02.2022 has also circulated Standard Operating Procedure (SOP) for implementation of e-bill rollout process. Also, Training has been provided to the PAOs under Central Ministries/Departments for the same. PAOs under Department of Fisheries have been included in Phase-III for training purpose for implementation of e-bill rollout process. At present, PAOs under Department of Fisheries have successfully implemented e-bill rollout process till Phase-V.

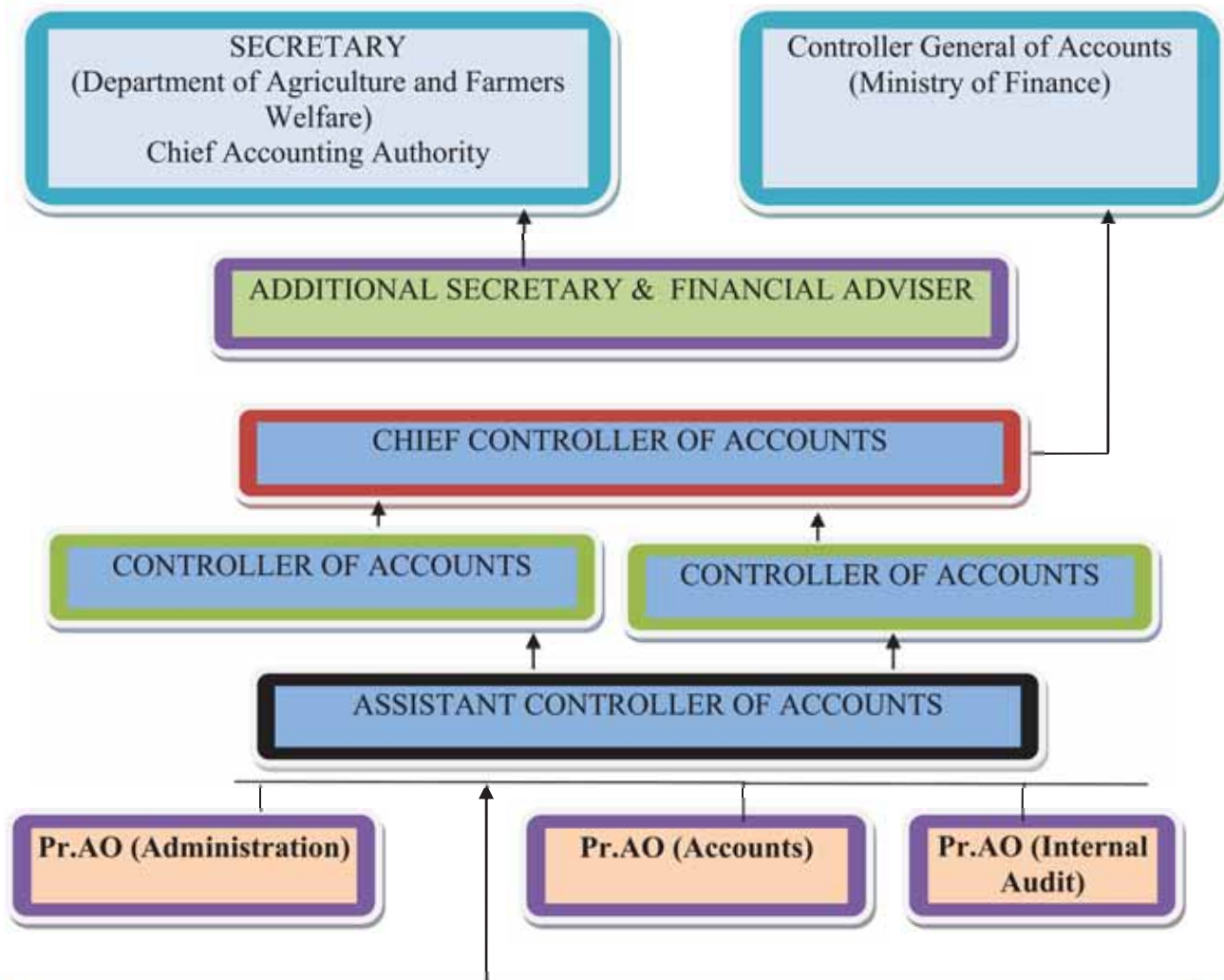
25.7 Scheme-wise Expenditure Statement in respect of Department of Agriculture & Farmers Welfare upto December, 2022 is enclosed as Annexure "A".

Annexure "A"

Scheme-wise Expenditure Statement in r/o Department of Agriculture & Farmers Welfare upto December, 2022								
(Rs. in crores)								
Sl. No.	Name of Scheme/Description	BE 2022-23	Exp. in 1st Quarter	Exp. in 2nd Quarter	Exp. in 3rd Quarter	Progressive Exp. upto 31.12.2022	Balance budget as on date	%age of Expenditure over BE
1	<u>Establishment Expenditure</u>							
I	Secretariat	163.40	44.06	35.87	36.23	116.16	47.24	71.09%
II	International Cooperation	50.73	0.06	0.91	0.00	0.97	49.76	1.91%
III	Other Attached and Subordinate Offices	419.37	100.86	87.96	89.04	277.86	141.51	66.26%
	TOTAL - ESTABLISHMENT EXPENDITURE	633.50	144.98	124.74	125.27	394.99	238.51	62.35%
2	<u>Central Sector Schemes</u>							
I	Crop Insurance Scheme /Pradhan Mantri Fasal Bima Yojana	15500.00	0.00	4725.61	236.01	4,961.62	10538.38	32.01%
II	Modified Interest Subvention Scheme (MISS)	19500.00	3039.28	9365.33	19.84	12,424.45	7075.55	63.72%
III	Market Intervention Scheme and Price Support Scheme (MIS-PSS)	1500.00	0.81	932.21	0.00	933.02	566.98	62.20%
IV	Pradhan Mantri Annadata Aay Sanrakshan Yojna (PM-AASHA)	1.00	0.00	0.00	0.00	0.00	1.00	0.00%
V	Distribution of Pulses to State/Union Territories for Welfare Schemes	9.00	0.00	0.00	0.00	0.00	9.00	0.00%
VI	Pradhan Mantri Kisan Samman Nidhi (PM-Kisan)	68000.00	22137.85	1037.76	17920.35	41,095.96	26904.04	60.44%
VII	Pradhan Mantri Kisan Man Dhan Yojana	100.00	0.00	0.00	0.00	0.00	100.00	0.00%
VIII	Formation and Promotion of 10.000 Farmer Producer Organizations (FPOs)	500.00	0.00	0.16	123.80	123.96	376.04	24.79%
IX	Agriculture Infrastructure Fund (AIF)	500.00	25.45	24.74	12.74	62.93	437.07	12.59%
X	National Beekeeping Honey Mission (NBHM)	100.00	0.00	0.00	0.00	0.00	100.00	0.00%
	TOTAL - CENTRAL SECTOR SCHEMES	105710.00	25203.39	16085.81	18312.74	59601.94	46108.06	56.38%

3	Other Central Sector Expenditure							
	Statutory and Regulatory Bodies							
I	Protection of Plant Varieties and Farmers Rights Authority	5.50	2.59	0.00	1.29	3.88	1.62	70.55%
	Autonomous Bodies							
II	National Institute of Plant Health Management	25.00	5.27	3.73	4.02	13.02	11.98	52.08%
III	National Institute of Agricultural Extension Management (MANAGE)	5.50	1.37	1.38	1.38	4.13	1.37	75.09%
IV	Chaudhary Charan Singh National Institute of Agricultural Marketing	4.50	0.00	0.00	2.25	2.25	2.25	50.00%
	TOTAL - OTHER CENTRAL SECTOR EXPENDITURE	40.50	9.23	5.11	8.94	23.28	17.22	57.48%
4	Centrally Sponsored Schemes							
I	Rashtriya Krishi Vikas Yojna	10433.00	73.36	1425.17	863.85	2,362.38	8070.62	22.64%
	Krishionnati Yojana							
I	Food and Nutrition Security	1395.00	50.82	187.24	173.46	411.52	983.48	29.50%
II	Edible Oil-Oil Palm	900.00	0.00	132.09	4.24	136.33	763.67	15.15%
III	Edible Oil-Oilseeds	600.00	27.25	120.64	21.00	168.89	431.11	28.15%
IV	Organic Value Chain Development for North East Region	198.00	0.04	63.18	20.48	83.7	114.30	42.27%
V	Integrated Development of Horticulture	1900.00	4.27	350.57	175.63	530.47	1369.53	27.92%
VI	Seed and Planting Material	305.00	17.41	31.89	49.33	98.63	206.37	32.34%
VII	Agriculture Extension	1000.00	14.92	224.13	153.18	392.23	607.77	39.22%
VIII	Digital Agriculture	60.00	3.45	6.51	6.86	16.82	43.18	28.03%
IX	Agriculture Census and Statistics	325.00	40.37	102.00	31.95	174.32	150.68	53.64%
X	Agriculture Marketing	500.00	1.86	116.66	79.04	197.56	302.44	39.51%
	Total - Krishionnati Yojana	7183.00	233.75	2760.08	1579.02	2210.47	4972.53	30.77%
	TOTAL - CENTRALLY SPONSORED SCHEMES	17616.00	233.75	2760.08	1579.02	4572.85	13043.15	25.96%
	GRAND TOTAL (1+2+3+4)	124000.00	25591.35	18975.74	20025.97	64593.06	59406.94	52.09%

ACCOUNTING ORGANIZATION SETUP IN DEPARTMENT OF AGRICULTURE AND FARMERS WELFARE



- 1) PAO (Sectt. I)
- 2) PAO (Sectt. II)
- 3) PAO (Extension)
- 4) PAO (PPM) Faridabad
- 5) PAO (Chennai)
- 6) PAO (Cochin)
- 7) PAO (Kolkata)
- 8) PAO (Nagpur)
- 9) PAO (DAC) Mumbai

Annexure-1.1

Details of pulses, oilseeds & copra procured at MSP under PSS since 2018-19 (as on 11.01.2023)							
Year		Oil seed		Pulses		Total	
		Quantity Procured (in MTs)	MSP Value (Rs. in lakh)	Quantity Procured (in MTs)	MSP Value (Rs. in lakh)	Quantity Procured (in MTs)	MSP Value (Rs. in lakh)
2018-19 To 2022-23	2018-19	18,29,295.44	8,16,651.05	19,44,653.25	10,53,971.95	37,73,948.69	18,70,623.00
	2019-20	15,43,187.86	7,30,987.52	28,54,400.82	14,74,143.93	43,97,588.68	22,05,131.45
	2020-21	2,95,212.34	1,58,516.95	8,17,046.85	4,52,867.33	11,12,259.19	6,11,384.28
	2021-22	1,51,634.73	84,261.64	30,30,956.91	16,63,569.77	31,82,591.64	17,47,831.41
	2022-23*	47,911.04	47,390.56	1,17,251.16	90,927.15	1,65,162.20	1,38,317.70
	Total	38,67,241.41	18,37,807.72	87,64,308.99	47,35,480.13	1,26,31,550.40	65,73,287.85

*Procurement ongoing

Annexure-1.2

Details of Sanction accorded under MIS since 2018-19 (as on 14.11.2022)							
S.N.	Year	Period	Commodity	State	Market Intervention Price (MIP) (Rs. Per MTs.)	Sanctioned Qty (in MTs.)	MIP Value (Rs in lakhs)
1	2018-19	13.04.2018 to 20.06.2018	Garlic	Rajasthan	32,570	1,54,000	50157.80
2	2018-19	13.04.2018 to 20.06.2018	Onion	Rajasthan	6,180	2,60,000	16068.00
3	2019-20	09.09.2019 to 31.03.2020	Apple	Jammu & Kashmir	Garde by MIP fixed by the Designated Price Committee	12,00,000	
4	2020-21	22.10.2020 to 31.03.2021	Apple	Jammu & Kashmir	Garde by MIP fixed by the Designated Price Committee	12,00,000	
5	2021-22	05.10.2021 to 05.11.2021	Potato	Nagaland	8,620	14,200	1224.04
6	2022-23	07.06.2022 to 06.07.2022	Onion	Rajasthan	7,780	2,56,400	19947.92
7	2022-23	07.06.2022 to 06.07.2022	Garlic	Rajasthan	29,570	1,07,836	31887.11
8	2022-23	27.07.2022 to 25.08.2022	C-grade Apple	Himachal Pradesh	12,960	1,44,936	18783.71
9	2022-23	27.07.2022 to 25.08.2022	Mango	Himachal Pradesh	11,700	1,250	146.25

CHAPTER - 2

**FUNCTIONS AND ORGANIZATIONAL STRUCTURE
LIST OF FUNCTIONAL DIVISIONS IN THE DEPARTMENT
OF AGRICULTURE AND FARMERS' WELFARE**

DIVISIONS:

1. Administration
2. Agricultural Census
3. Agricultural Marketing
4. Budget, Finance and Accounts
5. Credit
6. Crops & Post Harvest Management of Foodgrain
7. Digital Agriculture
8. Drought Management
9. Economic Administration
10. Extension
11. Farmers Welfare
12. General Coordination
13. Hindi
14. Horticulture
15. Investment and Price Support
16. Integrated Nutrients Management
17. International Cooperation
18. Mechanization and Technology
19. Natural Resource Management
20. Plant Protection
21. Policy
22. Plan Coordination
23. RKVY
24. Rainfed Farming System
25. Seeds
26. Oil Seeds
27. Agriculture Trade Policy, Promotion & Logistics Development
28. Vigilance

ANNEXURE – 2.2

CHAPTER - 2
FUNCTIONS AND ORGANIZATIONAL STRUCTURE
INVENTORY OF FIELD FORMATIONS

I. ATTACHED OFFICES

1. Directorate of Economics & Statistics, Shastri Bhavan, 'B' Wing, New Delhi.
2. Commission for Agricultural Costs and Prices, Shastri Bhavan, 'F' Wing, Second Floor, New Delhi.
3. Directorate of Plant Protection, Quarantine and Storage, N.H.IV, Faridabad (Haryana).
4. Directorate of Marketing & Inspection, N.H.IV, Faridabad (Haryana).
5. Mahalanobis National Crop Forecast Centre, New Delhi.

II. SUB-ORDINATE OFFICES

1. Central Farm Machinery Training & Testing Institute, Budni (Madhya Pradesh).
2. Northern Region Farm Machinery Training & Testing Institute, Hissar (Haryana).
3. Southern Region Farm Machinery Training & Testing Institute, Garladinne, Distt. Anantapur (A.P.).
4. North Eastern Region Farm Machinery Training & Testing Institute, Biswnath Chariali, Distt. Sonitpur (Assam).
5. Directorate of Cotton Development, Bhoomi Sarvekshan Bhawan, Near Centre Point School, Seminary Hills, Katol Road, Nagpur, Maharashtra-440013.
6. Directorate of Jute Development, 234/4, Acharya Jagdish Bose Road, Nizam Palace Campus, Kolkata- 700020 (West Bengal).
7. Directorate of Millets Development, Mini Secretariat Building, Room No. 710, 6th Floor, Bani Park, Jaipur (Rajasthan).
8. Directorate of Sugarcane Development, 8th Floor, Hall No.3, Kendriya Bhavan, Aliganj, Lucknow - 226024 (U.P.).
9. Directorate of Rice Development, 191, Patliputra Colony, Patna-800013 (Bihar).
10. Directorate of Wheat Development, 86, Delhi - Jaipur Expy, Sector 18, Gurugram, Haryana 122008
11. Directorate of Extension, Krishi Vistar Bhavan, Dr. K.S. Krishna Marg, IARI Campus, Pusa, New Delhi-110 012.
12. Directorate of Oilseeds Development, Telhan Bhavan, Himayat Nagar, Hyderabad (A.P.).

13. Directorate of Pulses Development, 8th Floor, Vindhyachal Bhavan, Bhopal- 462004 (M.P).
14. Central Fertiliser Quality Control & Training Institute, N.H.IV, Faridabad (Haryana).
15. National Centre of Organic Farming, C.G.O. Complex, Kamla Nehru Nagar, Hapur Road Chungi, Ghaziabad (U.P).
16. Directorate of Cashewnut and Cocoa Development, M.G. Road, Kochi-682011 (Kerala).
17. Directorate of Arecanut and Spices Development, Cannanore Road, Kozhikode-673005 (Kerala).
18. Office of the Minister (Agriculture), Embassy of India, ROME (ITALY).
19. All India Soil and Land Use Survey, IARI Campus, Pusa, New Delhi-110 012.
20. National Seed Research & Training Centre (NSRTC) VARANASI (U.P.).
21. Central Institute of Horticulture, Medziphema, Nagaland.

ANNEXURE-2.3**1. PUBLIC SECTOR UNDERTAKINGS**

1. National Seeds Corporation, New Delhi.

2. AUTONOMOUS BODIES

1. Coconut Development Board, Kochi (Kerala).
2. National Horticulture Board, Gurgaon (Haryana).
3. Small Farmers' Agri Business Consortium, New Delhi.
4. National Institute for Agricultural Extension Management, Hyderabad (A.P.).
5. National Institute of Agricultural Marketing, Jaipur (Rajasthan).
6. National Institute of Plant Health Management, Hyderabad (A.P.)
7. National Centre for Cold Chain Development, 2nd Floor, B-Wing, Janpath Bhawan, New Delhi.

3. AUHTORITIES

1. Protection of Plant Varieties and Farmers' Rights Authority, NASC Complex, DPS Marg Opp. Todapur, Delhi-110012.
2. National Rainfed Area Authority, NASC Complex, Dev Prakash Shastri Marg, Pusa, New Delhi- 110012.

Annexure 15.1 (a)

Statement showing Allocation, Release, Expenditure and Unspent balance of the States Under RKVY during 2020-21 to 2022-23 as on 31.12.2022							
							(Rs. Crore)
Sl. No.	Name of the States	2020-21		2021-22		2022-23	
		Allocation	Release	Allocation	Release	Allocation	Release
1	Andhra Pradesh	185.01	315.64	203.47	97.19	183.20	45.79
2	Arunachal Pradesh	26.46	44.00	14.74	6.27	18.66	4.67
3	Assam	188.49	174.42	159.95	150.69	226.86	0.00
4	Bihar	179.16	45.39	140.95	69.77	131.80	0.00
5	Chhattisgarh	126.44	104.77	91.03	43.27	80.84	20.21
6	Goa	17.87	8.94	17.94	0.00	17.80	4.45
7	Gujarat	134.17	119.30	145.84	69.39	130.32	32.58
8	Haryana	86.11	67.86	83.89	64.23	57.69	14.42
9	Himachal Pradesh	27.02	11.87	23.54	11.68	22.37	0.00
10	Jammu & Kashmir	8.20	0.00	10.58	0.00	9.90	0.00
11	Jharkhand	93.58	0.00	60.02	0.00	50.57	0.00
12	Karnataka	249.72	200.66	218.84	113.08	206.09	51.52
13	Kerala	63.42	30.63	63.11	50.44	55.74	13.94
14	Madhya Pradesh	170.96	43.00	197.46	96.62	180.50	45.12
15	Maharashtra	290.88	199.62	249.23	120.55	229.77	0.00
16	Manipur	19.23	9.00	23.25	17.47	31.57	0.00
17	Meghalaya	21.35	10.59	23.70	10.79	31.90	0.00
18	Mizoram	13.28	6.64	33.65	16.11	49.37	0.00
19	Nagaland	33.88	43.06	17.14	26.95	22.64	5.66
20	Odisha	190.60	100.08	107.26	49.58	90.06	0.00
21	Punjab	145.96	8.00	151.29	75.36	85.22	0.00
22	Rajasthan	159.84	159.13	179.64	87.80	166.37	41.59
23	Sikkim	9.48	9.48	9.40	4.14	14.20	3.55
24	Tamil Nadu	176.83	173.58	197.96	171.50	182.32	45.58
25	Telangana	177.04	0.00	207.64	0.00	186.00	0.00
26	Tripura	44.21	22.11	52.31	52.27	74.28	18.57
27	Uttar Pradesh	402.14	346.89	302.71	145.10	255.27	70.25
28	Uttarakhand	46.64	77.61	54.15	49.87	52.83	13.08
29	West Bengal	204.15	170.17	188.01	92.75	170.85	42.72
	Total States	3492.10	2502.43	3228.71	1692.87	3014.98	473.70
30	Delhi	0.00	0.00	0.23	0.00	0.10	0.00
31	Puducherry	0.00	0.00	4.04	0.00	4.00	0.00
32	A & Nicobar	2.60	1.30	2.61	1.30	2.60	0.00
33	Chandigarh	0.00	0.00	0.13	0.00	0.10	0.00
34	D & N Haveli	0.10	0.00	0.10	0.00	0.10	0.00
35	Daman & Diu	0.10	0.00	0.11	0.00	0.10	0.00
36	Lakshadweep	0.10	0.00	0.10	0.00	0.10	0.00
37	Ladakh	7.00	0.00	9.00	0.00	9.00	0.00
	Total Uts	9.90	1.30	16.32	0.00	3031.08	473.70
National Level/2401 (includ.) Enterp.		140.00	58.35	120.00	37.03	444.68	100.34
Unallocated		58.00		347.41			
Grand Total (States+Uts+Other)		3700.00	2562.08	3712.44	1729.90	3475.76	574.04

(Rs. in crore)

Department of Agriculture & Farmers Welfare

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Note :- Some funds to be allocat under RKVY AAP during 2022-23, However the total allocation of the RKVY cafeteria is Rs.10433.00 crore

%age	19.62%
total	

Annexure – 15.2(a)

Sector wise Approved Projects Cost 2020-21

Sr No	State	(Rs. in crore)																				
		CROP	HORT	SERI	ANHB	OTHR	FISH	COOP	IPMT	SEED	FINM	AMEC	EXTN	MRKT	NONF	ITEC	AGRE	NRM	IRRI	OREM	DDEV	Total
1	ANDHRA PRADESH	0.00	49.00	7.84	0.00	156.58	46.33	0.00	1.14	22.15	0.00	1.60	40.76	0.00	0.00	0.00	19.85	0.00	0.00	0.00	0.00	345.26
2	BIHAR	59.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	59.86
3	CHATTISHGARH	115.26	25.42	0.00	0.00	0.00	20.97	0.00	4.08	8.73	0.00	0.00	1.80	0.00	0.00	0.00	0.00	0.00	3.06	8.75	0.00	188.07
4	GUJARAT	69.01	0.00	0.00	0.00	0.00	0.00	0.00	1.80	81.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	152.30
5	HARYANA	43.77	14.54	0.00	23.00	2.00	11.65	0.00	1.00	54.70	0.00	0.00	0.00	32.67	0.00	0.00	13.89	52.31	20.00	0.00	17.35	286.87
6	KARNATAKA	5.99	71.61	21.07	24.75	56.93	18.04	6.97	1.09	15.84	2.00	74.10	41.62	5.38	0.00	0.00	37.20	65.00	0.00	0.00	0.00	447.59
7	KERALA	51.00	19.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.36	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00	0.00	70.82
8	MADHYA PRADESH	0.00	30.02	0.00	35.36	2.92	14.50	73.44	5.15	35.40	28.05	84.64	2.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.67	325.18
9	MAHARASHTRA	0.00	11.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	31.33	42.95
10	MANIPUR	0.00	3.00	1.34	0.00	0.73	1.57	0.60	0.00	0.08	0.00	0.42	0.00	5.75	0.00	0.00	0.00	0.13	0.00	0.09	0.00	13.70
11	MEGHALAYA	0.00	0.73	0.00	1.17	0.00	0.50	0.20	0.00	0.00	0.00	0.21	0.00	0.00	2.66	0.00	0.00	2.20	0.00	0.00	0.00	7.67
12	NAGALAND	0.00	0.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.49	
13	ORISSA	90.79	78.91	0.00	0.00	0.00	1.02	0.00	54.45	12.26	0.00	8.54	0.00	0.00	0.00	0.00	9.23	4.42	0.00	0.00	0.99	260.60
14	PUNJAB	47.57	46.25	1.00	12.53	0.90	2.29	0.00	6.45	18.55	68.84	0.00	0.00	8.83	7.61	0.00	34.70	0.00	20.00	0.00	23.99	299.50
15	RAJASTHAN	0.00	323.29	0.00	0.00	0.00	2.34	26.00	6.91	1.00	0.00	0.00	1.00	0.00	0.00	0.00	4.05	32.10	0.00	0.00	0.00	396.68
16	TAMILNADU	112.89	45.40	0.00	16.90	0.00	19.28	5.50	20.00	3.06	8.05	10.50	0.00	52.50	0.00	0.00	7.05	4.45	0.00	12.80	10.36	328.73
17	TELANGANA	5.77	67.92	16.76	41.63	0.00	5.55	0.00	2.33	31.85	1.14	132.00	0.00	8.50	0.08	0.00	17.09	0.00	0.00	0.00	0.00	330.60
18	TRIPURA	29.39	3.44	0.00	16.05	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.07	0.00	0.00	0.00	57.96
19	UTTAR PRADESH	256.38	105.25	9.10	28.77	11.33	19.76	51.15	1.05	33.99	3.60	0.00	159.38	26.64	0.00	0.00	79.04	16.21	0.00	41.48	0.00	843.13
20	UTTARAKHAND	0.00	0.00	0.00	1.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	33.86	0.00	35.35
21	WEST BENGAL	114.47	11.33	1.39	18.01	0.00	1.28	0.00	3.00	23.77	0.00	28.56	17.27	71.35	0.00	0.00	0.00	0.00	6.35	0.00	0.00	296.78
Total		1002.15	907.59	58.50	219.67	231.39	170.08	163.86	108.43	342.86	111.68	340.93	263.85	211.62	10.35	0.00	222.09	180.89	49.48	96.98	97.68	4790.08

CROP - CROP DEVELOPMENT; HORT - HORTICULTURE; SERI - SERICULTURE; ANHB - ANIMAL HUSBANDRY; OTHR - INNOVATIVE PROGRAMMES / OTHERS; FISH - FISHERIES; COOP - COOPERATIVES/COOPERATION; IPMT - INTEGRATED PEST MANAGEMENT; SEED - SEED; FINM - FERTILISERS AND INM; AMEC - AGRICULTURE MECHANISATION; EXTN - EXTENSION; MRKT - MARKETING AND POST HARVEST MANAGEMENT; NONF - NON FARM ACTIVITIES; ITEC - INFORMATION TECHNOLOGY; AGRE - RESEARCH (AGRI/HORTI)/ANIMAL HUSBANDRY etc; NRM - NATURAL RESOURCE MANAGEMENT; IRRI - MICRO/MINOR IRRIGATION; OREFM - ORGANIC FARMING / BIO FERTILISER; DDEV - DAIRY DEVELOPMENT

Note:- Source of date - Entered by the State Govt. in RKVY - RDMIS, Rest of the States are not entered the Data in RKVY - RDMIS portal

Annexure – 15.2(b)

Sector wise Approved Projects Cost 2021-22

Sr No	State	CROP	HORT	SERI	ANHB	OTHR	FISH	COOP	IPMT	SEED	FINM	AMEC	EXTN	MIRKT	NONF	ITEC	AGRE	NRM	IRRI	ORFMI	DDEV	Total
1	BIHAR	38.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.60
2	GUJARAT	8.00	0.00	0.00	2.38	7.42	6.20	0.00	3.00	40.60	0.00	25.00	8.06	3.13	0.00	0.00	23.18	0.00	0.00	0.00	8.96	135.94
3	HARYANA	93.59	29.49	0.00	19.00	2.10	15.60	0.00	4.00	30.00	0.65	0.00	2.00	0.00	0.00	0.00	26.97	53.00	42.34	0.00	6.28	325.02
4	HIMACHAL PRADESH	4.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.05
5	KARNATAKA	4.79	119.06	10.44	42.27	0.00	2.30	3.26	0.00	4.19	0.00	1.94	0.92	0.00	0.00	0.00	11.55	61.05	0.00	0.00	0.00	261.76
6	KERALA	24.44	33.44	0.00	0.00	0.00	0.00	0.00	0.12	1.55	0.00	0.00	0.00	1.43	2.55	0.00	1.71	4.69	0.00	2.19	19.77	91.88
7	MADHYA PRADESH	0.00	13.40	0.00	9.87	0.00	2.27	39.76	0.00	52.87	0.00	17.34	54.76	14.00	0.00	20.33	0.40	0.00	30.25	0.00	0.00	255.24
8	MAHARASHTRA	0.00	198.23	0.00	85.29	1.36	0.00	0.00	0.00	1.81	3.53	150.00	0.87	19.70	0.00	0.00	0.00	0.00	100.00	1.90	13.56	576.25
9	MEGHALAYA	0.00	1.37	0.00	0.00	0.38	0.00	0.00	0.00	0.00	0.00	0.68	0.30	0.00	0.00	0.00	0.00	2.12	0.00	0.00	0.00	4.85
10	NAGALAND	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.75
11	ORISSA	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	26.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	26.46
12	RAJASTHAN	15.00	0.35	0.00	10.83	17.49	0.40	0.00	6.58	0.00	1.03	0.00	0.00	0.00	0.00	0.00	15.81	0.00	0.00	0.00	0.00	67.51
13	TAMILNADU	62.85	37.92	0.00	40.81	0.00	15.17	3.55	21.75	0.30	2.48	23.79	79.77	6.75	0.00	0.00	9.11	3.28	8.50	29.20	29.72	374.95
14	TRIPURA	39.73	11.86	0.00	5.55	2.20	5.84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.97	0.00	0.00	0.00	67.15
15	UTTAR PRADESH	0.00	2.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.99	0.00	0.00	0.00	0.00	3.59
16	UTTARAKHAND	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	74.25	0.00	0.00	0.00	74.25
17	WEST BENGAL	73.89	18.70	2.57	110.30	3.49	2.91	9.86	3.00	50.43	5.00	42.17	19.69	6.98	0.00	0.00	14.65	15.00	19.83	1.40	0.00	399.89
	Total	364.64	466.43	13.01	326.31	34.43	50.69	56.43	38.45	186.07	12.69	287.36	166.38	55.74	2.55	20.33	104.37	215.36	200.92	34.69	78.28	2715.13

Total Cost : Rs. 2715.13

CROP - CROP DEVELOPMENT; HORT - HORTICULTURE; SERI - SERICULTURE; ANHB - ANIMAL HUSBANDRY; OTHR - INNOVATIVE PROGRAMMES / OTHERS; FISH - FISHERIES; COOP - COOPERATIVES/COOPERATION; IPMT - INTEGRATED PEST MANAGEMENT; SEED - SEED; FINM - FERTILISERS AND INM; AMEC - AGRICULTURE MECHANISATION; EXTN - EXTENSION; MRKT - MARKETING AND POST HARVEST MANAGEMENT; NONF - NON FARM ACTIVITIES; ITEC - INFORMATION TECHNOLOGY; AGRE - RESEARCH (AGRU/HORT/ANIMAL HUSBANDRY etc); NRM - NATURAL RESOURCE MANAGEMENT; IRRI - MICRO/MINOR IRRIGATION; OREFM - ORGANIC FARMING / BIO FERTILISER; DDEV - DAIRY DEVELOPMENT

Note:- Source of date - Entered by the State Govt. in RKVY - RDMIS, Rest of the States are not entered the Data in RKVY - RDMIS portal

Annexure - 15.2 (C)

Sector wise Approved Projects Cost 2022-23

(Rs. in crore)

Sr No	State	CROP	HORT	SERI	ANHB	OTHR	FISH	COOP	IPMT	SEED	FINM	AMEC	EXTN	MRKT	NONF	ITEC	AGRE	NRM	IRRI	ORFM	DDEV	Total
1	HARYANA	38.50	7.16	0.00	0.00	0.00	0.00	0.00	0.00	28.00	0.00	0.00	0.00	24.00	0.00	0.00	27.12	144.70	0.00	0.00	0.00	269.48
2	KARNATAKA	0.00	0.00	5.84	0.00	0.00	0.00	0.00	4.62	0.00	0.00	0.00	20.00	0.00	0.00	0.00	1.50	0.00	0.00	0.00	0.00	31.96
3	MADHYA PRADESH	0.00	46.55	0.00	0.00	0.00	0.00	10.00	3.35	23.63	0.38	97.26	45.10	0.00	0.00	11.99	34.57	0.00	0.00	0.00	0.00	272.83
4	MECHALAYA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.99	0.00	0.00	0.00	0.99
5	NAGALAND	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.79
6	ORISSA	2.33	29.80	0.00	0.00	0.00	0.00	0.00	3.02	3.82	0.00	0.00	0.00	0.00	0.00	0.00	47.45	0.00	0.00	0.00	3.37	89.78
7	RAJASTHAN	0.00	0.00	0.00	0.00	9.75	0.00	0.00	0.00	0.00	0.00	24.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16.00	0.00	49.75
8	TAMILNADU	139.69	59.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.92	0.00	3.86	0.00	0.00	0.00	1.60	0.00	0.00	21.80	0.00	228.61
9	TRIPURA	39.57	16.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.66	6.00	0.00	0.00	0.00	0.00	63.57
10	WEST BENGAL	28.88	20.14	9.67	0.00	1.82	0.00	0.00	0.00	29.57	1.76	49.64	14.00	108.57	0.00	0.00	3.99	12.13	0.00	0.00	0.00	280.17
	Total	248.96	179.74	15.51	0.00	11.57	0.00	10.00	10.99	85.02	4.05	170.91	82.96	137.36	0.00	13.65	122.22	157.81	0.00	37.80	3.37	1291.93

Total Cost: Rs. 1291.93

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Note:- Source of date - Entered by the State Govt. in RKVY - RDMIS, Rest of the States are not entered the Data in RKVY - RDMIS portal

Annexure 20.1												
Seeds Programmes in North-Eastern States												
S. No.	Schemes/Programmes Approved	Details of Schemes/Programmes/Activities taken	Target for 2018-19	Achievement 2018-19	Target for 2019-20	Achievement 2019-20	Target for 2020-21	Achievement 2020-21	Target 2021-22	Achievement 2021-22	Target 2022-23	Achievement 2022-23
1	Transport Subsidy on movement of Seeds to North Eastern States including Sikkim, Himachal Pradesh, J&K, Uttaranchal and Hill areas of West Bengal.	The topographical situation and climatic condition being not conducive for the production of seeds in the North-Eastern States. (a) Reimbursement of 100% difference between road and rail transportation cost to implementing States/Agency for movement of seeds produced outside the states and movement to identified state capital/district headquarter. (b) The actual cost, restricted to maximum limit of Rs. 60/- per quintal for the movement of seed Within the State from State Capital/ district headquarters to sale outlets/sale counters is being reimbursed to implementing State/agency.	It is a reimbursement Programme. Therefore, targets cannot be pre-fixed as transportation of seeds depends on demand which varies from year to year.	For NE States a quantity of 18226.83 qtl transported exclusively to NE States. An amount of 102.23 lakh has been reimbursed. The total quantity of seeds transported including NE States is 1,55,149.06 Quintals (upto 31.03.2017)	As mentioned in Col.4	For a quantity of 12753.43 quintals transported exclusively to NE States, an amount of Rs. 40.205 lakh has been reimbursed. The total quantity of seeds transported including in NE States is 1,55,149.06 Quintals (upto 31.03.2017)	As mentioned in Col.4	For a quantity of 13674.84 quintals transported exclusively to NE States, an amount of Rs. 49,217.16 lakh has been reimbursed. The total quantity of seeds transported including in NE States is 142217.95 quintals. An amount of Rs. 247.06 lakh has been reimbursed.	As mentioned in Col.4	For a quantity of 63474.07 quintals transported exclusively to NE States, an amount of Rs. 294.78 lakh has been reimbursed. The total quantity of seeds transported including in NE States is 300899.75 quintals. An amount of Rs. 574.96 lakh has been reimbursed.	As mentioned in Col.4	For a quantity of 13088.30 quintals transported exclusively to NE states, an amount of Rs. 107.90 lakhs has been reimbursed. The total quantity of seeds transported including NE States is 183150.63 quintals. An amount of Rs. 333.72 lakhs has been reimbursed (as on 30.01.2023).



Department of Agriculture & Farmers Welfare

Ministry of Agriculture & Farmers Welfare

Government of India

Krishi Bhawan, New Delhi-110001

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