

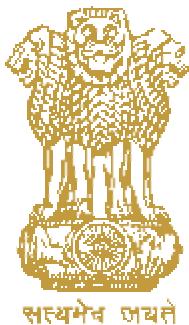


ANNUAL REPORT

2023-24

DEPARTMENT OF AGRICULTURE & FARMERS WELFARE
MINISTRY OF AGRICULTURE & FARMERS WELFARE
GOVERNMENT OF INDIA





ANNUAL REPORT

2023-24

**Department of Agriculture & Farmers Welfare
Ministry of Agriculture & Farmers Welfare
Government of India
Krishi Bhawan, New Delhi -110 001
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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). Agriculture and Allied sector accounts for 18.4 % of India's GVA at current prices during 2022-23. 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 LUS statistics for 2021-22, the geographical area of our country is 328.7 million hectares, of which around 54.8% is agricultural land, 141.00 million hectares is the reported net sown area and 219.158

million hectares is the gross cropped area with a cropping intensity of 155.4%. Net area sown comprises of 42.8% of the total geographical area. At all India level, total cropped area has increased by 66.1 percent in 2021-22 as compared to 1950-51 (131.89 million hectares in 1950-51 to 219.15 million hectares in 2021-22). The net irrigated area during 2021-22 was 77.9 million hectare, out of which 24.7% was accounted by canal source of irrigation, 2.8 % by tanks, 47.3 % by Tube wells, 13.2 % by other wells and remaining 12.0 % is irrigated by other source of irrigation. The gross irrigated area in 2021-22 was estimated at 120.3 million hectare, which was 54.9 % of the gross cropped area. The details of important parameters of Land Use Statistics for the year 2021-22 are given in the table below.

Table-1

Details of Important parameters of Land Use Statistics for the year 2021-22		
		(thousand hectares)
A) Classification of Land		
1	Reporting area for land utilization statistics (1 to 9)	306486
1	Forests	72000
2	Area put to non-agricultural uses	27578
3	Barren & unculturable land	16515
4	Permanent pastures & other grazing lands	10281
5	Culturable Wasteland	11920
6	Land under Misc. tree Crops	3013
7	Fallow Land Other than Current Fallows	10917
8	Current Fallow	13255
9	Net Area Sown	141007
	Agricultural Land (5+6+7+8+9)	180112
	Cultivated Land (8+9)	154262
	Cropping Intensity (% of Total cropped Area over Net Area Sown)	155.4
B) Irrigated Area		
1	Government Canals	19054
2	Private Canals	164
3	Total Canals (1+2)	19218
4	Tanks	2205
5	Tube wells	36797
6	Other wells	10308
7	Other Sources	9387

Net Irrigated Area (3+4+5+6+7)	77916
Gross Irrigated Area	120380
% of Gross Irrigated Area over Gross Cropped Area	54.9
% of Net Irrigated Area over Net Area Sown	55.25
C) Area under crops	
Total Foodgrains	138629
Total Cereals & Millets	108731
Rice	49905
Wheat	34808
Total Pulses	29898
Total Condiments and Spices	4330
Total Fruits & Vegetables	12643
Total Food Crops	162495
Total Oilsseeds	32111
Sugarcane	6494
Cotton	12349
Total non food crops	56663
Total Cropped Area	219158

Source: Economics Statistics & Evaluation Division , DA&FW

1.3 Gross Value Added of Agriculture & Allied Sector

As per the Provisional Estimates of National Income, 2022-23, released by National Statistical Office (NSO), Ministry of Statistics & Programme

Implementation, the agriculture and allied sectors contributed approximately 18.4 % of India's Gross Value Added, (GVA) at current prices during 2022-23. The absolute Gross Value Added 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 of Agriculture & Allied Sector (Rs. In Crore)

Items	Years					
	2017-18	2018-19	2019-20*	2020-21#	2021-22@	2022-23\$
GVA of Agriculture and Allied Sectors	2829826	3029925	3368471	3695412	4066649	4557599
GVA share of Agriculture & Allied Sector (%)	18.3	17.6	18.3	20.3	19.0	18.4

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

* Third Revised Estimates, #Second Revised Estimate, @First Revised Estimates, \$ Provisional Estimate as on 31st May 2023 .

1.4 Growth in Gross Value Added of Agriculture and Allied Sectors

The following table represents the growth in the economy's total GVA as well as the growth of the

agriculture and allied sectors and its sub sectors at 2011-12 basic prices over the previous year. The economy as a whole is expected to grow by 7.0 percent in 2022-23, while agriculture and allied sectors is expected to rise by 4.0 percent

Table-3 (In percent)

Year	Total Economy	Agriculture & Allied Sector	Crops	Livestock	Forestry & Logging	Fishing
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^	3.9	6.2	5.7	7.5	6.1	4.5
2020-21#	-4.2	4.1	2.8	6.2	5.8	3.8
2021-22@	8.8	3.5	1.7	6.0	2.4	9.3
2022-23\$	7.0	4.0		Will be released in 2024		

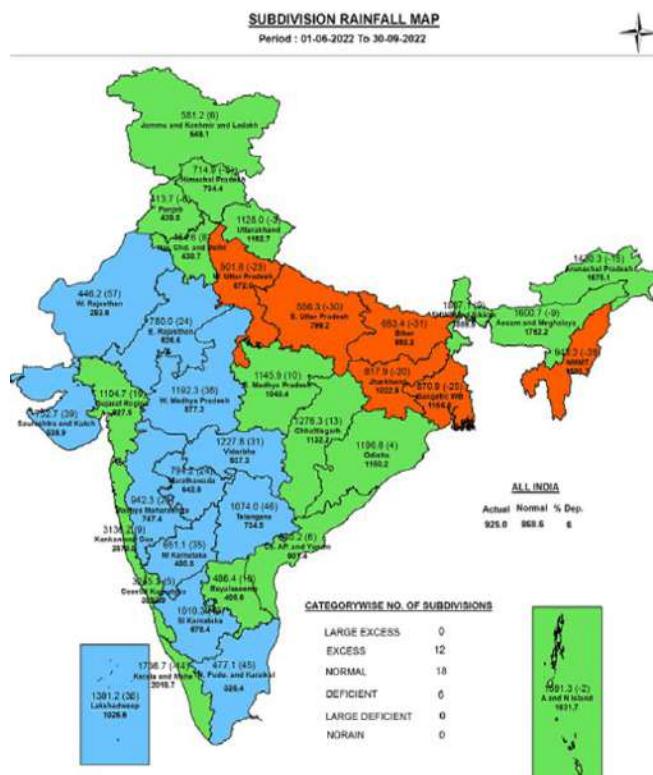
Source: National Statistical Office, Ministry of Statistics and Programme Implementation, Govt. of India

^ Third Revised Estimates, #Second Revised Estimate, @First Revised Estimates,\$ Provisional Estimate as on 31st May 2023 .

1.5 Rainfall 2023

Monsoon Rainfall (June - September)

The **cumulative rainfall** in the country during the monsoon season i.e. 01st June to 30th September, 2023 has been **lower 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 1% in North-West India, equal to LPA in Central India, but **lower** than LPA by 8% in South Peninsula and lower by 18% in East & North East India. Out of 36 meteorological sub-divisions, 03 met subdivisions in the country had received large excess/excess rainfall,



26 met subdivisions received normal rainfall and 07 met subdivisions received deficient rainfall. Out of 713 districts for which rainfall data is available, 20 districts (3%) received large excess rainfall, 102 districts (14%) received excess rainfall, 371 districts (52%) received normal rainfall, 209

districts (29%) received deficient rainfall and 11 districts (2%) received large deficient rainfall.

Post-Monsoon (October - December)

During the post-monsoon season (1st October to 31st December, 2023) country received rainfall which was 9% lower than the LPA. Out of 36 meteorological subdivisions, 07 received large excess/excess rainfall, 18 received normal rainfall and 11 met subdivisions received deficient/large deficient rainfall.

1.6 Production Scenario 2022-23

As per Final Estimates for 2022-23, total **foodgrain** production in the country is estimated at record 3296.87 Lakh tonnes which is higher by 140.71 Lakh tonnes than the production of foodgrains of 3156.16 Lakh tonnes achieved during 2021-22. Further, the production during 2022-23 is higher by 308.69 Lakh tonnes compared to average production of foodgrains during last five years. Total production of Rice during 2022-23 is estimated at record 1357.55 Lakh tonnes. It is higher by 62.84 Lakh tonnes than previous year's Rice production of 1294.71 Lakh tonnes and by 153.65 Lakh tonnes than the last five years' average production of 1203.90 Lakh tonnes. Production of **wheat** during 2022-23 is estimated at record 1105.54 Lakh tonnes. It is higher by 28.12 Lakh tonnes than previous year's wheat production of 1077.42 Lakh tonnes. Production of **nutri / coarse cereals** estimated at 573.19 Lakh tonnes, which is higher by 62.18 Lakh tonnes than the production of 511.01 Lakh tonnes achieved during 2021-22. Further, it is also higher by 92.79 Lakh tonnes than the average production. Production of Shree Anna is estimated at 173.20 Lakh tonnes. Total **pulses** production during 2022-23 is estimated at 260.58 Lakh tonnes which is higher by 14.02 Lakh tonnes than the last five years' average pulses production of 246.56 Lakh tonnes.

Total **oilseeds** production in the country during

2022-23 is estimated at record 413.55 Lakh tonnes which is higher by 33.92 Lakh tonnes than the oilseed production during 2021-22. Further, the production of oilseeds during 2022-23 is higher by 73.33 Lakh tonnes than the average oilseeds production of 340.22 Lakh tonnes.

Total production of **sugarcane** in the country during 2022-23 is estimated at 4905.33 Lakh tonnes. The production of sugarcane during 2022-

23 is higher by 511.08 Lakh tonnes than the previous year sugarcane production of 4394.25 Lakh tonnes. Production of **cotton** is estimated at 336.60 Lakh bales (of 170 kg each) is higher by 25.42 Lakh bales than the previous year's cotton production. Production of **jute & mesta** is estimated at 93.92 Lakh bales (of 180 kg each).

The data on area, production and yield of major crops from the year 2020-21 to 2022-23 is given in the table below:

Table-4
Area, production and yield of major Crops

Crops	Area (Lakh hectare)			Production (Lakh Tonnes)			Yield (kg/hectare)		
	2020-21	2021-22	2022-23	2020-21	2021-22	2022-23	2020-21	2021-22	2022-23
Rice	457.69	462.79	478.32	1243.68	1294.71	1357.55	2717	2798	2838
Wheat	311.25	304.59	314.01	1095.86	1077.42	1105.54	3521	3537	3521
Nutri / Coarse cereals	241.18	227.00	240.70	513.24	511.01	573.19	2128	2251	2381
Pulses	287.83	307.31	289.00	254.63	273.02	260.58	885	888	902
Foodgrains	1297.95	1301.69	1322.04	3107.42	3156.16	3296.87	2394	2425	2494
Oilseeds	288.33	289.15	302.39	359.46	379.63	413.55	1247	1312	1368
Sugarcane	48.51	51.75	58.85	4053.99	4394.25	4905.33	83566	84906	83349
Cotton@	132.86	123.72	129.27	352.48	311.18	336.60	451	428	443
Jute & Mesta#	6.62	6.67	6.58	93.55	101.49	93.92	2542	2738	2569

@ Production in Lakh bales of 170 kg each

Production in Lakh bales of 180 Kg. each.

Fig.-1
AREA: 2020-21 to 2022-23

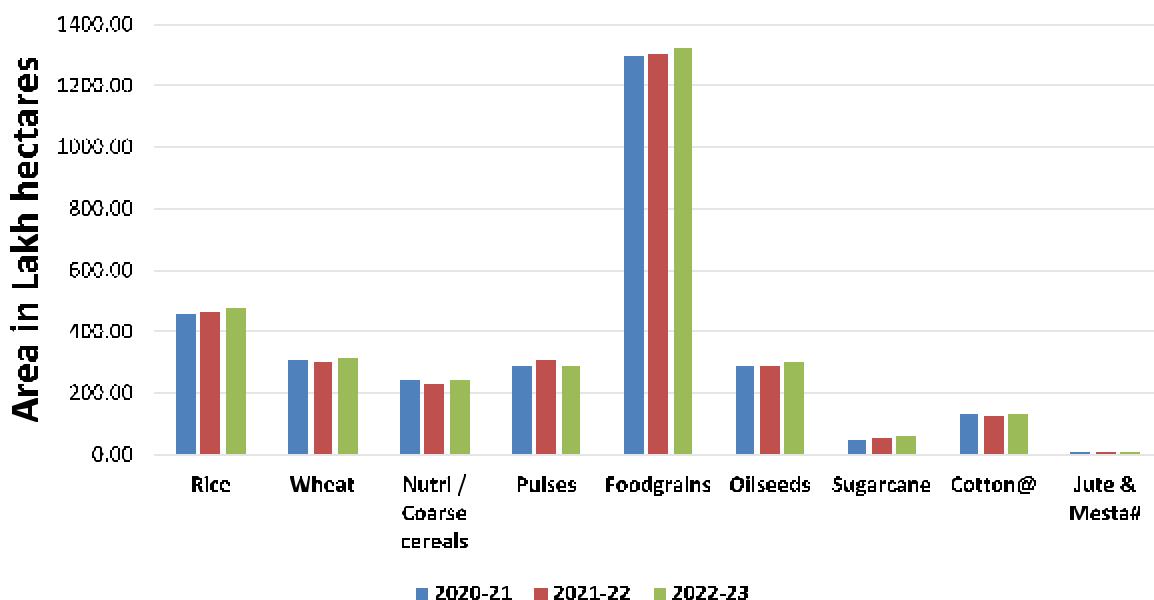


Fig.-2
PRODUCTION: 2020-21 to 2022-23

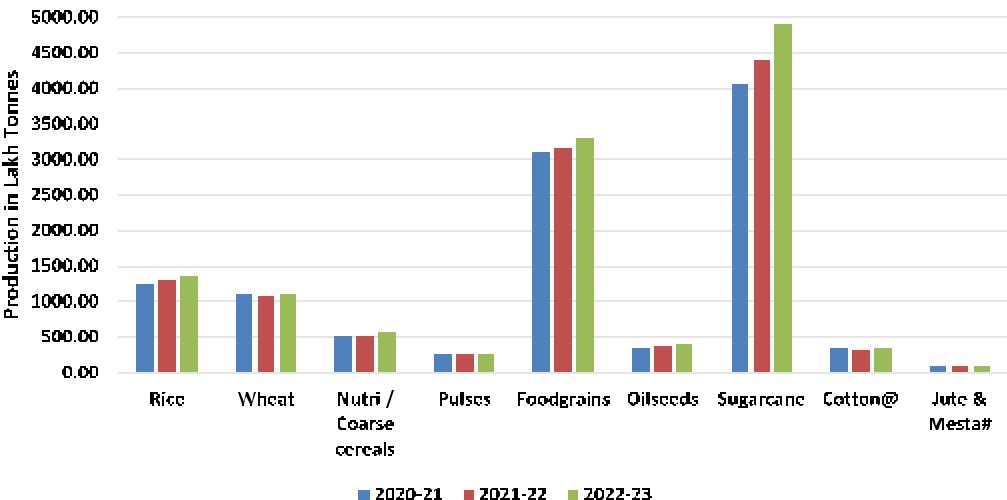
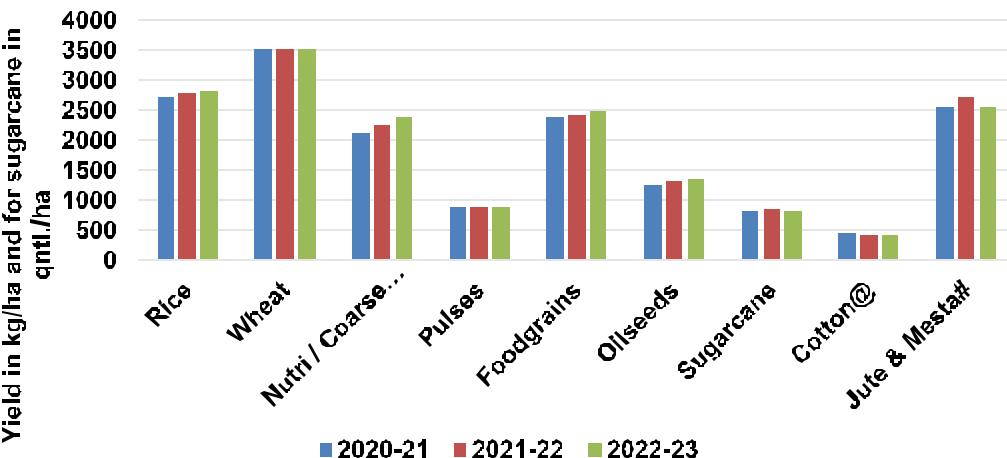


Fig.-3
YIELD: 2020-21 to 2022-23



1.7 Production Scenario during Kharif 2023-24 (as per First Advance Estimates)

As per First Advance Estimates for 2023-24 (Kharif Only), total foodgrain production in the country is estimated at 1485.69 Lakh Metric Tonnes. Area under Rice which is the major Kharif crop is estimated to be higher by around 2 Lakh Hectare over previous year final estimate and by around 4.5 Lakh Hectare over average Rice Area during last five years. Its production is also estimated to be higher by about 1 lakh tonnes as compared to average Kharif Rice production during last five years.

Other cereal crops area such as Kharif Maize and Jowar is also estimated to be higher as compared to previous year as well as average area under these crops during last five years. Kharif Maize

production is estimated at 224.82 Lakh Metric Tonnes as compared to average production of 213.51 Lakh Metric Tonnes during last five years registering an increase of about 11 Lakh Metric Tonnes.

For 2023-24, production of Kharif Nutri / coarse cereals is estimated at 351.37 LMT which is slightly higher than the average coarse cereals production of 350.91 LMT during last five years. The production of Shree Anna is estimated at 126.55 LMT during 2023-24.

The production of Tur is estimated at 34.21 LMT, which is approximately similar to the last year's production. Further, the area under Urad is estimated at 30.73 lakh hectares which is approximately similar to the last year's area of

30.98 lakh hectares. However, total Kharif pulses production for 2023-24 is estimated to be lower than previous year due to climatic conditions. Total Kharif pulses production during 2023-24 is estimated at 71.18 LMT.

Total production of sugarcane is estimated at 4347.93 LMT which is higher than average sugarcane production of 4222.55 LMT during last five years.

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 declared the MSPs for all mandated Kharif, Rabi and other commercial crops with a return of at least 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 MSP for all mandated Kharif crops of year 2023-24 on 7th June 2023, for all mandated Rabi crops of year 2023-24 on 18th October, 2023, MSP for Copra for 2024 season on 27th December, 2023, MSP for Raw Jute for 2023-24 season on 24th March, 2023 and MSP for toria for the year 2022-23 on 1st December, 2022.

Kharif Crops: MSP for Kharif Crops ranges from Rs. 8635 per quintal (sesamum) to Rs. 2090 per quintal (maize) for Kharif Marketing season (KMS) 2023-24. The highest absolute increase in MSP of Kharif crops for the year 2023-24 over the previous year has been recommended for sesamum (Rs. 805 per quintal) followed by moong (Rs. 803 per quintal). In case of cotton (long staple), cotton (medium staple), groundnut and arhar, there has been an increase of Rs 640 per quintal, Rs 540 per quintal, Rs 527 per quintal and Rs 400 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 (82%) followed by tur (58%), soyabean (52%) and urad (51%). For rest of the crops, return to farmers over their cost of production is estimated to be atleast 50%.

Rabi crops: Similarly, MSP for Rabi Crops ranges from Rs. 6425 per quintal (lentil) to Rs. 1850 per quintal (barley) for Rabi Marketing season (RMS) 2024-25. The highest absolute increase in MSP of Rabi Crops for the year 2023-24 over the previous year has been recommended for lentil (masur) at ₹ 425 per quintal followed by rapeseed & mustard at ₹ 200 per quintal. For wheat and safflower, an increase of ₹ 150 per quintal each has been recommended. For barley and gram an increase of ₹ 115 per quintal and ₹ 105 per quintal respectively, has been recommended. The expected return to farmers over their cost of production is estimated to be highest in case of Wheat (102%) and rapeseed/mustard (98%), followed by lentil (89%), gram (60%) and barley (60%) and safflower (52%).

Copra: For 2024 season, MSP of milling copra is fixed at Rs. 11160/- per quintal and for ball copra at Rs. 12000/- per quintal. The MSP provides margin of 51.84 percent of milling copra and 63.26 percent for ball copra over the all India weighted average cost of production estimated at Rs. 7350/- per quintal for 2024 season.

Raw Jute: For 2023-24 season, the MSP for raw jute (TDN3 equivalent to TD5 of old grade) is fixed at Rs. 5050/- per quintal. The MSP provides returns of 63.1 percent over the all India weighted average cost of production estimated at Rs. 3095/- per quintal for 2023-24 season.

Toria: MSP of Toria of Fair Average quality (FAQ) for

2024-25 marketing season is yet to be fixed. The MSP of Toria for RMS 2023-24 was fixed at Rs. 5450/- per quintal marking an increase of 7.9 percent over the previous season's MSP.

Statement showing Costs, MSPs and percent return over cost for the all mandated crops for the year 2021-22, 2022-23 and 2023-24 is enclosed.

Table-5
Cost, MSP and percentage return over cost

SL.No.	Commodity	2021-22			2022-23			2023-24		
		Cost*	MSP	% Return over Cost	Cost*	MSP	% Return over Cost	Cost*	MSP	% Return over Cost
1	PADDY(Commun)	1293	1940	50	1350	2040	50	1455	2183	50
	(Grade A) ^		1960			2060		-	2203	
2	JOWAR (Hybrid)	1825	2738	50	1977	2970	50	2120	3180	50
	(Maldandi) ^		2750			2990		0	3225	
3	BAJRA	1213	2250	85	1268	2350	85	1371	2500	82
4	RAGI	2251	3377	50	2385	3578	50	2364	3846	50
5	MAIZE	1246	1870	50	1308	1962	50	1394	2090	50
6	ARRHAN(Tur)	3886	6300	62	4131	6600	60	4414	7000	53
7	MOONG	4850	7275	50	5167	7755	50	5705	8538	50
8	URAD	3816	6300	65	4155	6600	59	4392	6950	51
9	COTTON (Medium Staple)	3817	5726	50	4053	6080	50	4411	6620	50
	(Long Staple) ^		6025			6380			7020	
10	GROUNDNUT IV SHRL	3696	5550	50	3873	5850	51	4251	6377	50
11	SUNFLOWER SEED	4010	6015	50	4113	6400	56	4505	6760	50
12	SOYABEAN	2633	3950	50	2805	4300	53	3029	4600	52
13	SESAME	4811	7307	50	5220	7030	50	5755	8635	50
14	NIGERSERO	4620	6930	50	4858	7287	50	5155	7734	50
	RABI CROPS									
1	WFRAT	1008	2015	100	1055	2125	100	1128	2275	102
2	BARLEY	1019	1635	60	1082	1735	60	1158	1850	60
3	GRAM	3004	5230	74	3206	5335	66	3400	5440	60
4	MASUR (Lentil)	3079	5500	79	3239	6000	85	3405	6425	89
5	RAPESEED/MUSTARD	2523	5030	100	2670	5450	104	2855	5630	98
6	SAFFLOWER	3627	5441	50	3765	5650	50	3807	5800	52
7	TORIA ^		5050			5150				
	OTHER CROPS									
1	COPRA (Milling)	6805	10335	52	694	10590	52	7153	10860	52
	(Ball) ^		10600			11000			11750	64
2	DE-HUSKED COCONUT ^		2800			2860			2930	
3	JUTE	2832	4500	59	2959	4750	61	3095	5030	63

* 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 sets etc., miscellaneous expenses and imputed value of family labour.

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

MSPs of Toria and De-husked coconut are determined on the basis of MSPs of Rapeseed/ Mustard and Copra respectively.

1.9 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. Income support to farmers through PM KISAN
- ii. Pradhan Mantri Fasal Bima Yojana (PMFBY)
- iii. Institutional credit for agriculture sector
- iv. Fixing of Minimum Support Price (MSP) at one-and-a half times the cost of production
- v. Promotion of organic farming in the country

- vi. Per Drop More Crop
- vii. Micro Irrigation Fund
- viii. Promotion of Farmer Producer Organisations (FPOs)
- ix. National Beekeeping and Honey Mission (NBHM)
- x. Agricultural Mechanization
- xi. Namo Drone Didi
- xii. Providing Soil Health Cards to farmers
- xiii. Setting up of National Agriculture Market (e-NAM) extension Platform
- xiv. Launch of the National Mission for Edible Oils – Oil Palm
- xv. Agri Infrastructure Fund (AIF)
- xvi. Improvement in farm produce logistics, Introduction of Kisan Rail.
- xvii. Mission for Integrated Development of Horticulture (MIDH)-Cluster Development Programme:
- xviii. Creation of a Start-up Eco system in agriculture and allied sector
- xix. Achievement in Export of Agri and Allied Agri-Commodities

3. All these policies & programmes are being supported by higher budgetary allocations of Department of Agriculture & Farmers Welfare. In the Fiscal year 2013-14, when the Ministry of Cooperation, Department of Animal Husbandry and Dairying, and Department of Fisheries were integral parts of the Ministry of Agriculture and Farmers Welfare, the total budget allocation was a mere Rs. 30,223.88 crore. Despite the subsequent separation of these ministries/ departments, the total budget allocation for the Ministry of Agriculture and Farmers Welfare has witnessed a substantial increase, reaching Rs. 1,25,035.79 crore (Rs. 1,15,531.79 crore for DA&FW and Rs. 9,504 crore for DARE) in the financial year 2023-24. Budgetary allocations for other line Departments / Ministries, non-budgetary financial resources such as creating Corpus Funds like Micro Irrigation Fund, Agriculture Infrastructure Funds, PM Matanya 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) - In order to address the existing infrastructure gaps and mobilize investment in agriculture infrastructure, Agri Infra Fund was launched under Aatmanirbhar Bharat Package. AIF was introduced with a vision to transform the agriculture infrastructure landscape of the country. The Agriculture Infrastructure Fund is a medium - long term debt financing facility for investment in viable projects for post-harvest management infrastructure and community farming assets through interest subvention and credit guarantee support. 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, Rs. 1 Lakh Crore will be provided by banks and financial institutions as loans with interest subvention of 3% per annum and credit guarantee coverage under CGTMSE for loans up to Rs. 2 Crores. Further, each entity is eligible to get the benefit of the scheme for up to 25 projects located in different LGD codes.

Eligible beneficiaries include Farmers, Agri-entrepreneurs, Start-ups, Primary Agricultural Credit Societies (PACS), Marketing Cooperative Societies, Farmer Producers Organizations (FPOs), Self Help Group (SHG), Joint Liability Groups (JLG), Multipurpose Cooperative Societies, Central/State agency or Local Body sponsored Public Private Partnership Projects, State Agencies, Agricultural Produce Market Committees (Mandis), National & State Federations of Cooperatives, Federations of FPOs (Farmer Produce Organizations) and Federations of Self Help Groups (SHGs).

Eligible Projects

The scheme will facilitate setting up and modernization of key elements of the value chain including-

(A) Post Harvest Management Projects like:-

Supply chain services including e-marketing platforms, Warehouses, Silos, Pack houses, Assaying units, sorting & grading units, Cold chains, Logistics facilities, Primary processing centers, Ripening Chambers

(B) Viable projects for building community farming assets including -

- (I) Organic inputs production
- (ii) Bio stimulant production units
- (iii) Infrastructure for smart and precision agriculture.
- (I) For individual beneficiaries as well as Farmers' Communities such as FPOs, PACS, SHGs, JLGs, Cooperatives, National and State Level Federation of Cooperatives, FPOs federations, Federations of SHGs, National and State Level Agencies etc.
 - a. Farm/Harvest Automation
 - b. Purchase of drones, putting up specialized sensors on field, blockchain and AI in agriculture etc.
 - c. Remote sensing and Internet of Things (IOT) such as automatic weather station, Farm advisory services through GIS applications.
 - d. Integrated spirulina production and processing unit.
 - e. Sericulture processing unit.
 - f. Honey Processing unit.
 - g. Plant Quarantine unit.
 - h. PM Kusum - Component B and C
- (II) Only for FPOs, PACS, SHGs, JLGs, Cooperatives, National and State Level Federation of Cooperatives, FPOs federations, Federations of SHGs, National and State Level Agencies etc. as they qualify as community farming assets.

1. Hydroponic Farming.
 2. Mushroom farming
 3. Vertical farming.
 4. Poly house/ Greenhouse.
- (iv) Projects identified for providing supply
- (v)
- chain infrastructure for clusters of crops including export clusters.
- Projects promoted by Central/ State/ Local Governments or their agencies under PPP for building community farming assets or post-harvest management projects.

Nation-wide Progress under the scheme

(Amount in Rs Crores)

SN	Particulars	Commercial Banks		PACS		Total	
		No.	Amount	No.	Amount	No.	Amount
1	Total Loan Sanctioned	39,396	30,113	5,656	3,159	45,052	33,272
2	Amount Covered under AIF Subvention	39,396	23,335	5,656	3,159	45,052	26,494
3	Amount Disbursed	34,682	20,149	5,380	749	40,062	20,898

As on 31st December, 2023, Rs. 33,272 Crores have been sanctioned for 45,052 projects under AIF, out of this total sanctioned amounts scheme benefits are extended for an amount of Rs 26,494 Crores. These sanctioned projects have mobilized an investment of Rs 56,576 Crores in agriculture sector.

Major projects sanctioned under AIF include 10886 warehouses, 9410 primary processing units, 1403

cold store projects, 2291 sorting & grading units, 10338 custom hiring centres, around 10724 other kinds of post-harvest management projects and community farming assets.

Year on Year Progress of the Scheme has also been promising and it is increasing over the period. Table given below highlights the progress of the scheme:-

Year	No. of Sanctioned Project	Investment in Infra Project (Crores)	Loan Sanctioned under AIF (Crores)
20-21	5682	4691	3838
21-22	5785	9613	5749
22-23	15973	24181	13031
23-24*	17612	18091	10654
Total	45052	56576	33272

* Up to 31st December'2023

Major Activities conducted during 2023-24

To increase the awareness and reach of the scheme, various activities like seminars, conclaves, meetings are arranged at different forums and results are also very promising. Some of the activities conducted during the Year 2023-24 has been given below:

- Participation in the "Pashu Mahotsav pradarsh inievam Prashikhsan" in Mujaffarnagar, Uttar Pradesh on 6th and 7th April 2023.
- Launch of AIF Social Media campaign "Main Bhi Krishipreneur" on 10th April 2023.
- Meeting with MoC, NABARD, FCI and CWC on Model DPR for PACS on 17th April 2023 and 18th April 2023.

- Capacity building Program (physical workshop) for State PMU, Tamil Nadu and district level officials on 20th April 2023.
- Meeting with State PMU, Kerala regarding streamlining PACS Applications under AIF Scheme on 27th April 2023.
- Discussion on the draft Cabinet Note on proposed changes and modifications in the AIF Scheme with Additional Secretary, PMO on 27th April 2023.
- Meeting of AIF team with PFMS team, Banks and CNA to discuss fund transfer mechanism to beneficiaries on 02nd May 2023.
- Participated in AGRI India Meet 3.0 on 03rd May

- 2023 to create awareness about AIF among Start-ups and Agri-entrepreneurs.
- Meeting with NIP team to discuss integration of AIF portal to National infrastructure Pipeline Dashboard on 04 May 2023.
 - Meeting with the officials from IDBI bank on 10.05.2023 to discuss AIF and future plan of action for implementation of the scheme.
 - Promoted AIF at Vibrant North East Summit by setting up Exhibition booth on 16th to 18th May 2023.
 - AIF conclave for NER organised in Assam on 17th May 2023.
 - Conducted workshop for banks in collaboration with the PFMS to discuss Fund transfer mechanism on 17th May 2023.
 - Meeting with State Nodal officer and State PMU of Assam to discuss scope, issue and performance under AIF in NER on 18th May 2023.
 - Workshop for officials of IDBI bank to discuss the potential, performance and target areas for AIF in the Delhi Rajasthan circles on 26th May 2023.
 - Video Interview with the AIF beneficiary for the development of Promotion material on 30th May 2023.
 - AIF Conclave and Felicitation Program in the State of Punjab on 02 June 2023.
 - Meeting with Punjab PMU for capacity building and discuss scheme related issue on 05th June 2023.
 - Meeting with PFMS to discuss operation issues with CNA on 06th June 2023.
 - Virtual Training Session for State officials of Telangana on 14th June 2023.
 - Meeting with Tea Inntech Services Pvt. Ltd. to discuss scope of e-marketing platform for tea manufacturers in Assam and West Bengal on 14th June 2023.
 - Meeting through VC with the Tamil Nadu PMU on 15th June 2023 to review the progress and discuss issues in scheme implementation.
 - Meeting through VC with the Punjab PMU on

- 15th June 2023 to review the progress and discuss issues in scheme implementation.
- Meeting through VC with the PMFME N-PMU on 16th June regarding implementation of second phase on portal integration.
 - Meeting with the IT team of GOBARdhan scheme on 17th June 2023 discuss key data points for portal integration.
 - Meeting with NABARD IT Team held on 27th June, 2023 regarding automizing the calculations of scheme benefits.
 - Virtual Training Session for officials of Tamil Nadu on 27th June, 2023 to develop better understanding about AIF portal, MIS, Dashboard, Report generation and key progress monitoring parameters.
 - Meeting through VC with the Telangana state PMU on 27th June, 2023 to discuss about the report template and key data points for monitoring of scheme at state level.
 - Meeting with IT Vendor-NABARD on 5th and 6th July, 2023 for discussion regarding automation of claim submission on AIF Portal.
 - Meeting with officials of M/s Octane worldwide coffee Pvt limited on 7th July, 2023 to discuss possibilities of creation of infrastructure for 50+ spices supplier under AIF.
 - Discussion with Chief Executives of Leading Banks and Launch of BHARAT Campaign under the Chairmanship of The Secretary, MOA & FW on 12th July, 2023 on Launching of the BHARAT Campaign (15th July to 15th August'2023).
 - Participated in the stakeholder workshop for MOVCDNER (Mission Organic Value Chain Development for North Eastern Region (MOVCDNER) on 14th July, 2023.
 - Meeting with General Manager Cum AIF Incharge of IDBI Bank on 19th July, 2023 for discussion on the performance of IDBI Bank, issues faced and way forward strategies to scale up the progress of AIF.
 - Review of AIF by Additional Secretary on 21st July, 2023 for review of the performance and achievements of AIF and discussion on future

strategies and plan of action for improving the scheme's reach and numbers.

- Participation at Horticulture Expo, Pragati Maidan from 21st to 23rd July,2023 for spreading Awareness about the scheme benefits, features and opportunities for farmers and Agri-entrepreneurs under AIF.
- Training Program For Banks on 25th July,2023 for Training of Bank Officials on Online Claim Submission.
- Workshop on AIF to the Rural Development Officers and Agri Loan Processing Officials organised by UBI Zonal Office -Telangana State on 28th July,2023 for Spreading Awareness about the scheme benefits, features, and opportunities for farmers and Agri-entrepreneurs under AIF.
- Workshop focused on "Upscaling Digital Innovations in Agricultural Supply Chain organised by ICAR-National Institute of Agricultural Economics and Policy Research (NIAP) on 31st July,2023.
- Discussion with AERC Pune under the Chairmanship of Additional Secretary, MOA&FW on 3rd August,2023 for Discussion regarding impact assessment study of AIF.
- Discussion with AERC Pune on 04th August,2023 for Detailed discussion on scheme guidelines, progress and major concerns for impact assessment study with the Team AERC,Pune.
- Online session on AIF for Startups and Agripreneurs in association with Pusa Krisha on 07th August,2023 to To spread awareness on AIF ,its features and how AIF can help the new Startups and Agripreneurs in their growth journey.
- On the occasion of the completion of 3 years of @agriinfrafund, an interactive video conference was conducted on AIF scheme features with 100+ Agripreneurs Farmers, FPOs, SHGs, PACs, Bankers, DDMs & NABARD officials in order to create awareness nationwide on 09th August,2023.
- Meeting with state PMUs under the

chairmanship of JS for assessment of AIF through APURVA AI on 18th August,2023 To understand the working model of APURVA AI through a presentation made by Sh. Anand Rajan, Chief platform advisor, Ekstep foundation.

- Meeting with NIP team on 18th August,2023 To discuss about the form/template developed by NIP team for onboarding of AIF projects on the NIP portal.
- Virtual workshop with lending institutions on the new functionalities of the AIF portal. On 05th September To inform and sensitize lending institutions on the new developments and functionalities on the AIF Portal.
- Workshop by MoA&FW on the convergence of MOVCDNER with other schemes. State officials from NER states along with FPCs joined the workshop. From AIF,Shree K R Meena, Director MoA&FW presented for AIF on 05th September,2023
- Online Performance review of HDFC Bank and Bank of Baroda Bank on 16.10.2023 regarding achievement in the FY 2023-24 and plan of action to improve the numbers including timely disposals of the applications pending at the banklevel.
- Online Performance review of Kotak bank and Indian Bank on 17.10.2023 regarding achievement in the FY 2023-24 and plan of action to improve the numbers including timely disposals of the applications pending at the banklevel.
- Online Performance review of Punjab and Sindh Bank on 18.10.2023 regarding achievement in the FY 2023-24 and plan of action to improve the numbers including timely disposals of the applications pending at the banklevel.
- An Online Capacity Building Program was held with the officials of Indian Bank on 19.10.2023. The program highlighted the basics of AIF Scheme, its features, benefits and progress of Indian Bank.
- Online Performance review of IDBI Bank and Bank of Maharashtra on 19.10.2023 regarding

- achievement in the FY 2023-24 and plan of action to improve the numbers including timely disposals of the applications pending at the banklevel.
- Online Performance review of Bank of India and Yes Bank on 20.10.2023 regarding achievement in the FY 2023-24 and plan of action to improve the numbers including timely disposals of the applications pending at the banklevel.
 - Online Performance review of Canara Bank and UCO Bank on 26.10.2023 regarding achievement in the FY 2023-24 and plan of action to improve the numbers including timely disposals of the applications pending at the banklevel.
 - Online Review of State PMU for the state of Uttar Pradesh on 27.10.2023 regarding achievement in the FY 2023-24 and plan of action to improve the numbers including timely disposals of the applications pending at the banklevel.
 - Online meeting with the Nodal officers of all Banks and other lending institutions on 27.10.2023 ,discussion on progress of AIF with the special thrust on clearing of Pending applications lying with Lending Institutions.
 - VC session with the State Nodal Officer ,SLBC and top Executives of Banks in UP State on 01.11.2023, discussion on the progress in the FY 2023-24 and Analysis of Bank wise performance in the State of UP was conducted.
 - Participation in the Meeting on the findings of Impact Assessment done on AIF on 02.11.2023 regarding progress of Impact Assessment done on AIF.
 - Participation in the 3-Day Exhibition on the World Food India 2023 event at Pragati Maidan on 03.11.2023.
 - Participation in the 3-Day Exhibition on the Agri Horti Expo 2023 event at Dilli Haat, Pitampura, New Delhi on 03.11.2023.
 - Meeting with the Agency representative engaged by NABARD on 09.11.2023 regarding discussion regarding Implementation of Online Claim submission and Review of the progress so far.
 - VC session with the State Project Monitoring Units (SPMUs) of Haryana, Telangana, WB, H.P, Kerala & Odisha on 20.11.2023 regarding Discussion on the progress of AIF Scheme in the FY 2023-24 and strategy to achieve the annual targets.
 - VC session with the State Project Monitoring Units (SPMUs) of Punjab, MP, Maharashtra, Uttarakhand, Bihar and Jharkhand on 21.11.2023 regarding Discussion on the progress of AIF Scheme in the FY 2023-24 and preparation of roadmap to achieve the annual targets.
 - Video Conference with the Nodal Officers of all Regional Rural Banks on 22.11.2023 regarding Review of performance of RRBs and interaction with them on strategy to achieve the annual AIF targets.
 - Meeting with the Agriculture Department, Government of Himachal Pradesh at Shimla on 23.11.2023 regarding Review of arrangement for holding the Himachal Pradesh State AIF Conclave scheduled for 24.11.2023.
 - Participating in the AIF Himachal Pradesh State Conclave at Shimla on 24.11.2023 for addressing the various stakeholders and holding Technical session with the top Banks Officials of State at the Himachal Pradesh State AIF Conclave
 - VC Meeting with HDFC Bank, Axis, Kotak Mahindra, ICICI, IDBI, Karnataka Bank, Yes Bank, Federal Bank, AU Bank, Indus Ind Bank, Karur Vysya Bank on strategy to achieve annual targets.
 - Participation in the “AGROTECH-2023” - State Level Mega Agriculture Exhibition and Krishi Mahotsav at Akola (Maharashtra) which was organised jointly by State Department of Agriculture and ATMA, Akola during 27th to 29th December, 2023.

Some Snapshots of the activities conducted during 2023-24



Launch of AIF Social Media campaign “Main Bhi Krishipreneur” on 10th April 2023.



AIF @ International Agri & Horti Expo 2023, Pragati Maidan



AIF @ AIF Punjab Conclave



AIF @ Vibrant North East, Assam



AIF @ World Food India, Pragati Maidan



AIF @ Agri & Horti Expo 2023, Delhi Haat, Pitampura

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)” under **Aatma Nirbhar Bharat Announcement** for overall promotion and development of scientific beekeeping and to achieve the goal of “Sweet Revolution” in the country with total budget outlay of Rs. 500.00 crores for 3 years (2020-21 to 2022-23) and the scheme has been further extended for three years, i.e., 2023-24 to 2025-26, with the remaining available budget of Rs. 370.00 crores from the allocated budget of Rs. 500.00 crores. The scheme is being implementing through 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,

Distribution of Bee Colonies a new Component 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 SanraksHan Abhiyan” (PM-AASHA)

Investment and Price Support Division of this Department implements umbrella scheme of Pradhan Mantri Annadata Aay SanraksHan Abhiyan” (PM-AASHA) comprising Price Support Schee (PSS), Price Deficiency Payment Scheme (PDPS) and Private Procurement and Stockist Scheme (PPSS). Under PM-AASHA, States / UTs are offered to choose either PSS and 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 areas 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

The performance of the agriculture sector remains critical to growth and employment in the country. Investment in the sector must be encouraged through an affordable, timely and inclusive approach to credit delivery. In this regard, the government announces an annual target for Agriculture Credit in the budget annually. Agricultural credit flow has shown consistent progress every year. The agriculture credit flow target for the year 2022-23 was fixed at Rs. 18,50,000 crore, and against this target, the achievement was Rs. 21,87,413 crore. The agriculture credit flow target for 2023-24 has been fixed at Rs. 20,00,000 crore.

1.12 Modified Interest Subvention Scheme (MISS)

To ensure that the farmers pay a minimal interest rate to the banks, the department has introduced the Interest Subvention Scheme (ISS), now renamed Modified Interest Subvention Scheme (MISS), to provide short-term Agri-loans to farmers at concessional interest rates. Under the scheme, farmers are given an upfront interest subvention of 1.5%. Therefore, short-term crop loans up to Rs. 3.00 lakh are available to farmers engaged in agriculture and other allied activities at an interest rate of 7%. An additional 3% prompt repayment incentive (PRI) is also given to the farmers for prompt and timely repayment of loans; thus, the effective interest rate comes down to 4% per annum.

1.13 Kisan Credit Card (KCC)

Safeguarding and ensuring hassle-free credit availability at a cheaper rate to farmers has been the top priority of this department. Accordingly, the Kisan Credit Card Scheme (KCC) was introduced for farmers to provide farmers with easy access to

affordable credit for their agricultural needs so as to meet short term/long term cultivation requirements, postharvest expenses, consumption requirement etc. The KCC aims at providing adequate and timely credit support from the banking systems to the farmers for their cultivation and other needs like post-harvest expense; provide marketing loan; consumption requirement of farmers' household; working capital for maintenance of farm assets and activities allied to agriculture; investment credit requirement for agriculture and allied activities. In addition, KCC is also available for agriculture and allied activities like Animal Husbandry, Dairying and Fisheries etc.

1.14 Kisan Rin Portal (KRP)

The portal has been developed by this department and helps farmers avail of subsidised loans under the KCC. It offers a comprehensive view of farmer data, loan disbursement specifics, interest subvention claims, and scheme utilisation progress. It fosters seamless integration with banks for more focused and efficient agriculture credit.

1.15 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, 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 mustard, safflower, niger seed 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

Cost of production (CoP) is one of the important factors in the determination of MSP of mandated crops. Besides cost, the Commission considers other important factors such as demand and supply, price trends in the domestic and international markets, intercrop price parity, the likely effect 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 in case of MSPs and reasonable margin over cost of production in case of FRP.

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. 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 one Special Secretary, five Additional Secretaries including one Financial Adviser, 10 Joint Secretaries, one 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 27 divisions (Annexure-2.1) and has four 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. One

disciplinary proceeding against Shri K.C Meena, Fertilizer Inspector, RCOF, Mumbai has been disposed of during the year. 17 old complaints have been carried from previous year while 46 new cases were received during the year. Out of these, 32 cases including some previous complaints have been finalized/disposed of till date of 2023. Further, 232 public grievance cases have been addressed/finalized till date. 05 RTI's cases and 01 appeals have been processed and disposed of within the prescribed time limit. 10 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 List of Officers of Doubtful Integrity (ODI) and the Agreed List, 2023 for the year 2023 in respect of this Department has also been finalized.

2.6 As per direction of CVC, Vigilance Awareness Week, 2023 has been observed in the Department from 30th October, 2023 to 05th November, 2023. The theme of the week was “भ्रष्टाचार का विरोध करें; राष्ट्र के प्रति समर्पित रहें” - “Say no to corruption; commit to the Nation”. During the Vigilance Awareness Week, integrity pledge was administered by Secretary(DA&FW) to all officials/officers of this Department on 30th October, 2023. Further, a written examination on CCS(Conduct) Rule, 1964, CCS(CCA) Rules, 1965 and prevention of sexual harassment of women at work place was also held on 2nd November, 2023 in which 48 officials/officers participated.

2.7 A Public Grievance Cell has been set up and is fully functional in the Department of Agriculture, Cooperation & 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 2023-24 (from 01.04.2023 to 31.12.2023) 87599 public grievance petitions/suggestions have been received through CPGRAMS portal and 8319 cases were carried forward from previous year, out of 95918 total cases, 92394 cases have been disposed of and 1527 cases were pending in this Department at the end of December, 2023.

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 2023-24 (as on 31.12.2023), 3355 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 2023-24, 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 participants are rewarded 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-29th September, 2023. 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 by the Secretary.

2.15 The Second Sub-Committee of the Committee of Parliament on Official Language conducted inspection of 18 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, 7 subordinate/attached offices have been inspected by the officers of the Hindi Division of the Department of Agriculture and Farmers Welfare.

2.16 Apart from this, the Department of Agriculture and Farmers Welfare was selected for the third award for the Official Language Kirti Puraskar for the year 2022-23 under the category of departments with more than 300 employees and the shield was awarded in the third Official Language Conference held in Pune on the occasion of Hindi Day on 14th September, 2023 by the Honorable Minister of State for Home, Shri Ajay Mishra to director (O.L.) of representative of this department.

2.17 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.

2.18 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 woman officer of the Department.

Chapter-3

ECONOMICS, STATISTICS & EVALUATION DIVISION

Overview

3.1 Economics, Statistics and Evaluation Division, previously known as Directorate of Economics & Statistics (DES) erstwhile an attached office of DAC&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 Division is mandated to build and maintain a strong database 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. Economics, Statistics & Evaluation Division collects price data through its regional offices and regularly analyses the same to identify trigger points for policy intervention towards stable food prices. ESE Division 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 Division 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 Agricultural Statistics (AS) Section, (ESE Division) within the Department of Agriculture and Farmers' Welfare releases a series of four crop production estimates for 28 major agricultural crops, which include rice, wheat, coarse cereals, pulses, oilseeds, sugarcane, cotton, Jute & Mesta. These estimates are available at both the state and national levels.

The First Advance Estimates (AEs) focuses on kharif

crops only, which is released in October, once the kharif sowing season has concluded. Second Advance Estimates covering both kharif and rabi crops, are usually published in February of the following year, coinciding with the end of the rabi sowing period. Third Advance Estimates released in May, incorporates revised data on rabi crop acreage and more precise yield estimates for kharif crops. Additionally, they include estimates for summer crops. Final Estimates are typically released in September / October. At this point, states are expected to have provided comprehensive data on both kharif, rabi and summer crop area and yields.

When compiling the All-India level estimates, the data on crop area, production, and yield received from State Governments undergo a rigorous validation process. This validation is based on information obtained from various alternative sources, such as remote sensing based forecast from the Mahalanobis National Crop Forecast Centre (MNCFC), Econometric modeling based crop forecast provided by the Institute of Economics Growth (IEG), inputs received from the weekly Crop Weather Watch Group (CWWG) meetings, previous trends in area, production and yield, yield expectation information received through Farmers Survey and yield data received through supervised CCE sample yield of NSSO.

Unified Portal for Agricultural Statistics (UPAg) is an advanced agricultural data management platform designed to generate crop estimates and integrate with other systems generating Agriculture Statistics such as price, trade, procurement, stock etc. It serves as a centralized hub for near real time information on crop production, market trends, pricing, and other vital agricultural data.

Improvement of Agricultural Statistics (IAS) is a component of Agriculture Economics & Statistics categorized under "Other Central Expenditure" under which 100% financial Assistance is given to States/UTs for payment of salaries, travel expenses,

honorarium etc. by the Central Govt. The basic objective of Improvement of Agricultural Statistics is to collect and improve agricultural statistics such as area/yield/production of principal agricultural crops. Improvement of Agricultural Statistics (IAS) has three sub components; (i) Timely Reporting Scheme (TRS), (ii) Improvement of Crop Statistics (ICS) and (iii) Establishment of an Agency for Reporting of Agricultural Statistics (EARAS). The sub component-wise details of the scheme are as under:-

Timely Reporting Scheme (TRS): The objective of TRS 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, Jammu & Kashmir and Puducherry.

Improvement of Crop Statistics (ICS): The objective of ICS is to improve the quality of statistics on area and production of crops through supervision and monitoring. Under this sub 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, Jammu & Kashmir and Puducherry. The performance of the implementation of ICS component is also being closely monitored through Quarterly and Seasonal progress Reports.

Establishment of an Agency for Reporting of Agricultural Statistics (EARAS): This sub Component is being implemented in the permanently settled States of Kerala, Odisha and West Bengal and North Eastern States of Nagaland, Sikkim, Arunachal

Pradesh and Tripura. Under EARAS sub 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.

During the financial year 2023-24 under Improvement of Agricultural Statistics Scheme against total allocation of Rs. 109.05 Crores (BE), Rs. 76.69 Crores have been released till 31st December, 2023

- Activities Undertaken for Welfare of Women and North- Eastern State- Main objective of the component is to collect and compile agricultural statistics and it is not a welfare-oriented programme, 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. During the financial year 2023-24, Rs. 7.96 Crore (up to 31.12.2023) have been released to NES under the Scheme.
- Two Day Training Programme on Mobile Application & Web Portal for General Crop Estimation Survey (GCES)- Economics, Statistics & Evaluation Division (ES&ED) has developed mobile application & web portal for recording Crop Cutting Experiments (CCEs) conducted under the general crop estimation survey (GCES) and generation of yield estimation in order to digitise the Crop Cutting Experiments (CCEs) GCES. The Web Portal & Mobile Application were officially launched by Secretary (DA&FW) on 21.09.2023. Since the pilot rollout of the application was scheduled for ongoing kharif season 2023-24 in few selected states, a two days training programme of masters trainers nominated by states Government was organised on 05.10.2023 and 06.10.2023 in Lecture Hall, NASC Complex, Pusa New Delhi.
- Some Photos of the Training Programme are annexed.



3.2.2 Cost Study Section:

The Cost of Cultivation of principal crops in India is being implemented in India since 1970-71. The main objectives of the component 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.

1. Comprehensive cost statistics in respect of Principal crops are collected through 19 Agricultural/Central/General Universities located in different States; cost of cultivation data is transmitted to the CACP so as to enable them to recommend the MSPs of the mandated crops with regard to Kharif and Rabi Seasons.
2. The cost estimates generated under the Schemes are also used for research purposes 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 2023-24 to 2025-26, 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 field staff through direct interaction with the sample farmers of 06 selected farm holdings as per the sampling design in each village. Six operational holdings in a village consist of 2 each from 3 different size classes, viz., 0 to 1 hectare, 1-2 hectare, 2 and above.
7. In the financial year 2022-23, 195 cost estimates were generated and provided to CACP. Out of 195 estimates, 45 for Rabi, 122 for Kharif, 07 for Onion, 07 for Potato, 07 for Sugarcane, 03 for Jute and 04 for Coconut were generated in respect of 25 mandated crops.

3.2.3 Food Economics Section :

FE Section examines price policy reports of Kharif crops, Rabi crops, Copra and Raw Jute recommended by 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 Section is involved in declaration of

the MSP of Toria based on price differentials of toria and rapeseed/mustard.

3.2.4 Special Data Dissemination Standards (SDDS) Section

The Section 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 statistics is brought out in the 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 district wise compiled data on Area, Production and Yield (APY) and Land Use Statistics (LUS) from 1998-99 onwards are also available on the website 'data.desagri.gov.in'. 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) Section

The AER Section handles matters related to (i) Agro-Economic Research and (ii) Publication.

(I) AER

"Agro-Economic Research (AER)" an independent component of 'Agriculture Economics & Statistics' is categorized under Other Central Expenditure. This was initiated in 1954-55 through a network of 15 AER Centres/Units. A total of 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. This component is staff oriented and 100% funded through Grants-in-Aid by the Government of India, the Ministry of Agriculture & Farmers Welfare.

The 15 AER Centres /Units function/operate under the administrative control of their respective University/Institute. These AERCs/Us conducts research and evaluation studies annually on various

important and emergent issue/(s) of agricultural economy and allied sectors as per the need of the Agriculture Ministry and its allied Ministry.

Objectives of the AER are:

- To study specified agro-economic issues at the macro and micro levels;
- To conduct continuous studies on changes in the rural economy through periodic surveys of selected villages;
- To conduct research on structural changes and fundamental problems of agricultural and rural economy; and
- To give technical advice to the Governments based on the studies allotted to AERCs/Us.

Annually, on an average around 20 research studies are conducted by these Centres /Units, relating to various agro-Economics issues in agriculture, animal husbandry, water management, fisheries & horticulture, food processing, rural development etc. During last five years (2018-19 to 2022-23) more than 95 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, 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), Oilseeds, PM KISAN etc. During the year 2023-2024 till December 2023, 05 research studies have been completed by these AER Centres/Units.

For the current Financial Year 2023-2024 an amount of Rs 2669.60 lakhs has been allocated as Budget Estimate (BE) (including Rs.300.00 lakhs for Northeast regions). Out of which, Rs.1926.75 lakhs have been released including Rs.225.00 lakhs for Northeast regions till 31.12.2023.

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:

Table-6
PROGRAMMES OF NORTH-EASTERN STATES IN RESPECT OF
AGRO-ECONOMICS RESEARCH CENTRE – JORHAT

(Rs. In lakhs)

Name of Section: Agro-Economics Research Section					
Schemes/ Program Activities Approved	Details of Schemes/ Programs/ Activities taken up	Targets	Achievements	Funds Released from 2018-19 to 2023-24*	Funds Utilized from 2018-19 to 2023-24#
1	2	3	4	5	6
"Agro -Economics Research (AER) Scheme" an independent component of Agriculture Economics & Statistics'	AER Centre, Jorhat undertakes research studies on Agro -Economic issues of North Eastern States	There is no fixed target.	5 Studies completed by AER Centre, Jorhat during the Financial Year 2018 -19, to 2022-23.	1375.60	1386.38

Note: (*) Fund released, expenditure and studies completed till 31st December, 2023# Fund utilized till 31st December, 2023

(ii) The main role of the Publication Unit under AER Section is to carry out the printing and publication work of the Economics, Statistics and Evaluation Division. Primarily, this involves 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 of agricultural economics and allied sectors.

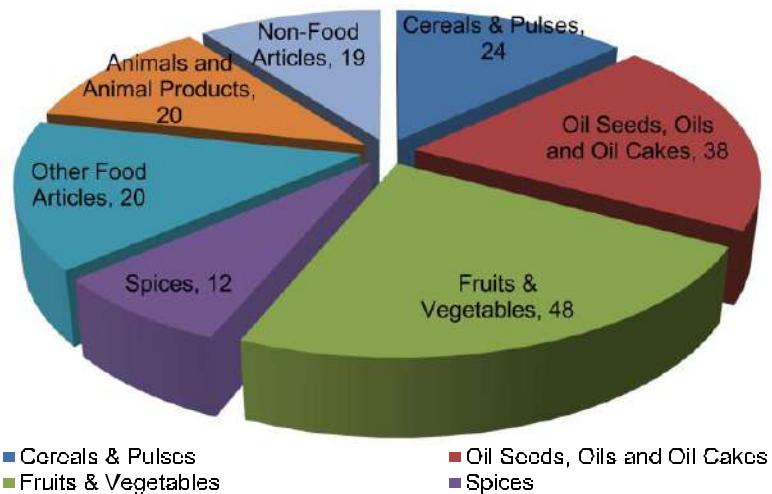
The journal covers information on multiple topics ranging from farm sector news, general survey of agriculture, commodity review with respect to food grain procurement, prices indices of commercial crops and agricultural commodities along with research articles and an agro-economics research. Agricultural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

(iii) AER also brings out the flagship publication of the Department, namely *Agricultural Statistics at a Glance*. This publication is widely used as a reference book for data on various aspects of agriculture and allied sector, including growth and investment in agriculture, crop production and

productivity across the states, Minimum Support Prices (MSP), cost of production, Terms of Trade (ToT), imports and exports, land use statistics, inputs, credit and crop insurance, food security, subsidy etc. During 2023, the latest 2022 issue of Agricultural Statistics at a Glance has been uploaded. This publication is available on the website <https://desagri.gov.in/> and hard copy is available at Department of Publication.

3.2.6 Price & Market Section

Prices & Market Section provides market intelligence to the Government and is involved in collection, compilation and dissemination of data/information on prices both wholesale and farm harvest prices of important agricultural commodities. Wholesale prices of 181 selected agricultural commodities from around 737 market centers spread across the country are collected and compiled on a 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 Section 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).

Fig 4 Number of agriculture commodities in WPI

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 section 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), 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. The Department has discontinued collating retail prices of agricultural commodities w.e.f 01.04.2023 to avoid duplication as retail prices are collected by other concerned Ministries.

This Section 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 section 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, the then 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 consists of Global Food Market Information Group and Rapid Response Forum to get timely market update and policy discussion. Department of Agriculture and Farmers Welfare, participated in 12th Session of the Agricultural Marketing Information System (AMIS), Rapid Response Forum held on 29 March 2023 in Chandigarh as part of the country's G20 Presidency. The Department has also participated in the Global Food Market Information Group meeting held in June 2023. 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 Section provides the required data to AMIS-FAO at regular intervals and coordinates the policy discussions.

3.2.7 Agricultural Wages Section

"Agricultural Wages Section 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:

- I. Field Labour: Ploughing, Sowing, Weeding, Reaping & Harvesting
- II. Other Agricultural Labour: Includes average wages of different operations like digging well, cleaning silt from waterways,

watering, carrying load, embankment, spraying pesticides, jute fiber extraction, cotton picking, herdsman & Others etc.

III. Non agricultural Occupations: Carpenter, Blacksmith & Mason.

IV. Tractor Driver

Data for these occupations are collected by the State Governments and supplied to Economics, Statistics & Evaluation Division, Ministry of Agriculture & Farmers Welfare on monthly basis. On the basis of furnished data, ESE Division 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.

3.2.8 Crop Forecasting Coordination Centre

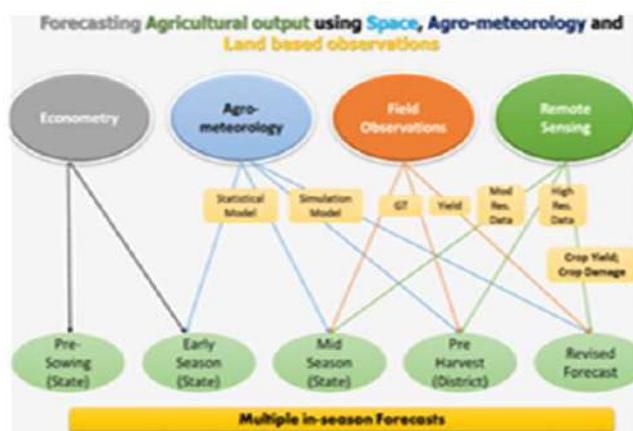
CFCC Section is coordinating the implementation of "Forecasting Agricultural Output using Space, Agro-Meteorology and Land Based Observations (FASAL)" project through partner organizations i.e. Mahalanobis National Crop Forecast Centre (MNCFC), New Delhi, India Meteorological Department (IMD), New Delhi and Institute of Economic Growth (IEG), New Delhi.

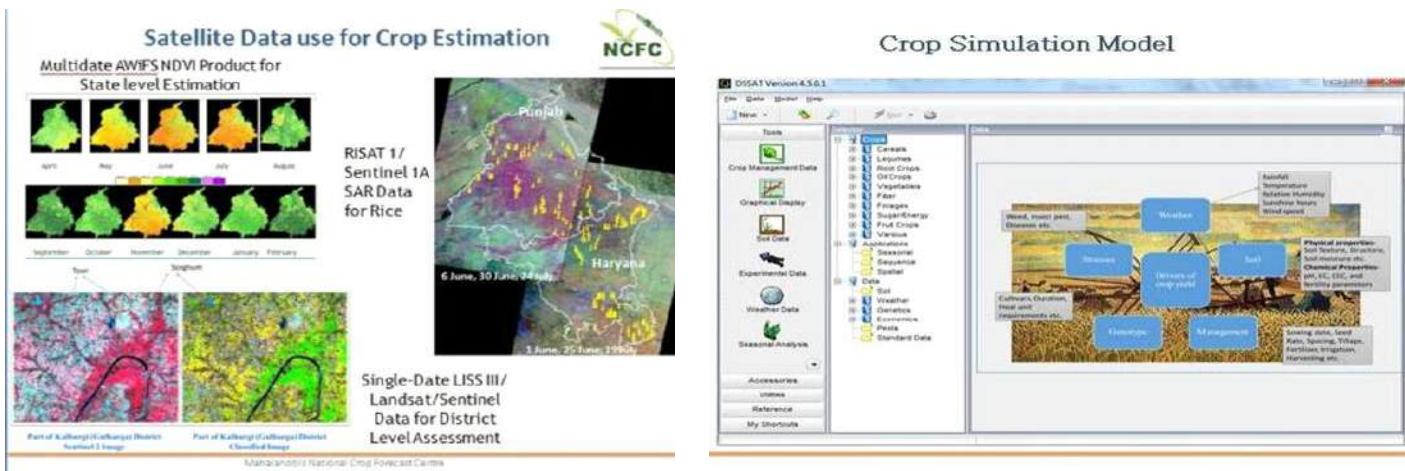
Besides, the Section is also involved in organization of weekly Crop Weather Watch Group (CWWG) meeting every Monday. Crop Weather Watch Group (CWWG) in the Economics, Statistics & Evaluation Division is an inter-departmental forum that undertakes weekly review of progress of crop sowing, weather conditions, 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 in the meeting. The CWWG data and report are uploaded on the DA&FW website every week. Objective of the project 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), pigeon pea/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 in respect of 18 crops on monthly basis. The Crops are: Rice (Kharif & Rabi), Wheat, Maize (Kharif & Rabi), Bajra, Jowar (Kharif & Rabi), Moong (Kharif & Rabi), Gram Masur (Lentil), Rapeseed & Mustard, 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, 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.





3.2.9 Coordination Section

The Coordination Section handles all kind of miscellaneous works including coordination between Department of Agriculture & Farmers Welfare (DA&FW) and different sections of Economics, Statistics and Evaluation Division on all concerned subject matters. The multifarious nature of the work in Coordination Section includes providing inputs for the Economic Survey

on Chapter “Agriculture & Food Management” on behalf of DA&FW, routine matters wherein several sections of ES&E Division and those of DA&FW are involved; preparation of material for annual report; providing information on budget related matters providing input on the Parliament Questions and working as Public Grievance Cell and RTI Cell for the Economics, Statistics and Evaluation Division.

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 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 areas, different ICT strategies have been devised.

4.2 Digital Agriculture (erstwhile National e-Governance Plan - Agriculture):

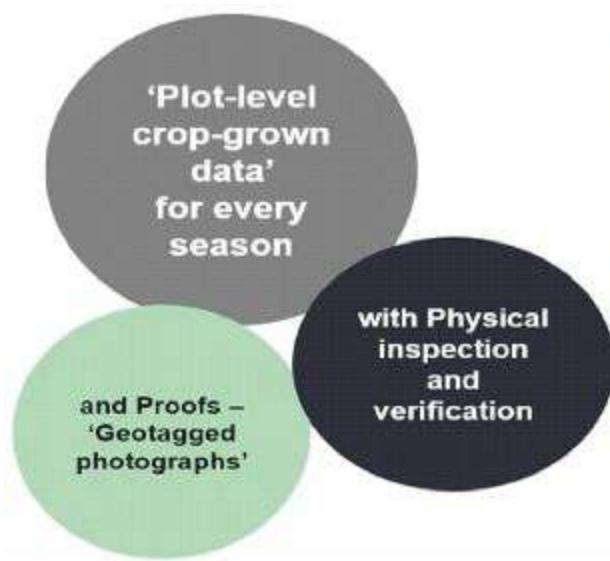
- I. Ministry of Agriculture & Farmers' Welfare is implementing National e- Governance Plan – Agriculture (NeGP-A). Its aim is to achieve rapid development in India through use of Information & Communication Technology (ICT) for timely access to agriculture related information for the farmers. In Agriculture, availability of real time information at the right time is a continuous challenge. Lack of information at proper time causes loss to farmers. NeGP-A aims to bridge this gap in communication by using technology.
- II. 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 extended in 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.
- III. The Committee on Doubling Farmers' Income (DFI), in their Report (Volume XII, Science for Doubling Farmers' Income), appreciated the transformation role of Digital Technology in modernizing agricultural activities. It pointed out how emerging technologies are revolutionizing agriculture by harnessing the power of data analytics, artificial intelligence, and the Internet of Things to optimize crop management, enhance precision agriculture, and improve resource efficiency.
- IV. Furthermore, in the last decade, a digital revolution has begun in India. Through the effective use of data, significant growth is being witnessed across various sectors. Several initiatives of the Government of India, such as Digital India Mission, National e- Governance Plan, Make in India, Startup India and other significant investments in technology infrastructure, have catalyzed the development of a thriving digital ecosystem in India. The Government of India has leveraged data and emerging technologies to improve governance, drive innovation and make informed decisions in various sectors such as finance, healthcare, retail, and agriculture. Additionally, the rise of digital transformation in key areas has led to exponential sectoral growth in the country and positioned India as a leader in the implementation of digital technologies.
- V. In view of the above background, NeGPA guidelines were amended in FY 2020-21 to incorporate projects involving the use of modern Information Technologies, such as Artificial Intelligence, Machine Learning, Blockchain Technology, the Internet of Things, Robotics, etc.
- VI. Further, during FY 2021-22, guidelines were

revised and according to new guidelines were revised and according to new guidelines Funds under NeGPA will be released to States only for the project involving use of modern Information Technologies such as Artificial Intelligence & Machine Learning, Block Chain Technology, Internet of Things, Robotics etc., and for customization /shifting of web & mobile applications already developed by the States, to the platform to be developed using digital technologies mentioned above.

- VII. Further, guidelines have been revised in 2023 for releasing the funds under Digital Crop Survey (DCS) and accepting the proposals from ICAR, autonomous bodies/institutes etc.

4.3 Digital Crop Survey:

For preparation of Crop Sown Registry by



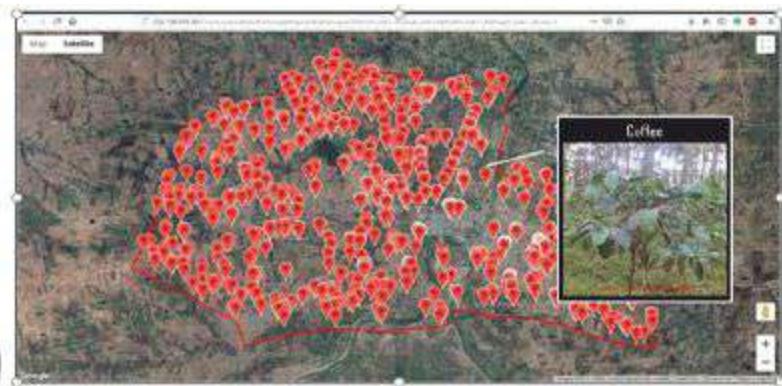
4.4 Unified Portal for Agriculture Statistics (UPAg)

Unified Portal for Agricultural Statistics (UPAg) has been launched as an advanced agricultural data management platform designed to generate crop estimates and integrate with other systems generating Agriculture Statistics such as Price, Trade, Procurement, Stock etc. It serves as a centralized hub for near real time information on crop production, market trends, pricing, and other vital agricultural data. UPAg aims to empower stakeholders in the agriculture sector, including policymakers, researchers, and farmers, by

conducting Digital Crop Survey (DCS) to identify the crops being sown on every farmland plot in the country across all seasons. DCS will enable a single-source-of-truth of crop sown data and will be a foundational block in the Agri Stack DPI.

The data from DCS will enable the agriculture ecosystem to enable various use-cases, i.e., Crop Diversification and planning, near real-time crop estimation, Procurement planning and will also enable improvement in process-flows of various ministry driven schemes such as PMFBY, KCC etc. to enable faster and more efficient scheme delivery to the needy farmers.

Pilot of Digital Crop Survey has been conducted in 10 States in Kharif 2023 : Assam, Gujarat, Uttar Pradesh, Maharashtra, Madhya Pradesh, Andhra Pradesh, Rajasthan, Karnataka, Telangana and Odisha. For conducting the pilot, the States are being supported under NeGPA scheme.



- Single Source of Truth for crops grown
- Data available for ecosystem as 'Crop Sown Registry' in Agri Stack
- Utilize for various purposes (Use Cases) – Schemes, Policy Decisions, Advisory etc.

providing them with comprehensive insights to support informed decision-making.

Key features of UPAg

Integration with other systems generating Agriculture Statistics such as Price, Trade, Procurement, Stock etc.

Centralized hub for near real time information on crop production, market trends, pricing, and other vital agricultural data

Providing quick insight on Area, production, yield and market intelligence on Cereals, Pulses, Oilseeds, etc.



4.5 Krishi Mapper

Department has launched Krishi MApper which is a geospatial web and mobile application platform aimed at efficiently managing a range of land-intervention-based schemes such as CroPIC, Natural Farming, Seed Production & Distribution, NFSM Horticulture, etc. It is a central component which enables geo-fencing of program implementation areas, collecting essential baseline information from the field, incorporating geotagged photographs (by clicking and upload pictures), and seamlessly integrating data through APIs from source like Agristack, Krishi DSS, etc.

Krishi Mapper as an application is centered around the vision of formulating farmer-centric solutions through relevant information services such as crop images and pictures for crop planning and health.

The objectives thereby envisaged to be fulfilled by Krishi MApper are:

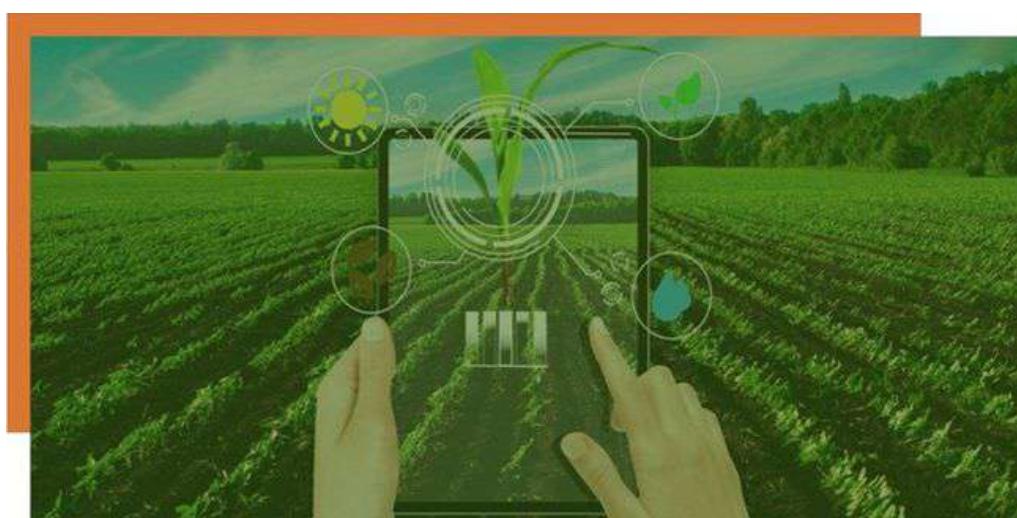
- Enabling authorities to geo-tag the farmlands and geo-plot the area

- Generating farm area through digitized mean (by drawing polygon)
- Identification of different schemes availed on a single farm land Ability to take images at different crop stage
- Evidence Based Decision Making through images

Key features of Krishi MApper are:

- To create uniform land-intervention database under different schemes/program
- Ability to identify farm by capturing geo-spatial information
- To be incorporated with all the schemes having land-based intervention

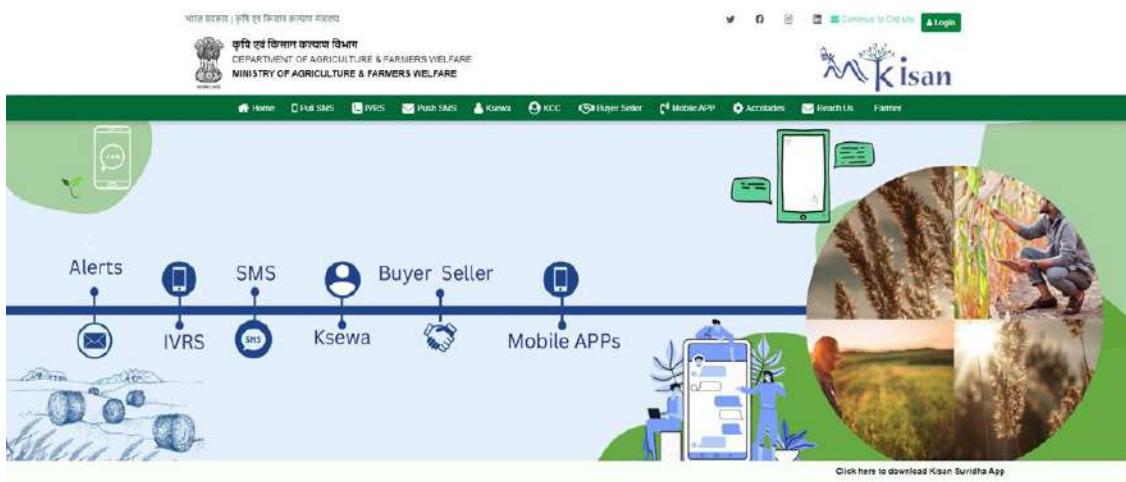
A platform which allows to take images of crop at various stages which in turn enables the government officials to analyse the images for crop health, pests, condition of the crop and take corrective, preventive or predictive decisions



4.6 MKisan-Use of basic mobile telephony:

Since the penetration of smart phones with internet in rural areas, 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. Department has developed a portal - mkisan (mkisan.gov.in), experts / scientists of different departments like IMD, ICAR, send information to farmers in local languages.



4.7 Development of Mobile Apps:

Spreading agricultural 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 extension services which can address food security issues. Various mobile apps have been developed for farmers.

Some of them are listed below:

Kisan Suvidha:

It is an omnibus mobile app to help farmers by providing relevant information to them quickly. It has a simple interface and provides information on different parameters—weather, input dealers, market price, plant protection, expert advisories, Soil Health Card, Cold Store & Godown, Crop Insurance, Fertilizers KVK, PM-KISAN, Seeds, Organic Farming etc.



4.8 DBT implementation in schemes of the Department

- 14 schemes of the Department 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 linked with Central Agriculture portal (dbtdacfw.gov.in).

IT related initiatives

Coordination work related to IT related initiatives like Artificial Intelligence, Machine learning, Data Governance Quality Index (DGQI), MyGov (Open Government) and other Division with IT related initiatives.

Prayas Portal: This Division is coordinating with other Division for on boarding of the schemes of Department on Prayas Dashboard.

PRAYAS is a data driven framework that enables government to visualize progress of its flagship schemes on a single platform and monitor their progress through identified Key Performance Indicators (KPIs). PRAYAS electronically captures aggregated anonymous data from IT systems of respective schemes in a predefined format at an agreed frequency and granularity through APIs. PRAYAS is able to maintaining a single source of truth across multiple officers of Government. PRAYAS also helps to generate actionable insight to assess implementation and reach of different flagship schemes across various dimensions, such as Sector, Department, State and District as well as on a time scale.

Schemes onboarded on PRAYAS are (i) PMKISAN, (ii) Soil Health Card, (iii) PMFBY, (iv) e-NAM & (v) AC&ABC (vi) ATMA & (vi) NFSM (vii) e-NAM

DGQI: This Division is coordinating with other Division for Data Governance Quality Index (DGQI).

- i. As per the advice of NITI Aayog a 'Data and Strategy Unit' (DSU) was constituted to implement Data Governance Quality Index (DGQI) strategy by December 2022 headed by a senior officer of the rank of AS/JS in the

Department with experts handling four major areas: viz. Data Analytics, Technology, Statistics, Monitoring.

- ii. An internal committee was constituted to hiring the expert from NICSI and firm-up the competencies required for the following verticals suggested by Niti Aayog with Director(IT), STD(NIC) and Sr. Consultant (IT).
- iii. The committee proposed setting up of Data Strategic Unit (DSU) for DA&FW. The qualification and eligibility for each vertical was proposed comprising of resources from each of the above verticals as suggested by Niti Aayog.
 - Data Analytics: - Data Visualization, Big Data Analysis, Predictive and Perspective Data Analysis.
 - Technology: End to end digitization, Integration of latest technologies like IoT, AI, Blockchain etc.
 - c. Statistics: Assessment and compilation of Statistical data, Developing mechanism for gathering quality data, Standards for data integration etc.
 - Monitoring: Strategy planning for implementation, End to end monitoring for successful implementation, etc.
- iv. As of Now, 28 schemes data is being considered by DGQI and Data Strategic unit has already been set up in the Department. Survey w.r.t last quarter of 2022-23 has already been filled on DGQI portal. Further, based on the survey filled on DGQI portal by scheme owners score are given by NITI Aayog on scale of 5 and the score of this Department upto last Quarter of 2022-23 is 3.41 out of 5.

Chapter-5

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. 1965.98 crore has been earmarked for MIDH during 2023-24. As on 31st December, 2023, funds to the tune of Rs. 805.60 crores have been released for implementation of activities of MIDH i.e. Rs. 408.63 crore under NHM, Rs. 133.96 crore under HMNEH, Rs. 50.50 crore under CDB, Rs. 140.00 crore to NHB, Rs. 24.82 crore under NBM and Rs. 47.69 crore to CIH, DCCD & DASD and Estt. Expenditure of CDB & NHB.

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 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 2023-24 are given at **Table 1** below:

Table 1: Progress under NHM

S. No.	Components	Unit	Progress during 2023-24 (as on 31 st December, 2023)
1	Area Expansion	Ha.	45100
2	Rejuvenation	Ha.	5206

3	Protected Cultivation	Ha.	827
4	Integrated Pest/ Nutrient Management	Ha.	27372
5	Nurseries	No.	4
6	Water Resources	No.	2459
7	Beekeeping	No.	30
8	Horticulture Mechanization	No.	4847
9	Post Harvest Management		
	(i) Pack House	No.	952
	(ii) Cold Storage	No.	19
	(iii) Primary/mobile processing units	No.	300
10	Rural Market	No.	0

Source: As per the data uploaded by the State Govt. on MIDII, web portal.

B. Financial Progress: During 2022-23, funds to the tune of Rs. 623.34 crore have been released to States/UTs/NLAs for implementing NHM scheme against RE of Rs 570.00 crore. During 2023-24, an amount of Rs. 974.67 crore has been allocated for NHM, against which an amount of Rs. 408.63 crore has been released as on 31st December, 2023.

5.4.2 Area, Production & Productivity of Horticulture Crops

The comparative details of area, production and productivity of various horticulture crops during 2022-23 (2nd 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	2021-22	2022-23*	2004-05	2021-22	2022-23*	2004-05	2021-22	2022-23*
Fruits	5049	7064	7009	50867	107507	108342	10.07	15.20	15.50
Vegetables	6744	11374	11358	101246	209143	212908	15.01	18.40	18.70
Flowers	118	282	272	659	2813	2854	5.58	10.00	10.50
Aromatic & Medicinal	131	668	739	159	664	644	1.21	1.00	
Plantation	3147	4293	4441	9835	15764	16045	3.13	3.70	3.90
Spices	3150	4360	4300	4001	11155	10986	1.27	2.60	2.60
Others	106	-	-	172	133	142	-	-	-
Total	18445	28042	28120	166939	347179	351921	9.05	12.40	12.50

***2nd Advance Estimates of Horticulture Crops 2022-23 - 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 28.12 Million Hectare at present; it has registered an increase of 21% as compared to 23.24 Million Hectare in 2011-12. However, with a production of about 351.92

Million Tonnes, horticulture production has witnessed an increase of about 36.78% during the period 2011-12 to 2022-23 (2nd Advance Estimates). The significant feature is that there has been improvement of productivity of horticulture

crops which increased by about 13.01% during this period.

Area, Production & Productivity of Horticulture crops during the past 12 years are given in **Table 3**.

Table 3: Area, Production & Productivity of Horticulture crops

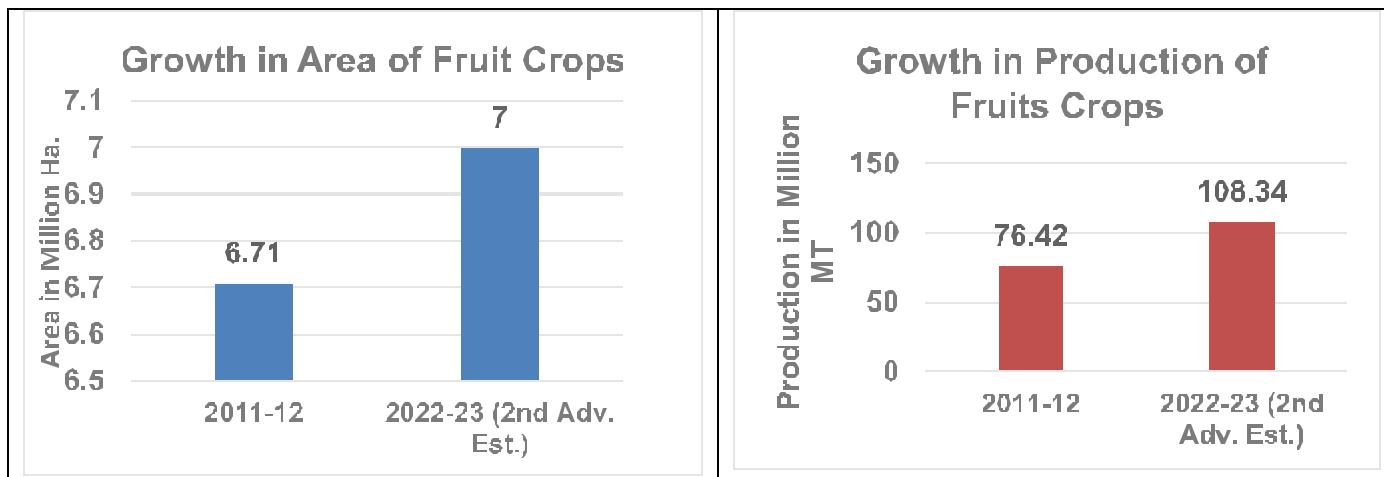
Area: Million Ha, Production: Million Ton, Productivity: Ton/Ha

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	28.04	347.18	12.38
2022-23 (2 nd Advance Estimates)	28.12	351.92	12.51

The area under fruit crops during 2022-23 (2nd Advance Estimate) is 7.01 Million Hectare, with a total production of 108.34 Million Tonne. During the Period 2011-12 to 2022-23 (2nd Advance

Estimate), production of fruits increased by about 41.76%, while the area increased by about 4.47%. Comparative details of area, production and productivity offruit crops are given in **Figure 1**.

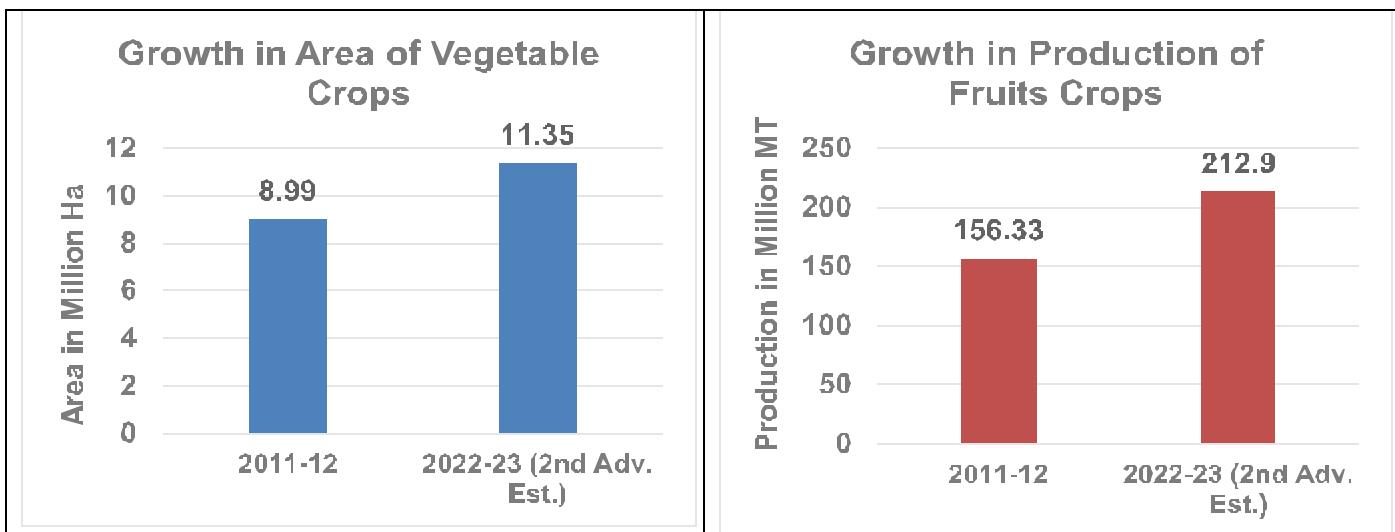
Figure 1: Growth in Area and Production of Fruits



Vegetables are an important crop in the horticulture sector, occupying an area of 11.36 Million Hectare as per 2022-23 (2nd Advance Estimate) with a total production of 212.91 Million Tonne with average productivity of 18.74 Tonnes/Hectare. In fact, vegetables constitute about 60.50% of horticulture

production. During the period 2011-12 to 2022-23 (2nd Advance Estimate), area and production of vegetables increased by 26.36% and 36.20% respectively. The comparative details are depicted in the **Figure 2**.

Figure 2: 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 2022-23 (2nd Advance Estimate) covered an area of 0.27 Million Hectare with a production of 2.85 Million Tonne offlowers.

India is the largest producer, consumer and exporter of spices and spice products. The total production of spices during 2022-23 (2nd Advance

Estimate) was 11.10 Million Tonne from an area of 4.44 Million Hectare.

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

A. Physical Progress

The summary details of progress achieved so far under HMNEH during 2023-24 are given at **Table 4** below:

Table 4: Progress under HMNEH			
S. No.	Components	Unit	Progress during 2023-24 (as on 31 st December, 2023)
1	Area Expansion	Ha.	5976
2	Rejuvenation	Ha.	41
3	Protected Cultivation	Ha.	354
4	Integrated Pest/Nutrient Management	Ha.	9385
5	Nurseries	No.	18
6	Water Resources	No.	183
7	Beekeeping	No.	0
8	Horticulture Mechanization	No.	1893
9	Post Harvest Management		
	(i) Pack House	No.	343
	(ii) Cold Storage	No.	0
	(iii) Primary/Mobile Processing Units	No.	731
10	Rural Market	No.	0

Source: As per the data uploaded by State Govt. on MJDII, web portal.

B. Financial Progress

During 2022-23, funds to the tune of Rs. 231.72 crore have been released to States implementing HMNEH scheme against RE of Rs.215.00 crore. During 2023-24, an amount of Rs.400.80 crore has been allocated for North Eastern States and Himalayan States against which an amount of Rs. 133.96 crore has been released as on 31st December, 2023.

5.4.4 National Horticulture Board (NHB)

A. Physical Progress:

- "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 Field 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 2.5 Acre are eligible.

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 **223 projects** during the current financial year involving subsidy of **Rs. 5292.53 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.

- "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 **32 projects** of Cold Storages/CA Storages involving subsidy of **Rs. 5565.77 lakh** for creation of capacity of **216454.95 MT** during the current financial year.

- 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 4ha).
- (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 **13 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. 8.27 lakh** during the current financial year.

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 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

Horticulture Cluster Development Programme (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, marketing and branding activities.

National Horticulture Board (NHB) being Nodal Agency for implementation of the Programme has appointed M/s Grant Thornton Bharat LLP as Programme Management Unit to drive the programme and support in its implementation. 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 learnings from the pilot phase.

The clusters of the pilot phase include Shopian (Jammu & Kashmir) and Kinnaur (Himachal Pradesh) for Apple, Lucknow (Uttar Pradesh), Kutch (Gujarat) and Mahbubnagar (Telangana) for Mango, Ananthapur (Andhra Pradesh) and Theni (Tamil Nadu) for Banana, Nasik (Maharashtra) for Grapes, Sepahijala (Tripura) for Pineapple, Solapur (Maharashtra) and Chitradurga (Karnataka) for

Pomegranate and West Jaintia Hills (Meghalaya) for Turmeric.

As per the implementation framework stipulated in guideline, Cluster Development Agency (CDA) has 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 all CDAs, Request for Proposals (RFPs) were floated/published by the CDA for selection of Implementing Agencies (IAs) for implementation of different verticals under CDP and one to one meeting with potential IAs were conducted.

With regards to the promotion/ awareness of Programme, National & State level newspaper advertisements were published by the NHB and CDA. Also, one day awareness programme under "Kisan Bhagidari Prathmikta Hamari" campaign, "Krishi Mela" in clusters and National Level Stakeholders meet were organized.

On the fourth day of 'Kisan Bhagidari Prathmikta Hamari' campaign under Azadi ka Amrit Mahotsav, a virtual awareness session was organized on 28th April 2022 by the Ministry of Agriculture and Farmers' Welfare wherein 4000+ attendees including farmers and other stakeholders across India were participated.

Key objective of these campaigns was to generate mass awareness amongst farmers and other stakeholders about various schemes/ programmes including Cluster Development Programme being implemented by the MoA & FW, Animal Husbandry & Dairying and encourage them to avail the benefits.

Also, Krishi Mela were organized in clusters during June and July'22 for wider outreach of the programme and providing more understanding with regards to its implementation structure.

National Horticulture Board, Ministry of Agriculture and Farmers' Welfare organized Consultation Meet 2022 on 9th September 2022. The interactive session included technical input, personal effectiveness facilitation, and hands of experience sharing by the stakeholders involved in the Horticulture Cluster Development Programme.

In response to the Request for Proposals (RFPs) published for the selection of Implementing Agencies in all the Clusters till 31.12.2023, Implementing Agencies have been finalized for the implementation of projects in six (6) Clusters i.e., M/s Prasad Seeds Private Limited for Mahabubnagar (Mango), M/s FIL Industries Private Limited for Shopian (Apple), Ms Sahyadri Farms Post Harvest Care Limited for Nashik (Grape), M/s Meghalaya Basin Management Agency for West Jaintia Hills (Turmeric), M/s BVG Global Farmworks Private Limited for Solapur (Pomegranate) and M/s Associated Industrial Corporation for Chitradurga (Pomegranate). Remaining clusters i.e., Kinnaur (Apple), Ananthapur (Banana), Theni (Banana) are under progress and 3 clusters i.e., Sepahijala (Pineapple), Kutch (Mango) and Lucknow (Mango) are under assessment for replacement with other potential clusters.

A total investment of approximately Rs.900 Crore has been approved for these 6 projects, which includes private contribution of approximately Rs.550 Cr and financial assistance of approximately Rs.350 Crore for their implementation.

As the implementation shall be commenced in 6 clusters, CDP-SURAKSHA (Cluster Development Programme - System for Unified Resource Allocation Knowledge and Secure Horticulture Assistance) Portal is being developed by M/s Grant Thornton being PMU to monitor, documentation, management, and fund disbursement processes within the Horticulture Cluster Development Programme. Portal shall facilitate streamlined collaboration, enhanced operations, and informed decision-making among stakeholders. Additionally, the integration of GIS and geo-tagging capabilities shall provide a comprehensive understanding of the horticulture clusters, aiding in identifying growth areas and assessing resource utilization.

NHB and PMU team are conducting Capacity Building workshops in cluster states where implementing agencies have been selected. These workshops are sensitizing, providing training and handholding for CDA officials, State Horticulture Departments officials and the IAs about the various operations, funds flow and reporting mechanism etc. under the Cluster Development Programme.

5.4.5 Coconut Development Board (CDB)

A. Physical Progress: The summary of physical achievements during 2023-24 till 31st December, 2023 is as follows:

- The Board has produced 3.55 lakh quality coconut seedlings in 11 Demonstration cum Seed Production Farms established across the country and supported various State Govts in production of 10.20 lakh seedlings.



technologies for management of insect pest and disease management as well as processing and product diversification.

- The Board has organized 425 training programmes on coconut based value added products, conducted extension programmes, publishing of journals and technical informations etc as part of creating awareness on coconut cultivation, processing, marketing etc.



- An extent of 1729 ha has been brought newly under coconut cultivation through Area expansion programme. 1900 ha new area have been demonstrated under integrated nutrient management and 3162 ha new area has been covered under replanting and rejuvenation.
- Under the scheme Technology Mission on Coconut assistance has been extended to 19 projects for development of

B: Financial Progress:

During the current financial year, funds to the tune of Rs. 54.50 crore has been released to CDB and an amount of Rs.80.50 crore has been expended as on 31.12.2023 (including Estt.Exp.ofRs. 30.00 crore).

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 in North Eastern regions and the programmes are executed through capacity building by training of trainers and farmers/beneficiaries; on & offfarm 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:

Capacity building and training programmes:

- Farmers' training on Protected cultivation of flower & vegetables at NRC Orchid, Sikkim with 200 participants.
- Farmers' training on Post harvest management and Marketing Linkage of horticulture crops at Tsupfume village under Phek district of Nagaland on 26th September 2023 with 84 nos. of participants.
- Farmers' training on production technology and post-harvest management of horticulture crops at Tening Namsan village under Peren district of Nagaland on 29th September 2023 with 50 nos. of participants.
- Awareness cum farmers' training programme on important horticulture crops at Tangnyu village under Mon district of Nagaland on 5th October 2023 with 54 nos. of participants.
- Workshop on various protected structure for horticulture crops and hydroponics cultivation on 26th October, 2023 at CIH,

Nagaland with 68 participants.

- Five (5) days training on Scientific Beekeeping for CAPFs personnel at Assam Rifle camp, Dimapur, Nagaland on 26th-31st October, 2023 with 85 participants.
- Two (2) days training on Production technology, Post harvest management of horticultural crops at Sanis, Wokha District, Nagaland on 23-24 Nov 2023 with 104 participants.
- One-day training programme on Pre and Post harvest management of horticultural crops at Molvom village on 19 Dec 2023 with 71 participants.
- Fifteen (15) trainings are being targeted from Jan- March 2024 in different states of the region.

Production of quality planting material:

The Institute produces a variety of plants in its nursery units with the objective to provide disease free quality planting material. A total of 16,600 nos. of rootstocks of Citrus, Mango, Cashew nut and Guava have been raised and 5400 Quality Planting materials have been propagated & produced for Citrus, Cashewnut, Litchi and Guava. Beside these, 3 nursery units and 2 scion blocks in poly house & scion mother block in field is being maintained.

(Projection of Jan-March 2024: Acid lime-5000 nos., Assam lemon-10,000, Guava-2000 nos, Khasi Mandarin-3000 nos.)

Demonstration of improved production technologies (on & offfarm):

The Institute has established demonstration plots of Papaya cv. Red Lady, transplanting of rough lemon, and gap filling of fruit crops (Khasi Mandarin), vegetables & spices (Okra, bitter gourd, sweet potato, Colocasia, ginger, turmeric, cabbage, broccoli, cauliflower, pakchoi, carrot), seasonal flowers, exotic vegetables (zucchini, lettuce, salad cabbage, red cabbage, parsley, snow pea etc.), Cultivation of capsicum, tomato, muskmelon and cucumber under protected structures.

PHM & Agribusiness promotion

- Various products like Turmeric powder, lemon juice, mango pickle, carambola juice, mango chunda, jackfruit chips etc. were prepared and showcased.
- Organized training programme for farmers on Post Harvest management and Market Linkage of Kiwi Fruit at Tsupfume Village under Phek district of Nagaland on 26th September 2023 with 84 participants.

Skill Development course & 3 months Certificate

- Skill development course on gardener with a total of 18 trainees from Longleng District of Nagaland.
- Skill development course on gardener with a total of 17 trainees from Phek district of Nagaland.
- Skill development course on gardener with a total of 17 trainees from Mon district of Nagaland.

GLIMPSES OF ACTIVITIES CARRIED OUT IN CIH, NAGALAND

Quality planting material production



Training Programmes/ webinar/ Field Day



Skill development & certificate course



Post harvest management & value addition



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, Betelvine 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 Major Achievements of DASD during 2023-24

During the year 2023-24, the Directorate had an outlay of Rs.16.88 crores for development and promotion of spices, arecanut, aromatic crops and betelvine under MIDH.

Following are the major achievements of the Directorate in 2023-24:-

1. Planting material production Programme

Planting material production programmes worth Rs.7.40 crores was implemented during the year. More than 1008 tonnes of seeds/ rhizomes and 45 Lakhs of seedlings of various spices were produced and distributed under this programme.

2. Accreditation of Spice nurseries

More than 50 nurseries are recognized under DASD accreditation programme till date.

3. 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 Agricultural Universities (SAUs) to meet accreditation norms.

4. Establishment of nursery infrastructure, storage infrastructure facilities

Nursery infrastructure facilities for spices are

established at 3 different SAUs under this programme, during 2023-24. Six seed processing and storage infrastructure facilities for spice crops were also established in selected centres. 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. Conducted farmers training programme on production technology of large cardamom in Mon district of Nagaland.

5. Frontline demonstrations established by DASD in 2023-24

- Cluster-based demonstrations on cultivation and value addition of aromatic plants were successfully established in an area of 37 ha at various locations.
- The Directorate has established 50 demonstration plots of size 1 ha each for seed spices to demonstrate latest technologies including pesticide free production technology evolved in seed spices.
- Demonstrations on 'EPN technology for management of white grub in arecanut' and 'Cultivation of Areca nut dwarf hybrids', 'Areca nut fruit rot disease management using Mandipropamid fungicide', 'Integrated Management of Inflorescence dieback in Areca nut' were established in different locations through farmer participatory approach.
- Demonstration on High density Cinnamon intercropping in coconut gardens were established in Bhatkal area of Karnataka in association with CPCRI Kasargod to popularizing a viable cultivation technology and organize group cultivation for value addition and easy marketing of cinnamon to reduce the import of true cinnamon.
- The directorate has established 6 ha demonstration plot for promotion and popularization the improved organic production technology in Mundu chilli to increase the yield and quality of GI tag Mundu chilli.

6. Innovative programmes

- Innovative technologies such as single bud

planting and protray method of nursery raising in ginger and turmeric had been promoted by the directorate. Special programme on micro-rhizome derived ginger seed production through tissue culture technique has been undertaken in association with SAUs to promote disease free seed material in these crops.

- A project on identification and multiplication of Cochin Ginger and Alleppey Finger Turmeric is being implemented in association with Kerala Agricultural University and other stakeholders to promote export-oriented production of these trade varieties.
- Demonstration of disease-free ginger seed production using microrhizomes and IDM were established at multiple locations in association with Kerala Agricultural University.
- 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.
- A project on identifying and reviving the original "Byadgi Chilli" cultivars for planting material production and maintenance of the seed stock is being implemented in association with UAS, Dharwad.



Quality seed material production plot of Ginger at BAU, Ranchi



Disease free ginger seed production using microrhizome and IDM technology

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 was also entrusted to this Directorate in the year 1997. The Directorate formulate and execute the developmental programmes of cashew and cocoa in the country and monitor the implementation of developmental programmes formulated and executed by the State Governments under Mission for Integrated Development of Horticulture (MIDH). 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
- Replanting of senile cashew plantations
- Accreditation of cashew/ cocoa nurseries
- Nursery programmes
- Technology demonstration through FLTD
- Transfer of technology programme

- Publicity for crop promotion including North Eastern states.
- HRD programme in cashew and cocoa
- Primary processing units in cocoa.
- Production Forecast.

5.6.2 Salient achievements, 2023-24

- Three days National Level Training programme on Cocoa was organized in association with Dr. YSR Horticulture University, Andhra Pradesh to the field level implementing officials of various development department involved in cocoa sector at Dr. YSR Horticulture University, Venkataramanagudem.
- One day workshop on clean cultivation in Cocoa as a part of Mission LIFE was organized in association with KVK, Ambalavayal, Wayanadon 26th May 2023. Around 100 farmers attended the workshop.
- National Conference on Cocoa was organized in association with Keladi Shivappa Nayaka University of Agricultural & Horticultural Sciences, Shivamogga at Shivamoga, Karnataka on 03rd June, 2023. Around 150 participants from Andhra Pradesh, Karnataka, Kerala and Tamil Nadu attended the Conference.
- One day workshop on Climate resilience in Cashew as a part of Mission LIFE in association with Livestock Research Station, Palakkad was organized on 05th June, 2023. As part of the programme, mass planting was undertaken with six high yielding varieties of cashew. Around 150 persons attended the workshop.
- Three days National Level Training programme on Cashew was organized in association with Keladi Shivappa Nayaka University of Agricultural & Horticultural Sciences, Shivamogga to the field level implementing officials of various development department involved in cashew sector.
- New plantation of cashew in an area of 2882.75 ha is completed in the states of Gujarat, Goa, Karnataka, Kerala, Madhya

Pradesh and Maharashtra.

- An area of 300 ha of cocoa was brought under new planting programme in Karnataka and Kerala.
- Demonstrated the latest technologies of research by establishing 90 demonstration plots with high density in Cashew and 380* demonstration plots with normal density in cashew/cocoa in various states.
- A National Level training programme on cashew will be conducted on 27th to 29th, January, 2024 in association with Cashew Research Station, Kerala Agricultural University, Madakkathara at Thrissur.
- A National Level Conference on Cashew/cocoa will be conducted in the month of February, 2024.
- Proposed to establish 2 number of primary processing units of cocoa in Andhra Pradesh and Karnataka state.
- This Directorate proposed to conduct production forecast survey in 12 districts to evaluate the production of cashew.
- Total 5.70 lakh good quality cashew grafts were distributed to farmers from DCCD accredited nurseries.
- 1,50,000 cocoa hybrid seedlings were distributed to tribal 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 750 ha in the state of Odisha and Tamil Nadu.
- Forty one 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, establishment/ modernization of five cashew nurseries is in progress.
- As part of publicity and crop promotion activities, 23 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.

- Under the HRD programme, 75 farmers training, 6 exposure visits and 19 cashew apple utilization trainings will be conducted in association with SAU's and ICAR institutes.

Glimpses of National Level Training on Cocoa



Cashew Area Expansion at Gujarat



Mass cashew planting under Life programme

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)**" under **Aatma Nirbhar Bharat Announcement for overall promotion and development of scientific beekeeping and to achieve the goal of "Sweet Revolution"** in the country with total budget outlay of Rs. 500.00 crores for 3 years (2020-21 to 2022-23) and the scheme has been further extended for three years, i.e., 2023-24 to 2025-26, with the remaining available budget of Rs. 370.00 crores from the allocated budget of Rs. 500.00 crores. The scheme is being implementing through 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, Distribution of Bee Colonies a new Component etc., Digitization/ online registration, etc. under MM-I, processing, value addition, market support, etc. under MM-II and R&D under MM-III.

6.3 Main activities under NBHM during 2023-24:

Details of main activities implemented during the year 2023-24 under NBHM, as on date, are given as under:

1. 4 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 establishment and (iv) IBDC Haryana
2. 35 Mini Honey Testing Labs have been sanctioned under National Beekeeping & Honey Mission (NBHM) in the states of Jammu & Kashmir (4), Himachal Pradesh (2), Uttarakhand (3), Assam(1), Arunachal Pradesh (1), Uttar Pradesh (4), Bihar (1), West Bengal (3), Haryana (1), Rajasthan (1), Gujarat (2), Maharashtra (1), Karnataka (4), Kerala (1), Odisha (1), Madhya Pradesh (2), Chhattisgarh (1), Telangana(1) and Andhra Pradesh (1)
3. 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, 88 FPOs of Beekeepers/ Honey Producers have been registered/ formed till date.
4. 14,536 Beekeepers/ Beekeeping & Honey

Societies/ Firms/ Companies with 22.04 lakhs honeybee colonies registered with NBB and uploaded on "Madhukranti Portal" upto 16th January, 2024.

- 5. World Bee Day (WBD) was celebrated under the gracious presence of Hon'ble Minister of Agriculture & Farmers Welfare, Govt. of India on 20th May, 2023 at College of Agriculture, Waraseoni, Balaghat, Madhya Pradesh.
- 6. 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.
- 7. A Book on "Marching Towards Sweet Revolution" was launched by Hon'ble Minister of Agriculture & Farmers Welfare, Govt. of India on the occasion of World Bee Day celebrated at College of Agriculture, Waraseoni, Balaghat, Madhya Pradesh on 20.05.2023.
- 8. Training Programme conducted on "Scientific Beekeeping for CAPFs and officials" at zonal level in which 832 participants of 144 units from different parts of the country get trained at various centers during 26th October – 9th December 2023.

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 currently producing about 1,42,000 Metric Tonnes (MTs) (2nd Advance Estimate) of Honey (2022-23).
- The country has exported 79,929 MT of Honey to the world for the worth of Rs. 1622.77 Crores during the year of 2022-23. (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.

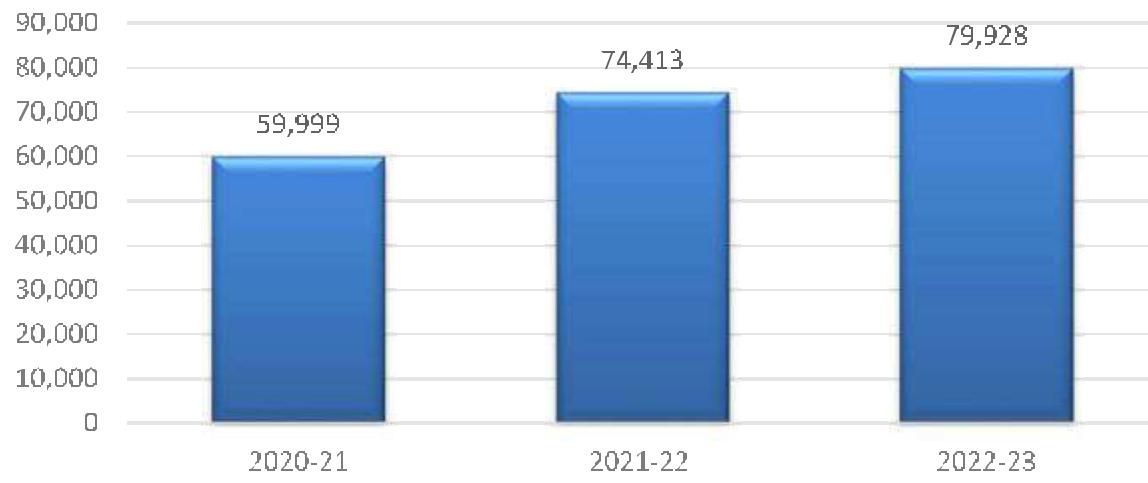
- To boost the agricultural production through pollination enhancement in crops in sustainable manner in the country, Department of Agriculture & Farmers Welfare, GOI has decided to treat Beekeeping/ Honeybees as an Input in Agriculture.
- 16 Integrated Beekeeping Development Centres (IBDCs) as role 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.
- NBB has coordinated to frame standards of Honey, Bees Wax & Royal Jelly notified by FSSAI.
- 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/ NDDB's infrastructure/ cooperative network in the field.

Honey Production



Production of Honey during last 3 years (2020-21 to 2022-23)

Honey Export



Export of Honey during last 3 years (2020-21 to 2022-23)



Consultative Workshop on “Technological Intervention & Innovations in the Honey / Beekeeping Sector” was organized on 12th April 2023 under the Chairmanship of Additional Secretary (AL), DA&FW at Krishi Bhawan in New Delhi under National Beekeeping & Honey Mission (NBHM)



National Workshop on “Technology Intervention in Beekeeping Sector” was organized on 19th April 2023 under the Chairmanship of Additional Secretary (AL), DA&FW at Central Farm Machinery Training & Testing Institute, Budni, Madhya Pradesh



National Workshop on “Technology Intervention in Beekeeping Sector” was organized on 19th April 2023 under the Chairmanship of Additional Secretary (AL), DA&FW at Central Farm Machinery Training & Testing Institute, Budni, Madhya Pradesh



World Bee Day (WBD) was celebrated under the gracious presence of Hon'ble Minister of Agriculture & Farmers Welfare, Government of India on 20th May, 2023 at College of Agriculture, Waraseoni, Balaghat, Madhya Pradesh.



World Bee Day (WBD) was celebrated under the gracious presence of Horticulture Commissioner, Ministry of Agriculture & Farmers Welfare, Department of Agriculture and Farmers Welfare, Government of India on 20th May, 2023 at College of Agriculture, Waraseoni, Balaghat, Madhya Pradesh.



Launching of Book (Marching Towards Sweet Revolution under NBHM Scheme during World Bee Day (WBD) by the Hon'ble Minister of Agriculture & Farmers Welfare, Government of India on 20th May, 2023 at College of Agriculture, Waraseoni, Balaghat, Madhya Pradesh



Launching of Purabi Honey during World Bee Day (WBD) by the Hon'ble Minister of Agriculture & Farmers Welfare, Government of India on 20th May, 2023 at College of Agriculture, Waraseoni, Balaghat, Madhya Pradesh



Four days training Programme conducted on “Scientific Beekeeping for CAPFs and officials” at Jalpaiguri, West Bengal during 26th October– 9th December 2023.

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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.

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 of farmers 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-Coarse Cereals in 269 districts of 26 states & 2 UTs viz. Jammu & Kashmir and Ladakh. NFSM-Pulses and NFSM-Nutri Cereals are being implemented in all the districts of 28 states & 2 UTs viz. Jammu & Kashmir and Ladakh.

The Government has also approved the 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. The Government has also approved the projects of ICAR-Central Institute for Cotton Research (CICR), Nagpur to increase productivity of cotton through High Density Planting/Closer Spacing Technology, promote production of Extra Long Staple (ELS) cotton and management of pink bollworm.

Further, steps have also been initiated to enhance production of maize for ethanol production under NFSM through the ICAR-Indian Institute of Maize Research (IIMR), Ludhiana.

7.4 Monitoring & Evaluation at National level: A three-tier monitoring mechanism exists in 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 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.

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 proportionate to their population in the States/districts.

7.8 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 centers.
- Supplying of Seed Minikits of pulses not older than 10 years free of the cost (100% share) to the farmers. During 2023-24, around 22.84 lakh numbers of seed minikits of pulses have been allocated to different states for Kharif & Rabi seasons.
- In addition to State Governments, the ICAR/KVKs/SAUs are also involved in conducting demonstrations on improved latest package of practices of pulses. During 2023-24, a total 65013 numbers of cluster frontline demonstrations have been sanctioned to 510 Krishi Vigyan Kendras coming under 11 ATARIs of ICAR in the country for demonstrating latest technologies of pulses at farmers' field. 4759 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 2023-24 for demonstrating latest technologies at farmers' field.

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 minikit allocation.
- Establishment of Centers of Excellence.
- Publicity of nutri-cereals.

A separate chapter on the International Year of Millets 2023 is given separately in this annual report.

7.9 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 2022-23, an area of around 40.00 lakh ha was covered under rice fallow for cultivation of pulses.

7.10 Production of foodgrain: The production of foodgrain has increased substantially. The foodgrain production during 2019-20 to 2022-23 is as under:

Crops	Rabi Kharif	2019-20	2020-21	2021-22	2022-23
Rice	Kharif	102.28	105.21	111.00	110.51
	Rabi	16.59	19.16	18.17	15.00
	Summer	-	-	-	10.24
	Total	118.87	124.37	129.47	135.75
Wheat	Rabi	107.86	109.59	107.74	110.55
Pulses	Kharif	8.73	7.99	6.69	8.24
	Rabi	14.89	16.28	16.58	17.90
	Total	23.02	25.46	27.30	26.05
Nutri Coarse	Kharif	33.61	36.75	36.12	37.57
Cereals	Rabi	14.13	14.57	14.97	15.92
	Summer	-	-	-	3.81
	Total	47.75	51.32	51.10	57.31
Total Food grains	Kharif	143.81	150.58	155.36	155.71
	Rabi	153.69	160.17	160.25	157.84
	Total	297.50	310.74	315.61	329.68

* Source: DES, DA&FW

Chapter-8

INTERNATIONAL YEAR OF MILLETS 2023

8.1 Overview

Millets or *Shree Anna* were among the first crops to be domesticated in India with several evidence of its' consumption during the Indus valley civilization. In India, *Shree Anna* are primarily a kharif crop, requiring less water and agricultural inputs than other similar staples. *Shree Anna* are important by the virtue of its mammoth potential to generate livelihood, increase farmers' income, and to ensure food & nutritional security all over the world.

Globally, India ranks first in both area coverage and production under *Shree Anna*. In India, *Shree Anna* were grown over an average area of 126.98 lakh ha with a production of 173.2 lakh tonnes and yield 1364 kg/ha during the year 2022-23 (Final Estimates).

The Resolution in the United Nations to celebrate the year 2023 as the International Year of Millets, was spearheaded by India and had the support of 72 countries. With the aim to generate mass awareness, increase in production, productivity and strengthen the *Shree Anna* value-chain, ***the United Nation's General Assembly (UNGA) declared 2023 as the International Year of Millets or IYM 2023 on 5th March 2021.*** Through this Declaration, the Government of India aimed to make IYM 2023 a 'people's movement' for the country, inspiring Markets, Farmers & Consumers, to promote and adopt *Shree Anna*, and its value-added products. **In view of the global branding of millets and its significance, the ancient grains were given the identity of '*Shree Anna*' under the leadership of Hon'ble Prime Minister Shri Narendra Modi in the year 2023.**

The Department of Agriculture & Farmers Welfare (DA&FW) took a proactive multistakeholder engagement approach to achieve the objectives of IYM 2023 and promote Indian *Shree Anna* globally based on Seven Sutras as the guiding principles for the IYM 2023.

- Enhancement of Production/ Productivity
- Nutrition and health benefits
- Value-addition, Processing & Recipe Development
- Entrepreneurship/ Start-up/ Collective Development
- Awareness creation – Branding, Labelling & Promotion
- International outreach
- Policy interventions for mainstreaming

The Ministries/ Departments of the GoI, State Governments and Indian Missions abroad were allocated a fortnight each across the year 2023 for conducting dedicated activities towards the celebration of IYM.

The Department of Agriculture & Farmers Welfare also mapped key stakeholders across the millet value chain such as start-ups, exporters, FMCG companies, industry associations, farmers, FPOs and research institutions for concerted efforts towards mainstreaming *Shree Anna* and investment promotion. More than 500 start-ups and 400 FPOs have been established. ICAR-IIMR as a nodal organization for IYM 2023, has played a pivotal role in supporting/ incubating 250+ start-ups across the country towards developing successful value-added products, recipes and processing machinery.

8.2 Key Events towards International Year of Millets

Run-up to the IYM 2023

Prior to the start of India's year-long grand celebration of IYM 2023, the Department of Agriculture & Farmers Welfare took a proactive approach in mainstreaming *Shree Anna* through various international and national events and expos such as Dubai Expo 2022, Surajkund Mela 2022, Aahar- The International Food & Hospitality Fair 2022, BIOFACH India 2022, SARAS Food Festival

2022, etc. showcasing the diversity of various *Shree Anna* based value-added products. *Shree Anna* was also showcased at the FAO's 9th Session of the Governing body of International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) at New Delhi in September 2022.

Prior to the commencement of the IYM, the government nominated *Shree Anna* as the "One Country One Product" (OCOP) to FAO and "One District One Product" across 21 districts for harnessing the potential of *Shree Anna*.

In addition, to popularise millet products, *Shree Anna* products vending machines were installed at the key ministries.



Hon'ble Minister of External Affairs and former Hon'ble Minister of Agriculture at Millet Luncheon for Ambassadors to India

IYM Opening Ceremony at FAO, Rome

On 6th December 2022, the Food and Agriculture Organization (FAO) of the United Nations, organized an official opening ceremony for the IYM 2023 at Rome, Italy. The event was attended by a delegation of senior government officials from India led by Sushri Shobha Karandlaje, Minister of State, Agriculture & Farmers Welfare. During the event, a ceremonial message by the Hon'ble Prime Minister of India, Shri Narendra Modi, was conveyed by Sushri Shobha Karandlaje. Through his message,

Pre- Launch and Millet Luncheon for Ambassadors

On 24th November 2022, Department of Agriculture and Farmers Welfare and Ministry of External Affairs co-hosted a special 'luncheon' for the foreign ambassadors of different countries appointed to India at Sushma Swaraj Bhawan, New Delhi. The event was graced by Shri Narendra Singh Tomar, Hon'ble Union Minister of Agriculture & Farmers Welfare and Dr. S. Jaishankar, Hon'ble Union Minister of External Affairs. High Commissioners/ Ambassadors to India from more than 100 countries attended the official luncheon.

the Hon'ble PM recognised the importance of millets and conveyed that, "*Millets are good for the consumer, cultivator and climate... There is a need for diversity on the land and on our tables... Millets are a good way to increase agricultural and dietary diversity.*" To mark the significance of this day in India, DA&FW launched and organized several initiatives, which included an extensive social media campaign on the importance of *Shree Anna*, showcasing Government's collective effort towards millet promotion, citizen engagement drives and several other outreach activities.



Opening ceremony for IYM by FAO



(L-R) Indian Ambassador to Rome, DG FAO, Hon'ble Minister of State of Agriculture and Joint Secretary (Crops) at the Opening Ceremony for IYM.

Millet Luncheon for the Members of Parliament

In the lead-up to the year-long celebration of the IYM 2023, the DA&FW hosted a 'Special Millet Luncheon' on 20 December, 2022 for the Members of the Parliament. The event, held at the

Parliament house, was graced by Hon'ble Prime Minister, Shri Narendra Modi. The special *Shree Anna* luncheon aimed to celebrate India's *Shree Anna* rich culinary heritage and encourage Members of Parliament to make IYM 2023 a 'people's movement'.



Millet luncheon at Parliament House

8.3 Celebrations of International Year of Millets

Global Millets (*Shree Anna*) Conference

The key event organized for IYM 2023 was **the Global Millets (*Shree Anna*) Conference, held from 18th - 19th March 2023** at IARI Pusa campus, New Delhi. The Conference was inaugurated by the Hon'ble Prime Minister, Shri Narendra Modi.

During the Conference, video messages by Heads of States of two countries, H. E. Sahle-Work Zewde, President of Ethiopia & Dr. Mohamed Irfaan Ali, President of Guyana was also played, which talked about the unprecedented efforts taken to promote

millets under the leadership of Indian Government. Delegates from over 100 nations participated at the Conference with representatives from 40+ foreign embassies, international organisations such as WFP and FAO, world-renowned chefs, scientists and academicians.

This was the first Global Conference for IYM hosted by any country which also witnessed participation of Agriculture Ministers from 6 Countries, namely Sri Lanka, Mauritius, Guyana, Sudan, Suriname and Zambia. Along with the international participation, a vast representation of state governments, industries, start-ups, KVKS, FPOs, farmers, and students from various schools and colleges also contributed for making this program a huge success.



*Hon'ble PM's address and felicitation during the Global Millet (*Shree Anna*) Conference*

Dedicating to IYM 2023, the Hon'ble Prime Minister unveiled commemorative coin and stamp

celebrating IYM, followed by digital launch of a book on Millets (*Shree Anna*) A Holistic Overview



Commemorative stamp and coin on IYM launched by the Hon'ble PM

During the inauguration, the Prime Minister also declared ICAR-IIMR as Global Centre of Excellence. The announcement entailed IIMR taking on the role

of disseminating effective research and development strategies at an international platform.



IIMR has been declared as a Global Centre of Excellence



Inaugural session of the Global Millets (Shree Anna) Conference

The inaugural session was followed by parallel sessions curated by ICAR, FSSAI and various industry associations such as FICCI, CII & PHDCCI.

The Conference was also accompanied by an exhibition-cum-Buyer Seller Meet (BSM) curated by APEDA, along with a live cooking corner hosted by renowned chefs from 18th – 22nd March 2023. The Conference was attended by **2000+ people in person and about 83 lakh people participated** virtually across Railway Stations, Indian Embassies, KVks, etc.

Festivals, Fairs and Awareness Programmes

In the year 2023, the IYM celebrations commenced with great enthusiasm across the country and abroad. The DA&FW actively participated in significant international events and exhibitions. Simultaneously, domestic events throughout the nation were organized.

The Surajkund Mela 2023 held at Faridabad, NCR featured various stalls of millet-based start-ups, IIMR and National Seeds Corporation, sponsored by the Department of Agriculture & Farmers Welfare.



Millet stalls at Surajkund 2023

NDMC organised a G20 Food Festival at Talkatora Stadium, from 11th to 12th February 2023. With IYM as a pivotal theme, *Shree Anna* startups received significant audience engagement and achieved substantial sales during the event.

Another highlight was a special millet luncheon for farmers and FPOs hosted by Hon'ble Agriculture Minister on 15th August 2023 who were special invitees for the Independence Day Function.

***Shree Anna* took Centre stage at the 9th International Chef's Conference held by IFCA**

The 9th International Chef's Conference, by Indian Federation of Culinary Associations (IFCA), was organized on 11-13th February 2023, under the gracious presence of Hon'ble MoS Agriculture & Farmers Welfare, Shri Kailash Choudhary, featuring workshops, live cooking demonstrations, masterclasses, expert panel discussions with focus on *Shree Anna*.



Cooking demonstration by Hon'ble MoS of Agriculture at Int'l Chef's Conference

Inauguration of Millets (*Shree Anna*) Experience Centre

On 28th April 2023, the first of its kind 'Millets (*Shree Anna*) Experience Centre (MEC)' was launched by Hon'ble Minister of Agriculture & Farmers Welfare at Dilli Haat, INA, New Delhi, with an aim to raise awareness on *Shree Anna* and encourage its adoption among the general public. The MEC offers unique dining experience with specially curated millet dishes, besides an in-store experience of purchasing *Shree Anna*-based ready-to-eat and ready-to-cook products from startups and FPOs.



Launch of the Millet Experience Centre at Dilli Haat

Promotion of *Shree Anna* Among Paramilitary Forces

A culinary training session was conducted by DA&FW in August 2023, for 300 chefs and cooks associated with paramilitary forces and departmental canteens of government, encouraging them to embrace *Shree Anna*-based recipes in their daily menus.



Chefs of paramilitary forces learning to cook with millets

The DA&FW also organized the *Shree Anna* FPO Exhibition for Central Armed Police Forces (CAPFs) at the BSF Camp in Chhawala, New Delhi, on October 6, 2023. The event aimed to encourage *Shree Anna* consumption among Central Armed Police Personnel. Over 34 Farmer Producer Organizations (FPOs) from across the country showcased a wide range of millet products, including raw millet grains, ready-to-cook items, and ready-to-eat products to an audience of approximately 1,000 attendees.



CAPFs at BSF camp for FPO Exhibition.

State-level Strides under IYM

- States played a crucial role towards popularizing millets amongst the masses. Many states have started distributing millets within the Targeted Public Distribution System (TPDS), Integrated Child Development Services (ICDS), Mid-Day Meal (MDM) etc.
- **11 states, namely Assam, Bihar, Chhattisgarh, Karnataka, Madhya Pradesh, Maharashtra, Odisha, Rajasthan, Tamil Nadu, Uttarakhand and Uttar Pradesh launched their respective State Millet Missions in line with the 2023 International Year of Millets (IYM), each with distinct objectives and budgets to design initiatives and ensure sustained promotion and adoption of Shree Anna.**

Promotion of Shree Anna during India's G20 presidency

The Department of Agriculture and Farmers Welfare promoted *Shree Anna* during India's G20 Presidency. *Shree Anna* was featured through exhibitions at G20 group meetings, including millet-based lunches and specially curated millet hampers for foreign dignitaries, among other key highlights.

G20 Agriculture Working Group Meetings

At the G20's First Agriculture Working Group Meeting held from 13th – 15th February 2023 at Indore, Madhya Pradesh, *Shree Anna* and IYM garnered central focus, through display of a *Shree Anna* value chain, presence of recognized *Shree*

Anna farmers, serving of *Shree Anna* meals and distribution of *Shree Anna* hampers to all delegates.

A technical excursion for G20 delegates was held at ICAR-IIMR during Agriculture Ministers G20 meeting held in June 2023. The delegates were given a tour to the *Shree Anna* fields, IIMR processing facilities and start-up incubation centre. During the visit the delegates were also gifted with *Shree Anna* portraits and a specially curated *Shree Anna* hamper.



Millet portrait of former Hon'ble Minister of Agriculture & Farmers Welfare, Shri Narendra Singh Tomar



Millet hampers curated for the G20 Agriculture Ministerial Meeting.



Technical excursion of Agriculture Ministers of G20 countries to ICAR-IIMR

G20 First Ladies and Spouses Visit to IARI Campus, New Delhi

On September 9, 2023, a special exhibition was hosted by the Ministry of Agriculture and Farmers' Welfare at the IARI Campus, PUSA, New Delhi, offering the first ladies and spouses of G20 member countries a first-hand experience of India's agricultural prowess.



Spouses of G20 countries photographed with a Millet rangoli and women millet farmers present from across the country



Delegates experiencing hand-beating of millet grains



Delegates at the live millet cooking counter

This unique event showcased a diverse array of elements, including a live cooking session with a focus on *Shree Anna*, led by renowned celebrity chefs. The exhibition also paid tribute to *Shree Anna*-based delicacies of G20 countries and provided a platform for leading and upcoming Indian startups to display cutting-edge agricultural technology.

Other key highlights of the exhibition included, eye-catching *Shree Anna* Rangolis, showcase of *Shree Anna* based products by FPO Farmers, interactions of delegates with progressive women farmers from ten *Shree Anna* producing states, and the fascinating 'Agri-Street,' adorned with rustic decor, representing the agricultural value chain from 'Seeding' to 'Feeding.' Lahri Bai, a farmer from Dindori, Madhya Pradesh, known for conserving 50+ varieties of *Shree Anna* seed also exhibited some variants at the Agri Street.



Lahri Bai showcasing genetic diversity of millet seeds



FPOs showcasing millet products exhibition

8.4 Key International Events Towards IYM 2023

To popularize Indian *Shree Anna* globally and create awareness on *Shree Anna benefits* in the global market, the department participated in various international events, through delegation comprising of officials, state agriculture representatives, agri-allied bodies and millet chefs, FPOs, startups etc. These include **Saveurs & Métiers Trade Show, Belgium (January 2023)**, **Millet Food Festival at Nigeria (January 2023)**, **Gulfood 2023, Dubai (February 2023)**, **AGRA Fair, Slovenia (August 2023)**. Further, India's participation at international trade fairs such as BIOFACH Germany, Natural Products Expo West USA, International Food and Drink (IFE) and Buyer Seller Meet UK, SIAL Food Canada and Seoul Food & Hotel, Korea enabled Indian exporters to present and promote their products in global markets and interact directly with buyers as well as learn international standards.

Initiatives by Indian Embassy

Various Indian Missions abroad also promoted *Shree Anna* and expanded outreach during IYM. Each mission had been allocated one-week periods for specific activities, which included food festivals, cooking competitions, quizzes, social media campaigns, BSMs, seminars, round table conferences, distribution of Millet hampers etc. They aimed to promote *Shree Anna* among the Indian diaspora and local population. The events attracted participation from chefs, students, businessperson, nutritionists, international dignitaries, government officials, the private sector, entrepreneurs etc.



Indian Delegation at AGRA Fair, Slovenia

Initiatives by Indian Embassies and Missions Abroad

Various Indian Missions abroad also promoted *Shree Anna* and expanded outreach during IYM. Each mission had been allocated one-week periods for specific activities, which included food festivals, cooking competitions, quizzes, social media campaigns, BSMs, seminars, round table conferences, distribution of Millet hampers etc. They aimed to promote *Shree Anna* among the Indian diaspora and local population. The events attracted participation from chefs, students, businessperson, nutritionists, international dignitaries, government officials, the private sector, entrepreneurs etc.



**Millet Festival at Nigeria hosted by Indian Mission
ASEAN-India Millet Festival**

The Indian Mission to ASEAN In collaboration with the Ministry of Agriculture and Farmers Welfare, organized ASEAN-India Millet Festival 2023 in Jakarta and New Delhi two editions. Aimed at promoting millets and millet-based products in

ASEAN member states, the festival featured diverse events.

The first edition was held at Kota Kasablanka Mall, Jakarta, Indonesia from 22 November- 26 November 2023. The DA&FW led a delegation of diverse group of professionals engaged in the Indian millet ecosystem, including chefs, start-ups, Farmer Producer Organizations (FPOs), industry leaders, etc. The 4-day event included a vibrant inaugural ceremony, 2 insightful panel discussions, a Millet Exhibition featuring Millet FPOs and Startups from India & Indonesia, live cooking workshops led by celebrity chefs and a B2B meeting at the Embassy of India in Jakarta.



Joint Beating of Gong at inaugural function of ASEAN-India Millet Festival, Jakarta

The second edition took place in New Delhi from 14 December-15 December with an inaugural ceremony graced by Shri Arjun Munda, Hon'ble Union Minister of Agriculture & Farmer's Welfare and Tribal Affairs.



ASEAN delegates with Hon'ble Union Minister of Agriculture & Farmer's Welfare and Tribal Affairs at ASEAN-India Millet Festival, Delhi

Ministers of State, Agriculture and Farmers Welfare, Sushri Shobha Karandlaje, and Shri Kailash Choudhary were also present in the occasion.



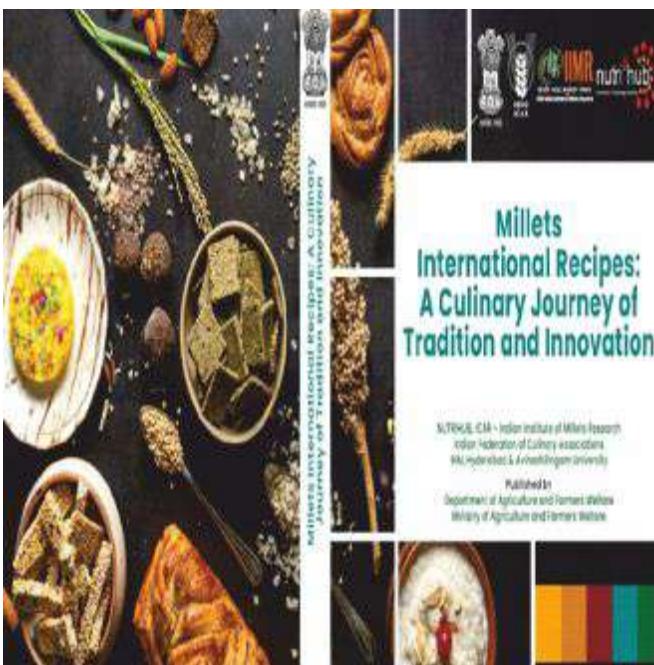
The inaugural ceremony featured two panel discussions. A 2-day Millet exhibition at Ambience-DLF Promenade showcased diverse millet-based products from 40 exhibitors, who were commended by the Hon'ble Union Minister of Agriculture & Farmer's Welfare, upon his visit to the venue. An APEDA-organized B2B meeting enhanced engagement between Indian exhibitors and ASEAN delegates, and an excursion to Delhi Haat's Millets Experience Centre (MEC) provided a vibrant culinary experience for the ASEAN delegates.



Cultural performance at Millet Exhibition for ASEAN-India Millet Festival, Delhi

8.5 Key Publications on Shree Anna

- Through concerted efforts of various stakeholders multiple informational and recipe books on millets have been released for widespread dissemination.
- DA&FW has published the 'Millets International Recipes: A Culinary Journey of Tradition and Innovation'.



Millets International Recipes book

milletology



Milletology, a Millet Cookbook

- During the G20 Agriculture Ministerial Meeting in June 2023, Hon'ble Minister of State for Agriculture & Farmers Welfare, Sushri Shobha Karandlaje launched three books titled 'Milletology', a dedicated Millet cookbook compiled by noted Indian chefs and culinary professionals of Indian Federation of Culinary Associations, 'Culinary Delights: Millets Traditional Recipes and Savouries' by IIMR and a 'A Compendium of Indian Millet Startups'.

8.6 IYM Promotion through Mass Media

Vichar Vimarsh - DD Kisan

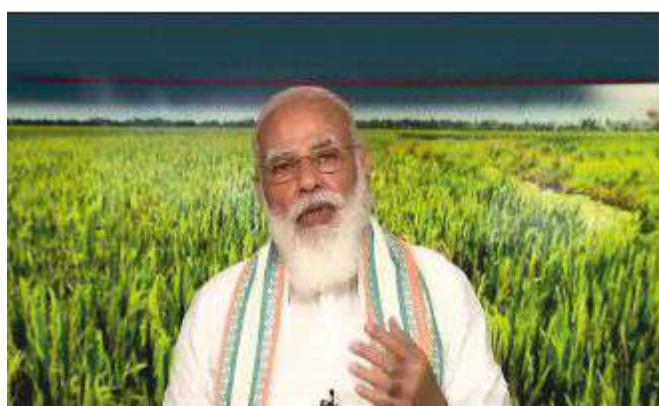
To increase the outreach of IYM, **special episodes with *Shree Anna* in focus were planned for DD Kisan's show Vichar Vimarsh**, some of the themes discussed in the panel discussion were 'Evolving *Shree Anna* Value Chain', 'Empowering Millet Farmers Through FPOs', '*Shree Anna*: Nurturing Health for Women and Children', '*Shree Anna*: Climate Resilient Smart Food of Future'. The distinguished sets of panellists featured Padma Awardees, Representative from FPOs, Start-Ups, NGOs, Chefs, Nutritionists and more.



Snapshot from Vichar Vimarsh

Videos released on Shree Anna

Six informative videos covering various aspects of *Shree Anna*, including production, health benefits, post-harvest management, recipes, success stories, and Hon'ble Prime Minister Shri Narendra Modi's vision to position India as a 'Global Millets (*Shree Anna*) Hub, have been broadcast on Doordarshan and pushed on social media handles of the Ministry, to promote *Shree Anna* and their significance.



Snapshot from one of the informative videos on millets

As part of the public awareness service, a short video on *Shree Anna* was prepared and showcased across the cinema theatres during the compulsory time to create awareness.

Social Media

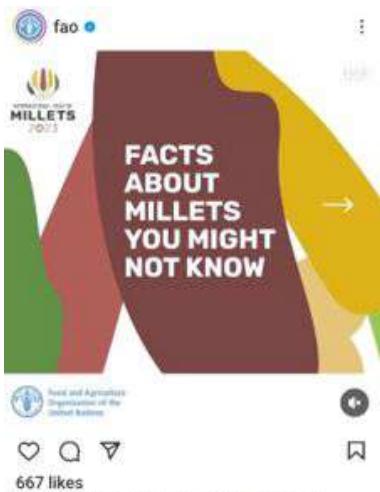


X handle of International Year of Millets

The social media accounts made specially for the International Year of Millets, (@IYM 2023) actively participated in the celebrations of IYM 2023.

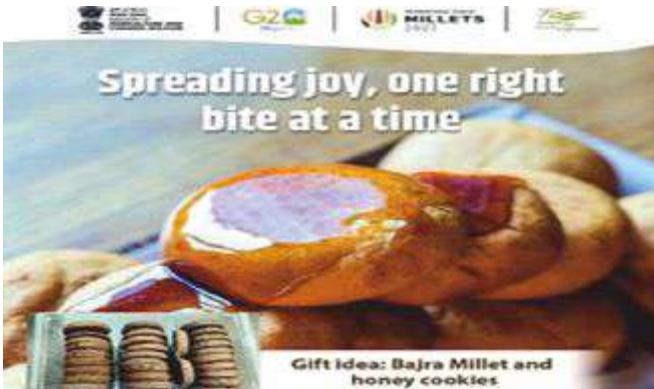
The handles shared informative content, videos, reels, campaigns, quizzes, and collaborated with various celebrity accounts. The content was published in both Hindi and English for broader outreach.

Through its active presence on platforms such as X, Facebook, Instagram, LinkedIn, and KOO, IYM's social media handles effectively conveyed information about the benefits of *Shree Anna* for consumers, cultivators, and the climate, initiatives taken by Government and other stakeholders to promote Millets and other outreach activities carried out across India and abroad.

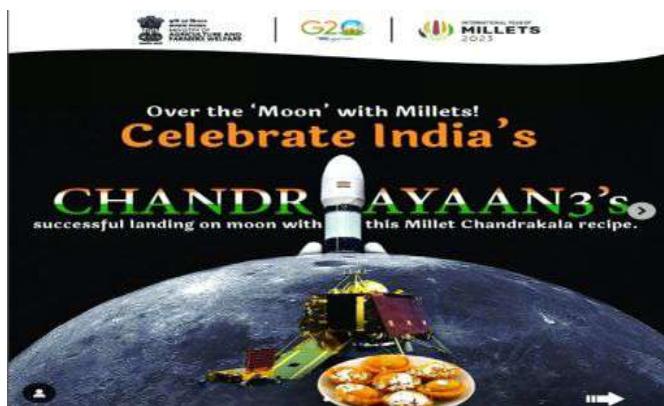


Snapshot from post on millets by FAO social media handle

Popular content included trending posts and festival-themed content featuring *Shree Anna* recipes and quizzes, generating significant interest.



Snapshot from post on IYM social media handle – Millet product Gift Idea.



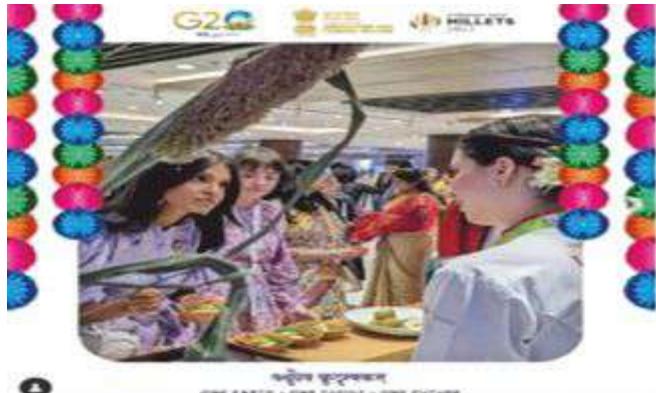
Snapshot from post on IYM social media handle – Celebrating Chandrayaan landing with Millets

Regular giveaways engaged the audience and showcased a variety of value-added *Shree Anna* products from local producer groups. Reaction videos featuring *Shree Anna* snacks and sweets also received a positive response.



Snapshot from post on IYM social media handle – Milletology book giveaway

Special strategies and plans including live tweeting, reels, video highlights, informative content, were put into action for events and activities by the DA&FW towards the celebration of IYM, resulting in remarkable success and audience engagement.



**Snapshot from post on IYM social media handle –
G20 Spouses event**



**Snapshot from post on IYM social media handle –
Regular Millet recipes**

The International Year of Millets witnessed active and committed endeavours, spanning from grassroots initiatives at the local, districts, and state levels to international events that drew participants from across the globe

Chapter-9

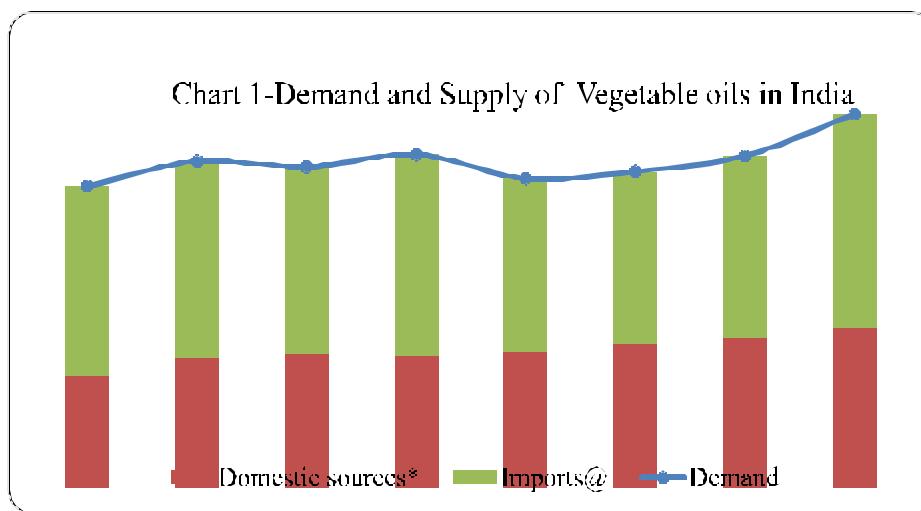
NATIONAL FOOD SECURITY MISSION (OILSEEDS) AND NATIONAL MISSION ON EDIBLE OILS-OIL PALM (NMEO-OP)

9.1 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 59% followed by soybean oil with a share of 23% and sunflower (17%). Import growth with respect to edible oils during the last decades is about 57%. The import figure of edible oils during 2022-23 reveals that India imported a total of 15.53 million tonnes of vegetable oils. The per capita consumption which was 15.80 kg/year/person in

2012-13 has increased to 23.50 kg/year/person in 2023. The consumption is around 21 kg/year/person during last five years. The year wise domestic production and import of edible oils in the country is given in (Chart -1).

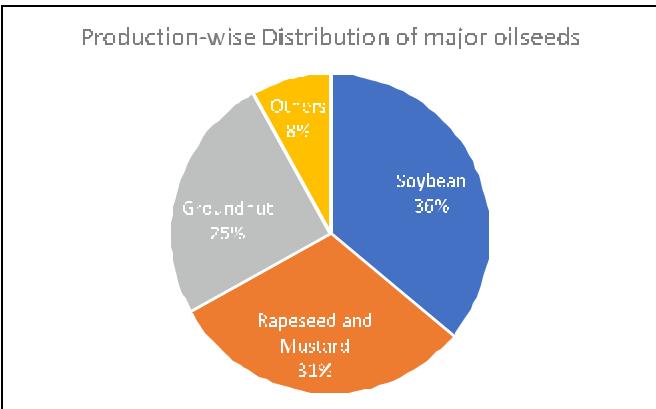
Domestic edible oil production has not been able to keep pace with the growth in consumption. During 2022-23, domestic production of edible oils was 12.41 million tonnes from both primary (Oilseeds) and secondary sources (Coconut, Oil palm, Rice bran oil, Cotton seed oil and TBOs). The year wise demand and supply of edible oil during last five years in the country are given below.



Source-Directorate of Vegetable Oils

9.2 Overview of Oilseeds Production:

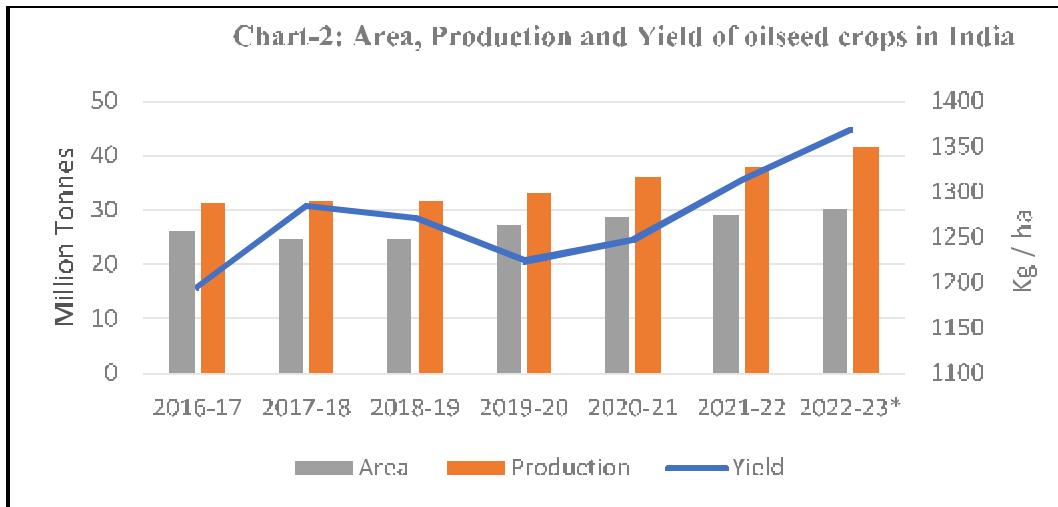
Oilseeds cultivation is undertaken across the country in about 30.24 million hectares, largely under rainfed areas covering 69% of the total area and producing around 41.36 million tons of oilseeds. Nine oilseeds are the major source of vegetable oil in the country, among which Soybean (36%), Rapeseed & Mustard (31%) and Groundnut (25%) contributes to more than 92% of total oilseeds production in the country.



However, in terms of vegetable oil production Mustard, Soybean and Groundnut contributes 29.13%, 18.03% and 17.53% respectively.

Rajasthan, Madhya Pradesh, Gujarat and Maharashtra are the major oilseeds producing

states contributing more than 77% of oilseeds production in the country. During 2022-23, Area, production and yield was 30.24 million ha, 41.36 million tonnes and 1368 kg/ha respectively. The highest ever production of oilseeds was achieved during 2022-23. (Chart-2)



* Final estimate

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

9.3. On-going Scheme

9.3.1 National Food Security Mission (Oilseeds & OilPalm) - 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 submissions namely, NFSM-Oilseeds, NFSM-Oil Palm and NFSM-TBOs. The scheme is being implemented through the State Departments of Agriculture/Horticulture. The focus of the assistance under the various interventions of the scheme is to benefit the farmers and have a direct impact on increasing the farmers income involved in oilseed cultivation. Component share between the GoI:State is 90:10 % for North East and Hilly States, 100% for UTs / Central Agencies and 60:40 % for other states.

Now, the Government has launched a separate Mission for Oil Palm, which is the National Mission for Edible Oils (Oil Palm) - NMEO (OP) in 2021 to

promote oil palm cultivation for making the country *Atmanirbhar* 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.

9.3.2 Oilseeds Production Achievement during 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 production of 41.36 million tonnes and yield of 1368 kg/ha, by the end of 2022-23.
- An area of 88.50 lakh ha-under Special Programme on Rapeseed and Mustard, during 2022-23.

iii. An area of 2621 ha - under TBOs namely Olive, Mahua, Kokum, Wild Apricot, Neem, Jojoba, Karanja, Simaroba and Tung during 2022-23.

9.4. Strategies of Oilseeds Production

Strategies for enhancing the productivity (and profitability) of oilseed-based production systems are prepared majorly 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 four categories as follows:

1. Horizontal (area) expansion and vertical (productivity increase) expansion of oilseeds crop. Focus on strategies such as rice fallow, intercropping and crop diversification.
2. Increasing seed production and distribution of newly released varieties.
3. Low-cost technologies with high impact on productivity resulting in higher income, with emphasis on eco-friendliness, high input use efficiency
4. Strategies with emphasis on improving employment in the sector through skill / entrepreneurship development.

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.

9.5. Annual Action Plan of NFSM (OS) during 2023-24:

NFSM (OS) programme is being implemented in 26 states and 3 UTs comprising of 9 (nine) Central seed producing agencies with Budgetary Estimate (BE) of Rs.600 crore.

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

9.5.1 Under this Mission, financial assistance is being provided for Seed Components (production & distribution of certified seeds, seed hubs and mini-kits); Inputs (Plant Protection Equipment, Bio-pesticides, Distribution of Micro-nutrients,

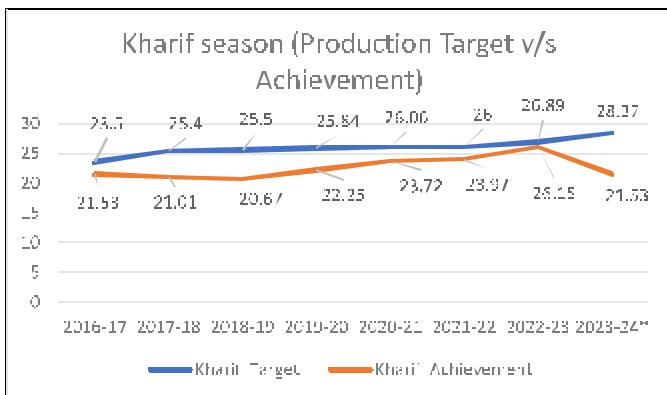
bio-fertilizers, improved farm implements, pipes, sprinklers, seed storage bins, seed treatment drums) and Transfer of Technology through Block demonstrations, Frontline Demonstrations (FLDs), Cluster Frontline Demonstrations (CFLDs), farmers and extension workers training etc. The scheme is being implemented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

The major interventions targeted under oilseeds programme during the year 2023-24 are as follows:

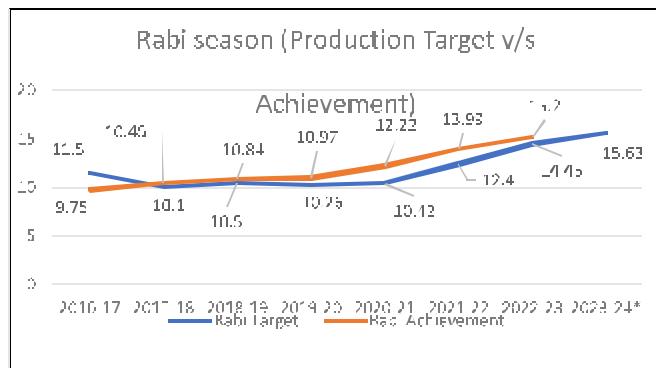
- A total of 2.74 lakh qtls of seed production of oilseed crops.
- More than 2.48 lakh qtls of certified seed distribution.
- 3.40 lakh ha block demonstrations.
- 0.65 lakh ha Front Line Demonstration (FLD)&Cluster FLDs through ICAR and KVKS.
- Training of 2523 farmers & officers
- Supply of soil ameliorants over an area of 4.49 lakh hectares
- Supply of PP chemicals/ Bio-pesticides/ weedicides/ micronutrients over an area of 3.08 lakh hectare
- Distribution of 0.52 lakh farm implements and PPEquipment.
- Distribution of 4047 sprinklers and 91.50 lakh mt water carrying pipes.
- 35 oilseeds hubs have been established with a target of producing 71532 qtls of certified seeds through ICAR, SAUs and KVKS.

Oilseeds production of 41.36 million tonnes has been achieved during 2022-23 which is the highest during past four years of implementation of the programme. The yield of 1368 kg/ha of oilseeds has been achieved during 2022-23.

Year and Season wise oilseeds production target, and production achievement, during 2016-17 to 2023-24 has been illustrated in Charts 3 and 4.



* 1st Advance Estimate, DRS



* 1st Advance Estimate, DRS

9.5.2 Seed production, Mini-kits and FLDs during 2023-24

In order to encourage the adoption of newly released varieties and improved agro-techniques in oilseed agriculture, support is provided under NFSM-Oilseeds to Central Agencies viz. NSC, KRIBHCO, HIL (include NFL), NAFED, NCCF, IFFDC & KVSSL, NDDB and BBSSL for procurement of breeder seed (B/S), production of foundation seed (F/S) and production certified seed (C/S), and supply of seed mini-kits (Kharif/Rabi/Summer) during 2023-24. In addition, support is also provided for conduct of Front-Line Demonstrations (FLDs) through ICAR/SAUs network.

During Kharif-2023 and Rabi 2023-24, total 24,32,375 nos. of seed mini-kits of different oilseeds crops were allocated (1205875 nos. of seed mini-kits during Kharif-2023 and 1226500 nos. of seed mini-kits during Rabi 2023-24) to the oilseed producing states through the Central Seed Producing Agencies. 1,15,000 Nos. of additional allocation for Mustard and 2,70,000 nos. of seed mini-kits under TL Hybrid of Rapeseed & Mustard programme were also allocated.

A total of 12902 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-2023 and Rabi, 2023-24. Moreover, a total of 81975-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, 2023-24. Further, 35 Seed Hubs for Oilseeds have been established to produce quality /certified seeds and also to make available to the farmers timely.

9.5.3 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 2022-23, more than 0.98 lakh ha area covered under TRFA-Oilseeds.

9.5.4 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.
- During 2023-24, NFSM-TBOs programme is being implemented in 8 States i.e Chhattisgarh, Jammu & Kashmir,

Maharashtra, Rajasthan, Tamil Nadu, Mizoram, Uttar Pradesh and Tripura with a target of 3053 ha to cover plantation area of TBOs.

9.6 National Mission on Edible Oils-Oil Palm (NMOE-OP):

A new Centrally Sponsored Scheme namely, National Mission on Edible Oil (NMOE)-Oil Palm (NMOE-OP) has been launched by Government to promote oil palm cultivation for making the country *Aatmanirbhar* 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 NMOE-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 Northeast alone fit for oil palm cultivation. Out of the total assessed area, only 4.60 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 in oil palm by 6.5 lakh hectares by 2025-26 and 16.71 lakh ha by 2029-30. The current fruiting area 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 NMOE (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 NMOE-OP and action to be carried out in 2023-24 is given below:

- i. 13 states had signed the MOU with the Central Government. Telangana and Andhra Pradesh have not signed.
- ii. Announced Viability Price of Rs. 10,516/ ton of FFBs effective from 1st Nov 2021 to 31st Oct 2022 (Oil Year). Similarly, for the oil year 2022-23, announced Viability Price of Rs. 13,346/ ton of FFBs effective from 1st Nov 2022 to 31st Oct 2023.
- iii. After launch of NMOE-OP, an area of more than 1,00,000 hectare under oil palm cultivation, production of FFBs of 48.56 lakh tons and CPO production 11.30 lakh tons has been achieved so far. Total cumulative area under oil palm as on 1st November 2023 is around 4.50 lakh ha
- iv. For the import of Oil Palm seed sprouts, permission for around 500 lakhs seed sprouts are given so far since new mission.
- v. Govt. of India has allocated an amount of Rs. 993.11 crores (GoI share) for implementation of NMOE-OP schemes in 15 states of the country for coverage of 1.70 lakh ha area during 2023-24.
- vi. Govt. of India had 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 NMOE-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 centers 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 increase the supply 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 had 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-

- a. There are 22 processing mills operating in the country at present i.e. Andhra Pradesh (12), Goa (1), Karnataka (3), Kerala (1), Odisha (1), Tamil Nadu (1), Telangana (2), and Mizoram (1)
- b. 15 Oil Palm Mills had been approved which are to be established in 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-

- Total no. of 111 Seed Nurseries (83 in ROI and 28 in NER) are established in the country.
 - o ROI States: Andhra Pradesh (25), Chhattisgarh (5), Goa (1), Gujarat (2), Karnataka (4), Kerala (1), Odisha (3), Tamil Nadu (4), and Telangana (38)

- o NER States: Arunachal Pradesh (4), Assam (14), Mizoram (4), Tripura (2), and Nagaland (4).

x. Seed Gardens-

- There are 12 Seed Gardens in the country at present wherein only 4 Seed Gardens (Andhra Pradesh-1, Karnataka-1, and Kerala-2) are currently producing about 15-20 lakh sprouted seeds per annum, rest of the Seed Gardens will start producing from the year 2025-26 onwards.
- 9 additional Seed Gardens are

proposed to be established in the states like Arunachal Pradesh, Assam, Chhattisgarh, Telangana, and Karnataka.

9.7 Budgetary Estimate (BE) and release:

During 2022-23, An amount of Rs.278.45 crore had been released out of the budgetary allocation of Rs.600.00 crore under Edible Oil-Oilseeds for implementation in States and Central agencies upto 31.03.2023.

During 2022-23, An amount of Rs.152.58 crore has been released out of the budgetary allocation of Rs.900.00 crore under Edible Oil-Oil Palm for implementation in States and Central agencies upto 31.03.2023.

The programme-wise allocation and release is given below: **(Rs. in crore)**

S. No.	NFSM (OS&OP)	Allocation (2022-23)	Release of fund
1.	A. States		
	i. NFSM-Oilseeds	273.71	137.01
	ii. NFSM-TRFA	59.28	10.45
	iii. TBOs	6.64	0.75
	iv. NFSM- Special Programme R&M	50.41	0.00
Total		390.04	148.21
2.	Central Agencies/R& D institutions	209.96	130.24
Total Edible Oil-Oilseeds		600.00	278.45
B. NMEO-Oil Palm		Allocation (2022-23)	Release of fund
1	States	900.00	149.10
2	Central Agencies		3.18
Total		900.00	152.58

9.8. Fund flow (%) under SCSP and TSP:

The release of fund under NFSM (OS) 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.

9.9. 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) programme.

9.10. Extension activities

Mega Oil Palm Plantation drive

Under the National Mission on Edible Oils – Oil Palm, the State Governments along with Oil Palm processing companies initiated 'Mega Oil Palm Plantation Drive' that commenced on 25th July 2023. The major oil palm growing states where the plantation drive was organized are Andhra Pradesh, Arunachal Pradesh, Assam, Goa, Karnataka, Mizoram, Nagaland, Odisha, Tamil Nadu, Telangana, and Tripura. The Oil Palm Processing companies such as Patanjali Food Pvt. Ltd., Godrej Agrovet, and 3F participated actively this participated drive. Apart from that other regional companies such as KE Cultivation and NavBharat also participated in the drive. The Mega Oil Palm Plantation drive concluded on 12th August 2023. Through this drive, the states and the companies were able to reach out to more than 7000 farmers in

80 villages of 50 districts in 11 states, covering approximately 3500 ha. of the area and planting more than 5.00 lakh planting material.

As part of the mega plantation drive, the companies also organized unique and intensive large-scale technical training seminars on oil palm cultivation for farmers along with the department staff. The aim of the seminars conducted was to make the

farmers and the staff more aware of the management packages which will help to ensure the plants' health, thereby enhancing productivity and creating sustainable income sources. Several dignitaries including senior political leaders, department officials, and gram panchayat members also graced the series of events that were conducted as part of the Pan-India Mega Oil Palm Plantation Drive.



Pic 1: Mega Oil Palm Plantation Drive on 8th Aug in Tinsukia district, Assam. Hon'ble CM Dr. Himanta Biswa Sarma, Hon'ble Agri Minister Shri Atul Bora, Swami Ramdev Ji and other public representatives graced the event



Pic 2 - Mega Plantation Drive in Bidar district of Karnataka, 3rd August 2023



Pic 3: Mega Oil Palm Plantation Drive inaugurated by Shri Ratan Lal Nath, Hon'ble Minister of Agriculture and Farmers Welfare, Govt. of Tripura in Jirania Agrilidistrict of Tripura.

Chapter-10

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

10.1 Overview

National Mission for Sustainable Agriculture (NMSA)

National Mission on Sustainable Agriculture (NMSA) is one of the Missions launched under the National Action Plan on Climate Change (NAPCC) in 2008. 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). 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 up of the respective Program Divisions.

The NMSA Strategy document was revised for the period 2018 to 2030 and has adopted an integrated holistic approach focussing 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 measures.

From 2022-23, various programmes / schemes of NMSA have been subsumed under Rashtriya Krishi Vikas Yojana (RKVY) as RKVY-Annual Action Plan based programme. The schemes related to NMSA are given as under:

- Per Drop More Crop (PDMC) -Now Subsumed under RKVY Cafeteria approach.
- Rainfed Area Development (RAD)- Now Subsumed under RKVY Cafeteria approach.
- Agro Forestry -Now Subsumed under RKVY Cafeteria approach.
- National Bamboo Mission (NBM)
- Soil Health Management (SHM)-Now Subsumed under RKVY Cafeteria approach.
- Paramparagat Krishi Vikas Yojana (PKVY)- Now Subsumed under RKVY Cafeteria approach.
- 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)
- National Mission on Natural Farming

10.2 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.

10.2.1 Per Drop More Crop Component (PDMC):

Department of Agriculture & Farmers Welfare (DA&FW) is implementing Centrally Sponsored Scheme of Per Drop More Crop (PDMC) in the country from 2015-16. From the year 2015-16 to 2021-22, the PDMC was implemented as component of Pradhan Mantri Krishi Sinchayee Yojana (PMKSY). From the year 2022-23, the PDMC is being implemented under the Rashtriya Krishi Vikas Yojana (RKVY). PDMC focuses on enhancing water use efficiency at farm level through Micro Irrigation namely Drip and Sprinkler Irrigation Systems.

Activities of Micro Irrigation:

- Drip Irrigation: Irrigating root zone through emitters fitted on a lateral tube.

- Sprinkler Irrigation: Water is discharged under pressure in the air through a set of nozzles attached to a network of pipes.

Benefits of Micro Irrigation:

The Micro Irrigation helps in water saving as well as reduced fertilizer usage through fertigation, labour expenses, and other input costs, while sustaining soil health and overall income enhancement of farmers.

Salient Features of PDMC Scheme:

- The Government provides financial assistance @ 55% for small and marginal farmers and @ 45% for other farmers for installation of Drip and Sprinkler systems under the PMKSY- PDMC. Besides, some States provide additional incentives/ subsidy to farmers for encouraging installation of Micro Irrigation.
- The Assistance for installation of Micro Irrigation systems is limited to 5 hectares per beneficiary with subsidy cycle of 7 years.
- 25% higher amounts have been taken into consideration while working out the unit cost for the North Eastern and Himalayan states, UTs of J&K and Ladakh and 15% higher for low penetration of Micro Irrigation States namely Bihar, Chhattisgarh, Goa, Punjab, Jharkhand, Odisha, Uttar Pradesh, West Bengal and Union Territories for larger adoption of systems by the farmers under the scheme.

Achievements made under PDMC:

Year	Central Assistance released (Rs. in crore)	Area covered under Micro Irrigation (in lakh ha)
2015-16	1556.73	5.73
2016-17	1991.24	8.40
2017-18	2819.39	10.49
2018-19	2918.38	11.59
2019-20	2700.02	11.73
2020-21	2562.19	9.37

2021-22	1796.12	10.15
2022-23	1901.37	11.02
2023-24 (as on 31.12.23)	1017.77	4.00
Total	19114.65	82.48

An area of 78.47 lakh ha has been covered under Micro Irrigation in the country through PDMC from 2015-16 to 2022-23 which is 69% higher achievement as compared to the corresponding Pre-PDMC eight years period. Besides, an area of 4 lakh ha has been covered during 2023-24 (as on 31.12.23). Total area of 82.48 lakh ha has been covered under PDMC as on 31.12.23.

10.2.2 Micro Irrigation Fund (MIF): Micro Irrigation Fund (MIF) with corpus of Rs. 5000 crores have been created with National Bank for Agriculture and Rural Development (NABARD). The objective of the MIF is to facilitate the States in mobilising resources for expanding coverage of micro irrigation. The States may access MIF for taking up special and innovative projects for expanding coverage of Micro Irrigation and also for incentivising micro irrigation beyond the provisions available under PDMC scheme to encourage farmers. Projects of Rs 4724.74 crore have been approved to the States and so far Rs 2812.24 cr has been disbursed to the States of Andhra Pradesh, Haryana, Gujarat, Punjab, Rajasthan and Tamil Nadu on reimbursement basis.

A Budget Announcement has been made by the Government during the year 2021-22 to double the initial corpus of MIF by augmenting another Rs. 5,000 crores.

Findings of Evaluation Study of PDMC:

Recent evaluation studies of the scheme have reiterated that Micro Irrigation is relevant in achieving national priorities such as improving on-farm water use efficiency, enhancing crop productivity, generating employment opportunities, improving quality of agri/horti. products and increase the farmer's income.

10.2.3 Rainfed Area Development (RAD): To mainstream development of rainfed areas in a sustainable manner, Rainfed Area Development

(RAD) Scheme was made operational from 2014-15 in the country as a component of National Mission for Sustainable Agriculture (NMSA). Rainfed Area Development (RAD) aims at promoting sustainable agriculture production through adaptation of agricultural climatic zone wise Integrated Farming System (IFS) models developed by Indian Council of Agriculture research (ICAR). RAD aims at promoting integrated farming system (IFS) with emphasis on multi-cropping, rotational cropping, inter-cropping, mixed-cropping practices with allied activities like horticulture, livestock, fishery, apiculture, etc. to enable farmers not only in maximizing the farm returns for sustaining livelihood, but also to mitigate the impacts of drought, flood or other extreme weather events. RAD component is implemented under the umbrella scheme 'Rashtriya Krishi Vikas Yojana' from the year 2022-23 onward.

The various activities supported under RAD component includes Integrated Farming System-cropping systems, Fishery, Apiculture, Silage making for increased availability of green fodder round the year, Vermi compost Units/organic input production unit, green manuring etc. Since its inception (2014-15) and up to 2022-23, an area of 7.12 lakh ha rainfed area has been brought under Integrated Farming System under RAD with an expenditure of Rs. 1619.73 cr. During 2023-24, an amount of Rs.80.71 crore has been released upto 31st December, 2023 to the States for the implementation of the programme.

Salient Features of RAD:

- a cluster based approach of 20 ha. or more (contiguous or non contiguous in difficult terrain with close proximity in a village/adjoining villages) has been adopted to derive noticeable impact of convergence and encourage local participation and for future replication of

the model in larger areas. Development and strengthening of FPOs through involvement in the implementation of the program has been emphasized upon.

- b. Priority has been given to Gram Panchayat/Blocks having more than 60% of the area under uplands/rain-fed, Natural Farming Clusters, Watersheds area taken up under WDC project in last 20 yrs, Gram Panchayat/Blocks which are the focus areas of NRLM, Aspirational Districts etc.
- c. Millets perform exceptionally well in rainfed areas due to its hardiness and capacity to withstand climatic aberration. Cultivation of millets has been preferred in RAD thus contributing to Government's strategy to promote millets. At least 25% area of the cluster is to be taken up for Millets cultivation.
- d. The scheme also promotes climate resilient agriculture practices. Indian Council of Agricultural Research (ICAR) implements flagship network project namely National Innovations in Climate Resilient Agriculture (NICRA) to promote climate resilient agricultural practices. In order to replicate/upscale the experiences gained in NICRA, the RAD Cluster would be linked/include the nearest NICRA Villages.

10.3 Agro Forestry

As a follow up to the recommendation of the National Agroforestry Policy, 2014, Sub-Mission on Agroforestry (SMAF) - 'Har Medh par Ped' under National Mission for Sustainable Agriculture (NMSA) was conceived to promote plantation on farmlands. The scheme(SMAF) was implemented from 2016-17 to 2021-22 with an aim of providing an additional source of income to the farmers. Since inception of the scheme in 2016-17, a total of 682 lakh trees under the 1.61 lakh Hectare have been planted in the country. Under the Scheme, around 899 nurseries have been setup/developed.

SMAF was discontinued during 2022-23. The program continues as Agroforestry component of RKVY from 2023-24 with objective of encouraging and expanding tree plantation in a complementary

and integrated manner with crops to improve productivity. The scheme will ensure the availability of Quality Planting Materials (QPM) like seeds, seedlings, clones, hybrids, improved varieties, etc. The scheme focuses on Quality Planting Material (QPM) of healthy, resilient and adaptable nursery stock raised through seed or vegetative propagation with an overall goal to improve the quality of the plants available to farmers and growers. The objectives of the scheme includes;

- i. To encourage and expand tree plantation in a complementary and integrated manner with crops to improve productivity, additional income generation and improved livelihoods of rural households, especially the small farmers.
- ii. To ensure the availability of Quality Planting Materials (QPM) like seeds, seedlings, clones, hybrids, improved varieties, etc. Quality Planting Material (QPM) of healthy, resilient and adaptable nursery stock raised through seed or vegetative propagation with an overall goal to improve the quality of the plants available to farmers and growers.
- iii. To popularize various agroforestry practices/models suitable to different agro-ecological regions and land use conditions through demonstration plots.
- iv. To create a database, information and knowledge support in the area of agroforestry.
- v. To provide Research & Development (R&D), extension and capacity-building support to the agroforestry sector.
- vi. To identify and catalyze linkages with traditional and emerging markets for the timber and non-timber products generated from agroforestry plantation on farmland including Bio-fuels, matchwood, plywood, silk, fiber, lac, beauty and wellness sector, handicrafts, construction, etc.
- vii. To promote value addition and processing of agroforestry produce by creating collection and post-harvest facilities for additional income generation by farmers.

viii. To provide use of modern technology for monitoring and evaluation (M&E) on the impact of agroforestry in agro-ecology.

The scheme components includes (I) Establishment of New Nurseries (ii) Establishment of Tissue culture Units (iii) Skill Development and awareness campaign (iv) Research & Development (v) Monitoring & Evaluation and Other specialized technical works (vi) Local Initiative. Under the program 100% assistance will be provided to Government agencies and 50% back ended credit linked assistance will be provided for private partners.

Salient Features:

- a. Agroforestry shall promote the setting up of new small, medium and hi-tech nurseries for producing Quality Planting Materials (QPM) like seeds, seedlings, clones, and improved varieties to meet the requirement of farmers.
- b. The Nodal Department/Agency shall ensure the availability of QPM by producing on its own or through the collaborative arrangement with individuals/institutions such as SAUs, KVKS, FPOs, SHGs, NGOs, Entrepreneurs/Start-ups, Forest/Agriculture institutes, farmers/ cooperative societies etc.
- c. QMP raised under the scheme shall be made available for farmers/SHGs free of cost or as decided by the respective States/UTs.
- d. All nurseries set up under the scheme shall comply with the registration and accreditation requirements as laid down by CAFRI. The States shall also make efforts for accreditation of other existing Forest Department/ Private/ Cooperative nurseries in the State that produce planting material for Agroforestry.
- e. ICAR-CAFRI will act as Nodal Agency for repository of agroforestry related works with a preamble note to states for providing all related information to CAFRI.
- f. All land-based interventions shall be Geotagged through Apps based monitoring system. A robust Monitoring and Evaluation

mechanism to keep a tab on supply of QPM up to the survival of planted trees shall be ensured. M&E platforms using modern geo-spatial technology/satellite imagery in collaboration with MNCF/ICAR-CAFRI shall be taken up.

- g. Since MNREGA provides sufficient opportunities for agroforestry related works, States/UTs are to ensure convergence of the scheme with MNREGA to meet the cost of plantation including maintenance.

Natural Resource Management

10.4 National Bamboo Mission (NBM)

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.

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 except 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.

Financial Status:

The scheme was announced during the Budget speech on 2018 and Rs. 361.96 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	40.00	11.63
2023-24	-	26.57 (as on 31.12.2023)
Projection for January 2024-March 2024.		12.00

Physical Progress:

Since the launch of restructured NBM during 2018-19, 46717 hectare non-forest area has been planted with bamboo, established 375 Bamboo Nurseries, 83 bamboo treatment and preservation units, 419 Product Development and Processing units, 109 Infrastructures for Bamboo Market, 1801 development of tools, equipment and machinery were achieved, 17294 persons were trained, 224 Workshops/seminars/trade fairs/exhibitions and 237 minor R&D activities were carried out.

Other Initiatives:

A project on "**India-Japan Initiative for Sustainable Development of the bamboo sector**" supported by the Government of Japan through JICA is being implemented. The National Bamboo Mission is the Executive agency and North East Cane and Bamboo Development Council is the implementing agency for the project. The major focus areas of the project are; skill upgradation of the artisans, improvement of production of export quality bamboo articles, knowledge and technology sharing etc.

Formation & Promotion of FPOs in bamboo sector:

Forty (40) FPOs in Bamboo Sector have been

formed under the Central Sector Scheme "Formation & Promotion of 10,000 FPOs" through 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).

10.5 National Rainfed Area Authority (NRAA):

The 'National Rainfed Area Authority' (NRAA) serves as an expert body to provide knowledge inputs regarding systematic up-gradation and management of country's dry land and rainfed agriculture. In this capacity, NRAA is actively engaged with various ministries and departments at the union level, and with the state governments as well. The focus of such engagements is always promotion of rainfed agriculture by enabling knowledge-based interventions and efficient coordination with various agencies, and convergence of different services. 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. NRAA was allocated Rs. 4.07 crores during 2022-23 and the budget for 2023-24 is Rs 4.44 crore. Some of the major activities undertaken during the year 2023-24 by NRAA are:

- NRAA is engaged in the development of drought-proofing action plans targeting the most vulnerable districts in the country. In the initial phase, 24 district plans were prepared and received approval from the respective state governments. In conjunction with its drought-proofing initiatives, NRAA has collaborated with NDMA as knowledge partner for drought proofing in selected districts across twelve states. An amount of Rs. 1200 crore has been earmarked under XVth Finance Commission under NDMF for implementation of these plans. NRAA along with NDMA conducted several rounds of

consultation with states and professional agencies to finalize the strategic approach. The templates for submission of proposal and the operational guidelines for implementation has been shared with states. The TAC is headed by NDMA and represented by members of NRAA.

- NRAA has taken up a project "In-situ Conservation and Management of Wild Rice (*Oryza rufipogon*) in the Sonitpur district of Assam, India" in partnership with ICAR-National Bureau of Plant Genetic Resources (NBPGR). The project envisages *in-situ* conservation, habitat and molecular study, and nutritional profiling of wild rice *Oryza rufipogon*. All stakeholders, Assam State Biodiversity Board, Forest Department, BMC Borjuli, Borjuli Tea Estate, KVK, Sonitpur and NRAA, New Delhi are partners in the management of wild rice site and implementation of this project.
- NRAA is implementing a FAO-funded project focused on "IoT-Enhanced Real-Time Weather Forecasting and Agro-Advisory Models" in partnership with Weather Risk Management Services Pvt Ltd (WRMS) across four states: Andhra Pradesh, Himachal Pradesh, Karnataka, and Maharashtra. The primary objective of this project is to equip farmers with a holistic solution for managing risks throughout the entire crop cycle including addressing uncertainties in the market. This project has yielded an IoT-based real-time Farm Monitoring System, which includes pest forecasting frameworks, irrigation advisory models, and nutrient advisory systems.
- NRAA is engaged as knowledge partner of DoLR in the World Bank supported REWARD program to develop National technical standards for improved watershed management. In this regard, NRAA established a consortium and signed MOU's with four agencies Viz., MANAGE, NRSC, ICRISAT and WASSAN. The project is designed to amalgamate the most cutting-edge practices in Land Resource inventory, Hydrology monitoring, Remote sensing and GIS applications, Monitoring & Evaluation and community engagement in the REWARD states of Karnataka and Odisha. NRAA is also leading the National Level Technical Committee (NLTC) for overall technical support and guidance to DoLR, technical institutions as well as to the states. The technical standards emerging from REWARD will refurbish the ongoing watershed development projects, and will stimulate the next generation watershed programmes in the country.
- The WDC-PMKSY 2.0 program is being implemented in 28 States and 2 Union Territories since 2021. NRAA in collaboration with DoLR has formulated a set of specific guidelines for the implementation of livelihood activities under WDC-PMKSY 2.0. These guidelines underscore an inclusive approach to empower economically disadvantaged populations living in watershed areas, particularly those who lack land and assets
- NRAA, in collaboration with FAO, Department of Agriculture & Farmers' Empowerment, Odisha and WASSAN implemented the project titled "Landscape-based Integrated Rainfed Agriculture Systems for Improved Income and Nutritional Security through Convergence" in Odisha's Nuapada district. The project introduced an innovative and redefined Integrated Farmers' Livelihood System (IFLS) approach, emphasizing intercropping, livestock and fisheries. The learnings gained from this project has been widely disseminated to state agriculture departments, agriculture universities and other organizations.
- The NRAA has taken a significant step towards fostering a National policy on accelerated growth of rainfed agriculture. The draft policy was made accessible on both the NRAA and DA&FW portals for wide array of suggestions from stakeholders. The policy will be pivotal in addressing the pressing challenges posed by climate change and achieving sustainable and

ecological sync production system. The proposal for obtaining approval of cabinet on the policy has been initiated.

- In adherence to the United Nations' declaration of 2023 as the International Year of Millets, NRAA, in collaboration with the Revitalising Rainfed Agriculture (RRA) Network co-hosted a two-day People's Convention on Millets in February 2023 at NASC Complex, New Delhi. The event served as a vibrant celebration of the rich cultural traditions and diversity associated with millets, featuring policy discussions with theme "Millets for People." The Convention saw active participation from a diverse spectrum of stakeholders, including farmers, entrepreneurs, manufacturers, researchers and FPOs.

Apart from above, NRAA is engaged with ICAR institutes, state agricultural universities and other national and international institutes to drive the research agenda for rainfed agriculture and capacity building of stakeholders.

10.6 Climate Change

Climate Change Cell under Natural Resource Management Division is a Nodal unit for PM Council for Climate Change to establish an effective inter and intra Departmental/Ministerial co-ordination for National Mission on Sustainable Agriculture (NMSA). The Cell collate activities being undertaken by other Divisions/Departments such as INM, MIDH, Crops, Animal Husbandry, ICAR etc. for preparing and communicating a consolidated report to Ministry of Environment Forest and Climate Change (MoEF&CC) and other committees.

Indian Agriculture is highly vulnerable to climate change with approximately 51 percent of cultivated areas under rainfed conditions. Climate change is causing significant shifts in weather patterns throughout the world and it is expected to impact agricultural production systems thereby posing major challenges to the livelihoods and food security to millions of people. As per the latest Inter Governmental Panel on Climate Change (IPCC) Assessment Report (AR-6), increase in rainfall, higher inter annual variability, intense and frequent

heatwaves, likely temperature increase by 1.5 to 4.0° C and rise in sea level by 300 mm could be the major challenges for sustainable agriculture in the coming years (IPCC, 2021). Agricultural production in India is becoming increasingly vulnerable to climate variability characterized by temperature rise and altered frequency, timing and magnitude of precipitation. One or other part of the country is experiencing frequent extreme weather events causing sizeable loss of yield and income to the farmers at micro scale and to the nation's economy at macroeconomic level. This necessitates accelerated research for developing resilient and smart technologies wherever feasible to combat climate change as well as their mainstreaming through adaptation mechanisms. Therefore, Government of India has accorded a high priority on research and development to cope with climate change in general and agriculture in particular. During the sessions of COP26 Climate Summit, Glasgow, Scotland (2021), Government of India declared 5 commitments (Panchamrit) to deal with climate change. India, through its Nationally Determined Contributions (NDC) committed to become carbon neutral and achieve net zero emissions by the year 2070. India has identified agriculture as a sector for taking up adaptation as climate action.

10.6.1 Meetings held during the year 2023 related to NMSA

i. Executive Committee on Climate Change (ECCC)

Constituted under the chairmanship of Principal Secretary to Hon'ble PM to assist in evolving a coordinated response to issues relating to climate change at the national level and to monitor the implementation of the eight National Missions under National Action Plan on Climate Change (NAPCC).

- Ninth Meeting 3rd June 2023
- Tenth Meeting 14th Aug. 2023

ii. National Advisory Committee under NMSA

National Advisory Committee (NAC) under the Chairmanship of Secretary (A&FW) constituted with the members of line Departments and organizations to provide overall direction and

guidance to the Mission monitor and review its progress and performance at National level.

iii. Fifth meeting of NAC held on 1st June 2023.

Celebrated "World Environment Day" on 5th June 2023

Ministry of Agriculture and Farmers Welfare organized Mega Event on Mission LiFE on the occasion of "World Environment Day", 5th June 2023 at Dr. C. Subramaniam Auditorium, NASC Pusa, New Delhi. The program began with tree plantation activity in the premises of the venue by Sh. Kailash Choudhary, Chief Guest and Hon'ble Minister of State for Agriculture and Farmers Welfare, with other dignitaries, Sh. Manoj Ahuja, Secretary DA&FW, Additional Secretaries and Joint Secretaries in the presence of FPOs, Agri-startups, Students, Scientists, Officers and Farmers from various states, ICAR and DA&FW staff. This was followed by inauguration of exhibition on Natural and Organic Farming showcasing and creating awareness on the sustainable agricultural practices that attribute to LiFE actions.

10.6.2 Participation in UN Climate Change Conference-28 (COP-28)

Ministry of Agriculture and Farmers Welfare participated in COP-28 held at Dubai from 30th November to 12th December along with Ministry of Environment, Forests & Climate Change. Discussion was held on the way forward on the implementation of Sharm el-Sheikh joint work on implementation of climate action on agriculture and food security. India supported the need for a holistic approach to climate action in agriculture and the upscaling of climate resilient practices that address issues related to agriculture and food security considering regional, national and local circumstances.

On 10th December, a Side Event was organized by the Ministry of Agriculture and Farmers Welfare at India Pavilion in the COP-28 venue. Panel discussion on lighthouse initiatives of the Ministry of Agriculture and Farmers Welfare was held involving officials of the Ministry, State Government, eminent experts and other stakeholders in sustainable agriculture. The lighthouse initiatives of the Ministry presented in the side event include;

- Transforming Global Food Systems through Climate Resilient Millets
- Climate Resilient Villages-Case Study from India
- Sustaining Soil Health through Natural Farming for Global Food Security

10.6.3 Constitution of Carbon Credit Cell in NRM Division

Carbon markets can offer opportunities to mobilize investments in priority sectors such as agriculture, forest and land use. Carbon markets have gained significant momentum in recent years and can help to accelerate the transformation needed towards more sustainable agriculture practices. Developing carbon market in agriculture can be an important driver towards more remunerative agriculture practices linking farmers to carbon markets. In view of above a separate Cell, has been constituted in NRM Division to explore the possibilities for carbon market in Agriculture Sector. Many interventions launched under National Mission on Sustainable Agriculture (NMSA) such as agroforestry, micro irrigation, crop diversification, National Bamboo Mission, Natural / organic farming, Integrated Farming Systems, etc. have potential to sequester carbon in soil or reduce emission thus creating opportunities for small holder farmers towards carbon trading and receiving incentives.

10.6.4 Activities related to Mission LiFE

The implementation of Mission LiFE actions is being coordinated by NRM Division and in this regard, an Action Plan on Mission LiFE along with its LiFE actions points and Key Performance Indicators (KPIs) pertaining to the Ministry of Agriculture and Farmers Welfare was prepared and submitted to Ministry of Environment, Forest and Climate Change, the Nodal Ministry of the Mission LiFE. The activities carried out during the year 2023 related to Mission LiFE actions of Department of Agriculture and Farmers Welfare and ICAR are also updated on the portal time to time.

10.7 Soil and Land Use Survey of India (SLUSI)

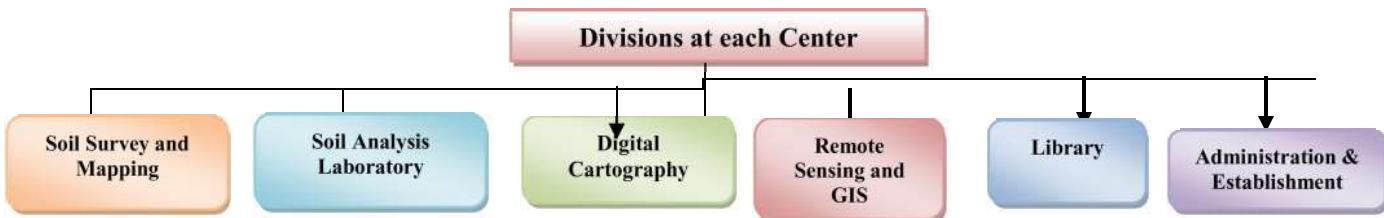
Soil and Land Use Survey of India (SLUSI)

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.

The organization mandate is to carry out soil survey of different intensities in order to provide scientific database for developmental programmes encompassing soil health management, soil and water conservation planning, watershed development, 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) 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 **261.150 million ha** in catchment areas of different river basin of the country. Similarly, the institute has also accomplished detailed soil survey database generation in **26.00 million ha** area in priority sub/micro watersheds, Rainfed/Aspirational districts of various states at 1:10,000 Scale using high resolution Satellite Data. Similarly, SLUSI has also carried out Soil Resource Mapping (SRM) at 1:50,000 scale in area of **166 million ha** areas of 345 districts in the country.

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 2023-24 (as on 31st October, 2023)

- Development of Detailed Soil Database at 1:10000 scale under National One Soil Unified Information System (NOSUIS):**

SLUSI takes up the task to carry out Detailed Soil

Survey (DSS) 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 2023-24, the institute initiated the field work in 37 districts namely Banaskantha (Gujarat), Patan (Gujarat), Dharmapuri (Tamilnadu), Thoothukudi (Tamilnadu), Krishnagiri (Tamilnadu), Tirunelveli (Tamilnadu), Tenkasi (Tamilnadu), Tuticorin (Tamilnadu), Tiruvannamalai (Tamilnadu), Anantpur (Andhra Pradesh), Narayanpet (Telangana), Wanaparthy (Telangana), Bankura (West Bengal), West Mednipur (West Bengal), Jhargram (West Bengal), Dhule (Maharashtra), Aurangabad (Maharashtra), Nanded (Maharashtra), Ahmednagar (Maharashtra), Jalgaon (Maharashtra), Harda (Madhya Pradesh), Tehri Gharwal (Uttarakhand), Bharatpur (Rajasthan), Sikar (Rajasthan), Jhansi (Uttar Pradesh), Lohardaga (Jharkhand), Simdega (Jharkhand), Kunti (Jharkhand), Saraikela-Kharswan (Jharkhand), Ramgarh (Jharkhand), Hazaribagh (Jharkhand), Koderma (Jharkhand), Dhanbad (Jharkhand), Pakur (Jharkhand), Jamtara (Jharkhand), Sahibganj (Jharkhand), Godda (Jharkhand) having an area of 96 lakh ha. Out of

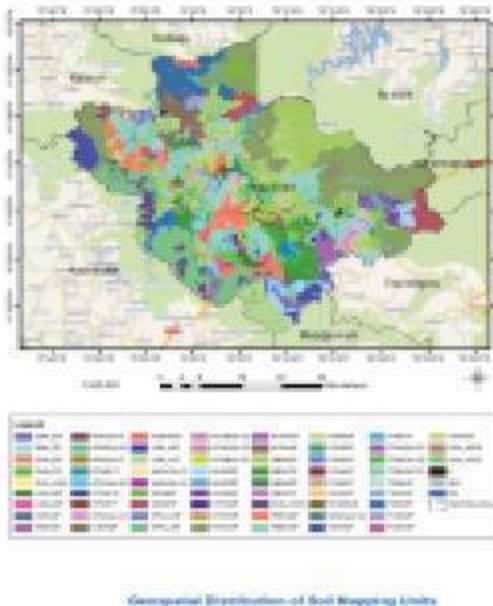
which, the area of 44 lakh ha have been completed upto 31.10.2023 and the rest of area to be completed by March, 2024.

The work of DSS will provides complete diagonals 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.

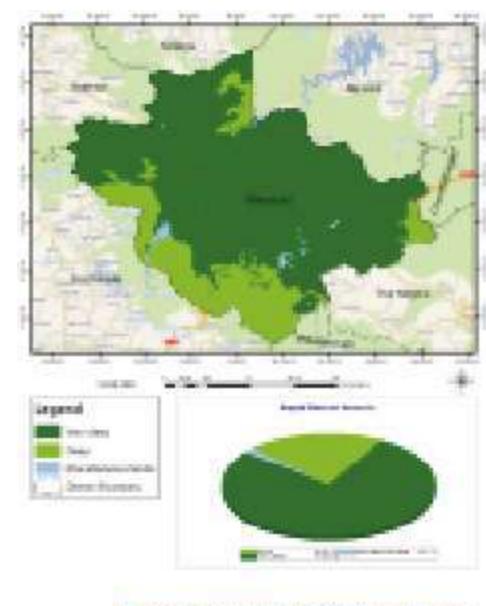
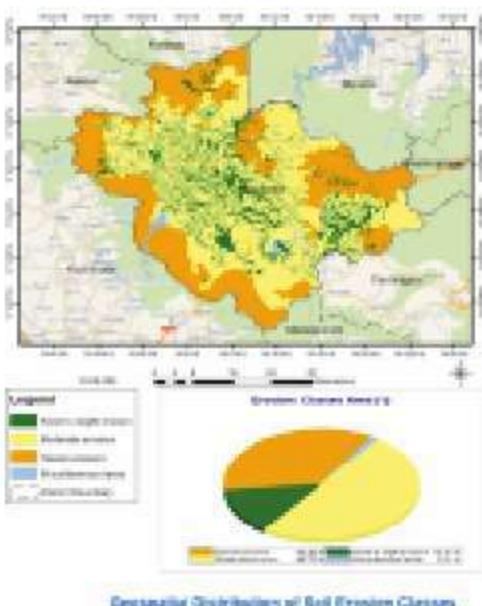
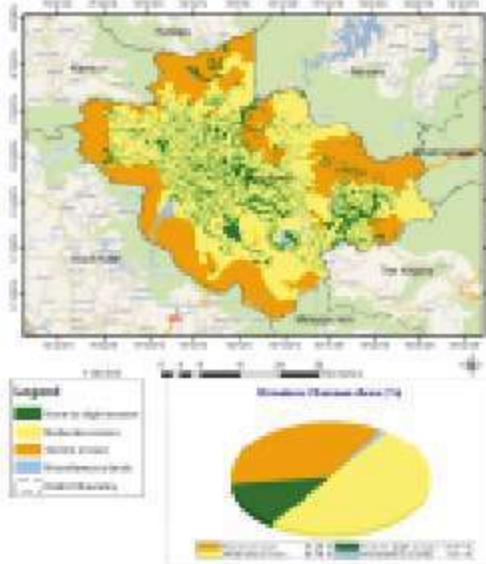
The aim of the soil data is to create a digital system incorporating land use trends, soil characteristics,

topography, fertilizer usage and major & micro nutrient availability status, for use in monitoring and predicting those vulnerable to deficiency, toxicity and to provide a basis for land use decision making. One of the main aims of the national-level soil database 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 of Wayand District, Kerala



Erosion Map of Wayand District, Kerala



Physiography: Hill side slopes **Latitude & Longitude:** 11°34'48" N & 76°08'17"E

Classification: Fine, Mixed, Isohyperthermic, Oxic Dystrudepts



Ø Outreach Programme for Farmers

SLUSI has conducted outreach programs on Soil Health Management for farmers to create

awareness among them regarding the benefits of Soil Health Card.

The programme was organized by all seven centres

of SLUSI along with State Agricultural departments wherein the farmers are actively participated. The SLUSI officers describe the benefits of Soil Health Card and the process of collection of soil samples for Soil Testing. They also explained about an importance to maintaining soil fertility and nutrient use efficiency in farmer's field. Soil fertility maps from the nearby villages were displayed and explained for easy understanding of the same. Thematic maps of Detailed Soil Survey report was also displayed to create a better exposure of the nature and activities of SLUSI. Pamphlets in local language describing the importance and method of collection of soil samples for soil testing were also distributed to the farmers.

The field demo station on profile study and hands on practical experience for collecting soil samples from field & soil testing for Soil Health Card preparation was conducted in the nearby Farmer's field. The field level queries were cleared and the contents of Soil Health Card were explained in detail by the officers of SLUSI and State Agri. Dept. for better understanding and awareness of farmers.

The short interaction and feedback sessions were carried out to know about the farmers' response in which farmers opined that the knowledge they got regarding the same will be helpful in future and vowed to go for soil testing of their farm lands.

The photographs of the activity are as given below:



Village – T. Thimmapuram; Mandal – Tadipatri; District – Anantpur; State – Andhra Pradesh on 24.05.2023 organized by Hyderabad Centre, SLUSI



Village – Pandra, Block- Ratu, District- Ranchi on 24.05.2023 organized by Ranchi Centre, SLUSI



Maniyabadi Village, Morrapur Block, Dharmapuri district, Tamil Nadu on 23.05.2023 organized by Bangalore Centre, SLUSI



Details of outreach programme (HSC/DSS) at farmer field at Kalmunda village, Tehsil Katol, Dist. Nagpur on 23.05.2023

Ø Outreach Programme for Students

An Awareness Programme on Soil Health Management and Soil Health Card Scheme was conducted for students by all centres of Soil and Land Use Survey of India, In this program importance of Soil Health Card and Soil Health Management had been explained with different

posters on site selection, soil sampling, soil analysis and soil fertility map showing 12 parameters. The students, teachers and Principal of Schools were participated in this program. The SLUSI officers highlighted the importance of Soil Health Management and Soil Health Card Scheme among the students.





Sutharnasdi Village tehsil Bhabhar Distt. Banaskantha , Gujarat state on 20.10.2023. Government Secondary School, Sutharnasdi organized by Ahmedabad Centre, SLUSI



School-Bharatiya VidyaBhavan's Vidyasharam, NIRD & PR Campus, Rajendranagar, Hyderabad, organized by Hyderabad Centre, SLUSI



10th October, 2023 in Rajkiye +2 Uchhay Vidyalaya, Kanke, Ranchi organized by Ranchi Centre, SLUSI



Student's Exposure Training Program Conducted at SLUSI Bangalore Centre for Annamalai University Final Year UG students on 18.08.2023 & 25.08.2023





Student's Exposure Visit Conducted at SLUSI Bangalore for Savistara Gurukul School, Thindlu, Bangalore on 15.09.2023



Bhawani Shankar Inter College, Sector-46, Noida



Govt. Inter College, Sec-12, Noida



Secondary School, Katol Road Nagpur on 15.09.2023 organized by Nagpur Centre, SLUSI

Meetings held during the year 2023 related to National One Soil Unified Information System (NOSUIS), Soil Health Card (SHC) and Krishi-DSS

1. **National Steering committee of National One Soil Unified Information System NOSUIS members** meeting was organised at Krishi Bhawan under chairmanship of Joint Secretary (INM) on 03.03.2023 to review the progress of work of NOSUIS for preparation of standard format, collection of soil resources data, harmonization and designing interoperable procedure to collect soil data from different organization. The meeting was attended by all committee members and Chief Soil Survey Officer, SLUSI.
2. **National Advisory committee Review meeting of National One Soil Unified Information System (NOSUIS) and Soil Health** under the chairmanship of Secretary , DA&FW organised at Krishi Bhawan , New Delhi to review the progress on data sourcing from all institutes, standard data format creation, harmonization of data , and to promote use of remote sensing in testing and mapping of soil fertility and health parameters on April 4, 2023
3. **First Joint National meeting of all stakeholder** involving heads of department of institutes under DARE- ICAR, DA&FW, Deptt. of Space-ISRO organised at 26-27

April 2023 to discuss about data types, format of soil geospatial data and data format for standardization and to source data from all organization.

4. **National Level Technical meeting of Joint Secretary, INM division, DA&FW, Chief Soil Survey Officer and all centre heads of Soil & Land Use Survey of India (SLUSI)** to decide the target for soil testing, survey under NOSUIS and health monitoring organised at Soil & Land Use Survey of India, Headquarters office, New Delhi on 31st Aug., 2023.

Meeting of Soil Health under Chairmanship of Secretary, DA&FW, was held on 27th Sept, 2023 at Krishi Bhawan, to review the soil health card portal services, nutrient dashboard, school SHC, and legacy data visualization with SLUSI

- **Publication:**
 - I. Detailed Soil Survey: 16 reports
 - II. Soil Resource Mapping: 42 Report
- **Consultancy Project:**

Soil Resource Mapping on 1:50K for 7 districts of Manipur: The total cost of the project is Rs. 31,36000/- . The project is funded by North Eastern Space Applications Centre (NESAC), Department of Space, Government of India. The project is completed and data has been handover to NESAC.
- **Physical Target for Soil Survey Work:**

Annual Target for field ground truthing & interpretation:

Type of Survey	Target (in lakh ha) (FY 2023-24)	Achievement (in lakh ha) upto 31.10.2023
Detailed Soil Survey (DSS) & Fertility Survey at 1:10K scale	96	44
Soil Resource Mapping (SRM) under Soil Resource Atlas of India (1:50K scale) Project between SLUSI and NRSC	50	40

- Revenue Generation :**

Through Sale of Soil and Microwatershed data: **Rs. 1.46 lakh**

Through consultancy project: **Rs. 7.84 lakh**

Estimates of the Activities to be carried out from November, 2023 to March, 2024:

- Physical Target for Soil Survey Work:**

The field ground truthing of remaining area (**10 lakh ha**) of Soil Resource Mapping for Soil Resource Atlas of India Project to be completed by November, 2023 and **52 lakh ha** area of Detailed Soil Survey will be completed by March, 2024.

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

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

- Soil Resource Atlas of India:**

The harmonization of SRM soil data with NRSC to be completed by January, 2024

10.8 Central Fertilizer Quality Control & Training Institute, Faridabad

10.8.1 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.

10.8.2 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 are 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 and samples are received for analysis drawn by the Department of Fertiliser's Central Team.

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.

10.8.3 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.

10.8.4 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 number of new methods of analysis for different new fertilizers notified during last one year under Fertilizer Control Order, 1985.

IV. Advisory Activities:

The Institute as a Member of Central Fertilizer Committee and Central Bio-stimulants Committee advise 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.

10.8.5 Strength of CFQC&TI and its RFCLs as on 31.10.2023:-

S.No.	Group	Sanctioned Strength	Existing Strength
1.	Group 'A'	15	11
2.	Group 'B'	11	05
3.	Group 'C'	47	27
Total		73	43*

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

10.8.6 Target & Achievements during 2023-24 (upto 31.10.2023)

During 2023-24, 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 42.66 % of the assigned targets of various training courses. The details of achievement (upto 31.10.2023) are as under:-

S. No.	Name of the item	Target	Achievement
1.	No. of ships/containers covered and sample analyzed	2500	2510
2.	Refresher Training Courses for Fertiliser Analysts & Fertiliser Inspectors	30	16
3.	Orientation Training Courses in States	30	10
4.	Dealers Training Programme in States	15	06
5.	Financial (Rs. in Crore)	Rs. 10.55	4.90

**The details of ships/containers inspected by the Institute /RFCLs
during 2018-19 to 2022-23 as follows:-**

S. No.	Name of Fertilizer	2018-19	2019-20	2020-21	2021-22	2022-23
1	Urea	182(1)	202	216(1)	190	196
2	DAP	150(2)	127(1)	141	126	160
3	MOP/SOP	125/ 267(1)	137(7)/ 200(10)	163(1)/ 271(10)	151(19)/ 307(06)	80/ 280(05)
4	NPK (C)	103(3)	74(3)	139(16)	120(08)	131(11)
5	MNF	155(7)	75(15)	12(4)	15(03)	10(03)
6	NPK 100% WS	1944(105)	2154(151)	1881(122)	1983(110)	1335(129)
7	Sulphur	20	45(10)	31(2)	51(03)	49(03)
8	Others	796(14)	869(26)	1093(75)	988(223)	578(153)
9.	Referee	60(07)	125(20)	141(50)	225(102)	201(121)
10.	SSP/NPKJM	-----	-----	1194(487)*	1367(619)*	355(147)*
	Total	3742(133)	3883(223)	5141(718)	5298(991)	3356(572)

*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.

Some photographs of Training Activities during 2023-24



Group photo of trainees/officers participated in Training Programme on Fertiliser Quality Control for Fertiliser Inspectors at CFQCTI, Faridabad



Demonstration on fertilizer sampling at Fertiliser Dealer shop



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

10.9 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, 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 into 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 30.10.2023):-

- Total Number of Groups : 60067
- Total Number of Farmers : 1565709
- Total number of valid Certificates : 132932
- Certified Cumulative Area (Ha) : 969218

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. Ministry has referred the matter to BIS and till date 03 meetings have been organized by BIS and Convener is Director, NCONF. Mobile App linked certification system is being finalized in consultation with Ministry of Agriculture and Farmers Welfare.

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 55 instruments amounting to Rs 276 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. In this context, laboratory of RCONF Ghaziabad has received the NABL accreditation while other RCONF labs are also under process.
- Sample tested (01st January 2023 to 30th September 2023)
 - o *Bio fertilizers: (Total Tested - 159, Substandard- 97)*
 - o *Organic Fertilizers: (Total Tested -194, Substandard -65)*

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 and aligned its 30 Days certificate course

viz., "Organic Farming Assistant" 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 Government's 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, Krishi Sakhis, Women Self Help Groups 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 grassroot 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 2023 to September 2023, a total of 126 programs either in online or offline mode on organic and natural farming have been organized covering approx 20000 participants including farmers, college students, members of Regional Councils, Service Providers, Officers of State Agriculture, Horticulture Depts., Day NRMLs, Krishi Sakhis, Women SHGs 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:

S.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	15	12504
2	One day and half days online training for Master Trainers/Champion farmers for Krishi Sakhis programme	02	194
3	One Day Farmers Training and Demonstrations	11	560
4	One day Stakeholder consultation on Natural Farming	02	200
5	One day Jaivik evam Prakritik Kisan Sammelan	04	2018
6	Two Days Training on PGS for State Govt. Extension Officers/RCs/SPs/LRPs etc	06	146

7	Participated in PGS India Programmes online/Offline	15	621
8	Two days Training for Extension Officers/LRPs/ Farmers on organic and Natural Farming	41	859
9	03 days offline training on Natural Farming for farmer under submission Agri Extension ATMA	01	38
10	5 days training on Quality Control for State Government Analysts/Fertilizer Inspectors	04	86
11	30 days certificate course on Organic and Natural Farming	05	160
12	Trainings organized as Co-Organizers in association with other institutes/universities etc	05	1400
13	Awareness Program on Organic and Natural Farming for college students	09	799
14	Awareness and Promotional Webinar on Organic and Natural Farming for KVKS	02	101
15	One day online Awareness workshop on Organic food, natural farming and Certification	03	200
16	Orientation course/workshop on Natural Farming for Officers of N/RCONFs	01	31
	Total Beneficiaries	126	19917

6. Important Publications of the Organization:

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

IMPORTANT PUBLICATION UPTO THE MONTH	
I.	Organic Farming News letter (Quarterly)
II.	Bio-fertilizer News letter (Bi-annual)
III.	Comprehensive Training Manual on Organic Farming (English)
IV.	Organic Food & Certification (Hindi & English)
V.	Schemes for promotion of organic farming (Hindi & English)
VI.	Organic Package of Practices for Horticultural Crops (English)
VII.	Field Guide for Organic Grower
VIII.	Jaivik Kheti Sahayak Pustika (Bengali, Malayalam Khasi and Garo)
IX.	Booklets & Pamphlets on Organic Farming (Hindi & English)
X.	PGS-India Training Manual
XI.	FAQs on PGS India Certification
XII.	Compilation on PGS India certified progressive farmer success stories
XIII.	Leaflets for PGS India Local Groups

XIV. Bhu-Sanrakshan pamphlet	01
XV. Comprehensive Training Manual on Natural Farming	01
XVI. Compilation of Natural Farming Practices	01
XVII. Two Days Training Module on Natural Farming (English)	01
XVIII. One Day Training Module on Natural Farming (English)	01
XIX. Field Guide for Natural Farming (Hindi & English)	01
XX. Farmer Field School (English)	01
XXI. Published pamphlets on organic and natural farming in English and Hindi	11
XXII. E-Module on PCO	01
XXIII. Other publications (Newsletters published by other agencies/journals etc)	01
XXIV. Training Module for two days training to master trainer for Natural Farming Convergence to NRIIM/SRLM	01
XXV. Training Module for five days training to Krishi Shakhis and Pashu Shakhis for Scheme Convergence to NRIIM/SRLM	01
XXVI. Training Module for Natural Farming Mass awareness through Krishi Shakhis and Pashu Shakhis of NRIIM/SRLM	01

7. Farmers Outreach Initiatives:

- More than 24911 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 18 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".
- Promotion of Organic and Natural Farming is also being done through various digital media platforms like Twitter, Facebook, YouTube etc. of NCONF Ghaziabad. Till date around 333 awareness videos on Organic and Natural Farming have been prepared &

uploaded on YouTube channel, Twitter and Facebook accounts of NCONF.

- Officials of N/RCONFs have created mass awareness on organic and natural farming activities through deliberation of more than 99 Guest Lectures, radio talks, News Coverage and TV talks altogether in various training programs, seminars, webinars, exhibitions etc organized by premier Govt. and private Institutes of India.
- Around 73680 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.

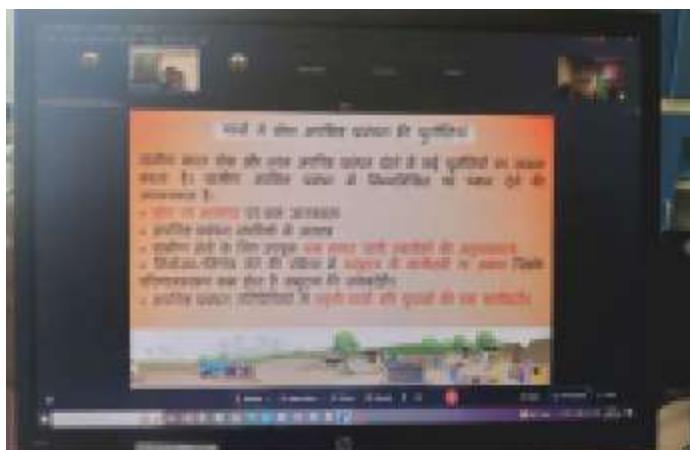
9. Ongoing initiatives:

- ❖ 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, CSKHPKV Palampur for promotion of Natural farming activities in the country.
- ❖ NCONF Ghaziabad entered into MoU with Patanjali Organic Research Institute, Haridwar, WASSAN Hyderabad, Sri Sri

- Naisargik Bengaluru etc for promotion of Organic and Natural farming activities in the country.
- ❖ Under process of making MoUs with various State Agricultural Universities like SKUAST Kashmir and PAU Ludhiana etc as well as with private organizations of national repute like Isha Foundation.
 - ❖ Working on proposal of 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 enclosed as annexure-1.

Annexure -1



Glimpses of Webinars/Workshops Organized to commemorate Azadi Ka Amrit Mahotsava on Campaign under Natural Farming with SHG Women by N/RCONFs during the period





Glimpses of HRD Trainings and Field Demonstrations organized by N/RCONFs



Trainings of State Agriculture Officers on National Mission on Natural Farming



Glimpses of Chitin Shivir and meeting on organic and natural farming with philanthropists held under the Chairpersonship of JS (INM)



Glimpses of Model Field Visit by Secretary, A&FW and JS (INM)



Glimpses of participation by N/RCONFs in Conferences/Workshops/ Trade Expos etc



MoU signed for promotion of Organic and Natural Farming between AS (NRLM) and JS (INM) in presence of Secretary, A&FW

10.10 Paramparagat Krishi Vikas Yojana (PKVY)

The PKVY Scheme is being implemented in cluster mode with minimum of 20 ha area. 25 such clusters are converted into one large cluster of about 500 ha area to facilitate marketing of organic produce. The scheme provides for an assistance of Rs.50,000 per ha to states, 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.,) directly through DBT during the conversion period of 3 years.

Objectives - PKVY was launched in 2015-16 with the following broad 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.

Achievements since 2015-16:

1. Total funds released under PKVY scheme is Rs 1958.18 Crore during the period 2015-16 to 2023-24 (as on 19.01.2024).
2. Total fund released Rs 104.25 Cr for PKVY component of RKVY cafeteria scheme during the CFY 2023-24.
3. Continuing work in existing 4.15 lakh ha area sanctioned in 2018-19 and 10.25 lakh farmers have been mobilized in 20493 clusters.
4. Work also continues on additional 8350 new clusters sanctioned in 2022-23 covering an area of 1.67 lakh ha.
5. In addition to above, work is continuing in existing 1.23 lakh ha area under Namami Gange Program and 4.09 lakh ha area covered under BPKP.
6. **Jaivik Kheti Portal:** A dedicated online web portal -www.Jaivikkheti.in/has been created to encourage, sale of organic products directly by farmers to consumers. On Jaivik-kheti portal total 6.19 lakh farmers are registered, 89 input suppliers, 18818 local groups have been formed and 8404 buyers have registered themselves.
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 & Gadchirrolia Organic Farming

Punjab	Five Rivers
Tripura	Tripureshwari Fresh
Jharkhand	Jaivik Jharkhand , from the land of Jharkhand
Chhattisgarh	Aadim brand of Bhoomi Gadi FPO, Bastar Naturals

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

- o M/s Adani Group
- o M/s Home Burps
- o Priyank Associate
- o Advance Crop Care (India) Pvt. Ltd.
- o Prasad Nutriments Pvt. Ltd.
- o All Season Farm Fresh, Jamshedpur
- o Big Basket
- o Ambe Phyto Extracts

2. Large Area Certification under PGS-India Programme:

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. Following traditional organic area were declared as organic without undergoing for conversion period.

- 14,445 ha area under Car Nicobar and Nancowry group of islands in Union Territory of A&N Islands.
- 5000 ha area of Ladakh
- 2700 ha area of Lakshadweep
- 60,000 ha area has also been supported for certification/ continuation of certification in Sikkim.

Photos related to PKVY scheme.

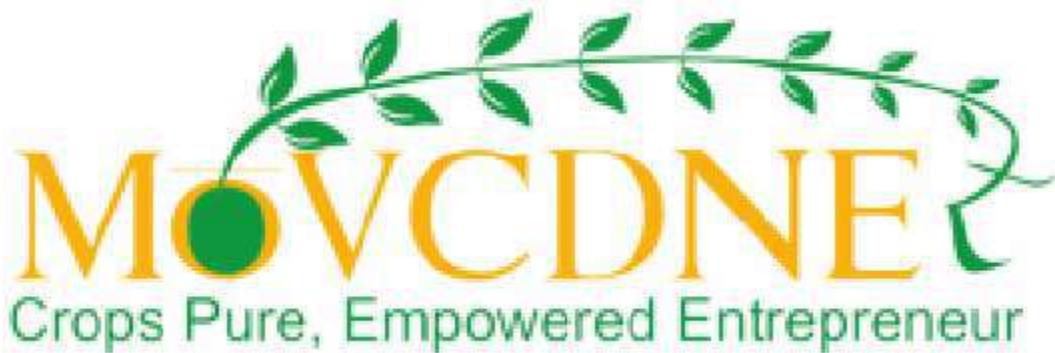


A screenshot of the PGS-INDIA website. The top navigation bar includes links for Home, About Us, Services, Contact, and News & Events. The main content area features a photograph of three women in colorful saris harvesting grapes from a vine. To the right of the photo is a quote: "A farmer does not grow crops. A farmer creates an environment where crops can grow." The PGS-INDIA logo is visible in the bottom left corner of the page.





10.11 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 (As on 19.01.2024)

- 200 FPO/FPCs created covering 92068 farmers and 87523 ha area
- Total Fund released under MOVCDNER scheme since 2015-16 to 2023-24 is Rs.1053.58 Crore.

- During the CFY 2023-24 total amount of Rs. 134.16 crore have been released.
- Work is continuing on the existing area of 87523 ha in CFY 2023-24.
- 43 Collection, Aggregation, Grading units have been created.
- 46 Custom Hiring Centers have been provided.
- 66 processing and pack house entities created under FPO/FPCs and private ownership.
- 35 transportation vehicles provided to FPO/FPCs.
- 7 states have developed their own brands.
- Marketing facilitation of Ginger, Turmeric, Pineapple, Bird Eye Chili and King Chili have been a major success and FPCs have been supported with buy back agreements.

- The export of Khasi Mandarin, Orange, Pineapple, Bird Eye chili and Ginger to Dubai, Bahrain, Qatar, Japan and USA, have already started.
- Industry mentorship model with necessary infrastructure development and buy back



assurance with 4 FPOs of Arunachal Pradesh and 2 FPCs of Nagaland have been done.

- 5 Contract farming for Medicinal & Aromatic Plants (MAPs) such as Perilla, White & Black Sesame, Sugandh Mantri, and Bacopa have been signed.



10.12 National Mission on Natural Farming

GoI has already initiated Natural Farming through implementation of Bhartiya Prakriti Krishi Padhati (BPKP-A sub scheme of PKVY)-since 2020-21 to promote traditional indigenous agroecological

farming. 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 Scheme as National Mission on Natural Farming to cover 7.5 lakh ha area by developing 15000 clusters.

Objectives of NMNF



- Promotion of natural methods of farming involving diversified and livestock integrated crop systems, progressive elimination of chemical usage and limiting external inputs to enhance regenerative capacity of the agroecosystems, soil health and farmers' net income with greater resilience.
- Strengthening on-farm agroecological research and knowledge based extension capacity of KVKS, State Agriculture Universities, ICAR institutions and grassroots innovators to evolve and improvise location specific natural farming practices in diverse agro ecological zones in partnership with experienced farmers.
- Build decentralized institutional and human capacities for scaling up of natural farming through developing champion farmers, strengthening community based organizations and Gram Panchayats in promoting natural farming; and evolving a decentralized enterprise ecosystem for input and service delivery including market promotion.
- To create a scientifically supported common narrative for a chemical free and agro-ecologically centered farming system; and promote it under a common national brand for safe food.

The scheme has already been appraised by the EFC on 4 October 2022 and is under consideration for approval of Government of India.

10.13 Soil Heath & Fertility of RKVY Scheme

Soil Health Management was one of the most important interventions for Sustainable

Agriculture. During 15th finance commission period, Soil Health & Fertility is implemented to promote the Integrated Nutrient Management through judicious use of chemical fertilizers including secondary and micronutrients in conjunction with organic manures and bio-fertilizers for improving soil health and its productivity as component of RKVY Cafeteria Scheme. The strengthening of soil and fertilizer testing facilities is to provide soil test based recommendations to farmers for improving soil fertility, up-gradation of skill and knowledge of farmers through training & demonstrations etc.

The Soil Health & Fertility 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 & Organic Fertilizer Quality Control Laboratories (BOQCL), strengthening of BOQCL, promoting Micro-nutrients, training & Demonstrations, Reclamation of problem Soils, NABL Accreditation and New Initiatives and testing soil samples to issue Soil Health Cards. Soil Samples should be processed as per standard procedures and analyzed for 12 parameters viz, pH, electrical conductivity (EC), Organic Carbon, available N, P, K, S and micronutrients (Zn, Cu, Fe, Mn & B). 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.

Physical Progress:

The components/activities of the Annual Action plan approved under the Scheme during 2022-23 and 2023-24 are as under:

(In numbers)

S. No.	Name of activity	Components/activities approved during	
		2022-23	2023-24
1	Setting up of Static Soil Testing Laboratories (STLs)	280	23
2	Strengthening of existing Static Soil Testing Laboratories	48	137
3	Setting up of Mobile STLs	10	
4	Setting up of new Fertilizer Quality Control Laboratory (FQCL)	03	04
5	Strengthening of Fertilizer Quality Control Laboratory	04	29
6	Promotion/Distribution of Micro-nutrients	156802	133227

7	Soil Samples Collection, Testing and Printing & Distribution of SHCs	-	6349558
8	Incentive to Entrepreneurs' (VLSTLs) for Soil Testing	-	1392350
9	Demonstrations, Training and knowledge sharing on farmers field	-	34773
10	Setting up of Village Level Soil Testing Labs	-	1091
11	Setting up of BOQCLs	-	02
12	Strengthening of BOQCLs	-	01
13	Reclamation of problem Soils (ha.)	-	12352
14	NABL Accreditation of Labs	-	18
15	New Initiatives (Research & Development)	-	1361

Soil samples are collected through Mobile App for testing for online generation & 495898 numbers of soil Health Cards have been generated during current financial year 2023-24.

Financial Progress:

Under the Soil Health & Fertility under RKVY

Cafeteria Scheme, the fund of Rs.52.62 crore was released to the States for implementation in the year 2022-23. The fund of Rs.72.85 crore has also been released to the States for implementation in the current financial year 2023-24 (up to the month of 17th January, 2024).

Chapter-11

PRADHAN MANTRI KISAN SAMMAN NIDHI (PM-KISAN)

11.1 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).

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

PM-KISAN is a central sector scheme launched on 24 February 2019 to supplement the financial needs of land-holding farmers. Under this scheme, the financial benefit of Rs 6,000/- per year in three equal installments every four months is transferred into the bank accounts of farmers' families across the country through Direct Benefit Transfer (DBT) mode. The scheme leverages technological & process advancements so that the maximum number of beneficiaries can benefit without any hassle. The scheme leverages technological and process advancements so that the maximum number of beneficiaries can benefit without any hassle.

Since the launch of the PM-KISAN scheme, it has been centred on using technology to guarantee that all eligible farmers get the benefit of the scheme. To this end, the scheme has continually evolved by integrating various systems including use of Digital Public Goods such as authentication through Aadhaar, Aadhaar based payment system, Income tax and PFMS verification, Pensioner data in PMFS, land records as per the Record of Rights, onboarding of IPPB as highlighted in the image below. A farmer-centric digital infrastructure has ensured the benefits of the scheme reach all the farmers across the country without any involvement of the middlemen, maintaining absolute transparency in

registering and verifying beneficiaries. The process of release of installment is transparent and there is no involvement of a middleman between the Government of India and farmers. From the 13th installment onwards 100% payment of PM-KISAN installments are being released to the Aadhaar-seeded bank accounts of the beneficiaries directly from the Government of India.

Under the Scheme, The Ministry of Agriculture and Farmers Welfare, Government of India, has launched the PM Kisan Mobile APP with a Face Authentication Feature to enable farmers to complete their e-KYCs from their mobiles. This App is very simple and convenient to use. Farmers can easily download the App from the Google Play Store on their Android phones. Farmers through this app can complete their e-KYC sitting at home even in remote areas of the country without any OTP or fingerprint, just by scanning their face. In addition, the Government of India, recognizing the need to compulsorily complete e-KYC, has also extended the ability to do e-KYC of farmers to state government officials, allowing each official to do e-KYC for 500 farmers so that wherever they go they can facilitate the farmers in completing their e-KYCs.

Further, to make the lives of our PM KISAN beneficiaries easy, the Government has developed the "Know Your Status" (KYS) module using the technology available within the existing ecosystem. Through KYS farmers can know the status of their land seeding, Aadhaar linking with bank accounts, e-KYC, eligibility, and payment. Also, if e-KYC has not been done, then the farmer can reach the e-KYC Module with one click and can complete his/her e-KYC successfully.

Under the PM KISAN scheme – the AI chatbot PM KISAN e-Mitra was launched on 21st September 2023. Considering the large beneficiary base of the scheme, to promptly address the general queries

and grievances raised by the beneficiaries, the Ministry has proactively developed the PM-KISAN AI Chatbot (Kisan e-Mitra). It acts as a one-stop solution to provide prompt, clear, and accurate responses to the grievances related to the PM-KISAN scheme in their native language. Currently, the chatbot is available in English, Hindi, Bengali, Odia, Telugu, and Tamil. Further, by November 23, it will be available in all 22 languages of the country.

By implementing these innovative tools, the Ministry seeks to enhance the overall efficiency of the scheme's support system, empowering farmers with easy access to information and timely resolution of any concerns they may have.

As mentioned by the Hon'ble PM in his speech, "We are creating modern digital infrastructure in India while also ensuring that the benefits of the digital revolution reach every section of the society". PM KISAN Yojana has become a great example of Modi Ji's vision of using digital public infrastructure for the welfare of Indian farmers, in which effective use of available technologies has ensured the last mile delivery of the benefits and has taken the PM KISAN Yojana to new dimensions.

11.2.1 Salient Features

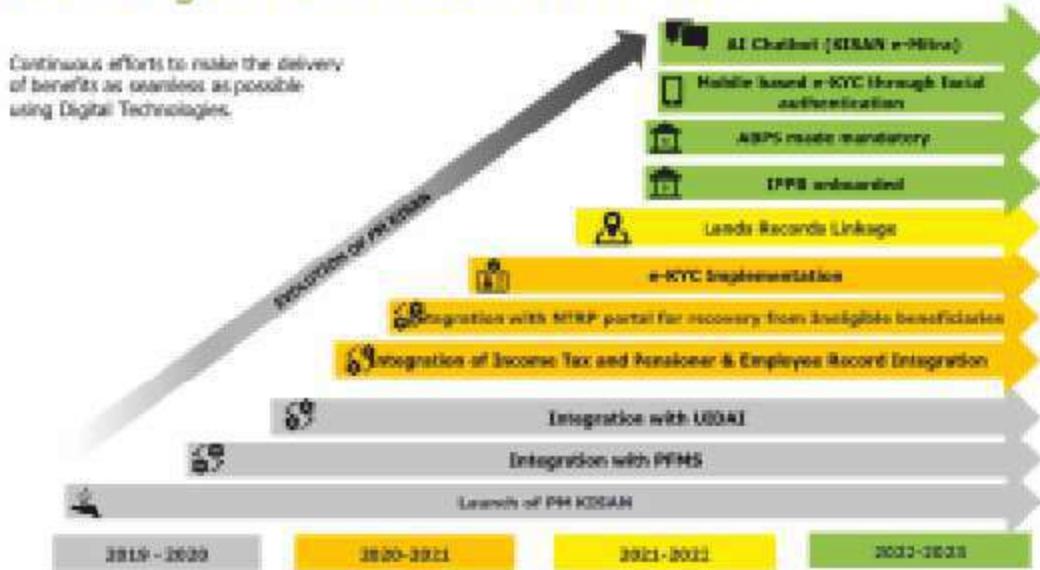
- The objective of the scheme is to augment the income of families of all land holding farmers subject to certain exclusion criteria relating to higher income status. The Scheme was formally launched on 24th February, 2019.
- The scheme was originally started for Small & Marginal Farmers (SMFs) only, 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.
- Land seeding of the data is mandatory to receive benefits of the Scheme, with exceptions to a few States/UTs.
- For enrollment, a farmer has to approach the local Patwari / Revenue Officer / Nodal Officer (PM-Kisan) nominated by the State Government. In addition to this, a special facility at web portal has been created at Farmers Corner through which farmers can also register themselves. Farmers can also edit their names in PM-Kisan database as per their Aadhar card through Farmers Corner. They can also know their payment status through Farmers Corner.
- A special mobile app has also been launched which provides facilities available through Farmers Corner which also provides facility of e-KYC through OTP and face-authentication.
- Farmers can also utilize the services of the chat-bot launched for PM-KISAN for knowing the status of their application and benefit transfer under PM-KISAN in 5 languages.
- Relaxations under few eligibility criteria have been provided to further the objectives of Vibrant Villages Programme of the Government of India.

11.2.2 Aims and objective of the Schème

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.

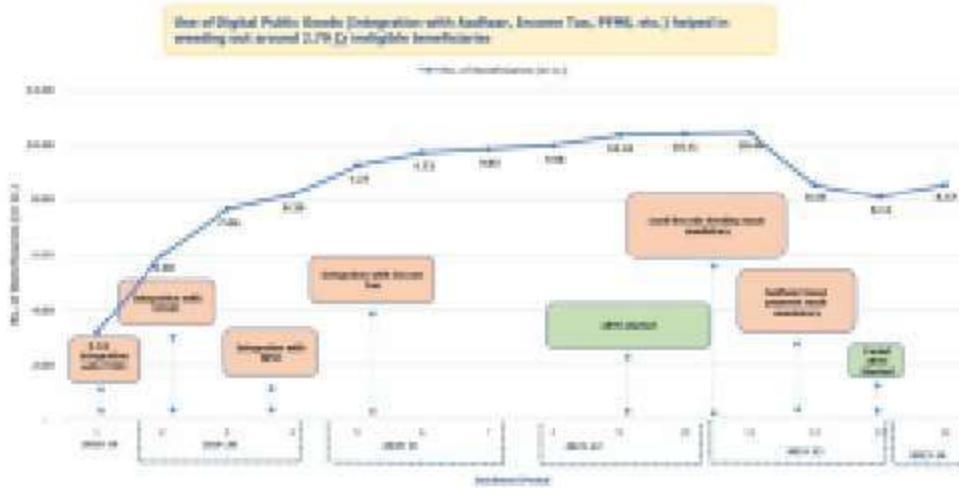
Use of Digital Public Goods in PM KISAN



A farmer-centric digital infrastructure has ensured the benefits of the scheme reach all the farmers across the country without any involvement of the middlemen. So far, the Government of India has

disbursed over Rs 2.61 Lakhs Cr. to more than 11 Cr. farmers' families into Aadhaar-seeded bank accounts. Impact of Digital Public Goods as follows:

Impact of using Digital Public Goods in PM KISAN



11.2.3 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.

11.2.4 Exclusion criteria:

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

All institutional land holders; and

I. 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.

11.2.5 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 updated 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 'Vanshavali' (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 minuscule. 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.

11.2.6 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.

11.2.7 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 DAC&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.

11.2.8 Release of funds

As on 15/01/2024, the state-wise details of funds released under PM-KISAN and beneficiary benefitted is attached at Annexure-I and Annexure-II

Annexure-I

Category-wise, State-wise Status of Benefit release under PM-KISAN, as on 15/01/2024

State/UT	GEN		SC		ST		Total	
	No. of Beneficiaries	Amount Transferred (in Rs. Cr)	No. of Beneficiaries	Amount Transferred (in Rs. Cr)	No. of Beneficiaries	Amount Transferred (in Rs. Cr)	No. of Beneficiaries	Amount Transferred (in Rs. Cr)
ANDAMAN AND NICOBAR ISLANDS	13,251	32.86	18	0.05	3,990	0.54	17,259	43.45
ARDHIA PRADESI	48,37,507	11,637.25	6,76,453	1,643.28	2,99,760	715.75	58,13,660	11,995.28
ARJNACHAI PRADESI	6,353	15.25	317	0.48	59,945	209.58	90,615	225.41
ASSAM	11,46,087	3,717.87	1,47,546	427.82	2,92,486	894.15	15,85,619	4,839.86
BIHAR	73,05,082	17,594.56	9,81,735	2,365.58	2,89,552	687.17	85,80,269	20,617.11
CHANDIGARH	443	1.06	7	0.02	1	0.00	451	1.10
CHHATTISGARH	22,34,245	4,770.17	4,89,624	898.26	10,59,487	3,197.04	37,76,371	7,367.67
DELHI	16,348	37.68	232	0.48	73	0.07	16,623	38.19
COA	8,142	16.13	48	0.07	3,241	7.21	11,437	23.41
GUJARAT	50,41,539	12,445.97	2,03,218	638.40	11,14,592	3,523.17	64,19,349	15,611.50
HARYANA	19,73,165	4,889.40	63,937	162.02	3,196	6.96	19,90,298	5,058.38
HIMACHAL PRADESH	6,91,596	1,710.57	2,19,800	657.63	62,231	133.47	10,03,797	2,393.27
JAMMU AND KASHMIR	9,73,078	2,333.88	1,04,812	248.67	1,31,046	317.35	12,14,936	2,899.90
JHARKHAND	20,07,168	3,787.17	3,74,106	631.13	4,06,977	818.43	27,38,251	5,236.73
KARNATAKA	50,78,707	12,289.60	7,89,281	1,202.00	2,96,101	730.72	58,61,089	14,222.31
KERALA	33,99,919	8,590.63	2,23,728	531.91	48,360	120.65	35,72,007	9,245.18

TADKA	13	0.02	13	0.02	19,117	49.21	19,143	48.25
TIKSHAYA VFFP	9	0.01			1,784	4.29	1,793	4.31
MADHYA PRADESH	61,17,384	17,200.58	11,59,404	2,698.28	21,05,315	4,837.68	93,82,03	21,736.54
MAHARASHTRA	98,84,058	24,060.49	7,93,675	1,967.96	7,88,680	1,937.46	1,14,66,413	27,959.90
MANIPUR	1,66,022	94.94	14,584	13.16	3,52,721	597.35	5,33,327	705.45
MEGHALAYA	18,605	36.89	868	2.10	97,423	296.08	1,16,896	337.07
MIZORAM	416	0.30	3,165	7.19	1,72,970	264.80	1,76,177	272.29
NAGALAND	472	1.17	525	1.23	2,03,725	505.06	2,04,722	507.46
ODISHA	26,48,363	5,506.40	4,57,373	1,050.42	10,98,417	2,625.70	42,02,651	9,202.52
PUDUCHERRY	10,738	26.80	730	1.62	4	0.01	11,272	28.78
PUNJAB	19,42,163	4,103.79	1,034	0.27	4,00,349	653.63	23,43,545	4,758.37
RAJASTHAN	57,85,871	13,253.69	11,71,530	2,793.31	10,90,816	2,513.35	80,48,317	18,500.35
SIKKIM	6,750	15.38	603	1.08	7,676	11.95	17,029	31.41
TAMIL NADU	39,81,278	5,621.65	5,07,541	1,135.12	94,792	196.91	45,83,721	9,945.69
TELANGANA	28,01,183	7,411.53	5,56,291	1,537.89	5,02,361	1,360.23	38,08,835	10,306.46
THE DADRA AND NAGAR HAVELI AND DAVAN AND DIU	3,535	8.14	730	0.53	11,114	29.55	14,879	38.22
TRIPURA	94,961	239.89	29,360	75.77	1,22,744	329.82	2,46,065	645.58
UTTAR PRADESH	2,11,11,042	31,556.79	48,89,514	12,171.01	2,45,263	601.66	2,62,45,829	64,330.05
UTTARAKHAND	7,78,079	1,878.10	1,55,302	385.17	48,894	124.76	9,82,375	2,386.03
WEST BENGAL	44,30,625	6,301.43	6,89,801	970.83	80,054	106.47	52,00,480	7,380.73
Grand Total	9,44,72,913	2,20,534.86	1,44,57,017	34,224.29	1,15,37,722	26,435.32	12,04,67,652	2,81,194.47

Annexure-II**Gender-wise, State-wise Status of Benefit release under PM-KISAN, as on 15/01/2024**

#	State Name	Female		Male		Other		Total No. of Beneficiaries	Total Amount Transferred In Cr
		No. of Beneficiaries	Amount Transferred In Cr	No. of Beneficiaries	Amount Transferred In Cr	No. of Beneficiaries	Amount Transferred In Cr		
1	ANDAMAN AND NICOBAR ISLANDS	6,561	18.24	10,632	27.20	3	0.01	17,259	43.15
2	ANDHRA PRADESH	29,78,687	4,866.58	37,34,54	9,16.76	1,714	2.80	58,13,680	13,896.78
3	ARUNACHAL PRADESH	50,17	116.59	16,154	108.72	74	0.10	96,615	225.1
4	ASSAM	3,42,254	1,197.06	12,41,152	3,640.19	680	2.61	15,84,036	4,835.85
5	BHARAT	26,50,910	6,262.53	59,27,955	14,385.80	1,403	1.41	85,60,258	20,847.14
6	CHANDIGARH	70	0.13	451	0.97			451	1.10
7	CHHATTISGARH	9,98,657	1,654.48	27,71,328	5,807.62	6,360	3.55	37,76,945	7,365.65
8	DELH	3,070	6.77	13,519	31.75	4	0.01	16,623	36.3
9	GOA	1,529	3.29	9,208	20.13			11,437	23.41
10	GULBART	18,05,588	3,994.55	46,08,189	12,624.37	1,089	2.08	64,13,346	15,311.50
11	HARYANA	3,49,838	938.80	16,40,019	4,218.46	441	1.12	19,60,948	5,058.39
12	HIMACHAL PRADESH	1,82,250	484.18	8,20,507	2,118.34	533	1.02	10,03,044	2,953.54
13	JAMMU AND KASHMIR	1,39,154	297.96	10,75,276	2,607.73	258	0.50	12,41,688	2,899.93
14	JHARKHAND	7,21,785	1,201.35	20,5,008	4,337.86	1,389	2.52	27,38,182	5,236.73
15	KARNATAKA	11,67,882	3,302.22	13,85,011	10,892.3	21,186	27.92	58,64,089	11,222.31
16	KERALA	16,32,252	4,085.01	20,37,647	5,155.81	1,893	4.33	38,71,782	9,245.18
17	LAKHIMPUR	2,922	7.50	16,213	40.73	8	0.01	19,143	46.25
18	LAKSHADWEEP	898	2.18	824	2.12	1	0.00	1,793	4.31
19	MADHYA PRADESH	20,54,510	4,476.93	73,73,083	17,372.43	4,110	1.73	93,62,103	21,736.54
20	MAHARASHTRA	21,06,621	5,381.41	90,55,838	22,568.26	3,885	3.20	1,17,66,704	27,359.90
21	MANIPUR	2,88,520	377.85	2,11,119	327.35	357	0.25	5,33,326	705.5
22	MEGHALAYA	75,430	215.25	37,364	113.71	42	0.11	1,16,896	335.07
23	MIZORAM	75,008	98.89	97,509	173.15	40	0.03	1,76,548	272.29
24	NAGALAND	1,08,544	268.87	96,792	248.98	80	0.00	2,04,719	507.46
25	ODISHA	10,23,906	2,181.53	31,78,036	7,316.74	708	1.56	42,02,650	9,202.52
26	PUDUCHERRY	4,403	11.12	16,803	17.65	1	0.00	11,272	28.78
27	PLURAB	2,136	2.02	23,41,119	4,755.35			23,43,376	4,758.37
28	RAJASTHAN	28,86,731	5,417.97	51,60,280	12,144.28	1,302	1.12	80,8,313	18,560.35
29	SIKKIM	3,057	5.30	11,932	26.11			17,029	31.41
30	TAMIL NADU	14,32,627	2,651.29	31,46,193	7,262.68	4,851	11.72	45,83,711	8,545.69

31	TELANGANA	11,07,370	2,97,309	27,65,381	7,366.24	81	0.13	38,69,835	10,305.15
32	RAJASTHAN AND DADRA AND NAGAR HAVELI AND DAMAN AND DIU	3,292	8.46	11,581	29.75	3	0.01	17,869	38.22
33	TRIPURA	54,610	135.77	1,91,379	509.68	53	0.13	2,46,047	645.54
34	UTTAR PRADESH	51,78,993	11,686.70	2,13,66,781	52,613.52	55	0.07	2,62,15,829	54,350.05
35	UTTARAKHAND	1,78,083	407.04	8,03,583	1,978.29	297	0.70	9,81,549	2,386.03
36	WEST BENGAL	9,75,231	1,366.25	42,19,495	6,012.05	2,784	2.40	52,00,480	7,380.73
	Grand Total	3,03,07,062	66,760.34	9,01,13,239	2,14,346.48	44,599	87.65	12,04,64,900	2,81,194.47

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

11.3.1 Salient features

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 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).
- (iv) The LIC shall be the Pension Fund Manager and responsible for pension payout.
- (v) It is a voluntary and periodic contribution based pension system meant for all land holding Small and Marginal Farmers (SMFs) 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 (1)	Superannuation Age (2)	Member's contribution (Rs.) (3)	Government's contribution (Rs.) (4)	Total contribution (Rs.) (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 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 anytime. 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.

11.3.2 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.

11.3.3 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.

11.3.4 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 MaanDhan 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.

11.3.5 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.

11.3.6 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 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 DA&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. A 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 and Farmers' Welfare, Ministry of Agriculture & Farmers' Welfare, Krishi Bhavan, New Delhi – 110001 for redressal.

11.3.7 Project Monitoring Unit (PMU):

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

11.3.8 Farmers registered so far:

As on 12.12.2023, the State-wise details of number of farmers enrolled under the PMKMY Scheme is at Annexure-III.

Annexure-III**State-wise, gender-wise details of number of farmers enrolled under PM KMY (As on 12/12/2023)**

State	Total	Male	Female	Others
BIHAR	344292	198714	145578	
JHARKHAND	252801	147166	105635	
UTTAR PRADESH	252778	186207	66570	1
CHHATTISGARH	203303	97022	106281	
ODISHA	157670	85328	72341	1
JAMMU AND KASHMIR	126539	88383	38154	2
MADHYA PRADESH	122572	74331	48241	
TAMIL NADU	110452	60217	50235	
MAHARASHTRA	80937	66792	14144	1
HARYANA	432622	379132	53409	81
GUJARAT	67909	48935	18973	1
KARNATAKA	41683	24398	17285	
RAJASTHAN	41696	23018	18678	
ANDHRA PRADESH	37433	21812	15621	
ASSAM	14451	7309	7142	
PUNJAB	11605	8337	6268	
TELANGANA	10582	6644	3938	
WEST BENGAL	8885	5354	3531	
HIMACHAL PRADESH	1373	2081	2292	
ARUNACHAL PRADESH	2420	1204	1216	
UTTARAKHAND	2490	1309	981	
KERALA	1518	657	861	
NAGALAND	1180	468	712	
TRIPURA	928	575	353	
MEGHALAYA	836	214	622	
MANIPUR	712	284	428	
CHIANDIGARH	531	281	250	
ANDAMAN AND NICOBAR ISLANDS	522	271	251	
DELHI	414	223	191	
MIZORAM	305	186	119	
THE DADRA AND NAGAR HAVELI AND DAMAN AND DIU	287	149	138	
GOA	265	78	187	
PUDUCHERRY	388	157	231	
LAKSHADWEEP	72	41	31	
SIKKIM	35	25	10	
JADAKH	2	1	1	
Total	2338488	1537503	800898	87

Chapter-12

NATIONAL CROP INSURANCE PROGRAMME (NCIP)

Agriculture Insurance

12.1 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 experience gained, demands from farmers and report of the Working Group constituted to examine Alternate Risk management Mechanism under Pradhan Mantri Fasal Bima Yojana, the Operational Guidelines of the Scheme have further been revised with effect from Kharif 2023 season.

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

(Rs. crore)

Plan/ Year	Insurance Schemes	Expenditure
2018-19	Pradhan Mantri Fasal Bima Yojana (PMFBY) and Restructured Weather Based Crop Insurance Scheme (RWBCIS)	11945.38
2019-20	- do -	12638.32
2020-21	- do -	14165.44
2021-22	- do -	13549.70
2022-23	- do -	10807.31
2023-24	- do -	9125.02

As on 31.10.2023

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

12.2.1 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 Scheme viz. Pradhan Mantri Fasal Bima Yojana (PMFBY), which is being implemented in various States/Union Territories of the country from Kharif 2016. This scheme aims at supporting sustainable production in Agriculture sector by way of:

- Providing financial support to farmers suffering crop loss/damage arising out of unforeseen events;
- Stabilizing the income of farmers to ensure their continuance in farming;
- Encouraging farmers to adopt innovative and modern agricultural practices;
- Ensuring flow of credit to the agriculture sector; which will contribute to food security, crop diversification and enhancing growth and competitiveness of agriculture sector besides protecting farmers from production risks.

12.2.2 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. The scheme has further been restructured on the basis of premium and administrative structure on the lines of PMFBY and is available in the country from Kharif 2016 as Restructured WBCIS.

The Schemes are being implemented through 20 General Insurance Companies including all the 5 Government Sector Companies. Under PMFBY, a uniform maximum premium of only 2% of the sum insured is paid by farmers for Kharif and 1.5% for Rabi food and oilseed 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 uniform across the country 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 – from 2020-21 and Himalayan States – from 2023-24, where the subsidy sharing pattern between Central and State Govt. is 90:10. Key indicators on the scheme are given below :

- i. 1st Largest crop insurance scheme in the world in terms offarmer enrolments
- ii. 3rd Largest scheme in the World in terms of insurance premiums.
- iii. Currently implemented in 22 States/UTs, however the scheme has been implemented in 27 States/UTs in one or more seasons in last 7 years.
- iv. Farmer enrollment is estimated to increase

by 23% in 2023-24 against 2022-23 and shall reach 3.75 - 4.0 crores with more than 13 crore farmer applications for the year.

- v. Since its inception in 2016, a total of 55.94 crore farmer applications have been insured for a sum insured of more than Rs 15.75 lakh crores (as on 31.10.2023).
- vi. Since 2016, total claims amounting to Rs 1.51 lakh crore against the farmers premium of Rs 30,800 crores have been paid, which is nearly 5 times of farmer premium collected.
- vii. PMFBY has undergone major Technology and Operational changes to suit the crop-zone- & budgetary specific requirements of the States/UTs in last 1 year.
- viii. States of Andhra Pradesh, Bihar, Gujarat, Jharkhand, Telangana & West Bengal exited from the scheme during 2018-20 period, later Andhra Pradesh re-joined from Kharif 2022. Jharkhand is likely to join from Kharif 2024. Punjab never implemented the scheme.
- ix. Kerala has converged their own scheme with PMFBY, Goa is likely to converge their another scheme under PMFBY from next season, however both the states have been implementing PMFBY since 2016 continuously.
- x. PMFBY is the only area-based scheme globally to leverage technology so extensively in its implementation.

12.3. Major Achievements & Important Policy Decisions/activities taken

Alternative Risk Management Mechanisms (ARTM) developed by a committee of JS (Insurance), Department of Insurance (DFS) and Actuaries from the insurance industry has been approved and made available to states to choose from.

Working Group headed by CEO, PMFBY was instrumental in getting Alternative Risk Management Models of **Profit & Loss Sharing, Cup & Cap (60-130) & Cup & Cap (80-110)** approved and passed through EFC giving flexibility to states to choose suitable model in addition to existing comprehensive insurance scheme under standard PMFBY.

This will on one hand help states with the multiple options to choose from as per their agriculture practices and agro-climatic requirements and on the other hand rationalize their fiscal expenditure on premium subsidies. The alternate models have been chosen by many states including, Madhya Pradesh, Maharashtra, Uttar Pradesh, Rajasthan, Tamil Nadu & Andhra Pradesh etc. in Kharif 2023 and have led to considerable reduction in overall cost of premium and savings to Governments.

NCIP (www.pmfby.gov.in) has been developed as a single source of Data for Actual Yield (AY) & Threshold Yield (TY) values for current and historical years in order to have a correct and similar data sets for Tendering and claim settlement. This has also enabled access to individual farmer-wise detailed data. This has built trust based transparency in the scheme ecosystem and Insurers have responded with better pricing in the recently concluded tendering cycle.

Digi-Claim-Payment Module

All PMFBY claim calculation and settlement shall now be done through Digi-Claim module of National Crop Insurance Portal (NCIP) using Public Finance Management System (PFMS) Platform. Now Govt. will have visibility of quantum of eligible claims, claims paid by the Insurance Company and actual claims transferred to beneficiary farmers, which till now was missing and Govt. always had dependence for these reports and data on Insurance Company.

More than Rs. 9,000 Crs. of claims for 50.47 lakh beneficiaries have been transacted through the module since its launch in March 2023.

AIDE (App for Intermediary Enrolment):

In addition to the existing channels of enrollment for non-loanee farmers viz. CSC, Banks, Post Offices etc, a smart-phone App has been designed and rolled out in Kharif 2023 for enrollment of farmers at their door-steps through a large network of Insurance Intermediaries. This App has been designed to streamline the process of enrollment and offer a completely paper-less and cash-less experience to a farmer to get enrolled leveraging the digital technology for registration, documentation and premium payment.

Already approx. 2.76 Lakhs applications covering about 1.23 lakh Ha area have been done during Kharif 2023.

Krishi Rakshak Portal & Helpline:

A single toll-free phone number integrated grievance redressal mechanism having digital portal and a call centre has been developed to enable farmers to lodge their grievances/concerns/queries. This Krishi Rakshak Portal & Helpline was launched on pilot basis for Chhattisgarh in July 2022, it shall be graduated to the nation-wide roll-out.

It shall be dovetailed with National Crop Insurance Portal and integrated with all stakeholders for real-time tracing, monitoring and redressal of grievances and queries.

Digitized land record integration is another intervention to ensure deduplication of land parcels and uniquely identify the land parcels of insured farmers thereby ensuring rationalization of premium subsidies and genuine utilization of scheme benefits.

Land Records of Maharashtra, Rajasthan, Karnataka & Odisha were already integrated with NCIP. In 2022-23, land records of Madhya Pradesh, Chhattisgarh, Andhra Pradesh, Tamil Nadu & Haryana have been integrated this year. With this, the scheme has reached to more than 90% Insured Area being pre-validated through digital e-land records.

Discussions with other states including Uttar Pradesh & Himachal Pradesh are already in advanced stage.

Mechanism of Escrow Account for states to ensure that the premium subsidies payments are not delayed beyond the prescribed timelines as per provisions of Operational Guidelines. NCIP to be opened up for enrollments only after commitments of states in terms of deposit of premium liability into Escrow Account.

12.4. New Technologies

Under PMFBY, CCEs have 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. With the primary objective to reduce the delays in claim payment to farmers, efforts have been made to make the scheme technology driven. Capturing of CCEs data on smartphones/CCE Agri App and its real-time transfer on the National Crop Insurance Portal (NCIP) has

been made mandatory from Kharif 2017 to ensure transparency and real time transfer of data. Remote sensing is being used to rationalize the number of Crop Cutting Experiments (CCEs) at unit area level. This Department has conducted large scale pilot studies through technology organizations (Government/ private/ national/ international) to estimate crop yield at village/GP level using innovative technologies. 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, after detailed analysis of the technology driven approaches developed during pilot studies for Gram Panchayat (GP) level crop yield estimation in Kharif 2019, Rabi 2019-20 for Rabi 2020-21 Government has approved following three major initiatives from Kharif 2023 onward:

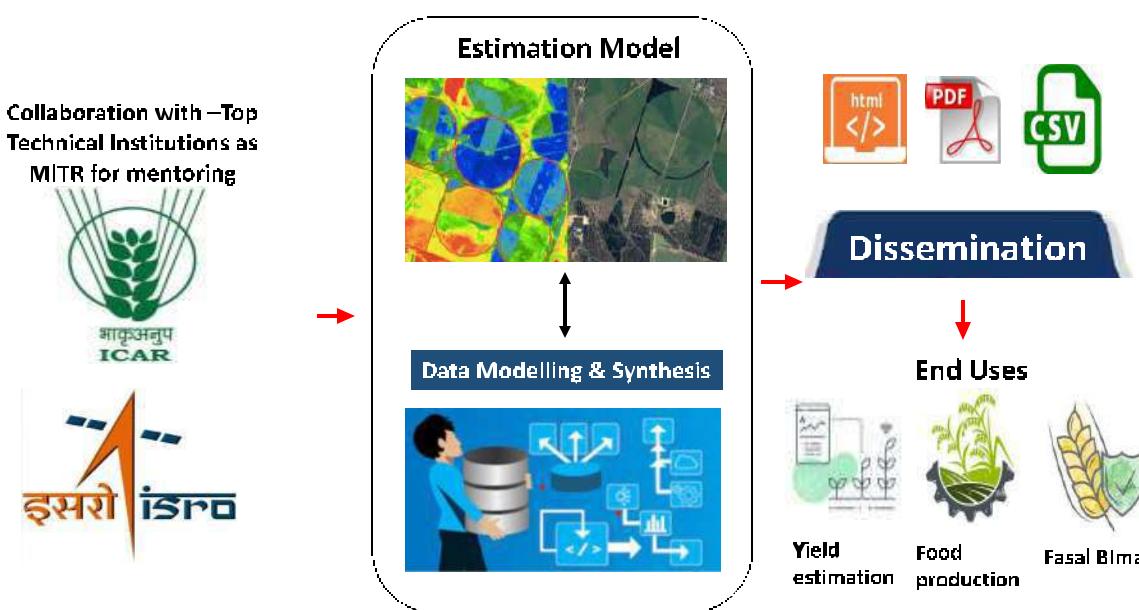
12.4.1 YES-Tech (Yield Estimation based on Technology) is a technology based yield estimations mechanism which has been developed after 2 years of rigorous testing and pilot runs across 100 districts of the country. It does crop Loss

assessment and Yield estimation assisted by data inputs from sources such as Remote Sensing indices, Weather indices, crop phenological information, soil types etc. MNCFC in collaboration with other experts has approved 5 Technologies/ Approaches for adoption for Paddy and Wheat crops from Kharif 2023 onwards.

Maharashtra and Madhya Pradesh were the first states to implement YESTECH from Kharif 2022, 8 more major states have given consent for adopting YESTECH from Kharif 2023 onwards with minimum 30% threshold for technology driven yield estimation. The guidelines of the same have been issued to the all concerned and are also available on NCIP. Ten States namely, Assam, Haryana, Rajasthan, Uttar Pradesh, Madhya Pradesh, Maharashtra, Andhra Pradesh, Tamil Nadu & Karnataka & Odisha shall be implementing Yes-Tech in this year.

Pilot study has also been undertaken for non-cereal crops during Kharif 2022 and Rabi 2022-23. Results are being analysed by experts in the field. Based on the results/analysis of these pilots more crops will be included for yield estimation through technology.

YES-TECH: Automation of Yield Estimation



12.4.2 WINDS (Weather Information Network & Data System) is a pioneering initiative of the country to set-up a network of Automatic Weather Stations & Rain Gauges. It will entail the installation of one AWS at Taluk/Block level and one ARG at the

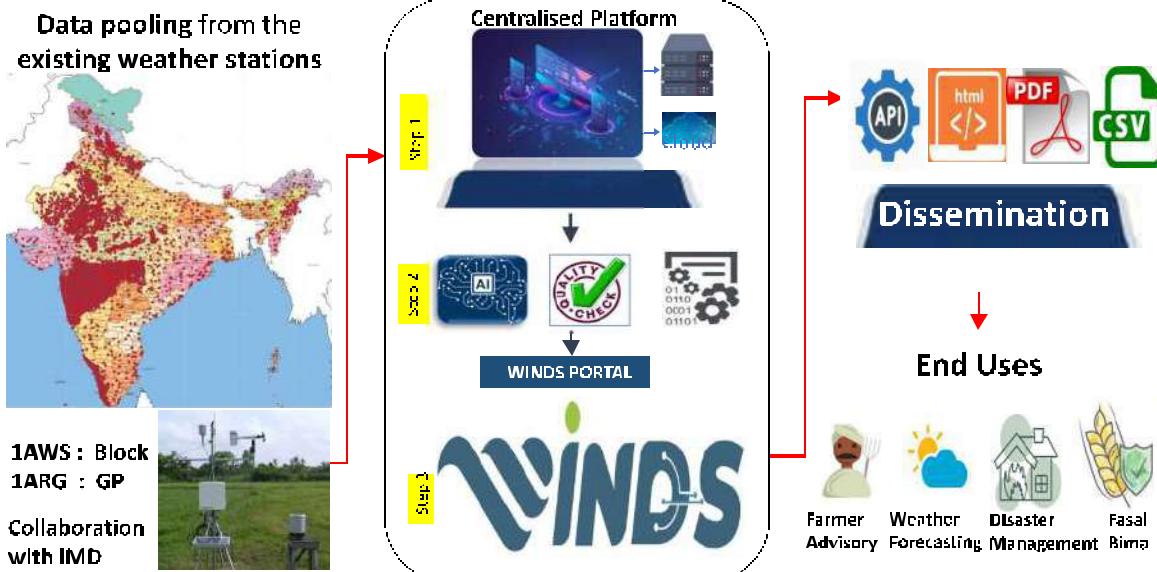
Gram Panchayat level to create a strong database of hyper-local weather data for the different Govt. and other entities to use for all farmer and farming oriented services. The data so collected will be used for claim assessment under Parametric Crop

insurance, Yield estimation through Technology, Crop-Region specific Agriculture Advisories to the Farmers, Disaster Risk Resilience & Mitigation needs. As of now the country has approx. 13,000 AWS and 20,000 ARGs installed for all institutions including IMD. Under WINDS, an additional 3,500 AWS and Approx. 1.6 lakh ARGs are proposed to be

established across the country. IMD and DA&FW has collaborated for setting up this system.

Nine states namely, Himachal Pradesh, Uttarakhand, Rajasthan, Chhattisgarh, Uttar Pradesh, Maharashtra, Andhra Pradesh, Kerala & Karnataka shall be implementing WINDS in this year.

WINDS: One Nation One Weather Portal



12.4.3 CROPIC (Collection of Real time observations and Photographs of Crops) is an initiative which has been taken up for periodic collection of photographs of crops during the crop life cycle. System is being put in place to collect 3-4 photographs of crops during their growth cycle. These photographs will be used for validation of sown and insured crops, crop damage assessment at the time of any localized and wide-spread calamity or climatic condition affecting the crops and also act as an input for Technology based yield estimation models.

A small-scale pilot was also launched to do a computer vision technology-based crop-damage assessment using photo-analytics, results of the same are looking promising. Based on these results, a large scale pilot to test the technology across crops and states will be done in this year to validate the technology and adopt the same under PMFBY.

EoI for invitation of proposals for implementation of photo-analytics based crop damage assessment has been published.

A thorough consultative process with all

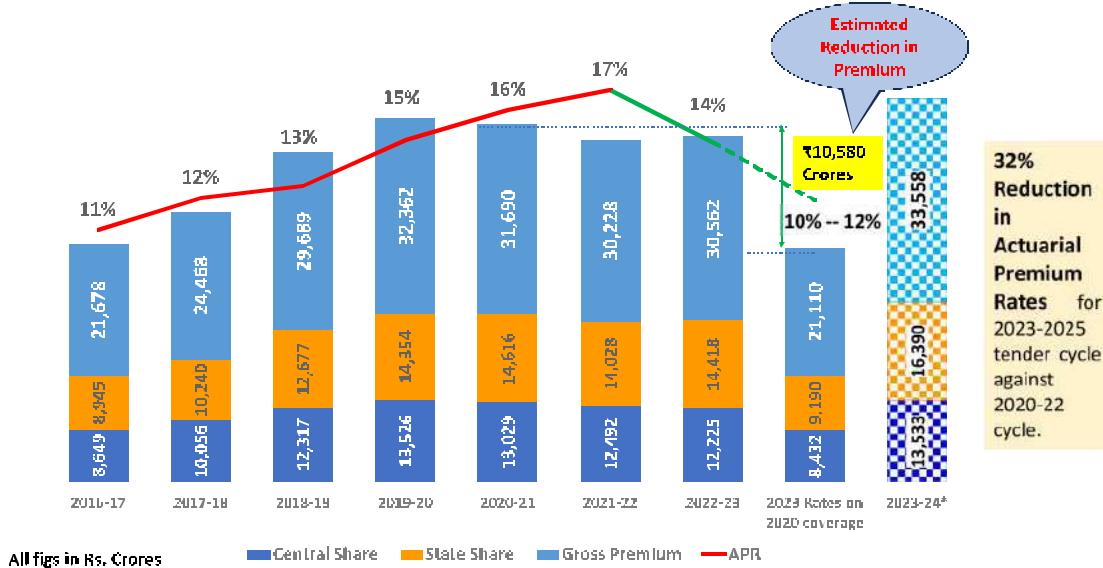
stakeholders was adopted to have inputs on the same. This intervention is well accepted by the insurance industry and reciprocated well in terms of increased participation in tenders and reduced premium rates in recently concluded tendering cycle.

12.5. Tender Cycle 2023-25:

In the current tender cycle for 2023-2025, 4 old left-out insurers have started participating, additionally 2 more insurers have been empanelled and therefore we have number of insurers increasing from 11 in 2020 tendering cycle to 15 in current year's tender cycle.

In the current tender cycle, a large participation of Insurance companies and high level of competition in bidding has been witnessed, which has led to discovery of very competitive premium rates. An overall reduction of 3%-35% in premium rates has been witnessed in comparison to rates in the previous years. This reduction has led to a combined saving of Govt. liabilities of Rs. 10,500 Crores in comparison to 2020-21 for the state & Central Govts.

PMFBY: Reduction in Premium Rates



In 2022-23 crops seasons:

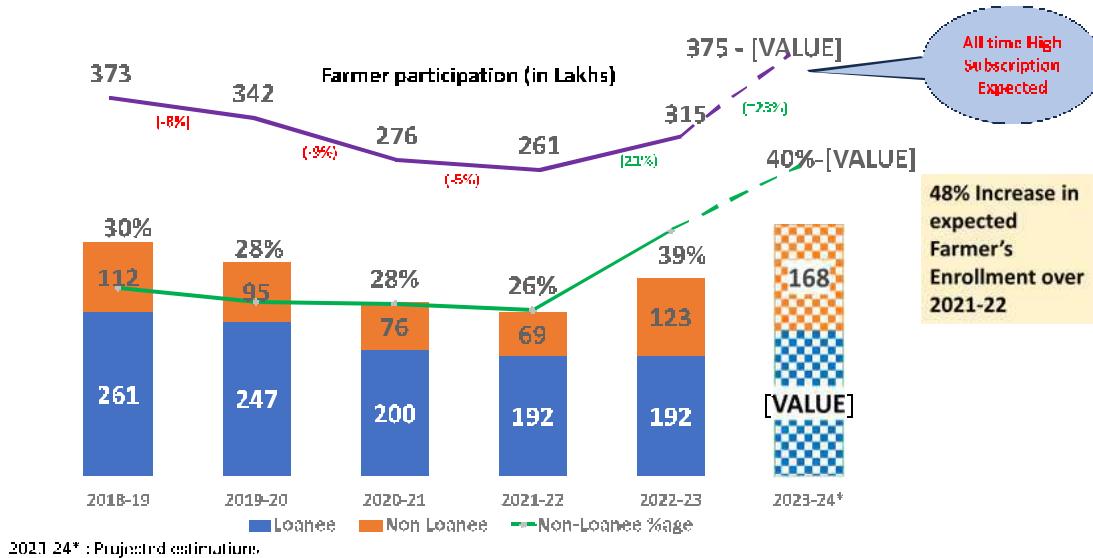
- Non-loanee farmers enrolment has increased to 42% of the total Farmers enrolled from 28% in 2022-23.
- Overall enrollment of farmers have increased by 21%, i.e. number of farmers enrolled in 2022-23 have reached more than 3.16 Crores against 2.61 crore farmers in 2021-22.
- Overall insured area has also increased by 12% in comparison to 2021-22 and reached at more than 497 Lakh Ha. This has resulted in insurance

coverage of 32% of gross Cropped Area of Implementing states/UTs, which in 2021-22 was at 30%.

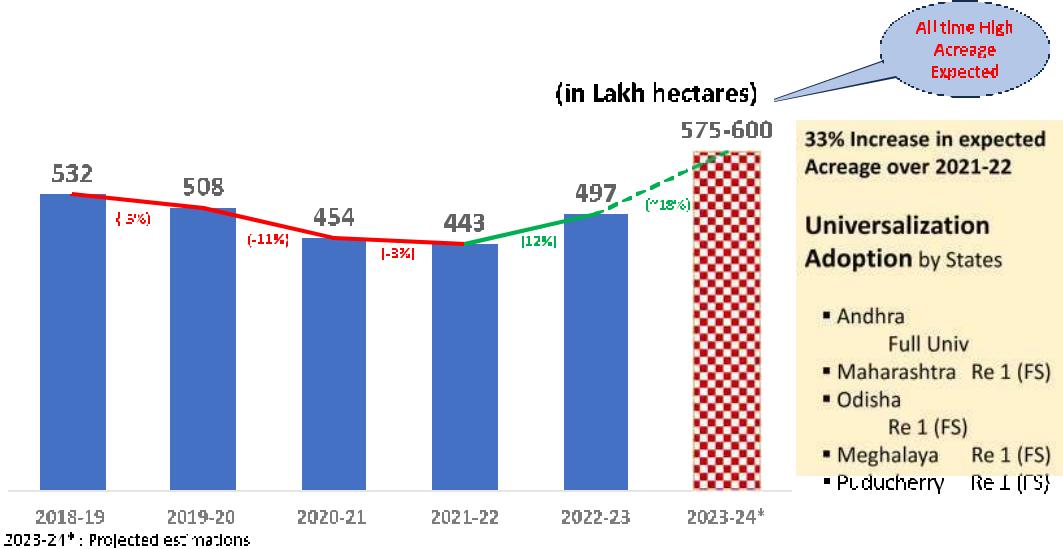
Expected coverage for 2023-24 seasons:

- Non-Loanee farmers are expected to be 42%-45%
- Overall enrolment of farmers to increase by 23%, i.e. total farmers enrolled are expected to reach 3.75-4.00 Crs
- Overall insured area to increase 18% to 5.75 – 6.00 Cr. Hectares from existing 4.97 Cr. Hectares.

PMFBY: Expected Subscription



PMFBY: Area Insured for last 5 years



12.6. Progress of the scheme implementation

The Scheme has completed 7 years of its implementation. Due to the concerted efforts of the Government coverage under the scheme as

compared to erstwhile schemes has been increased. Season-wise and Year-wise details of coverage including claims (as on 31.10.2023) are given in the following table:

PMFBY & RWBCIS - All India Business Statistics Since Implementation as on 31.12.23										
Season/Year	Farmer Applications Insured (lakh)	Area Insured (lakh ha)	Sum Insured	Farmers Share in Premium	Gross Premium	Reported Claims	Paid Claims	Farmer Applications Paid Claims (lakh)	Claim Ratio	Average APR
Rs. crore										
Kharif 2016	407.7	377.1	1,30,634	2,814	15,887	10,595	10,596	115.5	66.7%	12.2%
Rabi 2016-17	176.0	188.5	77,247	1,788	5,828	6,713	6,712	41.0	105.5%	8.1%
2016-17 Total	583.7	565.6	2,02,881	4,102	21,715	16,808	16,808	156.5	77.4%	12.7%
Kharif 2017	357.3	329.5	1,24,588	2,801	18,283	18,157	18,156	147.0	99.3%	14.7%
Rabi 2017-18	175.4	179.6	78,054	1,403	5,332	4,024	4,013	30.3	63.6%	8.1%
2017-18 Total	532.7	508.1	2,02,612	4,201	24,816	22,181	22,175	177.3	90.1%	12.1%
Kharif 2018	348.3	329.1	1,39,876	3,245	21,106	20,001	19,930	146.0	94.8%	13.1%
Rabi 2018-19	233.7	255.8	95,685	1,556	8,595	9,540	9,511	50.3	111.0%	9.0%
2018-19 Total	582.5	535.0	2,35,761	4,700	29,701	29,541	29,442	235.3	89.5%	12.5%
Kharif 2019	425.5	337.3	1,45,366	3,360	23,316	21,965	21,578	195.4	91.8%	15.3%
Rabi 2019-20	197.1	235.7	76,178	1,424	8,431	6,029	5,978	45.6	71.5%	11.1%
2019-20 Total	517.5	572.5	2,21,564	4,484	32,347	27,994	27,596	241.0	86.5%	14.5%
Upto 2019-20	2,316.1	2,181.3	8,67,848	17,490	1,08,378	96,525	96,019	81.1	89.1%	12.6%
Kharif 2020	474.3	285.7	1,16,275	2,537	20,689	14,919	14,774	129.2	77.1%	17.8%
Rabi 2020-21	198.5	183.5	83,209	1,421	10,389	6,491	6,428	69.4	59.1%	13.2%
2020-21 Total	522.3	469.2	1,99,583	4,047	31,576	21,110	21,212	198.5	67.6%	15.9%
Upto 2020-21	2,938.9	2,650.5	10,62,132	2,537	140,056	1,17,935	1,17,232	1,309.7	84.2%	13.2%
Kharif 2021	504.3	251.5	1,02,137	2,336	18,925	15,055	14,857	255.3	79.6%	18.5%
Rabi 2021-22	325.5	191.5	78,277	1,376	11,119	5,573	5,523	87.3	50.1%	14.2%
2021-22 Total	829.5	443.0	1,80,414	3,712	30,643	20,630	20,395	342.5	68.7%	15.7%
Upto 2021-22	3,758.8	3,093.6	12,42,846	25,249	1,70,130	1,38,564	1,37,627	1,352.3	81.5%	13.7%
Kharif 2022	734.2	266.8	1,25,907	2,540	19,379	11,295	10,734	200.8	56.5%	15.7%
Rabi 2022-23	440.4	232.7	86,610	1,468	11,124	4,500	4,235	75.5	40.4%	17.8%
2022-23 Total*	1,174.7	439.5	2,13,517	4,008	31,103	15,795	14,939	275.3	50.8%	14.5%

Note : Kharif 23 & Rabi 23-24 enrollment data yet to be finalized

** Kharif 2022 & Rabi 2022-23 claim calculations not yet finalized

In spite of overall good monsoon during the first four years of implementation of PMFBY, the claim ratio was about 77.5%, 90%, 99.5% and 86.5% in 2016-17, 2017-18, 2018-19 and 2019-20 respectively.

Sr. No.	Year	State	Claim Ratio
1.	2016-17	Tamil Nadu	77.5%
		Karnataka	90%
		Andhra Pradesh	99.5%
2.	2017-18	Chhattisgarh	86.5%
		Odisha	92.2%
		Haryana	99%
		Tamil Nadu	103%
3.	2018-19	Madhya Pradesh	126%
		Andhra Pradesh	132%
		Tamil Nadu	163%
		Karnataka	165%
		Chhattisgarh	122%
4.	2019-20	Jharkhand	199%
		Madhya Pradesh	159%
		Kerala	123%
		Chhattisgarh	106%
5.	2020-21	Kerala	151%
		Puducherry	311%
		Madhya Pradesh	108%
		Assam	121%
6.	2021-22	Puducherry	146%
		Haryana	141%
		Jammu & Kashmir	140%
		Haryana	139%
7.	2022-23		

Under PMFBY, benefits to the farmers are also being provided through early payment of claims directly into the bank accounts of the farmers. To bring more transparency in assessment of crop losses and assessment & settlement of claims through use of technology etc. a Digiclaim module has been introduced on NCIP.

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 through "Meri Policy Mere Haath" campaign.

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

The schemes' implementation is reviewed/monitored constantly through weekly video

Moreover, the farmers in most affected States received higher claims and the claim ratio i.e. claims over gross premium collected by insurance companies in the State was high in the following States :

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 further revamped from **Kharif 2020 season**.

Based on the report of Working Group constituted to examine Alternate Risk management Mechanism under PMFBY and Impact study of the Scheme, the Operational Guidelines of the Scheme have further been reviewed and revised w.e.f. **Kharif 2023 season**.

12.8. 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 contracts. 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. The scheme has no specific extra benefits/provisions for women farmers. However, the Government is bound to pay its share in premium subsidies for all the farmers, including women who take up crop insurance.

The coverage of women farmers under PMFBY has remained consistent since the inception of the scheme. Over the last three seasons, mainly Rabi 2021-22, Kharif 22 and Kharif 22-23, out of the total coverage under the scheme, approximately 15%-16% of women farmers were enrolled under the scheme every year. The State of Maharashtra has achieved maximum enrolment of women farmers till 2020-21 in terms of quantum of application-wise enrolments, constituting almost 18%-19% of the State's total farmer coverage. However, over the last two years, i.e., 2021-22 & 2022-23, the maximum quantum of application-wise enrolments for women farmers have come from the State of Rajasthan, constituting nearly 12-13% of the State's total farmer coverage.

The insured area owned by women farmers in the State of Maharashtra has been the highest among all participating States until 2020-21, whereas during 2021-22 and 2022-23 area insured by women farmers has been highest in the State of Rajasthan. Union Territories and North East States have recorded fairly improved enrolment of women farmers over the years.

For the latest two seasons i.e., Rabi 2022-23 and Kharif 2022-23, we have witnessed an increment of 36% & 48% respectively in overall applications enrolled by women farmers over previous seasons. In detailed specs, Loanee Women farmer applications have increased by 65% both in the Kharif and Rabi seasons of 2022-23. As regards Non-Loanee farmer applications, an increment of 19% in the Kharif 2022 season and similar levels as of Rabi 2022 season has been achieved, demonstrating favorable attitude among women farmers towards PMFBY.

Pending Audit Para - No Audit Para is pending relating to PMFBY.

12.9 Awareness and Mass Media campaigns

With a view to create awareness among the stakeholders especially farmers following steps have been taken during the year:

A. Media Monitoring: In the past year, monitored and tracked nearly 5,000 media articles related to farmer grievances, scheme implementation, and ongoing activities. Notably, over 500 news items highlighting on-ground issues were identified and promptly relayed to concerned stakeholders for resolution, exemplifying our commitment to addressing farmers' concerns effectively.

B. Events: Organized several significant events in the reporting year. These include the highly successful launch of Digi-Claim, YES-tech/WINDS. Additionally, gearing up for the impending launch of the Farmer Grievance Redressal portal, known as Krishi Rakshak Portal & Helpline. Further, we successfully conducted the 9th and 10th National Review Conferences (NRC), with plans underway for the forthcoming NRC in February/March 2024.

C. Stakeholder Engagement Podcasts: Throughout the year, produced 12 expert podcasts, providing a platform for insightful discussions with representatives from insurance companies, state governments, and other stakeholders. These podcasts have fostered meaningful engagement and knowledge sharing. Steps being taken to create 20 more podcasts for YouTube.

D. Social Media Campaigns: Included campaign for enrolling farmers for the Kharif 2023 and Rabi 2023-24 seasons, alongside comprehensive coverage of the PMFBY scheme. Through engaging infographics, static posts, social media stories, animated videos, and informative films, effectively conveyed information about Yes-Tech, WINDS, technological advancements in PMFBY, Digi-Claim, and the AIDEapp.

E. Campaigns: Successfully executed two seasons of "Meri Policy Mere Haath" and conducted a season of "Crop Insurance Week.", with 2nd season upcoming in Dec 2023. These campaigns served to promote the PMFBY scheme and educate farmers about the benefits and enrollment procedures.

F. Storytelling and Documentation: In line with commitment to transparency and beneficiary-centric communication, actively planning to document case studies and sharing human stories, focused on capturing the essence of on-ground IEC activities, and also highlight the pivotal role of women farmers in agriculture.

12.10. Trainings of Stakeholders

Training and Capacity Building of the stakeholders is one of the important areas identified by the Department in reaching out to farmers with credit and insurance support. PMFBY scheme was revamped in 2020 and participation was made voluntary for all farmers, it was compulsory for loanee farmers earlier. Since, the scheme is implemented through multiple stakeholders time to time (both Kharif and Rabi seasons) training and capacity building is pertinent. This department is already conducting trainings for State Govt/UTs, Bankers, Insurance Companies CSC and Post-Offices on various aspects of PMFBY in both online and offline mode.

This department has also felt the need for institutionalizing the stakeholder trainings by collaborating with Apex and Premier Training Institutes in the country, so that it can be continued on sustained basis. In this direction On-campus training for State Government officials on crop insurance was conducted in association with National Insurance Academy based at Pune. Similarly, in association with Bankers Institute for Rural Development, Lucknow trainings were conducted for Bank officials on Agriculture Credit and Crop Insurance. In collaboration with MANAGE, Hyderabad and Extension Education Institutes across India, webinars were organized for Extension Officials and functionaries of State Govt on agriculture credit and crop Insurance. Training on implementation of technology Yes-Tech and WINDS initiatives is organized jointly at Space Application Centre at Ahmedabad under guidance of MNCFC, GoI. Taking the initiative forward, "Certificate Course on Agriculture Insurance" is scheduled in collaboration with Anand Agriculture University and is planned to scale it up for all agriculture universities across the country.

Chapter-13

AGRICULTURAL CREDIT

Overview

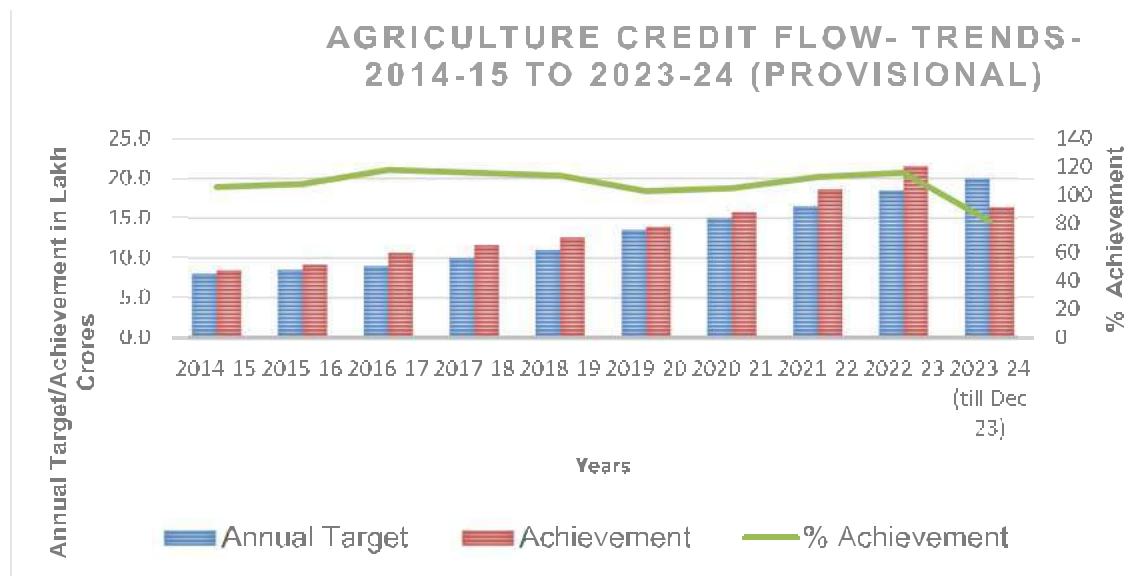
13.1 Under the vision of the Government, this department has taken many policy initiatives to strengthen the farm credit delivery system to provide credit at lower interest rates to support the agricultural sector's resource requirements. These policies have emphasised providing timely and adequate credit support to farmers, focusing on small and marginal farmers and weaker sections of society, enabling them to adopt modern technology and improved agricultural practices to increase agricultural production and productivity. The policy aims at augmenting credit flow at the ground level through credit planning, adoption of region-specific strategies, rationalisation of lending policies and procedures and bringing down the rate of interest on farm loans.

13.2 Policy initiatives for increasing the flow of credit

The government has initiated several measures to galvanise the institutional credit system to make it more responsive to the needs of farmers. Some of the critical measures undertaken in this regard are as follows:-

13.2.1 Agriculture Credit: Target and Achievement

The government sets a target for agricultural credit flow every year, which has increased consistently over the years, and it reached Rs. 21,55,163 crore against the target of Rs. 18,50,000 crore during 2022-23. The target for 2023-24 has been fixed at Rs. 20,00,000 crore. The credit flow trends since 2014-15 is shared below



13.2.2 Modified Interest Subvention Scheme

The Interest Subvention Scheme (ISS) was launched in 2006-07 to provide concessional short-term crop loans, including loans availed through Kisan Credit Card (KCC) to the farmers. The scheme has been renamed the Modified Interest Subvention Scheme (MISS) for 2021-22.

MISS is available to farmers availing short-term agri loans up to Rs.3.001 lakh at an interest rate of 7% per annum for one year. The short-term agri loans include crop husbandry, animal husbandry, dairy farming, and fisheries. An additional 3% prompt repayment incentive (PRI) 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 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 the provision of the benefit of IS & PRI for loan amounts up to 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 based on the 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

(Rs. in Crore)

Year	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Fund released	11,495.67	16,218.75	17,789.72	21,476.933	17,997.886	12,859.42*

*As on 31.12.2023

13.2.3 Kisan Credit Card Scheme (KCC)

KCC was introduced in 1998 to provide timely credit to farmers to meet short-term/long-term cultivation requirements, post-harvest expenses, consumption requirements, etc. KCC is implemented by Commercial Banks, Cooperative Banks and Rural Regional Banks (RRBs) under the overall guidance of the Department of Financial Services. Reserve Bank of India issued a master circular on implementing the KCC scheme, followed by more instructions occasionally.

This Ministry is actively involved in promoting KCC scheme to provide farmers easy access to concessional institutional credit. Several steps have been taken to simplify the procedure to access KCC. The KCC scheme, along with the benefit of IS & PRI has been extended to farmers practising animal husbandry and fisheries. Processing fees, inspection, ledger folio charges, and all other service charges have been waived for fresh issues/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.

To bring the maximum number of farmers under KCC

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 2022-23, the Department released a sum of Rs. 17,997.886 crore to the implementing agencies, i.e. Reserve Bank of India (RBI) / National Bank for Agriculture and Rural Development (NABARD), as a subsidy under the Interest Subvention Scheme. The government has allocated a sum of Rs. 23,000 crore (RE - Rs. 18,500 crore) for the current financial year for interest subsidy under the scheme. Out of the current year budget, Rs. 12,859.42 crore has been released to RBI/NABARD under the scheme. Details of funds released during the last five years and the current financial year are as follows:

so that they can get loans 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 has been run to cover eligible and willing farmers with a particular focus on PM KISAN beneficiaries. As a result, as of 29-12-2023, 463.12 lakh new KCC applications have been sanctioned with a sanctioned credit limit of Rs. 5,66,903 crore as part of the drive.

A revised KCC Saturation drive, i.e. "Ghar Ghar KCC Abhiyan", is being launched with a special focus on saturating PM KISAN beneficiaries from 01st October 23 to 31st December 23. The main objective of this drive is to mobilise the potential farmers through a campaign under the Block Level Bankers Committee to saturate PM KISAN beneficiaries with KCC and to enrol a maximum number of farmers/PM KISAN beneficiaries under all types of KCC schemes (for Crop cultivation, Animal Husbandry, Dairy and Fisheries etc.). A periodic review of "Ghar Ghar KCC Abhiyan" will be done by GoI and State/District/Block level fortnightly, weekly, and monthly at different stages.



13.2.4 Kisan Rin Portal

Department of Agriculture and Farmers Welfare (DA&FW), Govt. of India, in cooperation with the Department of Financial Services (DFS), Department of Animal Husbandry & Dairying (DAH&D), Department of Fisheries (DoF), RBI and NABARD, has developed an integrated digital portal viz. 'Kisan Rin Portal' for KCC & MISS to have complete access to the granular data of farmers/borrowers of KCC, including information about loans sanctioned and eligible interest subvention claims of the banks and review and monitoring of scheme progress & utilisation and to intervene with policy level strategic interventions and guidelines to make the scheme more resilient, focused, beneficial and efficient. Hon'ble Minister of Finance & Corporate Affairs and Hon'ble Agriculture Minister have launched 'Kisan Rin Portal' on **19th September, 2023**.

Since banks play a crucial role in extending short-term seasonal Agriculture Loans to farmers for their capital requirements, it is felt that integrating the banks with the Kisan Rin Portal being developed by

the Department will be of utmost importance to have a granular, hassle-free, and informative data available to the Department. The portal is now ready for data entry of claims related to MISS for the FY 2021-22 and 2022-23, and most of the banks are already onboarded.

In this connection, all the banks have already been requested to plan and deploy necessary development/ middleware for enabling requisite electronic data sharing with Govt. of India at the earliest and complete the data exchange / sharing within given timelines so that Aadhaar authenticated data of all KCC is fed into the portal. NABARD was requested to complete the KCC portal data entry by *Regional Rural Banks (RRBs)* and Cooperative Banks. All the public sector banks were also asked to complete the data entry/exchange (Fully digital/Hybrid/Manual) on the Kisan Rin portal. A timely review of the progress regarding the "Data Exchange of KCC beneficiaries on the Kisan Rin portal" is being done jointly by this Department and the Department of Financial Services.

Chapter-14

AGRICULTURAL MARKETING

14.1. 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.

14.2 Major Schemes

Major schemes of Agri. Marketing Division consists 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).

14.3 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 14 IAs have been approved for formation and promotion of FPOs viz., Small Farmers' Agri-Business Consortium (SFAC), National Bank for Agriculture and Rural Development (NABARD), National Cooperative Development Corporation (NCDC), 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), 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) Central Agricultural University (CAU), Imphal & Paschimbanga Agri-Marketing Cooperation Limited (PAMCL). Additional IAs for formation & promotion of Beekeepers FPOs viz. Tribal Co-Operative Marketing Development Federation of

India Limited (TRIFED), National Dairy Development Board (NDDB).

14.4 Integrated Scheme for Agricultural Marketing (ISAM):

14.4.1 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 till 31st March, 2026, 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 there for.
- 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 open ended, demand driven, credit linked with provision of back-ended subsidy. The scheme is also reform linked and infrastructure projects of State/UT agencies are allowed under the scheme for those States/Union Territories that have undertaken following reforms in their respective APMC Acts (i) direct marketing; (ii) e-trading; (iii) unified single trading license valid across the State/UT, and (iv) 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,

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, Sikkim, UTs of Andaman Nicobar and Lakshadweep Islands, Hilly* areas	33.33%	1333.20	1333.20	133.20
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

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 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 are 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>

14.4.2 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:

Department of Agriculture & Farmers Welfare grants one time 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 organized 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 expand and consolidate the e-NAM through integrating more markets and promoting inter-mandi within State and inter-state trade;
- (ii) to focus on Warehouses Based Sale (WBS) and eNWR trade through e-NAM;
- (iii) to proactively formalize new modules to provide benefits to the farmers and FPOs.
- (iv) to open the e-NAM platform beyond APMC/RMC mandis to create further competition and ensure competitive price realization to the farmers.
- (v) to strengthen quality assaying systems and to develop trade reliable grade-standards to promote inter-mandi and inter-State e- trade; and
- (vi) to create further demand in market and to benefit farmers, along with the primary trade, secondary trade will also be undertaken through e-NAM.

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.
- viii. Online payment gateway is available for transfer of bid value directly to bank accounts of farmers.

I) e-NAM Process Flow



State wise no. of mandis integrated with e-NAM platform

S. No	State/UT	Mandis Integrated
1	Andhra Pradesh	33
2	Assam	3
3	Bihar	20
4	Chhattisgarh	20
5	Gujarat	144
6	Goa	7
7	Haryana	108
8	Himachal Pradesh	38
9	Jharkhand	19
10	Karnataka	5
11	Kerala	6
12	Madhya Pradesh	139
13	Maharashtra	133
14	Nagaland	19
15	Odisha	66
16	Punjab	79
17	Rajasthan	145
18	Tamil Nadu	157
19	Telangana	57
20	Tripura	7
21	Uttar Pradesh	125
22	Uttarakhand	20
23	West Bengal	18

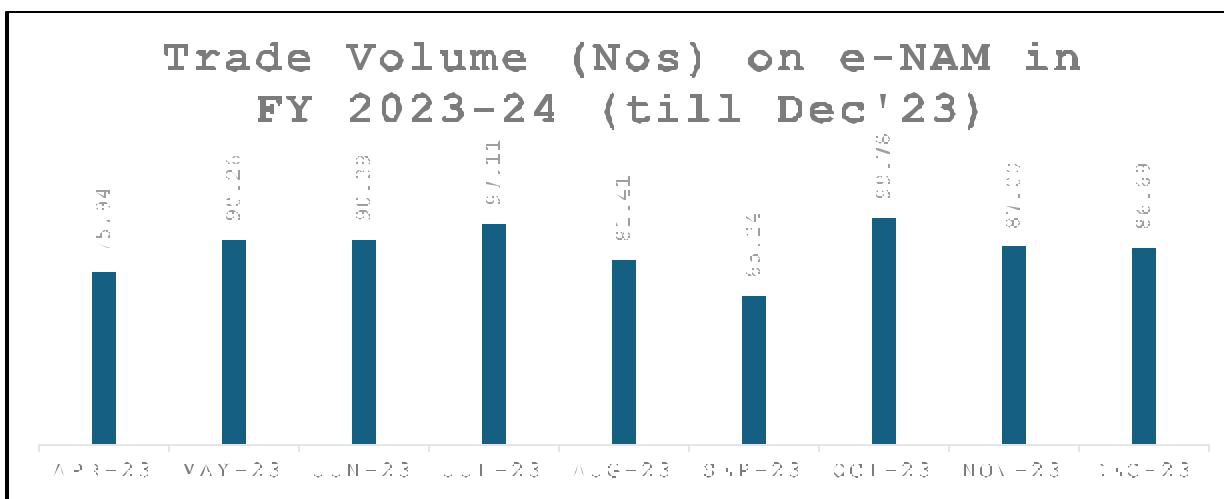
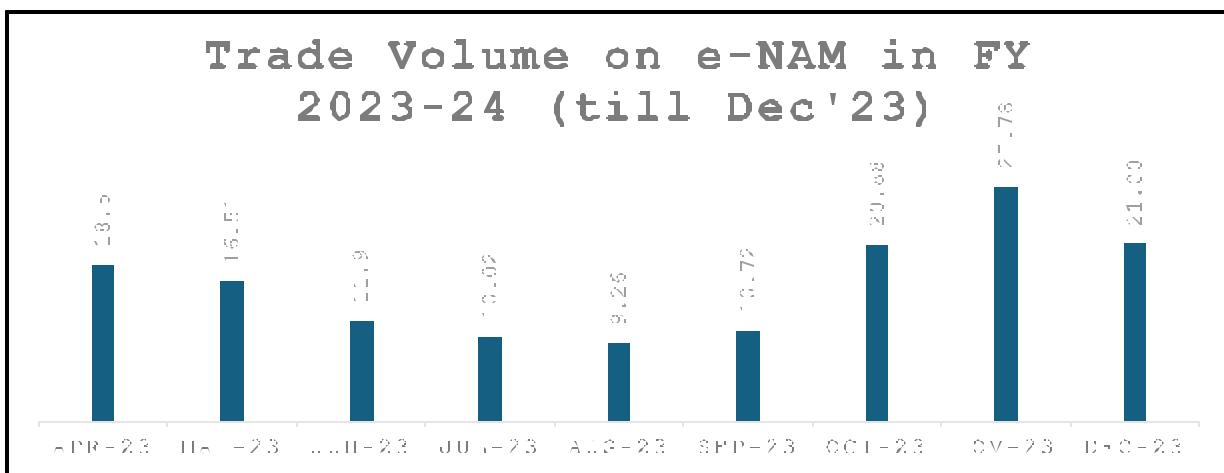
Union Territory (UT)

1	Andaman and Nicobar Islands	1
2	Chandigarh	1
3	Jammu & Kashmir	17
4	Puducherry	2
Total		1389

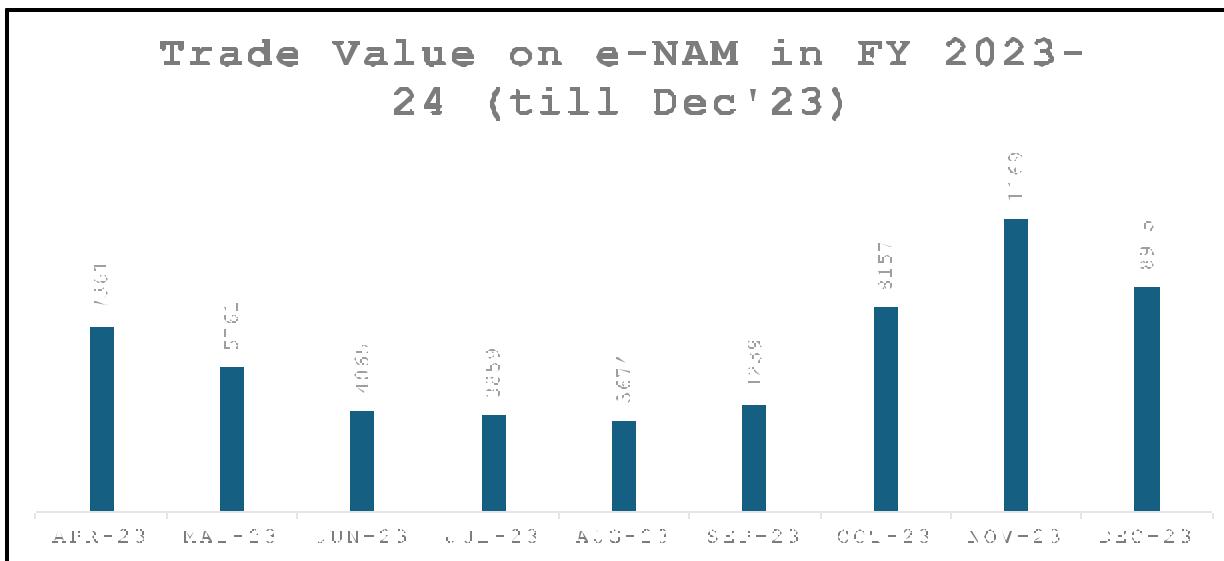
Performance at a glance (till 31st Dec 2023)

S. No	Particulars	FY (2023-24) Till 31 st Dec 2023	Since inception to 31 st Dec 2023
a.	Stakeholders Registration		
	No. of farmers Registered on e-NAM (nos)	1.57 (Lakhs)	1.76 (Cr)
	No. of traders Registered (nos)	8,433 (Nos)	2.51 (Lakhs)
	No. of Commission Agents Registered (nos)	2,263	1.11 (Lakhs)
	No. of FPO registered (nos)	830	3405
b.	Trade Recorded		
	Total Trade recorded in volume (Cr. MT)	1.46	8.96
	Total Trade recorded in numbers (Cr.)	7.73	30.99
	Total Trade recorded in value (Rs. Cr.)	57,786	3,19,450
c.	Tradable parameters of notified commodities (nos.)	10	219

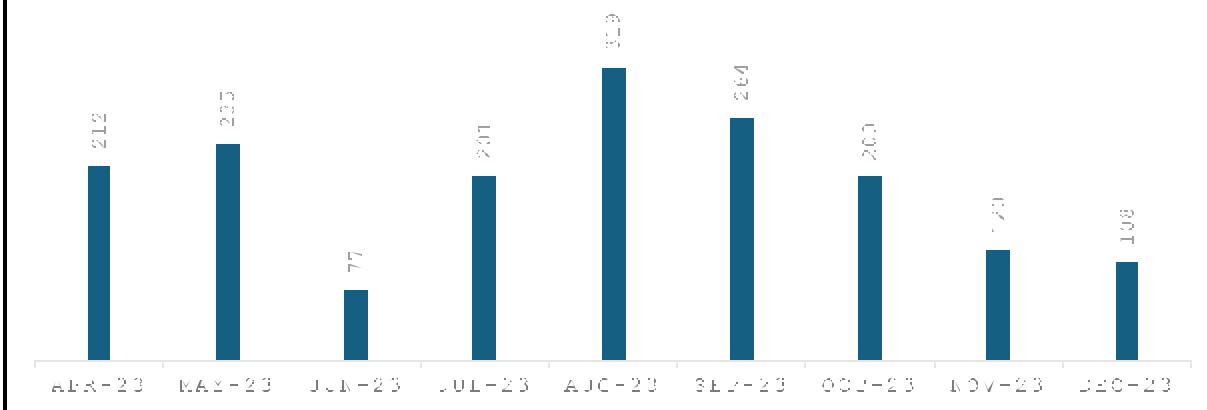
Month-wise Trade Value (Rs. Cr) and Volume (Lakh MTs & Numbers) for FY 2023-24(till Dec'23)



*Bamboo, Betel Leaf, Coconut, Lemon, Sweet Corn



**e-Payment Value (Rs Cr) on e-NAM
in FY 2023-24 (till Dec'23)**



Inter-State Trade on e-NAM in FY 2023-24(till Dec' 23)

Buyer State	Seller State	Lots Traded (nos)	Sum of Trade Vol (Qty)	Sum of Total Trade Value (Rs)
ANDHRA PRADESH	MAHARASHTRA	68	39325	76793860
ANDHRA PRADESH	TAMIL NADU	898	3762	23345142.81
BIHAR	MAHARASHTRA	36	10988	21654907.5
CHANDIGARH	MAHARASHTRA	3	908	1861282.5
GUJARAT	JAMMU AND KASHMIR	2	0	7175
GUJARAT	MAHARASHTRA	9	2427	4394355
HARYANA	JAMMU AND KASHMIR	1	0	14400
HARYANA	MAHARASHTRA	19	5755	12851450
JAMMU AND KASHMIR	MAHARASHTRA	1	303	514250
JHARKHAND	BHAR	1	63	200000
JHARKHAND	JAMMU AND KASHMIR	37	1863	12273931
JHARKHAND	MAHARASHTRA	60	22325	43570310
JHARKHAND	UTTAR PRADESH	2	100	81250.75
JHARKHAND	UTTARAKHAND	1	99	296400
KERALA	JAMMU AND KASHMIR	5	0	8118
KERALA	MAHARASHTRA	44	654	4031382.11
KERALA	TAMIL NADU	2	8	70340.05
MADHYA PRADESH	TAMIL NADU	246	1313	7992260.98
NAGALAND	MAHARASHTRA	5	1511	4089500
ODISHA	JAMMU AND KASHMIR	1	200	1300000
ODISHA	JHARKHAND	2	26	77256
ODISHA	MAHARASHTRA	3	908	2088157.5
PUDUCHERRY	TAMIL NADU	1294	3922	29269260.15
PUNJAB	MAHARASHTRA	45	16355	31024477.5
RAJASTHAN	JAMMU AND KASHMIR	4	104	619451.87
TAMIL NADU	MAHARASHTRA	38	8324	19212984.1
TAMIL NADU	PUDUCHERRY	59	192	1268450.11
TAMIL NADU	TELANGANA	6	112	1317293.41
UTTAR PRADESH	ASSAM	1	0	1500

UTTAR PRADESH	JAMMU AND KASHMIR	29	40	109136
UTTAR PRADESH	MAHARASHTRA	69	23117	50913950.5
UTTAR PRADESH	UTTARAKHAND	70	296	401285
UTTARAKHAND	UTTAR PRADESH	598	12113	14727477.52
WEST BENGAL	MAHARASHTRA	29	9383	21037670
KARNATAKA	MAHARASHTRA	8	2420	5949872.5
HIMACHAL PRADESH	HARYANA	22	925	4436820
Grand Total		3718	169838	400805357.9

Inter-Mandi Trade on e-NAM in FY 2023-24(till-Dec-23)

S.No	State	Mandis	Trade Volume		Trade Value
		Participated	(In MT)	(In Nos.*)	(Rs Lakh)
1	Andhra Pradesh	10	3833.892		2412.24
2	Chhattisgarh	7	18627.004		3641.58
3	Haryana	30	53246.436		22182.42
4	Jammu And Kashmir	7	1206.479	26850	815.57
5	Jharkhand	3	10.75744		0.87
6	Kerala	3	0.11		0.11
7	Maharashtra	5	14819.165		7583.38
8	Nagaland	5	1		1.10
9	Odisha	60	10592.085	13451190	2867.33
10	Rajasthan	53	238.277		70.92
11	Tamil Nadu	128	216646.2834	269229	69866.14
12	Telangana	19	10198.76846		3469.18
13	Uttar Pradesh	20	1890.995		492.68
14	Uttarakhand	16	1883.35		287.91
15	West Bengal	20	825.699		87.07
Total		386	334020	13747269	113778.50

*Odisha traded Betel leaf, Coconut, Lemon, Sweet Corn in numbers,

#Tamil Nadu traded Coconut in numbers

Key Features of e-NAM

1. Farmer friendly Mobile App:

- i. Multilingual (12 languages)
- ii. Geo-tagged e-NAM mandis to help farmers in locating the nearest e-NAM mandi in the 100 km radius along with last three days traded price of commodities.
- iii. Push notification
- iv. Advance Gate Entry
- v. Track Lot Progress
- vi. Sampling and Assaying Facility

vii. Online Payment Facility for Trader

viii. SMS Alert on Receipt of Payment

2. Unified trading licensing system for Inter-State

This feature has been created for traders to apply for interstate trade license in their e-NAM Login to enable them to participate across e-NAM mandis in the country.

3. Discounts to Traders in mandi fee at the time of e-Payment

To incentivize the move towards a cashless economy, the various state Governments have come up with incentives of discounts

on digital transactions. Thus, e-NAM introduced with Discount facilities on e-Payment. To avail the facilities, application administrator of the state can configure desired discount percentages in the application and in case of e-Payment mode selected by buyer; configured discount facilities will be automatically applicable in the transaction to avail such benefits in mandi fee while e-Payment.

4. Auto Sale Agreement

Auto sale agreement feature has been added to reduce e-NAM workflow execution time. This has benefitted farmer's transaction waiting time.

5. BHIM payment facility

Currently e-NAM portal facilitates direct online payment to farmers through RTGS/NEFT, Debit Card and Internet Banking. Facilitation of Unified Payment Interface (UPI) through BHIM helped in easing out the payment to farmers by reducing the payment realization time from buyers account to pool account and in turn disbursal to farmers.

6. Website & Mobile App in 12 languages

The website & Mobile App has been upgraded enabling stakeholders from different geographic and linguistic regions to avail such benefits. Languages are – Hindi, English, Bengali, Marathi, Gujarati, Tamil, Telugu, Punjabi, Odiya, Dogri, Malayalam and Kannada.

7. Shopping Cart feature

This feature has been created to ease traders in choosing multiple lots from daily auction. Once chosen, a shopping cart would be created. Thereafter, trader may choose to make bid/ make payment accordingly.

8. Bunching of Multiple Invoices

This feature enables the trader to select multiple invoices and make single one-time payment for combined amount of all invoices, instead of selecting each invoice

and completing the payment one by one. This has substantially reduced time for concluding trade online and provided smooth user experience to the stakeholder.

9. Part Payment Feature

Facility of part payment of invoice by the farmer/trader giving him the option of Full payment, Partial Online Payment with Mandi Fee, Partial Online Payment without Mandi Fee and Full Online Payment excluding Mandi Fee has been made available. This is a choice-based module and would be applicable as chosen.

10. Farmer Incentive Feature

This feature has been deployed enabling mandi to allow incentives to farmers for choosing online payment mechanism (% of Mandi fee), for promoting e-payments at their respective mandi. Successful pilot run done at Mandawari and Jodhpur Mandi in Rajasthan and is now available for all e-NAM mandis of Rajasthan.

New Initiatives on e-NAM

1. 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 Bangalore, 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.

2. 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 Bangalore, 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.

3. **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.
4. On the occasion of 'Bharat Ka Amrut Mahotsav' celebration & 5th Anniversary of e-NAM (14th April) Union Agriculture Minister launched the following new features of e-NAM:

a. IMD Weather 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.

b. 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.

c. Cooperative Module

Cooperative Trading module facilitates Cooperatives to register themselves on e-NAM and to trade their produce directly from their collection centre / warehouses without bringing the produce to the APMCs.

d. e-NAM Directory

A directory with compiled information on e-NAM processes and respective mandi information.

Recently launched features :

1. **Business Intelligence (BI) Dashboard** has been developed which provides data

analytics tools for e-NAM trade information. Dashboard is accessible at Central, Mandi Board and Mandi level.

2. **Gate Entry using QR Code Integration:** This feature facilitates Gate Entry with QR Code Integration. It empowers farmers to self generate QR-coded entry receipts, simplifying their gate entry process.
3. **Unlocking LOT insights, Assaying Certificate, Bidding Instantly by QR Code:** This feature helps buyer to access LOT information, Quality Assaying Certificate and place bids by scanning the QR code. This feature promotes transparency and enhances overall market efficiency.
4. **Sale Agreement & Weighment Slip Generation feature for Commission Agent (CA):** This feature enables Commission Agents to participate and generate Weighment Slip & Sale Agreement, leading to time saving for mandi officials and buyers.
5. **e-Payment Access for Commission Agent (CA) :** This feature enables Commission Agent to initiate payment on behalf of buyers via any of available e-mode (UPI, NEFT, RTGS, DEBIT CARD, and NETBANKING) to farmers/FPOs, thus facilitating swift payments.
6. **Live bidding Dashboard for Commission Agent (CA):** The Live Bidding Dashboard for Commission Agents (CAs) offers real-time bid updates, access to historical bidding data, and market trends.

Onboarding FPOs on e-NAM Platform

Farmer Producer Organizations (FPOs) are formed to overcome the challenges, especially of small & marginal farmers, of marketing small marketable surpluses. Aggregation of the produce as envisaged provides economies of scale; however, various bottlenecks in sale of the produce exists, making sustenance of the farmers difficult. Through e-NAM, the technology for online trade is made accessible to FPOs for better market linkages towards selling their produce.

Sr. No.	State	FY (2023 - 24)	No. of FPOs (Since Inception till Dec'2023)
1	Andhra Pradesh	23	216
2	Assam	12	12
3	Bihar	61	65
4	Chhattisgarh	5	34
5	Goa	1	1
6	Gujarat	73	223
7	Haryana	17	264
8	Himachal Pradesh	10	83
9	Jharkhand	22	176
10	Karnataka	8	21
11	Kerala	23	31
12	Madhya Pradesh	32	149
13	Maharashtra	34	320
14	Odisha	170	442
15	Punjab	7	20
16	Rajasthan	37	281
17	Tamil Nadu	87	211
18	Telangana	16	111
19	Tripura	0	2
20	Uttar Pradesh	44	343
21	Uttarakhand	38	92
22	West Bengal	85	265
Sr. No.	Union Territory	FY (2023 - 24)	No. of FPOs (Since Inception till Dec 2023)
23	Jammu & Kashmir	25	40
24	Puducherry	0	3
Total		830	3405

Out of 3405 registered FPOs, as on 31st December 2023, FPOs from 18 States & 1UT (Andhra Pradesh, Assam, Chhattisgarh, Gujarat, Haryana, Himachal Pradesh, J&K, Jharkhand, Kerala, Madhya Pradesh, Maharashtra, Odisha, Punjab, Rajasthan, Tamil Nadu, Telangana, Uttar Pradesh, Uttarakhand and West Bengal) had successfully participated on e-NAM and have done trade volume of 68019.3 MT and 1.86 crore Numbers (of Betel leaf and Coconut) of Trade value worth Rs. 127.59 Cr.

*Odisha traded Coconut in numbers

West Bengal traded Betel Leaves in numbers

Sl. No.	State	FY 23-24 Traded Volume (MT)	FY 23-24 Traded Volume (Nos.)	FY 23-24 Traded Value (Rs. Lakh)	Inception till Dec 2023 Traded Volume (MT)	Inception till Dec 2023 Traded Volume (Nos.)	Inception till Dec 2023 Traded Value (Rs Lakh)
1	Andaman & Nicobar Is	0	0	0	0.01	0	0.003
2	Andhra Pradesh	873618	0	650929	7055702	0	4528508
3	Assam	0	0	0	17	0	3
4	Bihar	6	0	2	16	0	4
5	Chandigarh	163192	0	35169	584079	0	113295

7	Chhattisgarh	95190	0	20755	982223	0	198002
6	Goa	66	262058	92	69	262058	97
8	Gujarat	393940	0	177406	2238295	0	890088
9	Haryana	4094854	18650	1609090	28345335	0	9148845
10	Himachal Pradesh	47648	0	19623	388112	0	143790
11	Jammu & Kashmir	59928	26850	40150	69304	26850	13501
12	Jharkhand	1611	0	363	27336	4469	5115
13	Karnataka	23421	0	21518	164197	0	108139
14	Kerala	132	0	41	652	0	208
15	Madhya Pradesh	1232271	0	428295	7677738	0	2516687
16	Maharashtra	525837	0	217698	4000532	0	1417100
17	Nagaland	557	0	270	653	0	296
18	Odisha	366862	67241953	88513	1229511	289712617	318061
19	Puducherry	3378	0	1658	44480	0	15391
20	Punjab	322390	0	115130	3617251	0	1188010
21	Rajasthan	4396192	1354104	1744774	18607012	5879671	7554688
22	Tamil Nadu	509095	0	161148	1765845	13974729	405511
23	Telangana	733542	0	252033	6206236	0	2173308
24	Tripura	1	0	1	2	0	1
25	Uttar Pradesh	678888	8469191	168098	6073073	0	1093766
26	Uttarakhand	127558	0	22995	504717	0	72500
27	West Bengal	14361	70	2930	53530	97100	10104
Grand Total		14664538	77372876	5770681	89635916	309957494	31945020

14.4.3 Marketing Research & Information Network (MRIN)

About the scheme:

Marketing Research and Information Network MRIN sub scheme links important agricultural markets spread all over the country and the State Agriculture Marketing Boards and Directorates



through a dedicated portal (<https://agmarknet.gov.in/>) Agricultural Marketing

Information Network (AGMARKNET), since March, 2000. The project is being executed with the technical support of National Informatics Centre (NIC). Presently, 3698 major markets in the country onboarded on this platform and covered more than 300 commodities and 2000 varieties on the database. 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. organizations.
- Provision of financial incentive @ Rs.1000/- per month to the marketing personnel of the market for uploading data in the portal for more than 20 days in a month and
- Provision of financial incentive @ Rs.1000/- per month to the State level monitoring officials is also provisioned.

Benefits:

The main users

The main users of AGMARKNET website are Farmers, Traders, Research Institutes, Exporters, Commodity Boards/Various Government Departments, ECO-STAT. The linkages are also provided to Kisan, Krishi World, Indian Agro-net, Agri watch, Indian Dairy Industry, Agro-India, Forwards Markets Commission, National Multi Exchange of India Limited and NCDEX through the portal to form a close user-group. Information linkages were provided to Farmer's portal, MKisan portal, BITCOE, IKSL, a Cooperative Sector company, has been involved in disseminating the price information to a large network of farmers cooperatives, Public sector banks, commodity exchanges, newspapers, etc. are using the site for publishing the data on prices of agricultural commodities apart from other international organizations.

Agmarknet data set as a benchmark for referral price for disposal of pulses the states under PSS for

calculation of issue price by the DA&FW. The data are also used as calculation of dynamic reserve prices for PSF under PSF scheme. Apart from this several



stakeholders like farmers, traders, policy holders, researchers and others refer the historical data of agricultural and allied commodity market arrival and price data as an advisory service free of cost which is on public domain.

Apart from the price and arrival information, AGMARKNET also provides with in-depth research studies, post-harvest market profile for major commodities, wholesale markets details, performance monitoring system, CODEX Standards of agricultural commodities, etc. E-mail addresses of APMC Secretaries are progressively being published for public access for facilitating direct interaction.

Available Information on the Portal

1. Queries on Prices & Arrivals.

[Commodity-wise, Market-wise Daily Report](#)

[Commodity-wise, Market-wise Daily Report \(weighted average\)](#)

[Market-wise, Commodity-wise Daily Report](#)



Market-wise Daily Report for Specific Commodity

Commodity Prices during last week

Market-wise Prices during last week

Commodity Transactions Below MSP

Commodity Transactions Above MSP

Commodity-wise, Market-wise Daily Report for a State

Commodity-wise, Market-wise Daily Report for a State (Market Category wise)

Date wise Prices for Specified commodity

Market-wise, Commodity-wise Daily Report for a State

2. Various Statistical Analytical Reports.

1. Statewise Reports

- State wise Wholesale Prices Monthly Analysis
- State wise,Variety wise Prices Monthly Analysis
- State wise Wholesale Prices Weekly Analysis
- State wise,Variety wise Prices Weekly Analysis
- Statistical and Analytical Reports

2. Districtwise Reports

- District wise Wholesale Prices Monthly Analysis
- District wise,Variety wise Prices Monthly Analysis
- District wise Wholesale Prices Weekly Analysis
- District wise,Variety wise Prices Weekly Analysis

3. Marketwise Reports

- Market wise Wholesale Arrivals Monthly Analysis

- Market wise Wholesale Prices Monthly Analysis
- Market wise,Variety wise Prices Monthly Analysis
- Market wise Wholesale Arrivals Weekly Analysis
- Market wise Wholesale Prices Weekly Analysis
- Market wise,Variety wise Prices Weekly Analysis

4. Marketwise Reports (All Districts)

- Market wise Wholesale Arrivals Monthly Analysis
- Market wise Wholesale Prices Monthly Analysis
- Market Wise Wholesale Arrivals Weekly Analysis
- Market wise Wholesale Prices Weekly Analysis

5. Daily Market Arrivals and Prices Trends for specified period

- For Top Five states in terms of arrivals
- For States in terms of arrivals -All
- For Metros
- State wise total arrivals

6. Daily Market Prices Trends for specified period

- For Top Five states in terms of arrivals
- For Top Five states in terms of arrivals - All
- For Metros for a specified date
- For Metros for specified period

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.

State wise coverage of markets onboarded on Agmarknet Portal

S.No.	Name of the State/UT	Number of Market Nodes (APMC/Sub Market yards) Covered on Agmarknet Portal
1	Andaman and Nicobar	4

2	Andhra Pradesh	195
3	Arunachal Pradesh	15
4	Assam	25
5	Bihar	100
6	Chandigarh	1
7	Chhattisgarh	189
8	Goa	8
9	Gujarat	305
10	Haryana	136
11	Himachal Pradesh	41
12	Jammu and Kashmir	35
13	Jharkhand	28
14	Karnataka	199
15	Kerala	110
16	Lakshadweep	0
17	Madhya Pradesh	295
18	Maharashtra	438
19	Manipur	5
20	Meghalaya	19
21	Mizoram	3
22	Nagaland	19
23	NCT of Delhi	7
24	Odisha	106
25	Pondicherry	4
26	Punjab	248
27	Rajasthan	212
28	Sikkim	7
29	Tamil Nadu	387
30	Telangana	167
31	Tripura	32
32	Uttar Pradesh	257
33	Uttarakhand	25
34	West Bengal	76
Total	All India	3698

The estimation of Physical and Financial during the period January-2024 to March-2024 under MRIN Scheme is as under :

- Physical Target : 172 newmarket nodes are expected to be added to the Agmarknet system.
- API integration of state portals of Tamilnadu and Assam will be made with Agmarknet portal.

3. Financial Estimation :

- Incentives of Rs1.20 crore is expected to be released state agencies.
- A PMU is expected to set under MRIN scheme for facilitating the process flow in Digitisation of Mandi Price and Arrivals capturing process at the APMC level and strengthening the data monitoring mechanism

4. Commodity Profiles Study: Total amount is 4.5 Lakh out of which 2.25 Lakh will be sanctioned & released in current FY-2023-24.

14.4.4. Strengthening of Agmark Grading Facilities (SAGF):

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 and Marking) Act, 1937, General Grading and Marking Rules, 1988 (as amended up to 2009) and specific commodity Rules notified by DMI, Department of Agriculture 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 240 agricultural commodities have been notified and granted approval for 3624 Certificate of Authorization (CA), 589 Printing Presses, 97 State Agmark Grading Laboratories/SGLs, 65 Private commercial laboratories for domestic trade and 25 Private commercial laboratories for export under Agmark 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. 240 agricultural commodities have been notified. These 240 Agri-commodities include Food grains & allied products, Fruits & Vegetables, Spices & Condiments, Edible Nuts, Oil Seeds, Vegetable Oils & Fats, Oil Cakes, Fiber Crops, 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 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 25 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. Agmark Laboratories are strengthened with sophisticated instruments to ensure the food safety requirements as specified under the Food Safety and Standards (Contaminants, Toxins and Residues) Regulations, 2011, Food Safety and Standards (Food Product Standards and Food Additives) Regulations, 2011, and other regulations under the provisions of Food Safety and Standards Act, 2006 (34 of 2006).

e. Agmark Quality Control Management System (AQCMS):

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, launched on 27th September 2018 by the Hon'ble Minister of Agriculture and Farmers

Welfare, Government of India, having three major modules:

- I. The Certification Management Module (for DMI)
- II. The Laboratory Management Module (For RAL and CAL)
- III. The CMS Module (to manage informational content)

Application/approval/renewal processes related to AGMARK certification of Certificate of Authorization (Domestic & Export), Printing Presses and Private Commercial Laboratories (Domestic & Export) was envisaged to make online and user friendly from offline mode. Laboratory information Management System (LIMS) having Online submission of Sample details to Laboratory, Online Result Processing of Samples for AGMARK Gradation, Sample assist analytics for AGMARK Laboratory, Assist in harmonizing central AGMARK standards with International Standards, Carry out Research and Standardization work in Food and Agricultural Commodities. Under AQCMS Phase-II, Replica Auto Generation and Allocation, Advance Payment management Module, 15 Digit code, E code all other approval/renewal like export Lab, Addition/Deletion for Approval of Designated Persons for issue of CAG, Modification of Commodities in CA / Printing / Lab, etc. also have been incorporated.

Extension and Statistics Division

A new Extension and Statistics Division at Head Office Faridabad has been created w.e.f. from 1st August, 2023 to look the functions of Social Media, publication of Quarterly News letter, Bi-annual Agricultural Marketing Journal and Annual Statistical Bulletin. The works of the Division also includes structuring and extending the extension activities through Directorate of Marketing and Inspection field offices for participation in Farmers Centric Kisan Melas/Events/fairs including trade fairs organized by Universities, State Governments, KVks and Other institutions etc., with the objective to create awareness and sensitization of the Schemes including flagship Ministry of the Schemes like FPOs and e-NAM among the farmers/FPOs at the grass root level. After the creation of Division, the extension

activities has been restructured and in a short duration, the Directorate has participated in All India Farmers Fair and Agro-Industrial Exhibition also known as Krishi Kumbh organized by the G B Pant University of Agriculture and Technology during October 13-16, 2023, Janjatiya Gaurav Divas on 15th November, 2023 at Khunti(Jharkhand) where the Hon'able Prime Minister of India has also graced the occasion, Krishimela-23 organized by the University of Agricultural Sciences, Bangalore from 17th to 20th November, 2023 which witnessed the presence of more than lakhs of the gathering of farmers, apart from the participation in IITF, Delhi wef 14th to 27th November, 2023.

In view of the restricting of the programmes, the Division has come out with a decision to celebrate National Farmers Day on 23rd December every year and conceptualize/planned more than 75 awareness programmes with also a view of sensitization in different regional languages at PAN India level which includes participation in association with Agricultural Universities/KVks/KVIC/DA&FW/ICAR/State, organizing National Farmers Day on 23rd December and World Consumer Rights Day on 15th March, demonstration/awareness programmes for checking adulteration of food products by the Regional Agmark Laboratories (RALs) of Directorate, participation in Vibrant Gujarat Summit and IITF Delhi apart from organizing a big event National Exhibition on Agricultural Marketing. The Division has decided to bring its first Quarterly News Letter (October-December, 2023), Annual Statistical Bulletin in the month of January, 2024 and Bi-annual Agricultural Marketing Journal (January-June, 2024) in the month of March, 2023.

14.4.5 CCS National Institute of Agricultural Marketing (CSSNIAM)

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.

Objectives of CCSNIAM

- ❖ 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.

14.5 Achievements:

Agri Marketing Reforms:

- Since the circulation of model APMC Act in 2003, Division has been vigorously pursuing with the States to adopt its provisions. Many of the States made cosmetic partial reforms leading to no noticeable ground level development excepting in few States like Maharashtra, Gujarat, Karnataka, Rajasthan and Madhya Pradesh, have not only amended their marketing laws and put in place conducive atmosphere but have also made reform linked noticeable progress.
- In order to make model APMC Act, 2003 more holistic, comprehensive and farmers friendly, Marketing Division in consultation with NITI Aayog and States formulated and released model Act "The --- State/ UT Agricultural Produce and Livestock Marketing (Promotion & Facilitation) Act, 2017", popularly called model APLM Act, in April, 2017. 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.

- 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. Most of the states have adopted this provision, though in varied form.
- 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. Marketing Division has been pursuing with the states to adopt it.

(a) Agricultural Marketing Infrastructure (AMI):

- Since inception of scheme up to 31.12.2023, a total number of 47,231 storage infrastructure projects (Godowns), with storage capacity of 89.67 million MT were sanctioned under the scheme and subsidy of Rs. 4212.45 crore has been released. Similarly, 20,298 other marketing infrastructure projects have also been sanctioned and subsidy of Rs. 2012.88 crore has been released so far.
- The estimation during the period Jan'2024 to March'24 under AMI scheme is as follows:-

Storage Infrastructure			Other than Storage Infrastructure	
No. of Projects to be sanctioned	Storage Capacity to be sanctioned	Amount Subsidy to be released	No. of Projects to be sanctioned	Amount of Subsidy to be released
250	0.7 million MT	270 crore	60	30 crore

(a) National Agriculture Market (e-NAM):

- As on 30.11.2023, 1389 mandis across 23 States and 4 UTs have been integrated with e-NAM platform. More than 1.76 crore farmers

& 2.5 Lakh traders have been registered on e-NAM platform. The agricultural produce trade with a value of Rs 3.1 lakh crore have been recorded on e-NAM platform

Performance at a glance (till 30th Nov 2023)

S. No	Particulars	FY (2023-24)	Since inception to 30 th Nov 2023
a.	Stakeholders Registration		
	No. of farmers Registered on e-NAM	1.39 (Lakhs)	1.76 (Cr)
	No. of traders Registered	7,703 (Nos)	2.50 (Lakhs)
	No. of Commission Agents Registered	2,183	1.11 (Lakhs)
	No. of FPO registered	791	3366
b.	Trade Recorded		
	Total Trade recorded in volume (Cr. MT)	1.25	8.75
	Total Trade recorded in numbers (Cr)	6.85	30.12

	Total Trade recorded in value (Rs. Cr.)	48,697	3,10,477
c.	Tradable parameters of notified commodities (nos.)	-	209

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1. Under Govt. of India initiative for Ease of Doing Business, decriminalize the imprisonment provisions of AP (G&M) Act, 1937 under Jan Vishwas Act, 2023.
2. Study was carried out on Impact of Blending oils on the production of oil seeds for the policy decision in consultation with NIAP-ICAR.
3. Tradable parameters for 10 new agricultural commodities namely Almond kernel, pinenut, walnut kernel, khandsari, mushk budji rice, khesari dal, lotus stem, snow mountain garlic, kiwi and sarda have been formulated and uploaded on e-NAM portal
4. New modules tested by nominated members for UAT and made live. Training Programme for the ROs/SOs/RALs/CAL organized virtually by NIC team on 22nd & 24th August 2023 to DMI officers and laboratory cadre.
 - ✓ Application for Change / Modification in the Certificate of Authorization Application for Change / Modification in permitted Printing Presses
 - ✓ Application for Change / Modification in the approved Laboratory
 - ✓ Routine Inspection of premises of Certificate of Authorization holders
 - ✓ Routine Inspection of premises of permitted Printing Presses
 - ✓ Routine Inspection of premises of approved Laboratory
 - ✓ Surrender of Certificate of Authorization
 - ✓ Surrender of certificate of permitted Printing Press
 - ✓ Surrender of certificate of approved Laboratory
 - ✓ Addition of Flow to Handle "Remnant Sample Analysis"-LIMS
5. Updates regarding document checklist are

implemented on dmi and AQCMS portal.

6. Successfully organized Cluster Based Business Organization (CBBO) conference's held at Delhi, Jaipur, Chandigarh and Bangalore.
7. Successfully organized First global Millets (Shree Anna) conference held at Delhi.
8. Following new modules made live on AQCMS:
 - Renewal of Approval of Laboratory (Export).
 - Provision of Appeal in AQCMS
 - Submission of Biannually Grading Statistical Report
 - Provision of email/SMS alert to respective officer on applications which remain pending for more than 5 days.

(d) CCS NIAM:

Training Programs: Training is the core mandate of CCS NIAM through which it reaches out to the vast array of stakeholders across the country. During 2022-23, 373 (Webinars, On-line Training Programs, Consultancy Programs) organized by the Faculty and with the help of partner Institutes of CCS NIAM covering 12,194 participants.

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1. Research and Consultancy:

Consultancy Project Title:

- Study on Gap Analysis of Regulated Market Committee / Market Yard in Odisha.
- **Consultancy Programs under WDRA:** Twenty (One Day) Awareness Programs for the farmers, traders and Dal Mil Owners were organized in the states of Rajasthan, Punjab,

Haryana and total of 998 participants have attended these programs. Three (five days) online training programs for In-Charge/ Managers/ Supervisors/ Representatives of Warehouses registered with WDRA were organized in the states of Rajasthan, Uttar Pradesh and Maharashtra and total of 122 participants have attended these programs. These programs were sponsored by Warehousing Development and Regulatory Authority (WDRA).

- **Consultancy Programs sponsored by Syngenta Foundation:** Total of 60 programs were conducted under this category for the stakeholders and 2423 participants have been trained in different parts of the country with the objective to strengthen the Entrepreneurship skill in the rural youth of the country, these awareness programs were organized in the state of Odisha, Rajasthan, Uttar Pradesh, Maharashtra, Tamil Nadu, Andhra Pradesh, Assam, Jharkhand, Karnataka, Bihar and Punjab. This was funded by Syngenta Foundation under "Agri-Entrepreneurship with specialization in Agriculture Extension Services & Integrated Nutrient Management".

Research Project :

- Evaluating the formation of Micro-enterprises at village level in the area of Mango processing in the state of Uttar Pradesh.
- Value chain analysis of Turmeric under One District One Product crop in Meghalaya State and its future prospects.
- Market intelligence study to explore potential of selected horticultural crops in Chota Nagpur region of Jharkhand.
- A study on the problems of agro-tourism in Rajasthan State
- The five years of the e-Nam Platform- Examining Factors Influencing its Adoption and Primary usages across Product categories and State
- A Case Study on Mapping of Gaps in Marketing of Value Added Products of Kiwi Fruits in North Eastern Region of India.

- A Case Study on Mapping of Gaps in Marketing of Value Added Products of Millets in Rajasthan State.
- Impact of Minimum Support Price on Market Prices and Arrivals in North Western India.
- A study to understand the decadal domestic and international market scenario of Coconut.

2. Education

CCS NIAM has one flagship program under the domain of education as a two-year residential Post Graduate Diploma in Management (Agri-Business Management) PGDM (ABM). The program is AICTE approved being run since 2001 with 100% placement. The program aims to train Agricultural and allied Sciences graduates in the field of Agri-Business to build techno-managerial competence among them. During 2023-24, another PG Programme on Innovation, Entrepreneurship & Venture Development has been started by CCS NIAM. We have a strong global alumni base of 700+ techno-managers holding positions of national and international repute in various sectors like Agri-Inputs, Banking and Micro-Finance, Food Processing, Consulting, Commodities, Rural Development, Agripreneurs etc.

The PG program is running under self-finance mode wherein the entire revenue is being generated from students' fees and accordingly entire budget is met from the fees collected from the students. The capacity of intake is 70 students per batch and admission intake is depending on the CAT score, CMAT score and individual performance in the Interview and Group discussion.

- Highest domestic package this year was 15.5 LPA (CTC) and the average package was 11.81 LPA approx. Also, the international package stands with 82 LPA (CTC).
- Placement demand has been emerging from a wide range of sectors, including Agri-input, Retail, Commodity, Banking, Consultancy, Sustainability, etc.

3. RKVY-RAFTAAR

CCS NIAM Agri Innovation & Incubation Centre formerly known as NIAM Agri-Business Incubator (NABI) was established in the FY 2018-19 under RKVY-RAFTAAR has proved itself as the flag-bearer

of innovation, entrepreneurship and has established itself as a "Friend of Farmer" in the field of Agri-Startup ecosystem. CCS NIAM is promoting, nurturing and flourishing the business of the agribusiness startups to provide social and economic benefits. In these years of operation, the centre has not just trained and funded agri-startups but has created a safe haven for innovative agri-business ideas to grow and bloom as an agri-venture.

Knowledge Partner

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.

Highlights: CCS NIAM as Knowledge Partner of RKVY - RAFTAAR

- **700+** agri startups incubated
- **230+** startups recommended for grant-in-aid
- **INR 28+ crores** grant-in-aid
- **INR 36+ crores** external funding (angel / VC) raised by our startups
- **400+** innovative products & services commercialized
- **130+** IPR filed by our startups (Patent, Trademark, Copyright, etc.)

4. Indo-German Cooperation on Agriculture Market Development (AMD) project Indo-German Agricultural Market Development (AMD) Project Progress Note (As of 31st December 2023):

Project Management Unit (PMU) set-up

The AMD Project core team was recruited and mobilised in July 2021. AMD project team consists of a Team Leader (International Position), Agribusiness Expert (national position), Project Assistant (national position) and three Field Executives (national position). The AMD operational project office was fully established and equipped in NIAM since August 2021. The AMD

project website has been designed, launched, and integrated to MoA&FW website. The project webpage can be accessed at <https://amd-india.net/> where all the project progress updates are regularly posted.

The AMD Project Management Unit (PMU) has been established and ten meetings have been organized to steer the project progress on regular basis. The PMU meetings are chaired by Director (Marketing), DA&FW. A wide range of stakeholder consultation meetings and visits have been undertaken with the support of CCS NIAM and DMI. This has included meetings with other institutions involved with AMD including APEDA, Spice Board of India, and NIPHM. Regular state level meetings in Rajasthan, Odisha and Uttar Pradesh have been organized and visits to selected APMC's and FPOs are being regularly done by the project staff to implement the project activities.

The project has completed an Institutional profiling and SWOT Analysis for NIAM and DMI and Institutional profiles for APEDA and NCCD. These assessments are intended to be used to guide discussions on potential areas of future collaboration and to frame training programme proposals. The project's first Project Steering Committee (PSC) meeting was held on 19th April 2022, under the co-chairmanship of Dr. Vijaya Lakshmi Nadendla (IAS), Joint Secretary (Policy & Marketing), Ministry of Agriculture and Farmers Welfare, GoI and Ms. Svenja Fuhrmann, Division 624 "International Projects, Twinning", German Federal Ministry of Food and Agriculture (BMEL), Germany to review the project progress and approve the annual action plan of the project. An Interim PSC meeting of the project was held on 14th November 2022 under the chairmanship of Secretary Agriculture, DA&FW to review the progress of the project. Second PSC meeting of the project was conducted on 5th April 2023 at Krishi Bhawan under the co-chairmanship of Dr. Vijaya Lakshmi Nadendla (IAS), Joint Secretary (Marketing), Ministry of Agriculture and Farmers Welfare, GoI and Mrs. Johanna Scholz, Division 624 "International Projects, Twinning", German Federal Ministry of Food and Agriculture (BMEL), Germany. Second interim project review meeting of the project was held on 22nd November 2023 under the chairmanship of Additional Secretary (Marketing), DA&FW to review the

progress of the project.

Selection of Value Chains and Commodities in pilot regions

Based on the studies commissioned under the

#	State	Potential Commodity
1	Rajasthan	Cumin and Coriander
2	Uttar Pradesh	Mangoes and Green Chili
3	Odisha	Turmeric and Ginger

After the identification of commodities in the pilot regions, the project has selected 10 Farmers Producer Organizations (FPOs) to pilot its value chain development initiatives in three states. Export value chain studies and FPOs business plans have been developed. Around ninety-five FPOs members from the states of Rajasthan, Uttar Pradesh, and Odisha were trained on Good Agricultural Practices (GAP) with association of National Institute of Plant Health Management (NIPHM).

Technical Discussions and Dialogues

The project, in association with the CCS National Institute of Agricultural Marketing (CCS NIAM) and Spice Board of India conducted its First technical webinar on "Best practices and challenges in spices exports" on 5th July, 2022 where around 40 participants participated to exchange their knowledge and information on spice trade. The webinar was attended by Spice Board of India, European Spice Association, Marketing Division GoI, private traders and exporters. Second technical discussions were carried out for discussing the best practices and challenges in fruits and vegetables exports during March 2023.

The project has also subsequently conducted the technical discussions on the following topics-

- Technical dialogue meeting on pesticide residue compliance for exports (16th May 23)
- Technical dialogue meeting on standards and certifications for EU export (17th May 23)
- Technical dialogue meeting on traceability mechanisms (18th May 23)

These technical dialogue were carried out with

project and different stakeholders' consultations at national and state level, the project has selected 6 potential commodities for value chain development.

participants from CCS NIAM (Moderation), APEDA, Spices Board, DMI, GLOBALG.A.P, NIPHM, The Federal Office of Consumer Protection and Food Safety (BVL), Ecocert, Rainforest Allinace, and AMD team.

Study Tours

The project conducted its first Agri-food Value Chain Study Tour to Germany from July 24th to 28th, 2022. Five senior Indian delegates participated in the study tour. The objective of the study tour was to increase participants' knowledge on agricultural market information systems in Germany and develop more detailed understanding of the German / EU commodity standards and import regulations with focus on spices, vegetables and fruits. The participants also had exchanged information at the Biofach fair 2022 in Nürnberg, Germany.

Second study tour was conducted from 3rd to 9th September 2023 to Germany and the Netherlands. 8 Indian delegates participated in the study tour along with the AMD Project team. The objective of the study tour was to better understand the official control and market safety requirements and mechanisms (especially for contamination, hygiene and traceability) for selected Indian spices and fruit (Mango & Green Chilli, Cumin & Coriander Turmeric & Ginger) intended for import into the EU, based on the examples of Germany and the Netherlands.

Training Programs for Agri- Marketing Officials

With NIAM as knowledge partner, AMD project is launching 6 months of Agri Export Import Management Certification Training Program for around 98 Indian participants on topics like Indian & EU Agri-Food Trade Policies, Regulations, Programmes & Trends, Product & Market

Identification for Export; International Marketing Management, Trade Operations, Documentation, Agri-Trade Logistics & Customs Regulations, International Trade & Finance; Industry Interface - Indian Exporters, EU Importers, Value chains.

The project has also collaborated with GLOBALG.A.P and launched the training program on Integrated Farm Assurance (IFA v6) and Quality Management System (QMS v6). The training program was attended by 23 Indian participants from CCSNIAM, DMI, APEDA, Spices Board of India and State Nodal Offices. The objective of this training program was to prepare participants to independently assess the status quo of farms and offer consulting to producers on the implementation of the GLOBALG.A.P standards.

Studies and Reports

The project had commissioned, completed, and published five studies during inception phase on the thematic areas of:

1. *Commodities Export potential Assessments* (including specific herbs, spices, fruits, vegetables, cereals, pulses, oilseeds, organic products, medicinal & aromatic plants) to assess the supply and demand trends for EU markets.
2. *State agriculture and markets profiling* of Uttar Pradesh, Rajasthan & Odisha to understand the current situation with agriculture marketing in each target State.
3. *Learnings from FPOs engaged in exports* thorough case studies to identify key lessons learned, best practices and actionable recommendations.
4. *Assessment of digital innovations in the area of agriculture and market* to undertake targeted analysis of existing and potential agri-food market technological innovations, aimed at strengthening forward linkages for selected agri-food value chains. This includes consideration of AI tools, management of market data, application of GIS systems and related information services, block chain and e-business platforms and tools.
5. *Repository of agriculture and markets development projects in India* and to

identify and map existing projects in support of AMD, both nationally and regionally.

AMD project has commissioned and completed five studies and the findings have been shared with the project PMU members. The studies primarily covered the thematic areas of

- a. Study 1. EU market requirements for the AMD project selected commodities;
- b. Study 2. Assessment of existing value chain for project commodities and recommending development of sustainable export-oriented value chains for the commodities;
- c. Study 3. Diagnostic study to assess existing APMCs infrastructures and services to act as export-oriented service providers; and
- d. Study 4. Assessment of the existing production systems, institutional capacities, marketing, and business models of the FPOs and later, develop viable export-oriented business plans (including traceability, certifications, and quality assurance systems) for up to 12 pilot FPOs in the three pilot states of the project.
- e. Probable profit analysis for farmers planning to enter export production systems.

Training program for Farmer Producer Organizations (FPOs)

Trainings for FPO members on GAP and quality assurance systems related to exports are being conducted at local level. Till date, project has completed 110 cluster level training programs with FPO members on the topics of Principles of Good Agricultural Practices +IPM and Nutrient Management, Present use of active substances by farmers and EU approved active substance, quality specification and requirements for exports, and standard protocols for exports.

The project has conducted MRL testing of 30 AMD project commodities samples and all the spice samples and Mango samples have qualified for the EU food safety standards. The project is collaborating with the FPOs to plan for first trial shipments to EU countries.

The project also conducted separate training programs for FPOs in Odisha on agri-export management systems to support the promising FPOs to enter the agri export operations.

Major Events & Trainings in FY 2023-24

1. National Level workshop on e-NAM

The National Workshop on e-NAM 2.0 and Agri. Marketing Reforms was held on 19.09.2023" in

Rang Bhawan, Akashvani Bhawan, Sansad Marg, New Delhi with the twin agenda (i) to deliberate on developing an ecosystem for e-NAM to function as Open e-Platform for plug in and plug out facility for other service provider platforms including private e-trading platforms; and (ii) to carry out reforms in agricultural marketing system and laws with the objectives to benefit the farmers and support ease of doing business in agricultural trade.



2. Interaction With FPOs on DD Kisan

Churchu Nari Urja FPCL (Jharkhand), Maangani City Consortium (Tamil Nadu) & Jaivik Shri FPCL,

Koraput (Odisha), were invited by DD Kisan where they shared their experience on using e-NAM platform. These FPOs are continuously using e-NAM with a trade of Rs 1.25 Cr, Rs 1.44 Cr and Rs 2.68 Cr

respectively. "As per the FPO, e-NAM is a great platform for output marketing as it is 100% digital with complete transparency. It helps in providing best prices to farmers"-Churchu Nari

FPCL"Product diversity need to be expanded. Also, accessibility for FPOs must be created to utilize existing cold storage structures & Godowns"-Jaivik Sri FPCL



e-NAM Training and awareness program conducted for FPOs in collaboration with NSC



FPO training at KVK Mandla organized jointly with NSC, Date- 25 April 2023



FPO training at KVK Dindori organized by NSC, Date- 26 April 2023



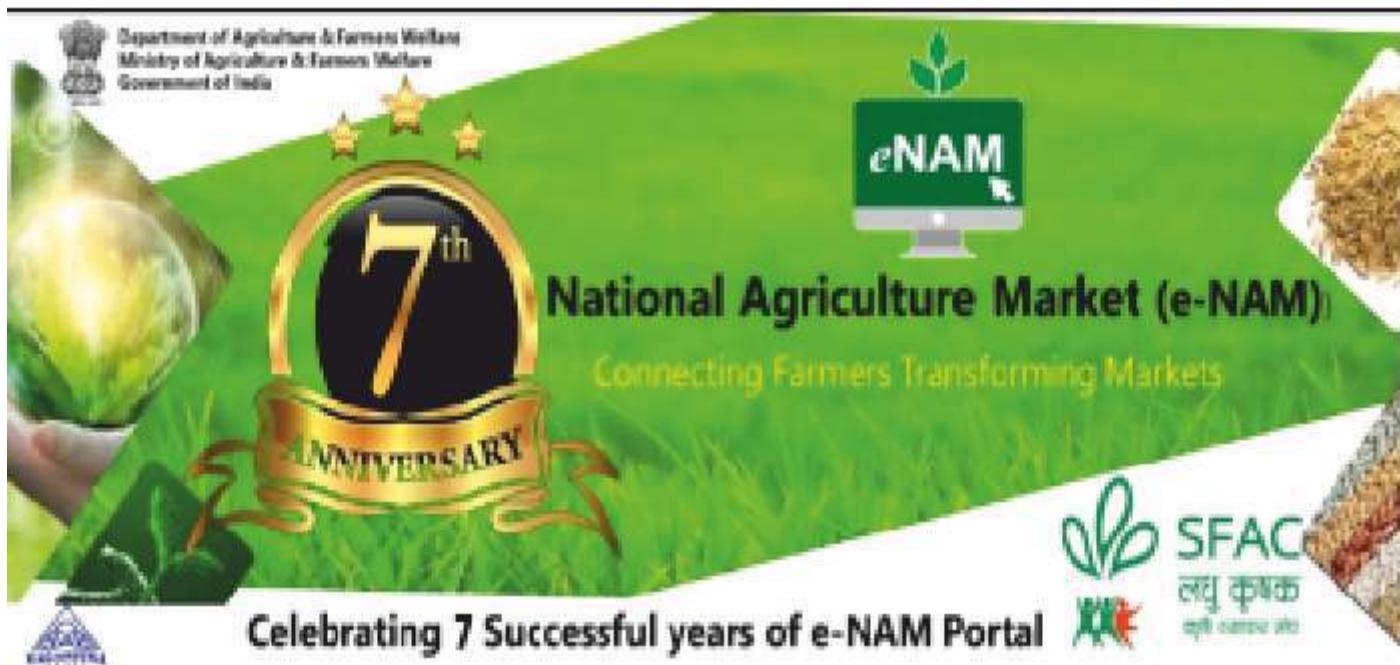
Tamil Nadu officers visited Gujarat (Ahmedabad APMC) for meeting with MD GSAMB and APMC Secretary Ahmedabad for exploring potential Inter-state trade under e-NAM, Date-17 May 2023.



FPO training program jointly conducted jointly with NSC at Piparkothi, Bihar, Date- 20 May 2023

e-NAM in Media

On the occasion of 7th Anniversary of e-NAM (14th April, 2023), digital card and e-banners were prepared and floated on e-NAM website and various Whatsapp Groups.



Date- 31 May 2023, News Paper Name- Hindustan, State Name - OD.

Govt brings all agri markets under e-NAM

The farmers can now access agri-commodity markets functioning across the country through one central place and sell their produce at the price of their choice from within the comfort of their homes.

BY SURESH KUMAR

Bhubaneswar, May 30: In a bid to increase transparency and reduce costs in the agriculture value chain, the government has brought all major agricultural markets under the resultant market mechanism called e-NAM platform.

This was revealed by Cooperation department minister Anil Kumar Choudhury, TMC.

“Our farmers can now save the help of intermediaries, access e-commerce marketplaces, spread their produce at the price of their choice because with the creation of these markets, the big players involved in the agriculture value chain are now available at a single place for all,” he said.

Choudhury also informed that the



In 2017, there were only 10 NAMCs on e-NAM platform, but Odisha has achieved 100% onboarding of all the markets under NAMCs.

(Left) many agri-transformation and value-chain partners with 100% onboarding of all its registered members under e-NAMC. This includes 100% coverage of 401 mandis (interior, regional and national) and 100% coverage of 100000 farmers.

Over 400000 officially registered farmers of 100000 mandis across 10 states and union territories (UTs) are using the function of the common platform. Farmers have access to the e-NAMC enabled features like the e-auction platform, e-NAMC app, e-procurement feature to ensure that the right buyers

purchase without hassles, informed the government sources.

The department has undertaken several efforts including 100% and 100% onboarding of registered farmers under NAMCs and 100% coverage of 100000 farmers under e-NAMC to get better deals for those farmers.

Further, the farmers are facing less intermediaries, due to which the prices are going down. According to the department, 100% onboarding of 100000 farmers under e-NAMC will bring down the prices by 10%.

“All these initiatives have brought a lot of change. The farmers are getting better prices, which will help them to earn more money. This is a great initiative by the government to support the farmers and help them to earn more money,” he added.

Date- 01 June 2023, News Paper Name- Economic Times, State Name - Mumbai.

ECONOMIC TIMES, MUMBAI 01 JUNE 2023

18.6 MT OF PRODUCTS TRADED

Agricultural Trade Via e-NAM Surges 41% in FY23

In value terms, trade rose 32% to ₹74,656 crore from ₹56,497 crore in 2021-22

Shambavi Anand
ETTIMES@ETNOW.COM

New Delhi: Agricultural products trade through the electronic National Agricultural Market (e-NAM) surged 41% to ₹18.6 million tonnes in 2022-23 from 13.2 million tonnes in the previous financial year.

“Several innovative products have started flowing through these mandis,” said a senior official, who did not wish to be identified, adding that several products such as milk powders, soffees and basmati rice being sold on the platform.

In terms of value, agricultural products trade through the e-NAM platform increased 32% to ₹74,656 crore from ₹56,497 crore in 2021-22.

The trade between inter-state mandis increased 39% to 2.38 L40 metric

tonnes in 2022-23 from 1.74,200 metric tonnes in the previous year. It was worth ₹2.41 crore, up 117% from last year’s ₹1.11 crore.

As on November 30, 2022, 1,200 mandis of 29 states and three Union Territories (UTs) have been integrated with the e-NAM platform. The government has been working on more interstate mandis with the e-NAM to promote trade between mandis located across the country.

The states are Andhra Pradesh, Bihar, Chandigarh, Goa, Gujarat, Haryana, Himachal Pradesh, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Nagaland, Odisha, Punjab, Rajasthan, Tamil Nadu, Telangana, Tripura, Uttar Pradesh, Uttarakhand and West Bengal, and the UTs using the facility are Chandigarh, Jammu & Kashmir and Puducherry.

The e-NAM, launched in

April 2016, is being implemented by the small Farmers’ Agricultural Commodity Commission, a central government agency, with the support of state governments.

Since inception, about 1000 MT crop has been released for the integration of mandis with the e-NAM platform.

Date- 06 July 2023, News Paper Name- Dainik Bhaskar, Dhanbad Jharkhand.

दैनिक
भास्कर

धनबाद 06-07-2023

मानवरक उत्तरा : इस बार धनबाद से गिरिधील, बोपाले, देवगढ़, कुरुका समेत अन्य ज़िलों में गुरुः रोगों की आपूर्ति कश्मीर से इस बार धनबाद पहुंचा 3879 किलोटन सेव... यह देश में सबसे ज्यादा, व्यापरियों ने किसानों को किया 1.29 करोड़ का पेंट

किसानों को 1.29 करोड़ का पेंट। जिसकी वजह से जूँड़ जिले के व्यापरियों ने सीधे कश्मीर के किसानों से लाई है सेव।



कश्मीर से 1.29 करोड़ का पेंट
जूँड़ जिले के व्यापरियों ने सीधे कश्मीर के किसानों से लाई है सेव।

प्रति किलो गुरुः रोगों की व्यापरियों ने किसानों से लाई है सेव। एक गुरुः रोगों की जिले के किसानों से लाई है सेव।

जूँड़ जिले के व्यापरियों ने सीधे कश्मीर के किसानों से लाई है सेव।

प्रति किलो गुरुः रोगों की व्यापरियों ने किसानों से लाई है सेव।

Date- 06 July 2023, State- Chhattisgarh.

किसानों को गुणवत्तायुक्त बीज का इस्तेमाल करने की दी सलाह



प्रधानमंत्री
मंत्री भवन



प्रधानमंत्री के ग्रामकां से गुणवत्ता

गुणवत्तायुक्त बीज का इस्तेमाल करने की दी सलाह

गुणवत्तायुक्त बीज का इस्तेमाल करने की दी सलाह। जिसके फलस्वरूप ग्रामकां के लिए बेसिन और बायोग्राम बढ़ेगा। जिसके फलस्वरूप ग्रामकां के लिए बेसिन और बायोग्राम बढ़ेगा।

Financial Express. Date- 11 July 2023, State- New Delhi.

FINANCIAL EXPRESS, 11/07/2023

PLATFORM'S TURNOVER MAY CROSS ₹1 TRN IN FY24

Inter-mandi eNAM up 290% in Q1

By SACHIN SHUKLA
11 July, 2023

Date- 25 Aug 2023, State- Rajasthan

**ई-नाम में बड़े बदलाव के बाद
रुझान बढ़ने की उम्मीद जगी**
केंद्र ने अकेले राजस्थान के लिए किया परिवर्तन

卷之三

क्षेत्रीय विकास के लिए जल संग्रह का एक विशेष विधि है। यह विधि जल संग्रह के लिए विभिन्न विधियों का सम्मिलन है। इसका उद्देश्य जल संग्रह के लिए विभिन्न विधियों का सम्मिलन है।

प्राचीनतम् विद्या विद्यां पूर्वीं
प्राचीनतम् विद्याविद्यां पूर्वीं । एवं इस
विद्याविद्या के अन्तर्गत ही विद्याविद्या विद्या
है, जो विद्याविद्या की विद्या विद्याविद्या में
विद्याविद्या विद्याविद्या है ।

The person with authority
of succession has authority against those
persons who transgress the authority upon

અને આ માર્ગદરોડી કારી ખિલ્લી હું પણ એક કારી ખિલ્લી



यहाँ देखें तो उपर्युक्तियों का अध्ययन के बाहर आप उपर्युक्त विषय पृष्ठान्तराल समाप्त हो जाएंगे और आपकी गुणवत्ता भी बढ़ जाएगी।

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— *Wiggle Wiggle* —
— *Wiggle Wiggle* —

Date- 26 Aug 2023, State- Haryana.

पंजाब में इ-नेम से हुआ 10,000 करोड़ रुपए के कृषि जिन्सों का इ-व्यापारः चौमा

१) भौतिक की दृष्टिकोण से वायरल लाइन के लिए विभिन्नता है। अस्थिरता के लिए जापानीका लाइ

卷之三

प्रायोगिक रूप से देख, असरों
एवं कानून सभी व्यक्तिगत रूप
में पैदा हो जाते हैं इन्हें व्यक्ति
विकास उन्नीसाला वयों (18-वर्ष)
से बालों से ज्ञात एवं बालों की
उन विभिन्नों से ज्ञात 12,000 विभिन्न
वाक्यों में अधिक ज्ञान का उन्नीसाला
द्वारा व्यक्त रूप है। व्यक्ति
विकास इन व्यक्तिगत विभिन्न विभिन्न
वाक्यों एवं वाक्यों का उन्नीसाला
(एवं अधिक वयों) के असरों
में व्यक्त हो जाता है इन्हें व्यक्ति
विकास (व्यक्ति विकास) विभिन्न विभिन्न
वाक्यों को व्यक्तिगत विभिन्न विभिन्न



के लिए विशेषज्ञता करने के अवसर दृष्टि धूमधारी विशेषज्ञता के लिए विशेषज्ञता दिया जाता है तो यह विशेषज्ञता का नाम है दृष्टि धूमधारी विशेषज्ञता का लाभ लाने के लिए उपयोग का लिए जाना चाहिए।

विवरण
संक्षिप्त संक्षिप्त
संक्षिप्त विवरण
मौजूदा अवस्था
के लिए प्राप्त
अपने उत्तरोत्तर
मौजूदा अवस्था
के लिए प्राप्त
अपने उत्तरोत्तर

प्राप्ति देता, जीवन
के यह अवसर सबसे
मजेही ही सुख-सूखी ही
जीवन के दिन लिखने
का बहुत बड़ा विषय है, जिसके द्वारा
ही पौरी जीवन-कथाएँ
इस जीवन के लिये दृ-
ष्टि दियी जाती है। इसके द्वारा
जीवन का अधिक अभियन्ता
का अवसर मिलता है और जीवन
का अधिक अभियन्ता का अवसर
दिया जाता है। जीवन के लिये दृ-
ष्टि दिया जाता है। जीवन के लिये दृ-
ष्टि दिया जाता है।

विवरण देते हुए कहा, कि ये अपनी अवधि की बीच से निकलते हैं औ इसका लिए गया विवरण विवरण के लिए उपयोग किया जाता है। यह विवरण विवरण के लिए उपयोग किया जाता है। यह विवरण विवरण के लिए उपयोग किया जाता है। यह विवरण विवरण के लिए उपयोग किया जाता है। यह विवरण विवरण के लिए उपयोग किया जाता है।

Date- 05 Sep 2023, state- JH.

कृषि वाचार समिति

एनेट्रीट्रेड मराठा से होनी जानवों की बुनायत जाए

देश के किसी भी मंडी में फसल को बेच सकेंगे किसान

खबरों की खबर

पूर्ण व्यापार कानून अनुसार देश के किसी भी बाजार में व्यापार करने के लिए व्यापार व्यवस्था में व्यापार करना चाहिए। इसके लिए व्यापारी ने अपने व्यापार को देश के व्यापार व्यवस्था में व्यापार करने के लिए व्यापार व्यवस्था में व्यापार करना चाहिए। इसके लिए व्यापारी ने अपने व्यापार को देश के व्यापार व्यवस्था में व्यापार करने के लिए व्यापार व्यवस्था में व्यापार करना चाहिए।



इसी उद्देश्य के लिए व्यापार व्यवस्था में व्यापार करना चाहिए। इसके लिए व्यापारी के द्वारा व्यापारी के द्वारा व्यापार करना चाहिए।

व्यापार व्यवस्था में व्यापार करना चाहिए। इसके लिए व्यापार व्यवस्था में व्यापार करना चाहिए। इसके लिए व्यापार व्यवस्था में व्यापार करना चाहिए। इसके लिए व्यापार व्यवस्था में व्यापार करना चाहिए।

Major Success Stories during FY 2023-24 (till Sept'23)

1. Andhra Pradesh

Inter-State trade Success story

In September, the Maharashtra Board granted an exemption from the requirement of a Bank Guarantee for Trader License. They also issued free license and waived the market fee for onion trade. In Andhra Pradesh, the e-NAM team and the AP Marketing Department organized a meeting with

onion traders to facilitate onion trade from Maharashtra. Traders from three APMCs - Ravulapalem, Guntur, and Eluru APMCs - expressed their interest and applied for licenses. Subsequently, the e-NAM team issued licenses to these traders.

In September 2023, six traders from Ravulapalem, Guntur, and Eluru APMCs participated in interstate trade. The highest volume of inter-state trade within Andhra Pradesh involved 2722.5 metric tons of commodities valued at 475 lakhs.

Commodity	Seller State	Trader Mandi	Traded Qty MT	Trade Value Lakhs
ONION	Maharashtra	EI, URU	60.50	10.59
		GUNTUR	1694.00	296.55
		RAVULAPALEM	968.00	167.89
Total			2722.50	475.02

Traders are delighted with the new opportunity to engage in interstate trade through the e-NAM

portal. It is expected that this trend will continue in the future, further promoting interstate trade.



8	2023-24	07-10-2023	Gujarat	Gondal	Maharashtra	Lasalgaon			
9	2023-24	07-10-2023	Gujarat	Gondal	Maharashtra	Lasalgaon	Onion	302.5	5,46,617.50
Total (2023-24)								2,427.32	43,94,355.00

In this thriving partnership, e-NAM has played a pivotal role in facilitating the sale of onions by NAFED (National Agricultural Cooperative Marketing Federation of India). Onions, a staple in Indian households, are grown in abundance in Maharashtra's Lasalgaon APMC (Agricultural Produce Market Committee) and Gujarat's Mahuva and Gondal APMCs. E-NAM provides a seamless and transparent avenue for NAFED to connect with buyers and sell their onion produce across state borders. This not only streamlines the distribution process but also ensures fair pricing and

accessibility to consumers.

Another noteworthy example of interstate trade through E-NAM involves the exchange of sunflower seeds between Gujarat and Maharashtra. Nizar APMC in Gujarat and Nandurbar APMC in Maharashtra have fostered a successful trade partnership. E-NAM has served as the bridge, connecting sellers and buyers from these regions and facilitating the exchange of sunflower seeds. This collaboration promotes economic growth and diversification in both states and strengthens the agricultural supply chain.



NAFED onion of Lasalgaon - Maharashtra in Mahuva and Gondal APMC of Gujarat.



1. Jharkhand

APMC Dhanbad organized an event on the visit of Hon'ble chairman Sri Ravindra Singh of Jharkhand State Agricultural Marketing Board (JSAMB).

Dhanbad APMC is one of the mandi of Jharkhand which has integrated on e-NAM platform along with 18 more mandis of Jharkhand. Dhanbad is on the 3rd position in the state with 23190 farmers registration, 199 traders along with 8 FPOs on e-NAM. Also, Dhanbad is on the top in India in doing interstate trade of Apple from Jammu & Kashmir. Till now Dhanbad has successfully done the interstate trade with **Bihar, Jammu & Kashmir, Punjab, Maharashtra, Uttar Pradesh, and Uttarakhand** of different commodities like **Apple, Saffron, Walnut,**

Almond, Honey, Onion, Potato, Banana, Kinnar.

After the nomination by the Government of Jharkhand, this was the 1st visit of Hon'ble chairman to the Dhanbad APMC for interaction with FPOs and their members, progressive farmers and traders who are participating in e-trading (e-NAM) (specially who are participating in interstate trade with Jammu & Kashmir) and taking the benefits of the scheme. He interacted with the participants and discussed about their experience on e-trading and other facilities needed by them. At last, he distributed appreciation letters to the best performing FPOs (Nirsha Nupur FPO and Balyapur FPO) and Apple trader Md. Athar Hussain and encouraged them to perform more better in coming time.



1. Maharashtra

Success Story: Interstate Trade through eNAM via Farmgate Module of Onion from APMC Lasalgaon, Maharashtra

NAFED (National Agricultural Co-operative Marketing Federation of India Limited) and NCCF (National Cooperative Consumers' Federation of India Limited) have successfully started Interstate trade of Onion from Lasalgaon APMC through e-NAM platform. These trades are conducted via Farmgate Module in which buyers/ traders from PAN India able to participate through digital auction platform, which had led to real price discovery of Onion.

Maharashtra State Agricultural Marketing Board with co-ordination with Director of Marketing has facilitated this trade in APMC Lasalgaon, MH. NAFED and NCCF procuring Onion from farmer/ FPOs and lots of the same had been created on eNAM app through mobile. Price stabilization and smooth trade mandates of NCCF and NAFED is successfully observed. Quality and weightment assurance is taken by NAFED and NCCF while logistics arrangements are managed by buyers itself.

The Traded Value and Volume till 28th September 2023 is given below;

Sl no	Traded Value (Qtl)	Traded Volume (Rs in Cr)
NCCF	86556.5	17.08
NAFED	59897.5	13.10

Traders from across Nation participated in online auction mode to purchase Onion. This Institutional trade of Onion has promoted use of digital platform eNAM for selling Onion on bulk quantities. It has also influenced traditional

buyers to adopt the digital trade systems eNAM. Participant States are – Andhra Pradesh, Chandigarh, Odisha, Nagaland, Kerala, Uttar Pradesh, Bihar, Jharkhand, Karnataka, Punjab, Haryana, Tamil Nadu, Gujarat, West Bengal etc.



Success Story: Interstate Trade of Silk Cocoon from APMC Baramati, Maharashtra

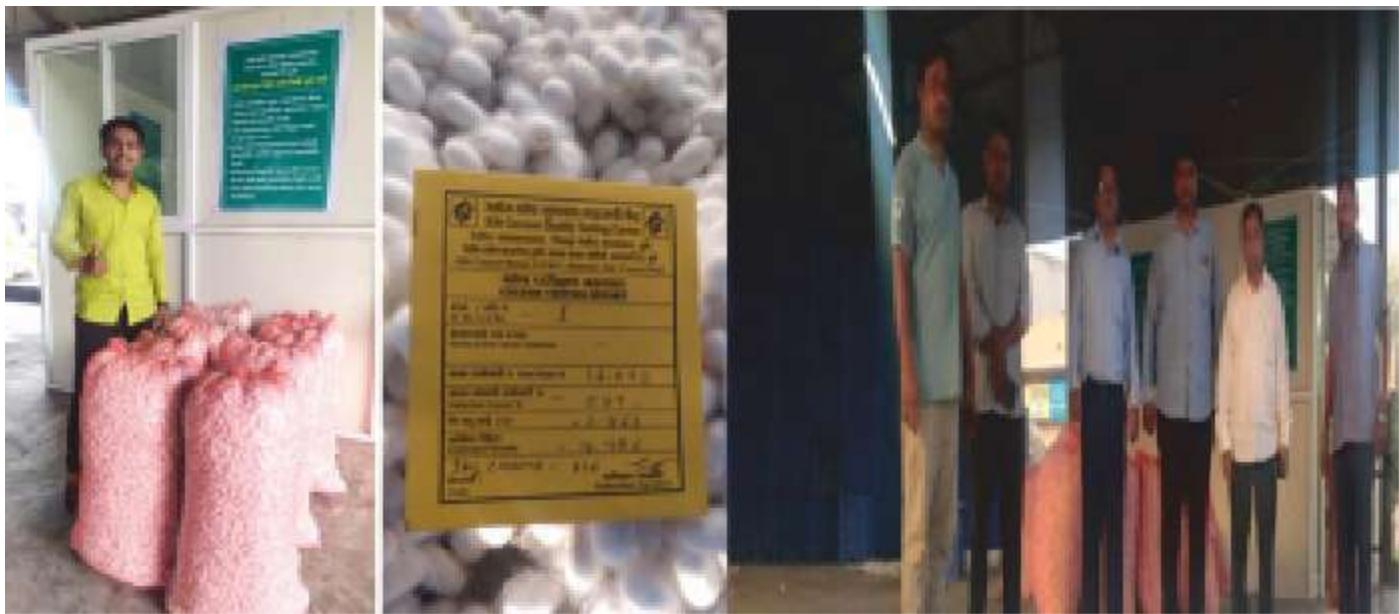
NAM is national level platform is being developed by the Ministry of Agriculture and Farmer Welfare, implemented through SFAC. In Baramati APMC, the e-NAM basically increases the choice of the farmer when he brings his

produce to the mandi for sale. Local traders can bid for the produce and also traders on the electronic platform sitting in other States. APMC Baramati gives the farmer choice to accept or reject the bid rate he gets.

APMC had made arrangements to see visuals on big screen, in which live bidding and rates are seen, this makes farmers easily to decide and mark status of his lots. e-NAM platform provides better price compare with MSP and private markets. Earlier to e-NAM traders used to form syndicate and quote lesser price. However, after the implementation of e-NAM, as the prices are disseminated in transparent manner, he receives good price for his produce. Not only the local trader but buyers from other state like Kerala and Karnataka are taking part in bidding hence rate received is very competitive.

Interstate Trade conducted till 28-10-2023;
Traded Value – 147.62 Qtl

Traded Volume – Rs 84.20 Lakhs



1. Nagaland

(April-September 2023)

First ever **Inter-state** trade between Maharashtra and Nagaland was conducted on 4th September 2023. Details are given below,

- Seller APMC: Lasalgaon, Maharashtra (NCCF)

- Buyer APMC: Dimapur, Nagaland
- Commodity: Onion (NCCF)
- Quantity: 305 quintals
- Price: 2300/ quintals
- Total Amount: Rs. 70150
- Date: 4th September 2023



One of the unique commodities for Nagaland which has seen increased cultivation in recent years is **Persimmon**. Trading of this unique commodity was done in Pfutsero APMC, also inter mandi trade of persimmon was done between Pfutsero APMC and Dimapur APMC.

- Mandi: Pfutsero APMC
- Commodity: Persimmon
- Quantity: 5 quintals
- Price: 25000/quintals
- Total Amount: Rs. 126250.00
- Date: 20-09-2023

14.5 Central Sector Scheme for Formation and Promotion of 10,000 Farmer Producer Organizations (FPOs)

Government of India has launched the Central Sector Scheme for “Formation and Promotion of 10,000 Farmer Producer Organizations (FPOs)” in the year 2020 with a total budgetary outlay of

A. Registration Data

S. No.	Implementing Agencies (IAs)	Allocations to IA	No. of FPOs registered
1	CAU Manipur	100	57
2	FDRVC (MoRD-NRLM)	800	361
3	GAICL	100	97
4	NABARD	1,651	1,685
5	NAFED	1,167	1,028
6	NCDC	1,063	684
7	NDDB	126	101
8	NERAMAC	205	210
9	PAMCL	25	25
10	SFAC	3,649	3,313
11	SFAC-TN	50	50
12	TRIFED	14	13

Rs.6865 Crores which will enable farmers to enhance their bargaining power, leverage economies of scale, reduction in cost of production and enhancing farmers' incomes through aggregation of their agricultural produce, thus playing a major role towards sustainable incomes. Under the said scheme, FPOs being 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. Further, Rs.25 Lakhs are given to CBOs for hand holding each FPO over a period offive years.

Progress

- As on 31.12.2023, under the said scheme so far, 7,774 FPOs have been registered in the country.

13	UPIDASPI	50	50
14	WDD Karnataka	100	100
	Total	9,900 *	7,774
	INM, DA&FW	100	
	Grand Total	10,000	7,774

B. Equity Grant Status

Rs 129.5 Crore has been distributed to 2,933 FPOs as a matching equity grant.

S. No.	Implementing Agency	No. of FPOs received equity grant	Amount of equity grant released to FPOs (Rs. Crores)
1	CAU Manipur	-	-
2	FIDAVC (MuRID-NRIM)	160	8.7
3	GAICL	-	-
4	NABARD	770	33.4
5	NAFED	298	10.5
6	NCDC	433	18.1
7	NIDDB	5	0.2
8	NIRAMAC	50	0.8
9	PAMCL	-	-
10	SPAC	1,048	48.5
11	SPAC-TN	50	3.3
12	TRIFED	-	-
13	UPIDASPI	21	0.8
14	WDD Karnataka	98	5.3
	Grand Total	2,933	129.5

C. Credit Guarantee Fund

Credit Guarantee has been issued to 994 FPOs worth credit guarantee coverage of Rs 226.7 crore covering more than 9.35 lakh farmers.

#	Particulars	Total (till October 2023)	10,000 FPO Scheme
1	FPOs Covered	994	155
2	Credit Guarantees issued*	1,253	185
3	Farmers Covered	9,35,314	60,546
4	Sanctioned Loan (in ₹ Cr.)	271.1	23.2
5	Guarantee Cover (in ₹ Cr.)	226.7	19.5

D. Market Linkages- B2B & B2C

S. No.	Online Platform	No. of FPOs Onboarded
1	Open Network for Digital Commerce (ONDC)	3,242
2	Government e Marketplace (GeM)	207

E. Learning Management System (LMS) for Farmers Training

Learning Management System (LMS) has been development for online training of farmers on various module related to Agriculture. The

modules helpful for farming practices are uploaded from time to time on LMS portal. LMS available in Audio visual and reading literature in Hindi and different regional languages uploaded on LMS portal (<https://10kfpo.lms.gov.in/>)

Chapter-15

AGRICULTURE TRADE POLICY, PROMOTION AND LOGISTICS DEVELOPMENT

15.1 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) 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).

15.2 India's Agriculture Trade

15.2.1 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. In the year 2022-23, India has emerged as a significant Agri-exporter in crops like

marine products, buffalo meat, rice, sugar, spices, oil meals, wheat, castor oil and misc. processed items.

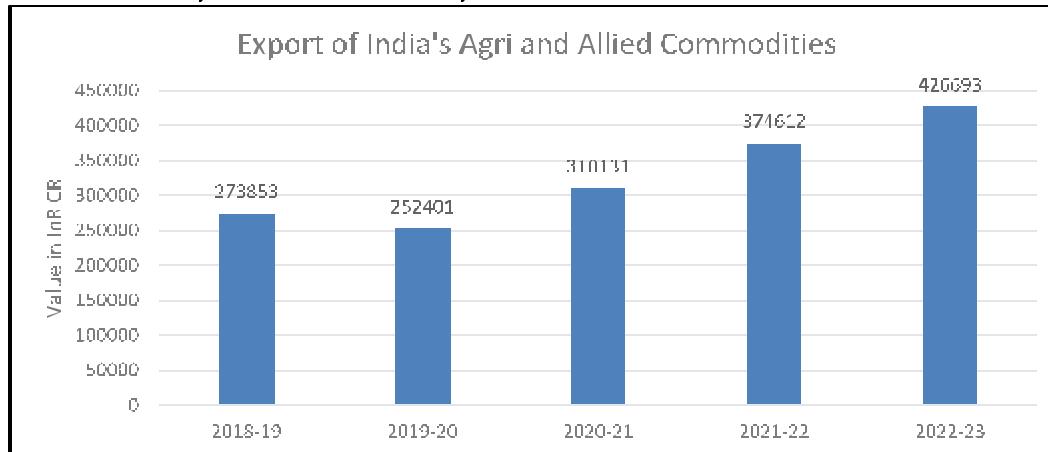
As per available WTO's Trade Statistical Review (2023), the share of India's agricultural exports and imports in the world agriculture trade in 2022 were 2.4% and 1.9%, respectively. India was in the top 10 ranking of the global Agri exporters.

The share of agricultural exports in India's total merchandise exports has decreased from 11.90% in 2021-22, to 11.79% in 2022-23.

As compared to previous year (2021-22), the Agri and Allied exports in the year 2022-23 increased by 13.90% to Rs. 4,26,693.20 crores. The increase in Agri and Allied exports during 2022-23 was primarily on account of increased exports of commodities like Cashew Nut Shell Liquid (249.03%), Vegetable Oils (114.93%), Poultry Products (104.10%), Pulses (98.01%), Oil Meals (68.26%), Tobacco Unmanufactured (55.31%), Guergam Meal (48%), Rice Basmoti (45.98%), Groundnut (43.39%) and Sugar (34.84%) which witnessed high growth in the year 2022-23 as compared to previous same period.

Major destinations of exports for India's Agri and Allied commodities were USA, UAE, Saudi Arabia, China, Vietnam, Indonesia, Iran and Bangladesh.

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 2018-19 to 2022-23 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	2018-19		2019-20		2020-21		2021-22		2022-23		2023-24 till November 2023	
		Qty	Value	Qty	Value	Qty	Value	Qty	Value	Qty	Value	Qty	Value
1	MARINE PRODUCTS	1672	47665	1329	47618	1168	44176	1390	57910	1754	64992	1273 7692	43223 25318
2	RICE(OTHER THAN BASMOTI)	7648	21171	5056	11400	13149	35357	17289	45725	17787	51089	2666	13911
3	SUGAR	3990	9523	5799	13982	7510	20666	10457	34345	11751	46309	2994	27904
4	RICE - BASMOTI	4413	32104	4153	31026	4610	29318	3914	26390	4361	38324	866	21021
5	SPICES	1134	23218	1191	25642	1607	29329	1420	29039	1310	30433	847	29886
6	BUFFALO MEAT	1233	23091	1152	22661	1086	23460	1175	24613	1176	25640	2769	8625
7	OIL, MEALS	4483	10537	2656	5861	4367	11606	2926	7695	4183	12940	96	237
8	WHEAT	227	424	220	414	2135	4173	7215	15845	4593	11827	0	8982
9	MISC PROCESSED ITEMS	0	4613	0	4387	0	6403	0	8715	0	11408	439	5678
10	CASTOR OIL	619	6170	594	6324	731	6802	715	8754	516	10133	1273	43223
	TOTAL AGRI & ALLIED EXPORTS		27385 3		25240 1		310131		37461 2		42669 3		255664

Source: Department of Commerce, Government of India.

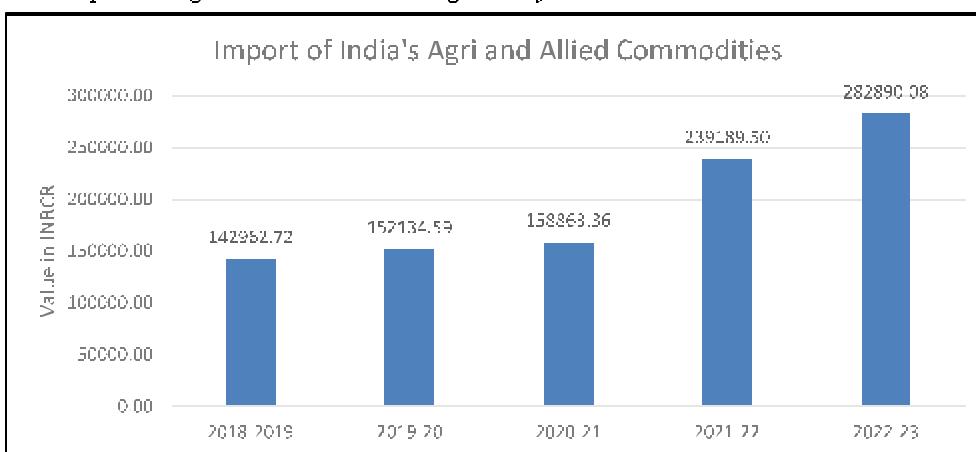
15.2.2 Agri-Imports:

As compared to previous year (2021-22), the Agri and allied imports in the year 2022-23 increased by 18.27% to Rs 282890.08 crore. Increase in value of Agri and Allied imports during 2022-23 were primarily on account of increase in imports of Wheat (25895.12%), Sesame Seeds (271.22%), Guergam Meal (255.37%), Sheep/Goat Meat (250.16%), Shellac (242.58%), Other Cereals (210.06%), Cotton Raw including waste (175.97%), Mollases (131.45%), Sugar (88.25%) and Jute Raw

(84.75%). Similarly, the total merchandise imports increased more significantly, therefore the share of Agri and Allied imports has increased from 5.23% in 2021-22 to 6.43% in 2022-23.

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 2018-19 to 2022-23 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]

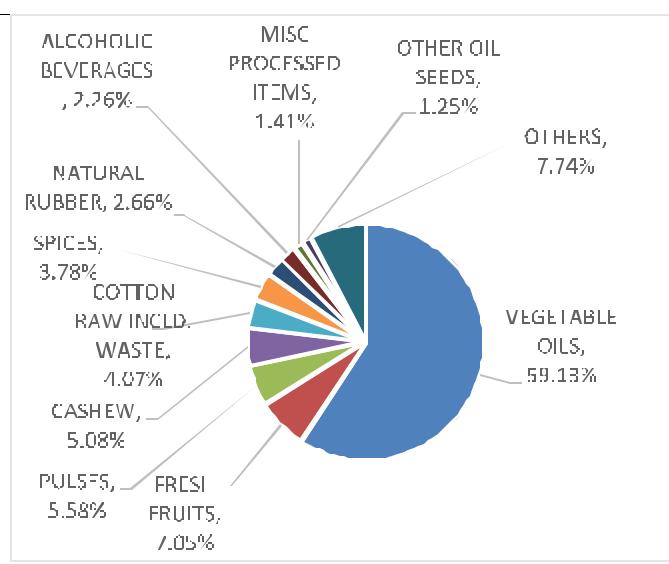
S. No	Commodity	2018-19		2019-20		2020-21		2021-22		2022-23		2023-24 (upto November)	
		Qty	Value	Qty	Value								
1	VEGETABLE OILS	15019	69024	14722	68558	13510	62123	14278	141532	15745	16727	10836	86987
2	FRESH FRUITS	1124	13932	994	14137	1212	15765	1552	18342	1550	19958	1085	14363
3	PULSES	2520	8035	2898	10221	2466	11930	2700	16628	2496	15701	2389	17324
4	CASHEW	840	11162	941	9026	834	7491	939	9338	1332	14370	985	9156
5	COTTON RAW INCLD. WASTE	299	4303	744	9371	231	2061	224	4169	452	11506	199	3872
6	SPICES	241	7933	321	10187	314	8071	364	9685	386	10695	280	8395
7	NATURAL RUBBER	582	6128	457	4927	410	4620	546	7703	529	7514	330	4048
8	ALCOHOLIC BEVERAGES	380	6679	577	1644	616	1037	564	5182	331	6393	250	6717
9	MISC PROCESSED ITEMS	0	2560	0	2636	0	2266	0	3403	0	3080	0	2387
10	OTHER OIL SEEDS	220	745	411	1528	507	2165	701	4308	574	3542	536	2767
	TOTAL AGRI & ALLIED IMPORTS		142963		152135		158863		239190		282890		178295

Source: Department of Commerce, Government of India

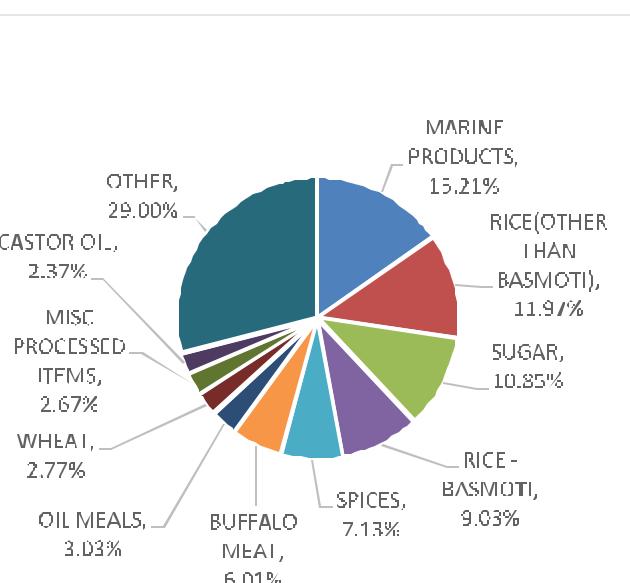
Share (in value terms) of top 10 exported and imported agricultural commodities during 2022-23. Agriculture sector posted positive

balance of payment like earlier years. The import was dominated by single commodity namely vegetable oil.

Import share in 2022-23 (Top-10 Items)



Export share in 2022-23 (Top-10 Items)



Source: Department of Commerce, Government of India

15.3. EXIM Policy of Agricultural Commodities:

15.3.1 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 up to 5 kgs with a Minimum Export Price (MEP) of USD 900/MT.
- ❖ Recently, the export policy of non-basmati white rice and wheat have been amended from free to prohibited.

15.3.2 IMPORT:

- ❖ In the agriculture sector, import of Peas, Moong, Urad, Tur, 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 commodities and 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.
- ✓ Import policy of items under HS Code 15119010 (refined bleached deodorised palm oil), 15119020 (refined bleached deodorised palmoline) and 15119090 (other) were amended from 'Restricted' to 'Free' until further orders (w.e.f 28th December, 2023).
- ✓ 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)
- MIP of Rs 351/kg on Arecanut (w.e.f. 14th February, 2023)
- MIP of Rs 50/kg on Apples (w.e.f. 08th May, 2023)
- ✓ 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. ü Government of India vide Notification dated 3rd July, 2023 allowed import of Potatoes (HS code 0701 90 00) from Bhutan without license up to 30th June, 2024.
- ✓ Department of Revenue has revised the Basic Customs Duty rates on some agri items (like peas, chana, apple, edible oil, lentils, cotton, maize etc.) with imposition of Agriculture Infrastructure and Development Cess so that overall consumer does not bear additional burden on most of the items.
- ✓ The import duty on edible oil was reduced time to time to meet the demand supply gap to keep a check on edible oil prices.

15.4. 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

15.5. Trade Agreement:

15.5.1 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, Peru, Israel, GCC, Iran, Mauritius, Canada, UK, South Korea, Sri Lanka and Oman are also in various stages of discussion.

15.6 WTO Meetings/Notifications:

15.6.1 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. 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.

15.6.2 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/>.

15.6.3 Trade Policy Reviews under WTO: WTO 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. 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.

15.7. Audit Para

No audit para/observation is pending in Agriculture Trade Policy, Promotion and Logistics Development Division of this Department.

Chapter-16

RASHTRIYA KRISHI VIKAS YOJANA (RKVY)

16.1 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 and 90:10 for North-Eastern and Himalayan States. However, funding pattern to UTs continued to be 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 been re-structured as RKVY

Cafeteria Scheme from 2022-23 onwards merging some schemes of Department of Agriculture & Farmers Welfare which includes Soil Health & Fertility (SHF), Rainfed Area Development (RAD), Paramparagat Krishi Vikas Yojana (PKVY), Per Drop More Crop (PDMC), Agriculture Mechanization (including Promotion of Agricultural Mechanization and Management of Crop Residue (CRM), Agro Forestry and Crop Diversification Programme. RKVY cafeteria scheme has 3 components viz. Annual Action Plan (AAP), Detailed Project Report (DPR) and Administration, Monitoring and Evaluation including startup.

16.2. Objectives of RKVY 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 enables 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 for increase in the farmer's 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.

16.3 Funding pattern under RKVY:

RKVY fund is provided to the States/UTS as

grant-in-aid. 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. 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 (as on date) are given respectively at **annexures - 16.1 & 16.2**.

16.4 Innovation & Agri-Entrepreneurship programme: A new programme called "Innovation and Agri-Entrepreneurship Development" has been launched under Rashtriya Krishi Vikas Yojana 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.

Over 3500 entrepreneurs / agripreneurs have been trained during 2019-20 to 2023-24 under Agri-entrepreneurship programme. Out of these trained entrepreneurs, 1524 start-ups operating in various areas of agriculture & allied sectors have been given financial support. A sum of Rs. 106.25 crore has been released in installments to the 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.

16.5. 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: Establishment of Permanent Pandal System (RKVY)

Category: Horticulture/ Agriculture

Background & objectives:

Pandal system is a technological improvement used to support bitter gourd, ribbed gourd, snake gourd, lab-lab, Chow-Chow, Coccinea, Bottle gourd and fruits like grapes, musk melon. These crops are being grown on commercial scale since they have tremendous market potential and are capable of giving high returns to the growers. The objective of the programme is to increase the productivity of gourd vegetables, enhance the quality of creeper vegetables, reduce the pest & disease incidence as the crop is better exposed, assist the small and marginal farmers to cultivate gourds etc through establishment of permanent pandals.

Permanent Pandal cultivation has the advantages like branches are well distributed and exposed to sunlight, convenience in carrying out cultural operations, easy to harvest fruits/vegetables, maximizing productivity with quality fruit production, results in higher yield as compared to open field cultivations, farmers don't have to invest in the supporting structure annually as it is permanent and benefits on the long run.



Intervention:

Considering the above-mentioned objectives, assistance has been provided for the establishment of Permanent Pandal system through Rashtriya Krishi Vikas Yojana (RKVY). Assistance for cultivation of horticultural crops through establishment of permanent pandal system has

been provided for an area of 3209 Ha at an outlay of Rs.61.51 crore. Most of the farmers benefitted through this programme are small and marginal farmers. The beneficiary farmers have been provided back ended assistance @ Rs.2 lakh / ha for establishing permanent Pandal structure with stone pillar / concrete pillar with GI wire and for hybrid high yielding vegetable seeds. Each farmer is eligible for a maximum assistance of one-hectare area. The beneficiary farmers have also been encouraged to install drip irrigation from Pradhan Mantri Krishi Sinchayee Yojana.

Outcome:

Pandal is erected using Stone pillars and GI wires. Compared to conventional method, it is stable and durable. Hence, the farmer can cultivate for subsequent years using the same pandal structure. It is observed that percentage of yield increased considerably vis-à-vis the normal yield after introduction of Permanent Pandal.

II. Saffron in Jammu & Kashmir

Category - Agriculture/ Horticulture

S. No	District	Target (Ha)	Achievement as on date
01	Pulwama	3200.00	2035.75
02	Budgam	300.00	328.000
03	Srinagar	165.00	165
04	Kishtwar	50.00	50,000
Total		3715.00	2598.75

India International Kashmir Saffron Trading Center (IIKSTC) at Dussu, Pampore

The Spice Park/ India International Kashmir Saffron Trading Centre (IIKSTC) has been constructed

Background

Saffron Cultivation in Kashmir Valley dates back to 500 BC as reported by various historical records. Saffron is a legendary spice of Kashmir and approximately 16000 farm operating families are associated with its cultivation. An area of 3715 hectares is presently under its cultivation.

Intervention

In order to boost the production of saffron and to mitigate the sufferings of the saffron growers, Ministry of Agriculture and Cooperation, Government of India, during the year 2010-11 sanctioned a flagship Scheme in mission mode for the Economic revival of Saffron in JK. A total of **Rs.236.00 crore** was released under RKVY scheme to the Kashmir from the years 2010-11 to 2017-18 for this project.

Target and Achievement:- Under the Mission an area of 3715 hectares of Saffron has been proposed to be rejuvenated under the mission in phased manner, out of which 2598.75 hectares stand rejuvenated as on date, the details are as under.

under National Saffron Mission at Dussu Pampore at an estimated cost of Rs. 38.11 Crore over an area of approximately 2.5 hectares by National Horticulture Board, GoI during 2017-18.



Agri-Startup Success Story under the Agri-entrepreneurship programme of RKVY

III. Title : Urban Monk Private Ltd (Millet Amma) (<https://milletamma.com>)

Millet Amma is a Bengaluru based agri-startup setup in 2017. This startup has developed over 50 millet range products both ready to eat and ready to cook that are not only tasty but also extremely healthy for the consumers. Government of India is also encouraging and promoting production of

millets (Shree Aanna) and its items in country. These millets based products are helpful in reducing / controlling life style diseases i.e. diabetes, gluten intolerance, etc. Startup has generated around 20 direct employments and around 100 indirect employments. It has customer base over ten thousand.



IV. Title: Singodwala Warehousing & Logistics Pvt. Ltd (www.apnagodam.com)

This is a Supply Chain & Agriculture Logistics Jaipur based startups founded in 2016. The startup is providing an application through which the customer can sell/buy commodities, deposit stock in warehouse/withdraw from warehouse, take commodity pledge finance/repay, digitally. This startup is addressing the issue like lack of infrastructure for storage of agricultural produce and lack of financing services for farmers. More than 6300 units are sold. It has garnered revenue around worth Rs. 572 Lakhs. It has generated direct and indirect employment of 54 and 500

respectively. More than 4500 farmers have been benefited.



16.6 Audit Para

No audit para pertaining to RKVY Division is pending.

Chapter-17

DROUGHT MANAGEMENT

Overview

17.1 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.

17.2 The State Governments initiate necessary relief measures in the wake of natural calamities from the State Disaster Response Fund (SDRF), which is readily available with them. Contribution to SDRF is made by the Central and the 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. The 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 the State Governments only.

17.3 On receipt of Memorandum from the State Government, an Inter-Ministerial Central Team (IMCT) is constituted. IMCT visits the State to assess the loss/damage to crops etc. and recommends appropriate financial assistance from NDRF. During 2023-24, the State Governments of Karnataka, Andhra Pradesh and Maharashtra have submitted Memorandums seeking financial assistance from NDRF for drought in the States during Kharif 2023. Inter-Ministerial Central Teams (IMCTs) have been constituted to visit the States for assessing loss/damage to crops etc. and recommend appropriate financial assistance from NDRF.

17.4 DA&FW has reviewed and updated the Crisis Management Plan (CMP) for Drought during the current year i.e. 2023. The Plan defines the roles and responsibilities of various agencies involved in crisis management, including media management during drought. CMP, 2023 was circulated to all the States/Union Territories for preparation of State Crisis Management Plan.

17.5 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 prepared Contingency Plans for **650** districts of the country.

17.6 A unified geo-portal for monitoring and management of drought has been developed by the Department. The portal hosts all drought related indicators- weather, soil moisture, remote-based

crop conditions, water storage etc., on a single digital platform for use by the States. It enables easy, timely and objective assessment of drought situation over any district or region.

Chapter-18

INTERNATIONAL COOPERATION

18.1 Overview

Mandate and Nature of Work: The mandate of the International Cooperation Division is to foster mutually beneficial partnerships with other countries of the world in bilateral as well as multilateral formats. Bilateral Agreements, Memorandum of Understanding (MoUs), Protocols, and Work Plans with countries of strategic interest are signed and implemented for furthering cooperation in the field of agriculture and allied sectors in coordination with the Ministry of External Affairs, other concerned ministries, departments and the Indian Missions abroad. The International Cooperation Division of DA&FW also handles the work related to coordination and collaboration with the Food & Agriculture Organization (FAO) and World Food Programme (WFP) of the United Nations, being the Nodal Department in India.

The Office of Minister (Agriculture), Embassy of India, Rome: The Indian Ambassador to Italy is the Permanent Representative of India to the FAO, IFAD, and WFP to maintain 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.

18.2 Bilateral Cooperation

MoU/MoC/Agreements/Work Plans:

Department of Agriculture and Farmers Welfare has entered into 73 MoUs/MoCs/Agreements with 67 countries in the field of agriculture and allied sectors. During the year 2023, DA&FW has signed three Memorandum of Understandings (MoUs) i) with Chile on 16.05.2023 ii) Egypt on 25.06.2023 and iii) Greece on 25.08.2023 for cooperation in the Agricultural sector.

As a follow-up to the MoU signed with Italy, the 1st India-Italy Joint Working Group (JWG) meeting on agriculture and allied sectors was held on 12.04.2023 through video conferencing.

18.3 Cooperation with International Organizations:

18.3.1 Food and Agriculture Organization (FAO): The Food and Agriculture Organization (FAO) is a specialized agency of the United Nations established in 1945 that leads international efforts to achieve food security. The FAO partners with India by offering training, and consulting services, as well as equipment and materials in the realm of Agriculture and related sectors as part of its Technical Cooperation Programme (TCP). The UN FAO programme in India is primarily guided by the Government of India (GoI) priorities, the United Nations Sustainable Development Cooperation Framework (UNSDCF 2023-27), and shaped by FAO's corporate policies. The 2023–2027 framework aims to align the four pillars of the 2030 Agenda—People, Prosperity, Planet, and Participation—with India's national priorities and provide direction to the efforts of all the UN entities working across the country. Currently, there are 14 projects under implementation in different states with FAO's assistance (**Annexure I**).

Important FAO events/meetings:

1. A Bilateral Meeting between Union Minister of Agriculture and Farmers' Welfare Shri Narendra Singh Tomar, and Mr. Qu Dongyu, Director-General of FAO was held on 15th June, 2023 on the sidelines of the G20 Agriculture Ministers' Meeting in Hyderabad.
2. The 43rd Session of the FAO conference (1-7 July 2023) was attended by the Additional Secretary, DA&FW in Rome on the 3rd and 4th of July 2023.



18.3.2 World Food Programme (WFP):

Established in 1961, the World Food Programme (WFP) seeks to provide emergency food support to places facing acute food insecurity due to natural calamities or man-made causes. WFP has been working in India since 1963; however, its role has evolved from providing direct food distribution to providing technical support to the Government of India in achieving food and nutrition security guided by SDG2. WFP collaborates with the Government of India through the Country Strategic Plans (CSP). The India CSP 2023-2027 aligns WFP's work with the Wider UN Sustainable Development Framework (2023-27) and with the WFP Corporate Strategic Plan (2022-25). A Memorandum of Understanding (MoU) between GoI and the UNWFP was signed to implement the same. There are several projects with WFP cooperation operational in India as per detailed provided in **Annexure II**.

Important events/meetings:

An MoU between GoI and UN WFP on cooperation for 2023-27 was signed between the Secretary, DA&FW, and Ms. Elisabeth Faure, Representative and Country Director, UNWFP in the presence of Hon'ble Minister of Agriculture and Farmers Welfare on 19th March 2023. The MoU aims to strengthen India's food and nutrition security in alignment with national priorities, enhancing cooperation with the government in capacity building and providing technical support for social protection programs and government schemes.



18.3.3 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. Asia and Pacific Plant Protection Commission (APPPC)
2. Trust Fund of FAO for Desert Locust in Eastern Region.
3. Trust Fund for International Desert Locust.
4. Organization for Economic Cooperation & Development (OECD).
5. International Coconut Community (ICC) [formerly known as Asia and Pacific Coconut Community (APCC)].

18.4 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

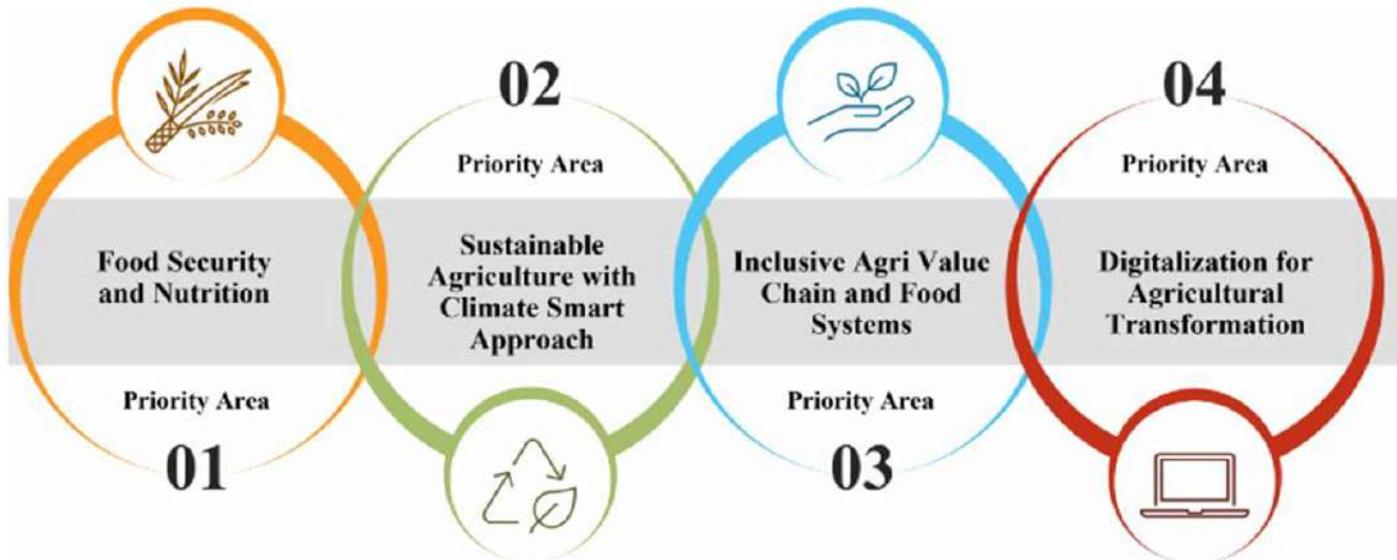
(India, Brazil, and South Africa); SCO (Shanghai Cooperation Organization); SAARC (South Asian Association for Regional Cooperation); BIMSTEC (Bay of Bengal Initiative for Multi-Sectoral Economic & Technical Co-operation) etc. The Department of Agriculture and Farmers' Welfare represents India in all events related to agriculture and allied sectors.

Group of Twenty (G20)

India's Presidency of G20: The Group of Twenty (G20) is the premier forum for international economic cooperation comprising 19 countries, the European Union, and the African Union (joined

in 2023). The G20 forum does not have a permanent secretariat or staff. Instead, the G20 Presidency rotates annually among the members. India held the Presidency of G20 from 1st December 2022 to 30th November 2023.

India will be in the "troika" under Brazil's Presidency with South Africa. The troika helps in the continuity of the agenda. In G20, issues related to agriculture are discussed under the aegis of the Agriculture Working Group (AWG). India, under its G20 presidency, identified four priority areas as the comprehensive agenda of the Agriculture Working Group, in line with the motto "One Earth, One Family, One Future."



Under India's Presidency, the Ministry of Agriculture and Farmers Welfare organized the following meetings of the Agriculture Working Group (AWG):

- i. First Agriculture Deputies Meeting, Indore (13-15 February 2023)
- ii. Second Agriculture Deputies Meeting, Chandigarh (29-31 March 2023)
- iii. Agriculture Ministers' Meeting, Hyderabad (15-17 June 2023)

In addition to the above, a meeting of Agriculture Chief Scientists (MACS) was organized by DARE at Varanasi from 17 to 19 April 2023. The meeting adopted the chair's summary and outcome document and endorsed the launch of Millets And

Other Ancient Grains International Research Initiative (MAHARISHI).

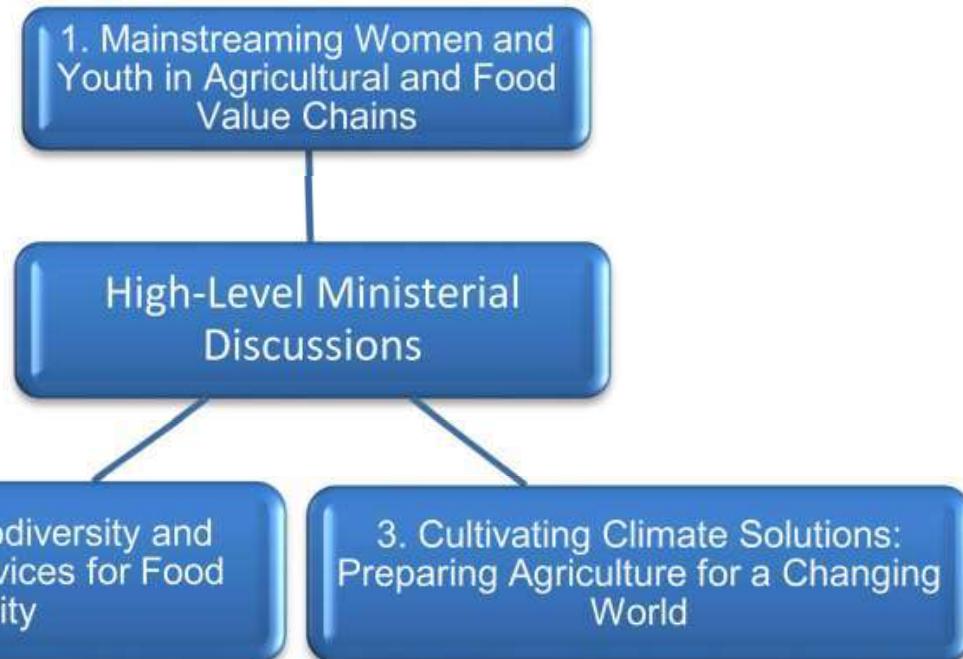
During the First Agriculture Deputies Meeting, on the first day two side events were organized. The first side event focused on "Stocktaking of G20 Initiatives in Agriculture," where previous G20 Initiatives (AMIS, GEOGLAM, TAP, Wheat Initiative, PARM, and TPFLW) presented their progress. Meanwhile, the second side event was under the theme "Global Forum on Climate Smart Agriculture for Food Security," with insightful presentations by representatives from OECD, ERIA, Cropin, BMGF, and ADB on the aforementioned topic. In the next two days, thematic discussions based on the Issue Note were held which culminated in laying the foundation for the formulation of the Draft Communiqué.



During the Second Agriculture Deputies Meeting, the 12th Session of the AMIS (Agricultural Market Information System) Rapid Response Forum was convened on the first day, centering its discussions on matters concerning the food market's status and future prospects. The subsequent two days were devoted to negotiations and the drafting of the Communique, involving multiple drafting sessions.

On the first day of the Agriculture Ministers' Meeting, two panel discussions were organized.

One under the theme "Managing Agribusiness for Profit, People, and Planet" and the other under the theme "Connecting the Digitally Disconnected: Harnessing the Power of Digital Technologies in Agriculture." The second day began with a plenary session on "Sustainable Agriculture for Food Security and Nutrition," chaired by the Union Minister of Agriculture and Farmers' Welfare Shri Narendra Singh Tomar. The second half of the day was dedicated to three parallel high-level ministerial discussions on crucial topics:



The conclusion of the discussions held during the Agriculture Deputies Meetings was adopted in the form of an Outcome Document and Chair's

Summary at the Agriculture Ministers Meeting in Hyderabad.



This meeting witnessed a robust participation of 217 foreign delegates (25 Ministers and the Directors General (DG), 10 Heads of Delegation (HoD), and 182 Delegates). 14 Ministers from the Member Countries, 6 Ministers from invited countries and the DG's of 5 International Organisations participated in the meeting.

Under India's Presidency, the Agriculture Working Group (AWG) achieved two major outcomes, namely the **Deccan High Level Principles on Food**

Security and Nutrition 2023 and Millets And Other Ancient Grains International Research Initiative (MAHARISHI). The Deccan high-level principles on food security and nutrition were proposed by India to strengthen and complement mutual efforts to tackle global food crises. The principles demonstrate the G20's collective responsibility in reinforcing and complementing efforts across geographies in response to global food security crises.

G20 Deccan High-Level Principles on Food Security and Nutrition 2023

Principle 1: Facilitate Humanitarian Assistance to Countries and Populations in Vulnerable Situations	Principle 2: Enhance Availability and Access to Nutritious Food and Strengthen Food Safety Nets	Principle 3: Strengthen Policies and Collaborative Actions for Climate-Resilient and Sustainable Agriculture and Food Systems	Principle 4: Strengthen Resilience and Inclusivity in Agriculture and Food Value Chains	Principle 5: Promote the One Health Approach	Principle 6: Accelerate Innovation and the Use of Digital Technology	Principle 7: Scale-Up Responsible Public and Private Investments in Agriculture
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The MAHARISHI aims to facilitate research collaboration on climate-resilient and nutritious grains including Millets and other ancient grains.

To facilitate collaboration for research on climate resilient and nutritious grains including Millets and other ancient grains

To organize capacity building activities, International workshops and conferences

Secretariat at Indian Institute of Millets Research (IIMR), Hyderabad

Shanghai Cooperation Organization

India's Presidency of the Shanghai Cooperation Organization (SCO-16th September, 2022 to 4th July, 2023): India assumed the rotating presidency of the SCO at the 2022 SCO Summit held in Samarkand (Uzbekistan) on 16 September 2022.

The Shanghai Cooperation Organization (SCO) is a permanent intergovernmental international organization established on June 15, 2001 in Shanghai. It aims to encourage effective cooperation between the Member States in such spheres as politics, trade, economy, science and technology, culture, education, energy, transport, tourism, environmental protection, etc. India officially joined SCO as a full Member on 9 June 2017 at a summit in Astana, Kazakhstan.

Under India's presidency-2022-23, the MoA&FW organized three Permanent Expert Working Group (PEWG) meetings, the first on 15th December 2022,



India highlighted the importance of achieving food security and nutrition, maintaining the normal functioning of the food supply chains, and attaining the Sustainable Development Goals, in the meeting. Hon'ble Minister also mentioned the national-level programmes launched by the Government of India such as the National Mission on Sustainable Agriculture, Pradhan Mantri Kisan Samman Nidhi scheme, Agriculture Infrastructure Fund, Pradhan Mantri Fasal Bima Yojana, National e-Governance Plan in Agriculture, Agristack and efforts for digital eco-system in agriculture.

18.4.1 BRICS (Brazil, Russia, India, China, South Africa):

BRICS is an important grouping bringing together

the second on 28th February 2023, and the third on 11th May 2023. During these PEWG meetings, the Concept of Interaction between the Authorized Bodies of the SCO Member States on "Smart" Agriculture and Agro-Innovations was discussed and finalized.

The 8th meeting of Ministers of Agriculture of the SCO Member States was held on 12th May 2023 through video conference. The meeting was chaired by Union Minister of Agriculture and Farmers' Welfare Shri Narendra Singh Tomar. The sides exchanged opinions on the current cooperation in agriculture, ensuring food security, and on the measures of rapid response in the SCO Member States. The member countries approved the Action Plan for 2023-2024 on the implementation of the Concept of Interaction between the Authorized Bodies of the SCO Member States on "Smart" Agriculture and Agro-Innovations.



the major emerging economies from the world, comprising 41% of the world population, 24% of the world GDP, and over 16% share in world trade. BRICS countries have been the main engines of global economic growth over the years. Over a period of time, BRICS countries have come together to deliberate on important issues under the three pillars of political and security, economic and financial, and cultural and people-to-people exchanges.

Important events/meetings:

- i. The meetings of the BRICS Working Group on Agriculture during 2023 were held under the Chairpersonship of South Africa.

- ii. The 13th BRICS Agriculture Ministers Meeting was held on 12 August 2023 at Limpopo Province, South Africa under the Chairmanship of South Africa. The Union Minister of State for Agriculture & Farmers Welfare, Shushri Shobha Karandlaje, represented India. In her video-recorded speech, she highlighted the steps taken by the Government of India for the development of agriculture and farmer's welfare. The Hon'ble Minister also emphasized India's commitment to scaling up sustainable agriculture by actively promoting organic and natural farming practices. These initiatives are aimed at ensuring long-term productivity, enhancing food security, and preserving soil health. Further, she also mentioned that India is embracing digital and climate-smart technologies, developing high-yielding bio-

fortified varieties, and investing in agricultural research. The BRICS Agriculture Ministers adopted a Joint Declaration of the 13th Meeting of the BRICS Ministers of Agriculture.

18.4.2 Externally Aided Projects

Several externally aided projects in the agriculture sector are being implemented in different parts of India with funding from the World Bank, International Fund for Agricultural Development (IFAD), JICA, GEF, Asian Development Bank (ADB), etc. A list of the projects is given in **Annexure III**.

Looking ahead, the International Co-operation Division of the Ministry of Agriculture and Farmers Welfare remains dedicated to a collaborative, sustainable, and technology-driven approach, ensuring India's active participation in global agricultural development and food security initiatives.

Annexure I

Major projects currently under implementation in States with FAO's assistance:

No.	Project Title	Project Objectives	Area of implementation	Implementing Agency/ Local partner
1.	Strengthening institutional capacity in surveillance and monitoring of antimicrobial resistance and antimicrobial use in the animal health sector	Strengthen the national monitoring and surveillance of antimicrobial usage in animals and share data with various stakeholders in the true spirit of One Health.	PAN India	Indian Council of Agriculture Research (ICAR); Department of Animal Husbandry and Dairying (DAHD)
2.	Technical support to develop forecasting/predictive techniques to assist vulnerable farmers and planners at the district and state levels to make informed decisions on crop choices and plans for rain fed agriculture	Develop forecasting/predictive techniques and tools using multiple data points and big data analytics to aid vulnerable farmers and planners to make informed decisions on crop choices, particularly in rain-fed areas. The TCP trains local resource persons/mural extension workers in utilizing the tool for deployment with rainfed farmers.	Karnataka, Maharashtra, Andhra Pradesh and Himachal Pradesh	Weather Risk Management Services Pvt Ltd. (WRMS)
3	Strengthening capacities of the Government of Andhra Pradesh to support farmers to	Develop methodology and framework for sustainable agroforestry systems and build capacities of Farmer	Andhra Pradesh	A.P State Seed Certification Authority (APSSCA)

	adopt sustainable agri-food systems	Facilitation Centres and key stakeholders.		
4	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	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	NCDEX Institute of Commodity Markets and Research (NICR)
5	TCPE: Support for improved monitoring of sustainable agriculture	Provide technical assistance to strengthen the evidence base to implement effective and targeted policies and programs to ensure sustainable and productive food systems and improved water use efficiency and access to water.	PAN India	NITI Aayog, Government of India
6	Enhancing livestock keepers' incomes through certification for milk and dairy products to increase market access in selected sites	Provide technical support in analyzing the variance of the protocols from the standards on quality and organic certification and organize relevant experience-sharing from existing initiatives & protocols on milk marketing for safe and clean milk in India with smallholders, and to build the capacity of those in the milk value chain.	Uttar Pradesh & Rajasthan	Ministry of Fisheries, Animal Husbandry & Dairying
7	TCPE: Support to developing protocols for quality planting material and certification of nurseries for timber and non-timber agroforestry species	Bring together key sectors and stakeholders to discuss the pending technical issues and barriers related to certification and develop standard protocols for certifying quality planting materials and nurseries and establish institutional mechanisms for certification.	PAN India	Ministry of Agriculture and Farmers Welfare (MoA&FW)
8	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	Mizoram, Rajasthan, Uttarakhand, Odisha, Madhya Pradesh	Farmers Welfare and Agriculture Development Department, Government of Madhya Pradesh; Department of Agriculture, Government of Mizoram; Department of Soil Conservation and Watersheds, Government of Odisha;

		conserve critical biodiversity and forest landscapes.		Department of Agriculture, Government of Rajasthan; Department of Watershed Development, Government of Uttarakhand
9	Promotion of Sustainable Food Systems in India through Transforming Rice-Wheat Systems in Punjab, Haryana, Odisha and Chhattisgarh (FSP)	Mainstream integrated models of sustainable and healthy food systems in rice/wheat-dominated landscapes in India.	Punjab, Haryana, Odisha, Chhattisgarh	Ministry of Agriculture and Farmers Welfare (MoA&FW); Department of Agriculture, Farmers Welfare and Bio-Technology, Government of Chhattisgarh; Department of Soil & Watershed, Government of Odisha; Department of Agriculture and Farmers Welfare, Government of Haryana; Department of Agriculture and Farmers Welfare, Government of Punjab
10	Strengthening spice value chain in India and improving market access through capacity building	Build capacities 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	Spices Board, Ministry of Commerce and Industry
11	Global Health Security (GHS) Project – Asia and the Pacific Region	Strengthen National One Health Programme for prevention and control of priority zoonoses and antimicrobial resistance (AMR) in India.	PAN India	Indian Council of Agriculture Research (ICAR); Department of Animal Husbandry and Dairying (DAHD); National Centre for Disease Control (NCDC)
12	Working together to fight antimicrobial resistance (AMR) (Regional project)	Support implementation of key activities listed in AMR NAP 2023-2027.	PAN India	Indian Council of Agriculture Research (ICAR); Department of Animal Husbandry and Dairying (DAHD)
13	Agriculture Sector Readiness for enhanced climate finance at sub-national level in India (GCF Readiness)	Develop and submit GCF Project Concepts, aligned to India's GCF Country Program Document, based on priorities arrived in agriculture	Odisha, Chhattisgarh, Madhya Pradesh and Punjab	Not applicable

	Programme)	investment programs that will be developed at the sub-national level.		
14	Enhancing resilience of migrants & vulnerable households to climate change in Odisha & Telangana	Enhance resilience of migrants & vulnerable households to climate change in Odisha & Telangana.	Odisha & Telangana	Department of Agriculture. Proposed LOA with NGOs

Annexure II**Projects with WFP cooperation:**

No.	Name of project	Expected Outcome	Area of Implementation
1.	Support efficient and effective delivery of India's food-based social protection (initiatives like Annapurni (Grain ATM) and Fospan)	<ul style="list-style-type: none"> • Supply Chain Optimisation • SMART warehouse • Learning Management System (LMS) 	Annapurni in 16 locations in Haryana (1), Odisha (1), Uttar Pradesh (3), Uttarakhand (8), Madhya Pradesh (1) and Meghalaya (1); supply chain optimization in 29 out of 31 states; Fospan at 3 locations in Manipur Pradesh (1), Uttarakhand (1) and Rajasthan (1); LMS in all states
2	Strengthening Climate Adaptation, Resilient Food Systems and DRR	<ul style="list-style-type: none"> • Strengthening the capacities and leveraging on India's expertise in DRR/Emergency Preparedness and Response for food and nutrition security • Strengthening Resilience of Smallholder farmers through 	Odisha, Andhra Pradesh, Tamil Nadu, Assam, Maharashtra, Karnataka, Rajasthan, Madhya Pradesh, and Uttar Pradesh. Drought Mitigation Planning is expected to be supported in 12 states namely Andhra Pradesh, Bihar, Gujarat, Jharkhand, Karnataka, Madhya Pradesh, Maharashtra, Odisha,
		<ul style="list-style-type: none"> • resilient food systems and climate adaptation • Support state governments to promote climate resilient livelihoods by empowering small holder women farmers • Support learning exchanges through South-South & Triangular Cooperation (SSTC) pathways in field of DRR/DRM, Climate and Resilient Food Systems 	Rajasthan, Tamil Nadu, Telangana, Uttar Pradesh
3	Capacity strengthening, technical assistance and innovative solutions to women's self-help groups	<ul style="list-style-type: none"> • Enhancement in women's economic empowerment and thereby sustainable food security in the community 	Odisha, Delhi-NCR, Puducherry, Haryana, Rajasthan, Assam
4	Support the beneficiaries of the Government's food-based social protection systems to have increase consumption of diverse nutritious and fortified foods	<ul style="list-style-type: none"> • Overall objective of addressing anaemia and micronutrient deficiencies • Prevention of malnutrition among young children • Setting up of kitchen gardens, capacity building of cooks, and demonstrating the operational feasibility of integrating fortified wheat flour • Social behaviour change 	<ul style="list-style-type: none"> • Uttar Pradesh, Uttarakhand, Bihar, Chhattisgarh, Odisha, Haryana, Kerala and Rajasthan
5	Research, Assessment and Monitoring (RAM) and Evaluation Unit	<ul style="list-style-type: none"> • Supporting Proof of Concept through Evaluation • Increasing the Knowledge Base Around Food Security and Nutrition 	<ul style="list-style-type: none"> • Engagement with Development Monitoring and Evaluation Office (DMEO), NITI Aayog for strengthening M&E capacity and pan-India evaluation of NFSA

		<ul style="list-style-type: none"> • Strengthening National and State Monitoring and Evaluation Capacity • Engaging Stakeholders Around Data and Evidence on SDG 2 Monitoring 	<ul style="list-style-type: none"> • State level engagements in Rajasthan, Odisha and Uttar Pradesh
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Annexure III

World Bank Projects being implemented by the State governments	
1	Integrated Project for Source Sustainability and Climate Resilient Rain-fed Agriculture in Himachal Pradesh
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	Andhra Pradesh 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

Japan International Cooperation Agency (JICA)	
1	Himachal Pradesh Crop Diversification Promotion Project (Phase-2)
2	AP Irrigation and Livelihood Improvement Project (Phase 2)
3	Jharkhand Horticulture intensification by Micro Drip Irrigation Project
4	Rajasthan Water Sector Livelihood Improvement Project (Phase 2)
5	Rajasthan Water Sector Livelihood Improvement Project (Phase 1)
6	Rengali Irrigation Project (Phase 2)
7	Project for Dairy Development
8	Uttarakhand Integrated Horticulture Development Project

19.1 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, 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.

19.2 Main activities undertaken during 2023-24:

Details of main activities undertaken during the year 2023-24 are given as under:

- All States/UTs commenced the data collection work for Phase-I of Agriculture Census 2021-22 using hand-held devices like Smartphone/Tablet/Laptop/Personal Computer.
- Virtual meetings with States/UTs were organized from time to time under the Chairmanship of Deputy Director General & Agriculture Census Commissioner, DA&FW to review the progress of data collection work as well as to discuss the data quality of Phase-I.
- Scrutiny and validation of the data collected by primary workers for all the States/UTs was undertaken and observations were shared with respective States/UTs to improve the quality of data.
- Finalization of Phase-I data of Agriculture Census 2021-22 was in progress and expected to be completed by March, 2024.

19.3 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.					

Chapter-20

SUB-MISSION ON AGRICULTURAL EXTENSION (SMAE)

Agriculture Extension:

20.1 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.

20.2 Objectives and Achievement of Major Schemes

20.2.1 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 Agricultural Extension (SMAE) under Green Revolution - Krishonnati Yojana. It is now under implementation in 739 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:** At least 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, agripreneurs, 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 Strategic Research and Extension Plan (SREP) and State Extension Work Plan (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 at least 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 739 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/4 UTs have been prepared and approved based on District Agriculture Action Plans of 739 ATMA districts. NCT of Delhi has not submitted State Extension Work Plan (SEWP) for 2023-24. Since the inception of the Scheme in 2005-06 up to 31st December, 2023, an amount of **Rs.7469.68 crore** has been

released to States/UTs under the scheme. During 2023-24, against the B.E. of **Rs.591.97 crores**, an amount of **Rs.434.15 crore has been released** to the States up to 31st December, 2023 for implementation of the Scheme.

- **Physical performance of the Scheme since its inception in 2005-06 (April 2005 to 31st December, 2023) is as below:**

- ✓ Over 6,17,51,477 farmers including 1,65,66,062 farm women (26.82%) have participated in farmer oriented activities like Exposure Visits, Trainings, Demonstrations and Kisan Melas.
- ✓ Over 3,92,413 Commodity based Farmer Interest Groups (CIGs)/ FIGs have so far been mobilized under the Scheme.
- ✓ Over 2,10,606 Farm Schools have been organized on the fields of outstanding farmers.

- **Progress of implementation during 2023-24 (up to 31st December, 2023):**

- 15,10,720 farmers including 4,70,951 farm women (31.17%) have been reportedly participated in farmer oriented activities like exposure visits, trainings, demonstrations & Kisan Melas.
- 11,657 CIGs/ FIGs organized.
- 8,598 Farm Schools organized.
- 14,363 specialists & functionaries have been reported as deployed under ATMA up to 31st December, 2023.
- 42,705 Farmer Friends also identified by the States.

20.2.2 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 05 days a week till July 2023 and 3 days a week from August, 2023 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) till July 2023 and 3 days a week from August 2023 and 03 programmes namely – Krishi Darshan (30 minutes), Hello Kisan (60 minutes till July 2023 and 30 minutes from August 2023) and Choupal Charcha (30 minutes) (5 days a week till July 2023 and 3 days a week from August 2023) 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 till July 2023 and three days a week from August 2023 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, Paramparagat 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 and 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: 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 2023-24 (up to December, 2023), 3150 programmes were telecasted on DD and 16199 broadcasted through All India Radio during the year 2023-24, out of Rs.157.50 crore (BE), an amount of Rs.70 crore (i.e Rs. 68.47 Cr. released to CBC as 40% of total allocation of fund of Rs. 171.18 Cr. under the Advertisement and Publicity Heads of DA&FW and Rs. 1.53 Cr. as expenditure incurred in Print and Social Media) has been incurred upto 31.12.2023 under Central Sector Scheme 'Mass Media Support to Agriculture Extension' for expenditure towards electronic, print and social media .

Projections for the period January to March, 2024: 819 and 3783 programmes are proposed to be telecast/broadcast on Doordarshan and All India Radio respectively in the month of January to March, 2024.

20.2.3 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 agripreneurs has been made a mandatory component of the Scheme. AC&ABC programme has been onboarded on PRAYAS portal, DIKSHA portal and Jan Samarth portal and integrated with Krishi MAPper. Details of the Scheme may be seen at www.agriclinics.net.

So far, 88680 candidates have been trained and 38927 agri-ventures have been established in the country during the period of implementation of the Scheme upto December, 2023. Out of the ventures established since inception, 3635 have been subsidized as on December, 2023. During the year 2023-24, starting from April, 3897 candidates have been trained, 1551 agri-ventures have been established and 198 ventures were subsidized upto December, 2023.

Projections for the period January to March, 2024:

- A. Trainings: 1064 Number of Candidates
- B. Establishment: 930 Number of Ventures

20.2.4 KISAN CALL CENTERS (KCC)

The KCC Scheme was launched on 21stJanuary 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 22 official languages. KCCs are in operational from 17 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 other TV channels. An Agri Knowledge Management system (AKMS) 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 AKMS 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. Integration with Kisan Sarathi of ICAR and advanced communication technologies and social media (including smartphone based apps like WhatsApp, Telegram, Chatbot, video calling, two way video clips, two way audio clips, two way SMS, Artificial Intelligence (AI), Machine learning (ML) etc.) with KCC is under progress. With these modernized facilities at each KCC location, there has been encouraging response from farmers.

Since inception of the Scheme till December, 2023; over 633.16 lakh calls have been registered in the KCCs. During the current year, around 25.93 lakh calls have been received upto December, 2023.

Projections for the period January to March, 2024: Expected number of calls to be answered from KCCs is 31,07,000.

20.2.5 Human Resource Development (HRD) SUPPORT:

DA&FW 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 (EEIs) 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 436 training courses planned for 2023-24, MANAGE has conducted 206 training programs (Up to 31st September, 2023) in which 15939 participant have been participated during current year. Against BE of Rs.12.50 crore, an amount of Rs.9.38 crore has been released till 31st October, 2023. 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 2023-24.

Extension Education Institutes (EEIs): Four Extension Education Institutes namely, Nilokheri (Haryana), Hyderabad (Telangana), Anand (Gujarat) and Jorhat/Guwahati (Assam) are functioning at the Regional Level. The objectives of EEIs 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 2022-23, a total of 230 training programmes have been planned, out of which the EEIs have conducted 238 training programmes with 6789 participants during 2022-23. Against the budget grant of Rs.18.22 crore, an amount of Rs.7.53 crore has been released to the EEIs during 2023-24 till December, 2023 and during 2023-24, 131 training programme have been conducted with 4083 Participants till December, 2023.

Projections for the Period January to March, 2024: EEIs proposes to conduct 98 training programmes fro training 1960 participants from January-Macrh, 2024 with a total expenditure ofRs. 1525.00 lakh upto March, 2024.

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, 58482 input dealers have been trained upto 2022-23. During 2023-24, 128 batches of DAESI programme have been conducted and 4949 input dealers trained till December, 2023.

Projections for the Period January to March, 2024: Proposal to conduct 54 training programmes for training 2160 participants from January-Macrh, 2024 with a total expenditure ofRs. 728.00lakh upto March, 2024.

20.2.6 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 is 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 brining 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-2023-

The National Gender Resource Centre in Agriculture (NGRCA), Directorate of Extension (DOE), Department of Agriculture & Farmers Welfare in collaboration with the Extension Education Institute , Anand celebrated 'Mahila Kisan Diwas' or 'International Rural Women Day' in hybrid mode on 15th October, 2023 at the Anand Agriculture University, Anand on the theme "**Sustainable Agriculture through Gender Inclusion and Participation**". Officials from DA&FW and various institutions participated in the said event. A book titled **Motivational Stories of Women in Agriculture** compiled and edited by NGRCA; DOE was also launched by dignitaries with the purpose of cross learning and replication of the stories narrated, offering valuable resources and information to the women farmers. The event also featured an exhibition and women farmers and entrepreneurs exhibited their products in the stalls. 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. Also, the events including trainings and felicitation of women farmers and agripreneurs were organized across the country on the occasion of Mahila Kisan Diwas by the States/UTs and institutions working

under the aegis of the Department of Agriculture & Farmers Welfare.

Side events on Women led development 2023-

India had the Presidency of the G20 from 1 December 2022 to 30 November 2023 and the theme of summit is "Vasudhaiva Kutumbakam" or "One Earth One Family One Future". National Gender Resource Centre in Agriculture, Directorate of Extension, Department of Agriculture & Farmers Welfare organised various side events across the country on the theme 'Women Led Development' with focus on Gender Mainstreaming and highlighting the contribution of women in Agriculture. Meetings/events/workshops were organized in collaboration with State Agricultural Universities, Indian Council of Agricultural Research and institutions working under the aegis of the Department of Agriculture & Farmers Welfare making it a Peoples' Event (Jan Bhagidari) and briefing them about G20.

20.2.7 PRE-SEASONAL DA&FW-ICAR INTERFACES:

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	15
7.	Sikkim	06
8.	Tripura	08
Total:		115

During the current financial year 2023-24, Budget estimate of Rs. 82.27 crore was earmarked for North Eastern States for implementing the Scheme whereas, an amount of Rs.58.18 crore has been released to North Eastern States - Arunachal Pradesh (Rs. 6.88 crore), Assam (Rs.14.85 crore), Manipur (Rs.4.50 crore), Meghalaya (Rs.6.75 crore), Mizoram (Rs.7.00 crore), Nagaland (Rs.12.70 crore), Tripura (Rs.3.50 crore) and Sikkim (Rs.2.00 crore) till 31st December, 2023.

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 then 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 2023 and Pre-Rabi 2023 DA&FW-ICAR Interface was organized on 28th April, 2023 and 18th September, 2023 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

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, 2023 is given below:

S. No.	State	Candidates Trained	Ventures Established
		Since Inception	Since Inception
1.	Arunachal Pradesh	48	03
2.	Assam	844	281
3.	Manipur	522	135
4.	Meghalaya	37	04
5.	Mizoram	52	00
6.	Nagaland	187	22
7.	Sikkim	09	01
8.	Tripura	06	02
	Total	1705	448

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, 2023 are, Arunachal Pradesh (13,121), Assam (4,17,776), Manipur (36,604), Meghalaya (20,791), Mizoram (11,770), Nagaland (7,340), Sikkim (22,443) and Tripura (59,818). The calls registered from these states during current year up to December, 2023 are Arunachal Pradesh (410), Assam (15,584), Manipur (583), Meghalaya (445), Mizoram (710), Nagaland (479), Sikkim (2,005) & Tripura (1,788).

Extension Education Institute (EEI): EEI set up at Jorhat/Guwahati (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 2023-24, 16 courses have been organized with 464 participants trained till December, 2023. An amount Rs.234.22 lakhs has been released to EEI Guwahati/ Jorhat during 2023-24 as against the budget estimate of Rs.395.34 lakh till December, 2023.

Projections for the Period January to March, 2024: EEI Jorhat proposes to conduct 11 training programmes fro training 220 participants from January-March, 2024 with a total expenditure of Rs. 334.00 lakh upto March, 2024

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-21

Sub-MISSION ON SEED AND PLANTING MATERIAL (SMSP)

21.1 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.

21.2 Major Schemes -Objectives

21.2.1. 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 SMSP has been merged with National Food Security & Nutrition Mission (NFSNM) w.e.f. 01.04.2023. The existing seed components under NFSNM are as under:-

S. 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

(i) Production of Breeder, Foundation and Certified/Quality Seeds: Seeds are the basic and critical input for agricultural production. The Indian Seeds program recognizes three

generations of seeds, namely breeder, foundation and certified seeds. The details of the 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
2021-22	9353.65	213969	4988286
2022-23	8919.69	235894	5142583
2023-24	7628.04 (Target)	182931.72 (Tentative)	5086018 (Tentative)

(ii) Strengthening of Grow Out Test (GOT) facility: To promote genetic purity through conventional methods, financial assistance is provided/available to the Departments of Agriculture of Governments/UTs, State Seeds Corporations, National Seeds Corporations, State Seed Certification Agencies, ICAR Institutes/ State Agricultural Universities and National level agencies etc. This component covers two activities i.e. Strengthening of Grow-out Test Farm and Green House facility/ PolyHouse facilities.

(iii) Support for Seed Certification Agencies: In order to strengthen Seed certification system/facilities to ensure quality of seeds, the financial assistance to the State Seed Certification Agencies is provided/available for the expenditure on staff cost, Travelling allowance to the Seed Certification Officers/officials for field inspection, certification and also for office automation etc. for facilitating Seed Certification System.

(iv) 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.0.15lakh)
- 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

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	71374	179.73
2023-24* (as on 15.11.2023)	15713	4.97

*The scheme is under progress in CFY. The actual figures come out at the end of every FY.

(v) Certified Seed Production of oilseeds, pulses, fodder and green manure crops through Seed Village: This component was initiated in the year 2014-15 to encourage the farmers to take up certified seed production of Pulses, Oilseeds, Fodder, and Green Manure crops to make available required certified seeds at the village itself. Under this component, financial assistance @ 75% cost of foundation / certified seed, cost is provided to the farmers for the production of certified seeds in these crops.

(vi) Creation/Strengthening of Seed Infrastructure Facilities (in the Public Sector): To establish/strengthen infrastructure facilities for the production, storage, processing, and distribution of seeds, 100% assistance is provided to state government and public sector undertaking firms for creating seed processing, packing, and storage facilities.

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.

(vii) Transport subsidy on the movement of seeds to Northeastern states including Sikkim, J&K, H.P., Uttarakhand, and hill areas of West Bengal: To make timely availability of certified/quality seeds at an affordable price to the farmers of hilly/remote areas of North-Eastern States, this scheme is in operation. As per this scheme:

1. A 100% difference between road and rail transportation charges is being reimbursed to implementing states/agencies for the movement of seeds produced from outside the State to the identified State Capital/Distt. Headquarter, and;
2. The actual cost is restricted to a maximum limit of Rs.120qtls. whichever is less for movement of seeds transported within the State from the State Capital/district headquarters to sale outlets/sale counters is being reimbursed.

(viii) 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	3.66	2.92	940.51
6.	2023-24	9.24*	1.48	799.42

Note:- Due to expected drought like situation in Kharif, 2023 season the physical target has been increased from 1% to 4 %

IX. Boosting seed production in private sector: Under this component 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 are allowed as administrative charges to the Nodal agency. So far 667 such projects have been sanctioned for all small entrepreneurs in 18 states with 162.50 lakhs quintals seed processing capacities and 63.36 lakhs quintals of storage capacities (as on 31.12.2023).

21.2.2. Programme being implemented in the North-Eastern States:- Details of the programmes being implemented in the NE region is at [Annexure-21.1](#).

21.2.3. Production of Breeder, Foundation and Certified/Quality Seeds: Seeds are the basic and critical input for agricultural production. The Indian Seeds program recognizes three generations of seeds, namely breeder, foundation and certified seeds. The details of the production of breeder, foundation and certified seeds from 2011-12 to 2023-24 are shown in the following table:-

YEAR	Production/Availability of Seed (Metric Tonnes)		
	Breeder Seed Production	Foundation Seed	Certified Quality Seed
2011-12	12358	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
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2020-21	9115.62	241207.00	4836632
2021-22	9353.65	213969	4988286
2022-23	8919.69	235894	5142583
2023-24	7628.04 (Target)	182931.72 (Tentative)	5086018 (Tentative)

21.2.4 Notification of New Crop Varieties: The 374 no. of new varieties of Agricultural Crops were released and notified for cultivation in different agro-climatic zones of the Country during the year 2022-23.

21.2.5 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 2022-23, 178 cases of export and 238 cases of import have been recommended to make available the best seeds and planting material to farmers.

21.2.6. 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.853/- for a packet of 450 grams the year 2023.

21.2.7 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 126.69 lakh hectare in 2022-23 (95% of total cotton area) and production of cotton

has increased from 86.21 lakh bales in 2002-03 to 343.47 lakh bales in 2022-23.

21.2.8.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 Banks in India. The National Designated Agency (NDA) would be intrusted 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 Departments of Agriculture are declared as Implementing Agencies for establishment and maintenance of the SAARC Regional Seed Banks 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.

21.3 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.

21.4 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 263 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.

Seed Traceability

- The DA&FW, Ministry of Agriculture & Farmer's Welfare, Govt. of India is working on Centralized Online System for Seed Traceability Project for effective monitoring, efficiency and transparency in seed traceability.
- Hon'ble Agriculture Minister, Govt. of India has already launched 1st phase of **Seed Authentication, Traceability & Holistic Inventory (SATHI) portal** - Seed Traceability for effective monitoring, efficiency and transparency covering Seed chain from Nucleus-Breeder-Foundation-Certified Seed on 19th April, 2023.
- The 13 States (Assam, Chhattisgarh, Jammu, Kashmir, Odisha, Punjab, Karnataka, Maharashtra, Rajasthan, Uttarakhand, West Bengal, Himachal Pradesh, Jharkhand and (2 States of M.P. and U.P. through API) have already been On boarded on SATHI portal so far. The On boarding is in process in the States of Haryana, Puducherry, Telangana, Andhra Pradesh, and Tamilnadu etc.
- The Phase-II of SATHI portal-Seed Supply Chain Management (Inventory) is completed. The trial run has successfully conducted in some States (Uttarakhand and Maharashtra etc).

21.5 Gender perspective in agriculture: Seeds Division, DA&FW is implementing Sub-Mission on Seeds & Planting Materials (SMS) 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.

Under the Sub-Mission on Seeds and Planting Material (SMS), the Seed Division is implementing the Seed Village Programme to upgrade the quality of farmer's saved seeds. Under this programme, financial assistance for distribution of foundation/certified seeds at 50% subsidy for cereal crops and 60% for pulses, oilseeds, fodder and green manure crops for production of quality seeds is available/ provided for farmers including women farmers. The objective of this scheme is to

make available improved /high yielding varieties seeds to the farmers in time to achieve self-sufficiency in respect of seeds at village level itself.

The scheme is demand driven and implemented by the concerned State for welfare of all farmers including that of women farmers. There is no separate budget allocated/ earmarked and released exclusively for woman farmers. However, implementing States/ agencies are requested to cover adequate participation of women farmers' in the scheme.

The details of women farmers benefitted under the components Seed Village Programme (SVP) and Certified Seed Production through the Seed Village Programme (CSP) of SMS during the years 2020-21 to 2023-24 is as under:

Year	BE (Gender Budget)	Expenditure on women beneficiaries	Women farmers benefitted under the SMS scheme (in lakh)
2020-21	There is no separate allocation of budget exclusively for women farmers under SMS.	There is no separate expenditure reported exclusively for women farmers under SMS.	6.114
2021-22			6.938
2022-23			6.251
2023-24			0.973 (as on 31.12.2023)

21.6 Organisations under the Seed Division

(I) Protection of Plant Varieties and Farmers' Rights Authority (PPV&FRA):-

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 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 breeders 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 within 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 National Gazetteer 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 are around 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. This journal is equal to an **Official Gazette under the PPV&FR Regulations, 2006**.

6. Varieties Registrable in India

- **New Variety**
- **Extant Variety**
- Notified under Seeds Act, 1966
- Farmer's Variety
- Variety of Common Knowledge
- **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 initial period of protection
Extant Notified varieties	15 from date of notification of variety under the Seeds Act, 1966 by the Central Govt.		

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

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 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 may be
- 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 offarmers
- Expenditure for supporting the conservation and use of *in situ* and *ex situ* 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 PPVFRA (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 breed new variety like any other plant breeder
- Right to register farmers 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
- Right to seek compensation in the event a registered variety fails to return expected performance after following the prescribed package of practices
- **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 01.04.2023 to 20.11.2023			
	Public	Private	Farmers
New	19	94	-
Extant Notified	5	1	-
Extant VCK	2	27	-
Extant Farmer	-	-	26
EDV	-	4	-
Total: 178			
Certificate Issued			
New		41	
Extant Notified		82	
Extant VCK		40	
Extant Farmer		1063	
EDV		-	
Total		1226	

A. Official Visits

The details of Officers of PPVFR Authority, Nodal Ministry and DUS Test Centre Officials who visited Germany are as follows:-

SL	Name of the Officer/Group	Visiting period	Purpose
1.	1. Dr. D.K. Agarwal, Registrar-General, PPVFR Authority 2. Dr. T.H. Singh, Principal Scientist, IIMR, Bangalore 3. Dr. Suresh Reddy Yerasu, Scientist, ICAR-IUVR, Varanasi	25 th to 30 th September, 2023	Study on DUS of Tomato, Nakutinbouw, The Netherlands under Indo-German Cooperation on Plant Varieties Protection
2.	Dr. D.K. Agarwal, Registrar-General, PPVFR Authority	20 th November to 24 th November, 2023	10 th Session of GB of ITPGRFA, Rome.

B. Workshop:

An online Exchange (Hybrid Seminar) was held from 25-26th May, 2023 in collaboration with Federal Plant Variety Office (BSA) of Germany under Indo-German Co-operation on Seed Sector Development. A workshop was held on 20.11.2022 under the Indo-German Cooperation. Both the sides made elaborate presentations.

C. Joining of Chairperson:

Dr. T. Mohapatra, joined as Chairperson in PPVFR Authority with effect from 21st April, 2023.

D. Meeting of PPVFR Authority:-

- The PPVFR Authority in its 36th Meeting held on 28th August, 2023 approved the DUS test

guidelines of Kokum, Lemon and Pummelo and also fixed the time limit for registration of extant varieties of the said crop species by 10 years. Further, the DUS test fees of the said crop species was also approved. The PPVFR Authority extended the time limit for registration of extant varieties of all crop species by 10 years and the Authority also withdrew the compound system of registration and consequential charging of Annual Fee was also revised. The Authority also modified the system of charging of Annual Fee in case of Extant Notified Varieties from the date of notification to date of registration of Extant Notified Varieties. The PPVFR Authority also approved the proposal for notification of 9

SAUs as centres under Section 41 of PPPVFR Act, 2001. The Authority also revised the DUS test guidelines of Wheat. The Authority also reconstituted the EDV committee and constituted other committees for revising existing DUS test guidelines and developing guidelines / protocols for special quality traits.

- The PPVFR Authority in its 37th Meeting held on 01.12.2023 approved the Annual Report and Annual Accounts for the year 2022-23. In the said meeting the PPVFR Authority also approved the DUS test guidelines, fix the DUS test fees and time limit for registration of extant varieties in respect of

Lilium, Jasmine, Aswagandha, Olive and Anthurium crop species. The PPVFR Authority also constituted a committee to reassess the requirement of Manpower of PPVFR Authority.

E. Gazette Notification Published:-

Vide Gazette Notification S.O. No.2221(E) dated 18th May, 2023, seven crop species namely, Teak, Kalazeera, Saffron, Dolichos Beans, Ash Gourd, Snake Gourd and Ivy Gourd were notified for registration.

F. DUS test guidelines Published:-

The following DUS test guidelines were published in the Plant Variety Journal of India namely:-

Sl.No.	Name of Crop Species	DUS Test guidelines Published in PVJ
1	Kokum (<i>Garcinia indica</i> Choisy),	Vol.-17, No.-8 (August 2023)
2	Lemon (<i>Citrus limon</i> (L.) Burm. f.)	(Date of Publication: 1 st September, 2023)
3.	Pummelo (<i>Citrus maxima</i> (J. Burm.) Merr.)	

G. Global Symposium on Farmers Rights

The Global Symposium on Farmers Rights was proposed by the Govt. of India in the 9th GB meeting

of ITPGRFA held in New Delhi during September 17 to 24, 2022, to share experiences and to discuss possible future work on Farmers' Rights.



Accordingly, the First Global Symposium on Farmers Rights was organised by the Secretariat of the International Treaty on Plant Genetic Resources for Food and Agriculture (International Treaty) of the Food and Agriculture Organization (FAO), Rome. The Global Symposium was hosted by



Ministry of Agriculture and Farmers Welfare, Government of India, in collaboration with PPVFR Authority, Indian Council of Agricultural Research (ICAR), ICAR-Indian Agricultural Research Institute (IARI), and ICAR-National Bureau of Plant Genetic Resources (NBPGR).



Hon'ble President of India, Her Excellency Smt. Droupadi Murmu, inaugurated the Global Symposium on September 12, 2023. On this august occasion, she conferred Plant Genome Saviour Community Awards/ Plant Genome Saviour Farmer Rewards / Plant Genome Farmer Recognition 2020-21 & 2021-22 to farmer(s)/ farming communities. The Plant Genome Saviour Community Awards comprise of five awards each consisting of Rupees Ten Lakhs amount to five farming communities, the Plant Genome Saviour Farmer Reward comprise of ten rewards each consisting of Rupees One and Half Lakh amount to ten individual farmers and Plant Genome Saviour Farmer Recognition each consisting of Rupees One Lakh amount to twenty farmers.

Also, the newly constructed 'Plant Authority Bhawan', the office of the PPVFR Authority, and an online plant variety 'Registration Portal' were inaugurated by the Hon'ble President, in the august presence of Sh. Narendra Singh Tomar, Union Minister of Agriculture and Farmers Welfare and Sushri Shobha Karandlaje and Sh. Kailash Choudhary, Ministers of State for Agriculture and Farmers Welfare.

This first of its kind symposium facilitated implementation of Farmers' Rights by Contracting

Parties through discussions on innovative approaches, effective policies, best practices, knowledge, and experience sharing in implementing Farmers' Rights. Also, the interconnectedness of Farmers' Rights with actions to support the effective implementation of the relevant targets of the 2030 Agenda for Sustainable Development Goals (SDGs) and the Post-2020 Global Biodiversity Framework (GBF) were given focus. The possible impact of Digital Sequence Information/Genetic Sequence Data on Farmers' Rights was examined. The Global Symposium also provided a platform to promote recognition of farmers as conservers of agrobiodiversity and guardians of global food security.

The Global Symposium drew more than 500 delegates, comprising representatives from 86 countries including the National Focal Points of the International Treaty, farmer bodies from around the world, policy makers, scientists, research scholars, industry representatives, government officers, intergovernmental and non-governmental organizations, legal experts and civil society. Various issues pertaining to Farmers' Rights as set out in the Article 9 of the International Treaty were deliberated in five different technical sessions, two panel discussions and three special sessions. A special session on Farmers Forum included

presentations by farmers. An important outcome of the Global Symposium was 'Delhi Framework of

'Farmers' Rights', with possible pathways for implementation of Farmers' Rights.

II. Awareness program (01.04.2023 to 31.12.2023):

The details of Awareness program conducted by PPVFR Authority are as follows:-

Sr. No.	Title of the Programme	Venue	Date
1.	Pashu Mahotsav aur Pradarshani evam Prashikshan	Muzzafarnagar, Uttar Pradesh	06-07 Apr, 2023
2.	Parvtiya Krishak Maha Sangam-2023	CSKIPKV, Palampur	17-19 Apr, 2023
3.	Regional Workshop on PPVFR Act, 2001	NRRI, Cuttack	11-12 May, 2023
4.	Training-cum-Awareness Programme	RVSKV, Gwalior	7 Jun, 2023
5.	Regional Agriculture Fair	CSKIPKV, Palampur	12-14 Jun, 2023
6.	Training-cum-Awareness Programme	KVK, East Kameng	24 Jun, 2023
7.	Overview of PPVFR Act, 2001 and International Law on Plant Varieties Protection	Maharashtra National Law University	24 Jun, 2023
8.	Training-cum-Awareness Programme	ICAR- CIAH, Bikaner	26 Jun, 2023
9.	Training-cum-Awareness Programme	KVK, Kangra	12-15 Jul, 2023
10.	Overview of PPVFR Act, 2001 and International Law on Plant Varieties Protection	Gujarat State Judicial Academy	13 Jul, 2023
11.	Training-cum-Awareness Programme	CSIR- IIM, Jammu	18 Jul, 2023
12.	Training-cum-Awareness Programme	CSIR- CFTRI, Mysore	18 Jul, 2023
13.	Training-cum-Awareness Programme	CSIR- NBRI, Lucknow	19 Jul, 2023
14.	Training-cum-Awareness Programme	CSIR- IIM, Srinagar	20 Jul, 2023
15.	Training-cum-Awareness Programme	CSIR- IIM, Leh	24 Jul, 2023
16.	Training-cum-Awareness Programme	DFR, Pune	24 Jul, 2023
17.	Training-cum-Awareness Programme	GBPUAT, Pantnagar	25 Jul, 2023
18.	Training-cum-Awareness Programme	BAU, Ranchi	31 Jul, 2023
19.	Training-cum-Awareness Programme	SBI, Coimbatore	31 Jul, 2023
20.	Training-cum-Awareness Programme	Alwar, Rajasthan	31 Jul, 2023

21.	International Conference on Mighty Millet for Food, Nutrition and Health Security	MSSRF, Chennai	06-08 Aug, 2023
22.	Training-cum-Awareness Programme	KVK, Namakkal (CTCRI)	26 Oct, 2023
23.	XVI Agriculture Science Congress (by NAAS)	CMFRI, Kochi, Kerala	10-13 Oct, 2023
24.	Training-cum-Awareness Programme	KVK, Kottayam	14 Oct, 2023
25.	International Seminar on Exotic and Underutilized Horticultural Crops	IHHR, Bengaluru	17-19 Oct, 2023
26.	Training-cum-Awareness Programme	VPKAS, Almora	28 Sep, 2023
27.	International Conference on Biochemical and Biotechnological Approaches for Crop Improvement	NASC Complex, New Delhi	30-Oct-23 to 01-Nov, 2023
28.	International Conference on Plant Health Management: Innovation and Sustainability (ICPHM-2023)	PJTSAU, Auditorium, Rajendranagar, Hyderabad	15-18-Nov, 2023
29.	International Conference on Next-Gen Preparedness for Food Security and Environmental Sustainability	AAU, Jorhat	22-24 Nov, 2023
30.	XIV Agrovision- A Mega Exhibition	Nagpur, Maharashtra	24-27 Nov, 2023
31.	National Seminar on Plant Biodiversity for Food, Nutrition and Health Security in North-West Himalayas	Shoolani University, Solan, HP	27-28 Nov, 2023
32.	VIROCOM 2023 Workshop by NRC for Banana	Hotel Courtyard by Marriot, Tiruchirapalli	01-03 Dec, 2023
33.	Vision Haryana- A Mega Exhibition	Kurukchhetra, Haryana	8-10-Dec, 2023
34.	Training-cum-Awareness Programme	CAII, Dimapur, Imphal	12-14-Dec, 2023

(ii) 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 2023-24 (till 31st December, 2023), NSRTC has received **18984** Nos. of seed samples under 5 % re-testing programme, **123** Nos. of court referred seed samples and **06** Nos. of seed samples under PT programme from ISTA, Switzerland.

Under HRD activities NSRTC has organized **06** National Training Programme and **01** National Workshop on various seed related issues for the

benefit of various stakeholders of Govt., Public and Private Sector etc. during 2023-24 and **06** Nos. of visits of group of Farmers and Students have been conducted at NSRTC (till December, 2023).

During January to March 2024, expected number of samples under 5% re-testing programme and court referred seed sample testing are around **4000** Nos. and **12** Nos. respectively. NSRTC will conduct **04** National Trainings and **01** National Workshop on various seed related issues under HRD activities.

(iii) International Rice Research Institute (IRRI), South Asia Regional Center (ISARC): IRRI South Asia Regional Centre (ISARC), Varanasi, India:

Working along the lines of IRRI's vision and mission, directions of the Government of India, our members, and the needs of the stakeholders, IRRI South Asia Regional Centre (ISARC) is dedicated to abolishing poverty and hunger among people, create sustainable rice-based agri-food systems that are in tandem with the changing climate, and ensuring nutrition and food security for a burgeoning population without putting undue pressure on an already degrading environment. This is being done by ISARC through its three units: Centre of Excellence in Rice Value Addition (CERVA), Centre of Excellence in Sustainable Agriculture (CESA) and Centre of Education, Innovation and Research for Development (CEIRD) by establishing 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, and through capacity development programs. The major achievements of ISARC in the year 2023 are as follows:

1. Centre of Excellence in Rice Value Addition (CERVA)

With the focus on exploring the inherent diversity of landraces to bring out the premium quality rice and develop rice-based value-added products, key activities under CERVA are as follows:

1.1 Identification of promising low GI Kalanamak accessions:

- o Three traditional Kalanamak accessions

were shortlisted with superior aroma and cooking quality and optimal yield potential. Also, out of them, one low Glycemic Index (GI) Kalanamak accession has been identified utilizing the state-of-the-art phenotyping procedures.

- o Superior selected accessions have been included in the field evaluation trials being conducted in the Krishi Vigyan Kendras (KVKs) and farmer fields of targeted geographical indication areas, viz. Gorakhpur and Siddharthnagar and systematic grain quality evaluation for positioning them. Positioning the superior Kalanamak in the seed system will be undertaken.

1.2 Development of ultra-low GI lines: With the strong collaboration of ISARC with IRRI headquarters, ultra-low glycaemic index (GI) rice varieties have been developed. Being with GI value of <45 and high yielding, a first set was formally presented to Philippine President Ferdinand Marcos, Jr. at the opening ceremony of the 6th International Rice Congress 2023. In this line, ultra-low GI lines are in process of getting imported and the IRRI administration is planning to present high-value ultra-low GI and low GI lines to the Government of India.

1.3 Exploring enriched rice quality lines from Northeast India: A total of around 100 highly diverse germplasms from the state of Assam and other neighboring regions of North-East India (through the APART-Assam project) were analysed. Preliminary assessments of grain quality revealed the extensive diversity among these indigenous varieties, along with ongoing evaluations of their nutritional attributes. A few high-quality accessions were shortlisted with high aroma, higher antioxidants, and with waxy nature. Through this initiative CERVA aims at identifying high-quality rice varieties tailored for distinct market segments. Comprehensive grain quality and nutritional profiling of these lines will be completed in the coming days.

1.4 ISO accreditation: CERVA has been able to successfully secure ISO 17025:2017 accreditation of its laboratory after several rounds of audit by the

National Accreditation Board for Testing and Calibration Laboratories (NABL). At present there are a total of 225 scopes covering quality and safety evaluation of four different agricultural commodities. As per the regulatory requirement, CERVA laboratory needs to undergo one more audit in the first half of 2024. Updation of the documents will be done before that and possibility to increase the scopes will also be evaluated.

1.5 Identification of bioactive- and fatty-acid enriched rice lines: CERVA has identified a few important landraces with significant nutritional quality. Rice lines with higher bioactive contents and higher concentration of essential fatty acids, such as alpha-linolenic acid or omega-3 fatty acid, have been identified through extensive analysis. Multiple field experiments are going on to confirm the superior nutritional quality of these lines. Analysis of the samples will be conducted from early 2024 onwards to confirm the results.

1.6 Support to National Agriculture Research and Extension System (NARES) partners: ISARC offered the capacity development training program in Grain Quality Analysis organized at ISARC with the help of Centre of Education, Innovation and Research for Development (CEIRD).

1.7 Providing services to farmers producer organizations (FPOs) and government departments: Apart from the research work, CERVA has extended expertise and services on grain quality to external partners like the Agricultural and Processed Food Products Export Development Authority (APEDA), District Agriculture Offices (DAO) in Balrampur, Chandauli, local farmers, Farmers Producer Organizations (FPOs) and private enterprises. To bolster international collaboration and the Seed Without Border Initiative, CERVA has profiled several top rice varieties of Bangladesh, as per the Breeder Seed Indent of Bangladesh. Under South-South collaboration, CERVA has acquired germplasm from Burundi and Mozambique for grain quality analysis.

1.8 Development of novel range of rice-based products: CERVA has successfully created a range of commercially appealing, nutritionally enriched, and health-conscious food products.

These offerings utilize a variety of traditional aromatic, pigmented, and non-pigmented rice varieties. The product line includes breakfast cereals, convenient meal options, as well as gluten-free rice and millet bakery items.

- o **Whole grain gluten free rice flakes muesli -** Whole grain rice flakes muesli is a nutritious and innovative option catering to the growing demand for gluten-free breakfast and snack choices. It features a unique blend of aromatic whole grain rice flakes, black popped rice, chia seeds, and nuts, providing a distinctive texture and a range of health benefits. By using whole grain rice flakes as its foundation, this muesli sets itself apart from typical options like wheat or corn flakes, offering a gluten-free alternative for those with dietary restrictions. It is a rich source of complex carbohydrates, ensuring sustained energy throughout the day. With chia seeds supplying fibre and omega-3 fatty acids, and nuts contributing healthy fats and protein, this muesli is both flavorful and nutritious. Emphasizing its nutritional advantages, gluten-free status, and versatility could form the cornerstone of a robust marketing campaign.
- o **Instant rice semolina upma mix -** The Instant Rice Semolina Upma Mix is a pre-packaged blend tailored for a quick preparation of the beloved South Indian breakfast dish, upma. It combines rice semolina (rava) with a precise mix of spices and seasonings, eliminating the need for individual ingredient measurements. This is a game-changer for busy mornings or when time is tight, offering a hassle-free route to a satisfying meal. The pre-roasted semolina and seasoned blend drastically cuts down on cooking time—just add hot water and let it sit. While designed for swift preparation, it also serves as a versatile base for customization with your choice of vegetables or nuts. Ideal for travellers or those with limited kitchen access, this mix provides a convenient and nutritious option on-the-go. With a longer shelf life than perishable ingredients, it's a pantry essential for whenever that upma craving strikes. By streamlining the process, even novice cooks can achieve upma perfection while savoring the authentic flavors of the homemade version.

- Rice-millet cookies** - Millets stand out as nutritional powerhouses compared to rice, offering higher levels of protein, dietary fiber, energy, and essential minerals. Despite their small size, they pack a punch with an abundance of vitamins and minerals. In particular, Small Millets boast impressive quantities of magnesium, calcium, manganese, phosphorus, iron, and valuable antioxidants. Recognized for their natural antioxidant properties, these millets are gaining recognition as a comprehensive nutrient source. Introducing these lesser-known millets into our food resources is crucial for achieving nutritional security, especially in the face of emerging climate challenges and health risks. CERVA is at the forefront of utilizing millets like finger millet, pearl millet, little millet, and foxtail millet in the development of both rice and millet-based cookies. This innovative approach not only expands dietary options but also harnesses the full potential of these nutrient-rich grains.

2. Centre of Excellence in Sustainable Agriculture (CESA)

ISARC nurtures core research conducted by IRRI and its partners in South Asia through its vertical CESA. It functions through six integrated sections, namely: Innovative Breeding, Robust Seed System, Geospatial Intelligence, Adaptive Agronomy, Pest Ecology, Mechanization and Postharvest, Natural Resource Management, Value Chain and Entrepreneurship Development. CESA's key activities include:

2.1 Innovative Breeding:

2.1.1 Enhancing NARES's breeding capability for the release of new varieties:

- A total of 25,414 seed packets were shared across 42 NARES partners during the Kharif 2023. This includes 6,400 seed packets of early-duration lines of three distinct pipelines (DELS-I, DELS-R, TEMS-I), 5,328 seed packets of medium duration line of three pipelines (TMeLS-I, TMeLS-R-d, and TMeLS-R-f) and 4,476 seed packets of late-duration varieties. This distribution effort encompassed a total of 1,953 Stage-1 lines

and 452 Stage-2 lines, contributing to a comprehensive initiative in support of NARES breeding efforts in developing new generation rice varieties.

- During Kharif 2023, a total of 40 promising lines were nominated (1st year of testing) to AICRP for testing and release. Also 14 and 7 promising lines are in the 2nd and 3rd year of testing, respectively.
- In the year 2023, three new rice varieties were released. These include "**Malviya Manila Sinchit Dhan 1**" developed in collaboration with BHU, and "**CR Dhan 211**" and "**CR Dhan 212**" developed in collaboration with ICAR-NRRI.

2.1.2 Trait mapping and gene discovery (evaluation of 3K/AM panel):

- Genome-wide association analysis of 3K subset identified 32 MTAs for percent survival under submergence condition from three location phenotyping data (NRRI, AAU and BAU). Haplo-pheno analysis identified superior haplotype for Os03g49990 and Os11g25990 genes which contributes 65% to 78% of phenotypic variance/trait value.
- Superior haplotype (H68) of Os06g18000 was identified for reproductive stage drought tolerance which contributed up to 29.45% of phenotypic variance.
- The superior haplotype (H18) of a receptor-like kinase gene, i.e., Os11g36160, was identified for brown planthopper (BPH), which contributes to strong resistance level (score of 1-3).
- Haplo-pheno analysis of candidate genes identified superior haplotypes, viz., Os12g29750 (H75- 6%) for grain yield, Os02g40130 (H77- 9.9%) for tiller number, and, Os07g29780 (H62- 18%) for panicle length.
- Through GWAS analysis, a total of 20 and 10 MTAs are identified for days to first emergence and early vigor traits under dry direct-seeded rice condition.

- Deep emergence is an important trait of machine sown dry DSR for uniform crop establishment. Seventeen novel quantitative trait loci (QTLs) related to deep emergence traits and genes with superior haplotypes for anaerobic germination in rice were identified. We are actively evaluating nine different mapping populations for targeted traits such as yield, grain quality, deep emergence, and drought resistance, with ongoing genotyping efforts.

- We conducted haplotype diversity analysis for a substantial set of 32,000 rice genes, which carried high or moderate single nucleotide polymorphism (SNP) effects, in the 3k panel and an extended panel of 3,474 rice genotypes (3K-RG + association mapping panel). This analysis allowed us to identify unique haplotypes associated with key traits, including yield, grain quality, DSR traits, and genes related to both biotic and abiotic stresses.

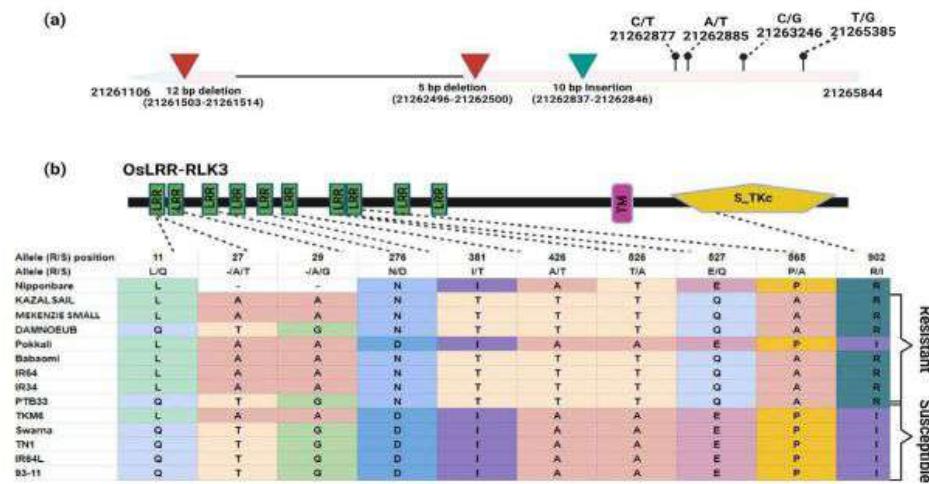


Figure: Superior haplotype for BPH resistance genes indicating the amino acid changes in resistant and susceptible rice genotypes

2.1.3 Development of multiple stresses resistance/tolerance traits for transplanted puddled rice (TPR) and DSR condition:

- More than 400 F₆ family developed for TPR conditions with multiple stress tolerance were evaluated in farmer fields for selection for yield and plant type, and for drought tolerance at the ISARC farm. These lines were developed in the background of DRR Dhan 42, DRR Dhan 44, DRR Dhan 50 Sarjoo 52, RP bio-226, etc. Also, a total of 261 new lines in the F3 family (46 in CR Dhan 801 and 215 in RP Bio 226) are being grown in Kharif 2023 for selection under TPR condition.
- Eighteen F₅/F₆ promising lines with multiple genes/QTLs for DSR adaptive traits and stress tolerance traits were evaluated for dry DSR and grain quality. Also, a total of 165 new sets of F3 breeding lines (154 in Sarjoo-52, 5 in DRR Dhan 48 and 6 in Swarna-Sub 1) are being grown in Kharif 2023 for selection under dry DSR condition.

- We have created user-friendly pipelines for data analysis and prediction, facilitating further advancements in crop breeding and resilience.

2.1.4 Breeding to develop biofortified rice and landrace improvement:

- NILs carrying superior haplotypes of *OsNAS3* gene were developed and five promising lines yielding equal to recipient parents (MTU1010, DRR Dhan 44) with high grain zinc were nominated to AICRP for testing and release.
- A total of 16 dwarf Tulsi manjiri lines (BC₁F₂, F₄); 74 dwarf Jeera 32 lines (BC₁F₃, F₄) and 16 dwarf Kalanamak lines (F₃) were grown for selection and advancement.
- A total of 15 dwarf mutant lines (M3/4) of Black rice and 2 dwarf mutant lines (M3/4) of Kalanamak rice were grown in Kharif 2023 for

evaluation.

2.1.5 Strengthening NARES through innovative breeding strategies such as speed breeding, haplotype-based breeding, AI based trait mapping, etc.:

- We have successfully optimized a speed breeding protocol to grow four to five generations of rice varieties (indica and japonica) in a year. The protocol worked for all three durations of rice (early, medium, and late). To make it more robust, we further tested an optimized protocol on 412 genotypes covering all 12 subgroups of *Oryza sativa*. In field conditions, the flowering time of these genotypes ranged from 58 to 127 days. However, under speed breeding, 85% of genotypes flowered within a shorter period of 80 days. Ten percent of varieties flowered between 80 to 100 days.
- We have developed NILs for yield, drought, bacterial leaf blight, blast, and zinc in various genetic backgrounds like Naveen, Ranjeet, and DRR Dhan 44 and a few of the NILs outperformed recipient parents, signifying the success of this innovative approach.
- Indian genome makeup project: A total of 370 Indian germplasm (high quality landraces, high yielding varieties, breeding lines) have undergone whole-genome re-sequencing. Subsequent data analysis has revealed the presence of numerous distinctive haplotypes exclusively found in Indian genotypes. Additionally, investigations into domestication and Genome-Wide Association Studies (GWAS) have uncovered evidence of breeding bottlenecks and regions with heightened recombination rates within the association mapping panel.

2.1.6 Supporting NARES partners on speed breeding in paddy:

- We are actively supporting our NARES partners in their endeavours to implement speed breeding techniques in paddy cultivation. The support is being provided in two ways one as providing technical support in establishing their facility and second helping in advancing partners materials based on space availability. We are also going to start

optimizing protocols for wild rice and their utilization in developing mapping and breeding populations

2.1.7 Establishment of disease phenotyping and genome editing facility:

- We are currently in the process of establishing a disease phenotyping and genome editing facility. The initial phase of collecting quotations has been successfully completed, we have now progressed to the procurement of necessary instruments and infrastructure development.

2.1.8 Training and capacity building:

- Conducted a One-week training program on "Innovative Breeding for Crop Improvement" from Nov 22-28, 2023 at ISARC.
- 12 breeding staff attended the 6th International Rice Congress in Manila, Philippines and 6 staff attended Plant and Genomic Conference of 2023 at Perth, Australia.

2.2 Robust Seed System

2.2.1 Crop cafeterias for testing and screening of newly released varieties:

- In 2023, new crop varieties were tested and promoted through crop cafeterias in India and Bangladesh. 29 crop cafeterias were conducted in 2023, focusing on initial testing and awareness raising for different stakeholders such as KVKS, State Agricultural Universities (SAUs), farmers, and private agencies.
- In Bangladesh, six crop cafeterias were conducted during both Rabi and Kharif seasons across three distinct ecologies. These cafeterias served as platforms for initial testing and awareness among stakeholders.
- With technical collaboration of Nepal Agricultural Research Council (NARC) two such cafeterias were established, one each in the central and western region of Nepal.

2.2.2 On-Farm Trials (OFTs):

- During the Kharif season 2023, extensive OFTs were conducted in India and Bangladesh for

evaluating new rice genotypes in farmers' fields across multiple ecosystems. In India, 330 OFTs were carried out across seven states, focusing on five market segments: DMeLS-I, DELS-I, TEMS-I, TMELS-I, and TLaSF-I/R. Simultaneously, in Bangladesh Seed System and Product Management (SSPM) unit conducted 120 OFTs spanning eight ecosystems across eight divisions. Additionally, in the Boro (Dry) season, 150 OFTs were evaluated in five ecosystems across seven divisions. The number of new genotypes evaluated in India, Bangladesh and Nepal are 56, 44 and 7 respectively. IRRI established a total of 910 OFTs in these three countries including 209 targeted DSR OFTs.

2.2.3 Cluster demonstrations:

- During the Kharif 2023, India, Bangladesh, and Nepal teams collectively conducted several cluster demonstrations to generate awareness about, and community scaling of, best-evaluated varieties suited to different rice ecologies. In India, 44 cluster demonstrations for transplanted ecosystems covering 131 hectares and 19 demonstrations under the dry DSR system on 13.7 hectares were conducted. The varieties found scalable from OFTs from previous seasons, such as BINA Dhan 11, MTU 1156, DRR Dhan 44, Rajendra Saraswati, Swarna Samriddhi, CO 51, Uttar Sona, PR 126, PR 131, Sabour Harshit, Telangana Sona, and Sabour Heera were popularized through farmer field demonstrations.
- In Bangladesh, the cluster demonstrations were carried out in 24 hectares. 14 best-evaluated varieties for Aman (wet season) viz. BRRI Dhan 71, BRRI Dhan 75, BRRI Dhan 76, BRRI Dhan 87, BRRI Dhan 93, BRRI Dhan 94, BRRI Dhan 95, and BINA Dhan 17, as well as Boro (dry season) varieties like BRRI Dhan 84, BRRI Dhan 88, BRRI Dhan 89, BRRI Dhan 92, BRRI Dhan 96, and BRRI Dhan 100 were demonstrated across different ecosystems. 20 hectares were exclusively DSR cluster demonstration.
- In Nepal, cluster demonstrations in 42 hectares (5 ha DSR) were conducted in western and central zones covering six provinces. For this 6

recently released varieties viz., Hardinath 4, Hardinath 5, Hardinath 6, Gangasagar 1, Gangasagar 2 and Ghaya -3 were tested and demonstrated.

2.2.4 Minikit trials at farmers' fields:

- During the Kharif 2023, about 800 Minikit trials were established in India, Bangladesh and Nepal to enhance farm-level knowledge and demand creation of best-fit varieties. These trials were conducted with progressive farmers and dealers with the aim of catalysing adoption decisions at the farm level. These collaborative efforts highlight the shared commitment of these nations to advance agricultural practices and explore promising crop varieties for sustainable farming in the region.

2.2.5 Early Generation Seed (EGS) production and downstream:

- In India, Early Generation Seed (EGS) production was ensured for 29 recently released varieties belonging to different speciality groups like stress-tolerant rice varieties (STRVs), premium cooking quality, biofortified, low GI, aromatic and local indigenous landraces. A total of 3 tonnes of breeder and foundation seeds were infused for the purpose. Some of the important varieties currently under EGS program include PR 126, DRR Dhan 58, DRR Dhan 56, DRR Dhan 48, BRRI Dhan 99, BRRI Dhan 84, BRRI Dhan 100, BINA Dhan 17, Swarna Samriddhi, HUR 917, CG Devbhog, BINA Dhan 11, Rajendra Kasturi, Swarna Shreya, MTU 1156, Rajendra Saraswati, Bauna Kalanamak 102, Kalanamak KN3, Kalanamak Kiran, Kalanamak SL-03, Sabour Harshit.
- To enhance seed access to the best evaluated varieties, 200 kg breeder seed and 800 kg foundation seed were distributed to licensed women federations for multiplication, featuring eight promising high yielding varieties (HYVs) including BRRI dhan87, BRRI dhan93, BRRI dhan94, BRRI dhan52, BRRI dhan80, BRRI dhan90, BRRI dhan95, and BINA Dhan 17.
- Furthermore, in Bangladesh 3.02 tons of EGS (BS and FS) were shared with licensed women

federations in the Kharif and Rabi seasons. Collaborations with BRRI resulted in breeder seed production of BRRI dhan88 and BRRI dhan92 for the upcoming Boro season, while partnerships with BINA led to the production of breeder seed for BINA Dhan 17, BINA Dhan 20, BINA Dhan 22, and BINA Dhan 26, available for private companies next year. IRRI-trained women-led groups multiplied and diffused these varieties.

2.2.6 Partnership for product management:

- IRRI has significantly strengthened the collaboration with national partners for product evaluation and scaling. The stronger partnerships with ICAR-institutes, BRRI, BINA, NARC have been instrumental in product listing for testing and diffusion. The intensive engagement with state seed corporations in India and BADC in Bangladesh facilitated seed chain advancement of several target varieties.

2.2.7 Seed Scaling:

- **Climate-resilient and high yielding varieties-** Rigorous testing and quality seed production were conducted for STRVs like BINA Dhan 11 (Submergence), BINA Dhan 17 (Drought), Sabour Harshit (Drought), and Swarna Samriddhi Dhan (Multi-Stress). Awareness generation efforts were conducted for DRR Dhan 50 (Multi-Stress), IR64-Sub1 (Submergence), and Samba Mahsuri-Sub1 (Submergence). Varieties suitable for the DSR system have been widely demonstrated across rice ecosystems for awareness generation, testing and market positioning in Nepal and India. PR 126, BRRI Dhan 75 are among the potential DSR varieties.

- **Healthier rice-** Three biofortified rice varieties, namely BRRI Dhan 84 (zinc- and iron-rich with high antioxidants) and BRRI Dhan 100 (zinc-rich), are being scaled up in Uttar Pradesh (UP). BRRI Dhan 69 a low GI variety is now highly popular in western Odisha. Additionally, seed production and scaling of Kalanamak accessions, namely Bauna Kalanamak 102, Kalanamak KN3, Kalanamak Kiran, and Kalanamak SL03 are underway in

Gorakhpur, UP.

- **Collaboration for seed increase-** Stakeholder engagement was significantly enhanced through collaborations with four Krishi Vigyan Kendras (KVKs), agriculture departments, five private seed agencies, 25 Farmers collectives, and women's groups. Strategic partnerships were established with UP Beej Nigam, Odisha State Seed Corporations, and Assam Seed Corporations to ensure a steady introduction of new rice varieties, indicating a comprehensive and coordinated effort in advancing suitable varieties in the region.

2.2.8 Training and capacity development:

- SSPM units in India, Bangladesh, and Nepal collectively reached out and trained 1500 farmers (35% women) on quality seed production, seed entrepreneurship and varietal intelligence, DSR-fit genotypes for ecology suitability and market demanded varieties. A total of 39 such trainings were conducted in association with NARES partners.

2.2.9 Seeds Without Borders (SWB):

- Under Seeds Without Borders program two biofortified rice varieties from Bangladesh namely, BRRI Dhan 84 and BRRI Dhan 100, along with one low input responsive green super rice viz. BRRI Dhan 99 were released in India by IIRR Hyderabad and are currently under a multiplication program for seed increase.
- IRRI is facilitating two potential Indian varieties (Swarna Samriddhi and DRR Dhan 60) for release in Bangladesh under SWB.

2.2.10 Women-centred intervention approach:

- All interventions under SSPM have been gender-inclusive by ensuring appropriate representation and active participation of women. As a programmatic approach and mandate, 35% of all participants were women. The active engagement with women was in capacity building exercises for quality seed production, on-farm trials, cluster demonstrations, farmer to farm technology transfer in India and Bangladesh. The 300 tons

of seeds to be produced by the end of this season by women is a testament to the gender inclusive program approach. 88 individual women farmers from resource-poor areas of Palamu, Garhwa, Mahasamund Jangaon, Chandauli, Varanasi, Bargarh and Ganjam districts of Jharkhand, Chhattisgarh, Telangana, Uttar Pradesh, and Odisha respectively were engaged in direct technology transfer through OFTs. Additionally, 26 women farmers belonging to women SHGs from Jansa, UP working with Transforming Rural India Foundation (TRIF) were engaged in technology transfer programs like Minikit trials and on-farm workshops on the DSR Package of practices.

2.2.11 Achievements:

- In India and Bangladesh, IRRI has profiled 110 most demanded varieties. These profiles include all the trait information to aid stakeholders' decisions on adoption and replacement.
- Based on the on-field performance in different ecologies and market segments, 30 varieties have been scaled in India and Bangladesh through seed production by public, private, and farmers' organizations.
- Production of about 300 tons of seeds of IRRI-advanced varieties are expected by the end of this wet season. The seed chain infusion of these varieties through multiple channels will pave the way for larger diffusion of target varieties.

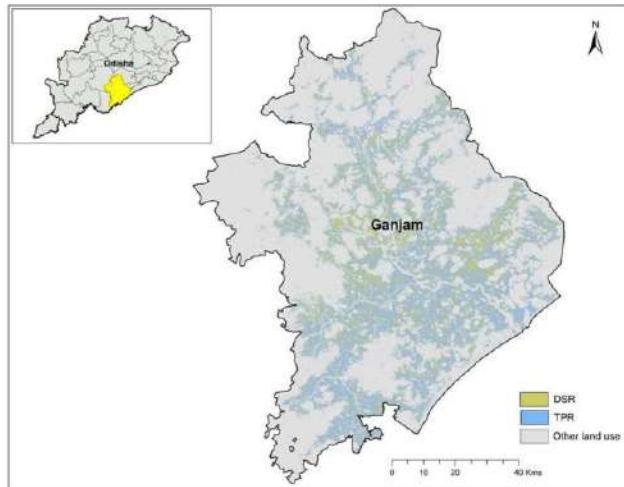
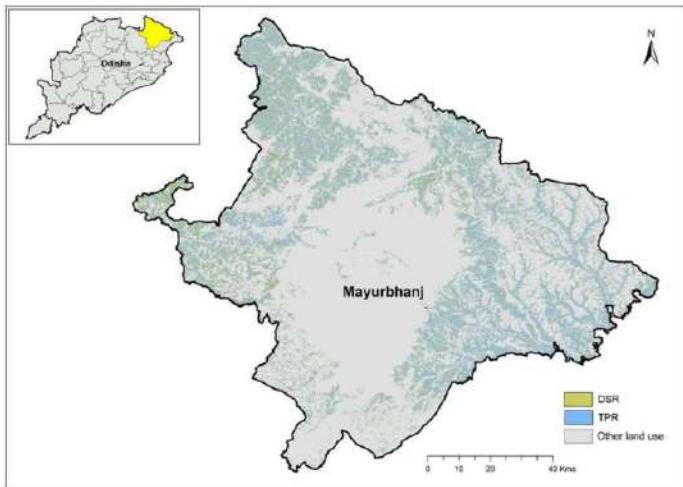
- Following the capacity building on production and EGS linkages, 25 farmers collectives (India and Bangladesh) have produced about 75 tons of seeds of best-evaluated varieties.
- Significant collaborations with state seed corporations (UP, Odisha and Assam), private agencies and farmers networks have been established for amplification of best-ranked varieties in target states.
- The five SWB varieties (3 in India, 2 in Bangladesh) are now being multiplied for large-scale adoption and production. Five tons of breeder seed are in the multiplication plan and will be shared with NARES partners and other multiplying agencies for seed amplification.

- Seed scaling for four Kalanamak varieties started with seed growers in Kushinagar and Siddharthnagar in UP. About three tons of seeds will be produced by grower-farmers (mostly women) to meet local seed needs.

2.3 Geospatial Intelligence

2.3.1 DSR mapping:

- Mapping of DSR and transplanted rice for five districts of Odisha was completed; identified the spatial pattern of DSR and transplanted areas of the year 2021 and verified it with existing government statistics.
- Mapping of DSR and transplanted rice for 2 districts of Haryana was completed; identified the spatial pattern of DSR and transplanted areas of Kharif 2022.



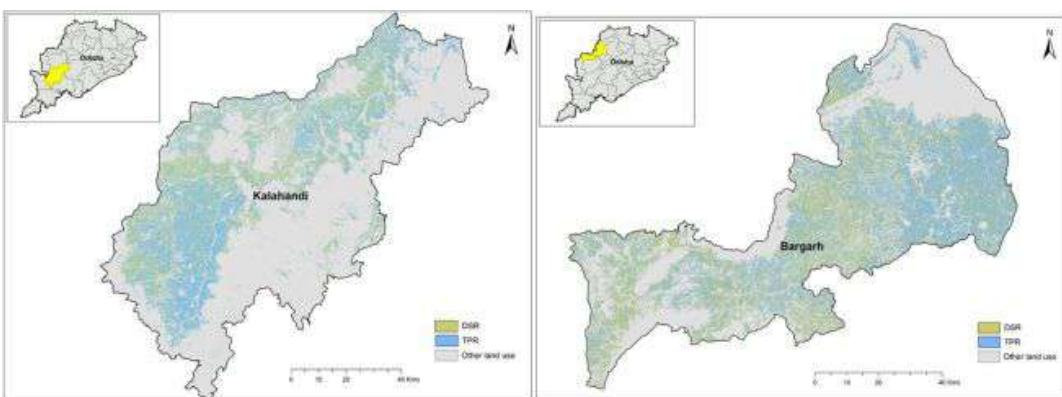


Figure: DSR and transplanting rice area mapping in Odisha

2.3.2 Rice-fallow:

- Through the APART-Assam project, a suitability atlas for rice-fallow areas of Assam was

released in March 2023 identifying potential areas where crop diversification can be targeted at the block and district level.



Picture: Suitability atlas for rice-fallow areas of Assam

2.3.3 Rice production information system for Africa:

- Through ISARC, mapping of rice area, and yield predictions were generated for Mali by using Sentinel-1 time series data. Also, historical flood

and drought indicators (frequency) were generated for disseminating climate-smart technologies. Similarly, mapping of rice area and yield monitoring piloted in 2023 in Ivory Coast, Senegal, and Kenya.

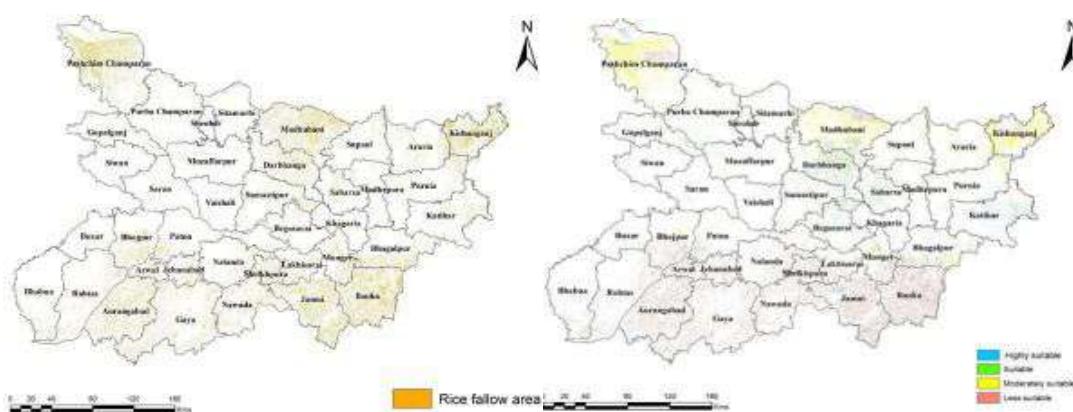


Figure: Rice-fallow and soil moisture suitability map of Bihar

2.3.4 Standing Panel on Impact Assessment (SPIA) in Bangladesh:

- Quantified the impact of flood-tolerant rice varieties on post-flood crop survival and yield in three study districts. Rice area maps were developed for Aman season.
- Maps were generated on flood indicators – Flooded and non-flooded, flooding intensity, start of season, peak of season EVI (max) and crop season EVI slope accomplished.
- Measured the relative change in Vegetation Indices (VIs) that occur during flooding, before and after the introduction of stress-tolerant rice varieties (STRVs).

2.3.5 Precision agriculture:

- Testing and standardizing imaging/agricultural drone for precision crop management at the farmer's field level are

being initiated.

- Standard Operating Procedures (SOP) for drone-based precision agriculture are currently being developed at the ISARC farm and at the BISA farm, Samastipur, under a project for the Climate-Smart Initiative funds of Government of Bihar.
- Using high resolution satellite images, processed and unprocessed market locations and spatial nutrient availability were developed for Nalanda district of Bihar.
- Multi-temporal Sentinel-1 SAR data and Landsat8 satellite data were used to complete the mapping of rice and rice-fallow areas in West Bengal, Bihar, Jharkhand, and Chhattisgarh, as well as their soil moisture suitability, with the goal of targeting the necessary interventions for increasing cropping intensity and diversification.

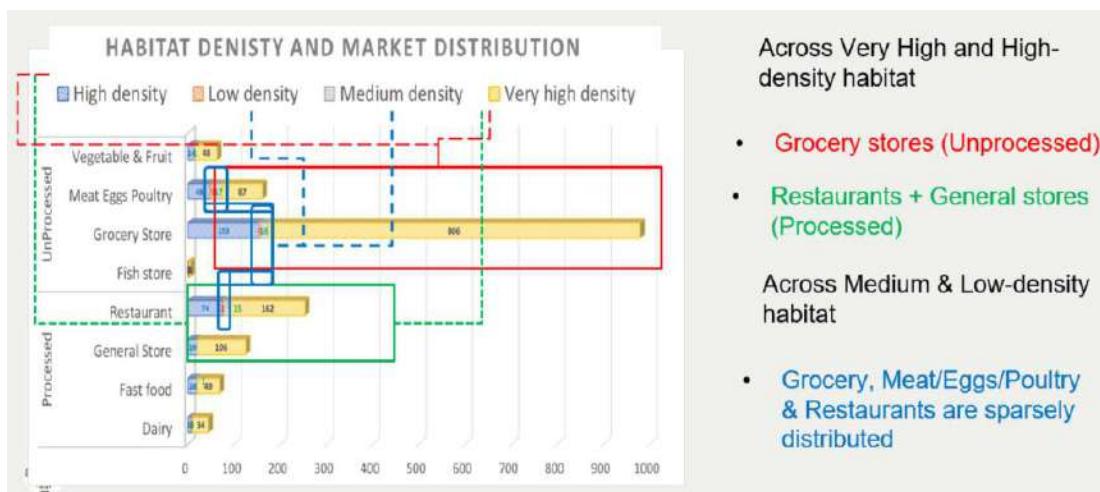


Figure: Food availability with human habitation density in Nalanda, Bihar

2.3.6 Mapping of abiotic and biotic stresses:

- Historical and current occurrence of abiotic stresses such as floods, droughts, and salinity were mapped for Odisha and Assam. Five years (2015-2021) flood and drought (Kharif and Rabi) maps were generated. Additionally, salinity maps were also generated for 2020-21.
- Biotic stress risks and hotspots were mapped for rice growing ecosystems for 30 districts of Odisha for the period 2015-22.

Landsat and MODIS rice areas, and EVI phenology indicators, were extracted and Flood inundation maps for Aman rice for Bangladesh were generated for the period of 2001-2021 which provides intelligence to target or disseminate the flood-tolerant rice varieties in flood prone areas.

- Spatial and temporal variability of crop stress were mapped between June–August 2022 in seven states of India.

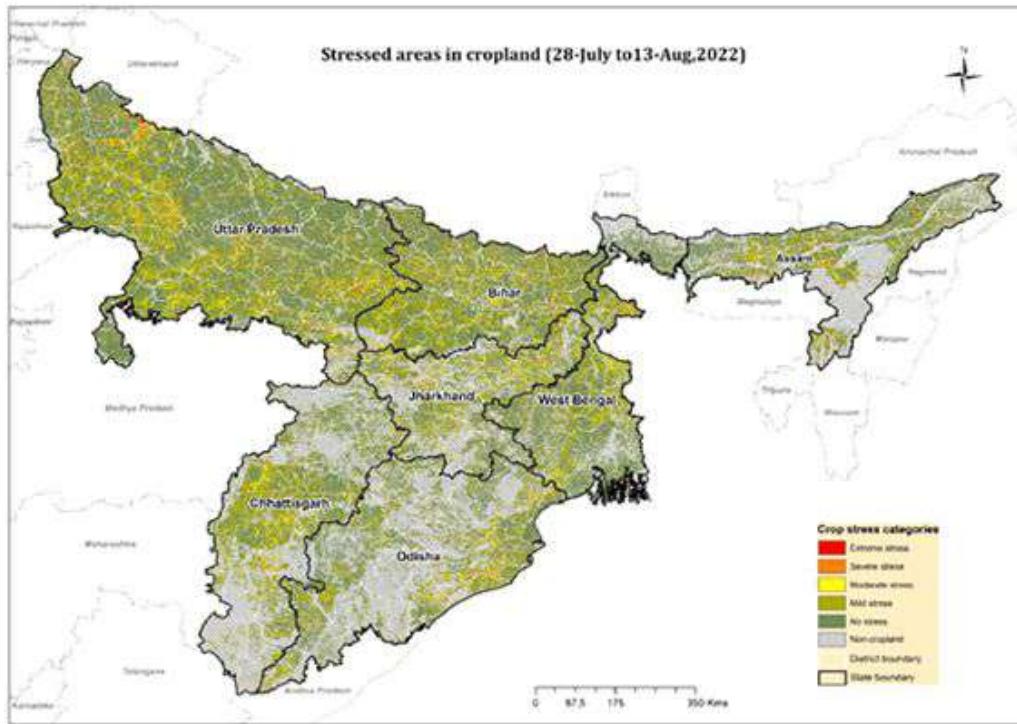


Figure: Spatial distribution of stressed areas in cropland between 28th July to 13th Aug 2022

2.4 Adaptive Agronomy, Pest Ecology, Mechanization & Post-Harvest

- Under the Direct Seeded Rice Consortium (DSRC), ISARC has been evaluating different cultivars including HT rice varieties, new herbicide molecules including drone-based spraying of herbicides, drone based direct seeding, and risks reducing agronomic practices in 14 states. In general, rice hybrids perform better than inbreds under DSR with yield gain of 0.6 t/ha. Seed priming improved germination and yield under DSR with yield gain of 10-15%. Vattar-DSR reduces the risk of early weed competition while saving irrigation water and enabling immediate and early sowing of rice.
- The collaborative experiment conducted at IARI showed that dry-DSR saved irrigation water by 20-25%, and reduced methane emissions by 72% compared to transplanted rice. Mechanized or precision DSR has been promoted in 5,060 acres in Kharif 2023 in Odisha. The random crop cut from the previous year showed that yield gain was more than 1 t/ha under drill-DSR than beushening systems.
- Alternate wetting and drying (AWD) methods of irrigation have been promoted in the farmers

field under irrigated ecosystems in Assam which saves irrigation water up to 38% without compromising yields.

- On-station experiments are ongoing at ISARC to measure water productivity and soil health under DSR and transplanted rice, water and nitrogen management in zero-till DSR; Zn-enriched variety and Zn fertilizer effect on grain Zn content in rice; nano-urea and nano-DAP on rice and wheat yields and profit and different crop establishment methods and suitable varieties for DSR. Additionally, the standardization of standard operating procedures (SoP) for drone-based foliar nutrition was a key area of emphasis.
- The experiment on nano-urea in wheat showed that 66% of recommended dose of nitrogen (RDN) with one foliar spray of nano-urea 4 ml/L of water at 21 days after emergence produced a similar yield as that of recommended dose of nitrogen (RDN) indicating the possible reduction of 34% N without any yield penalty.
- ISARC has been equipped with advanced dry-chemistry based soil analysis: mid-infrared (MIR) spectroscopy. ISARC is in process of developing partnership with ICAR-IISS,

CIMMYT and Cornell University for developing the model on dry-chemistry for Indian soil health scheme.

- A number of capacity building and training events were organized for wide-scale adoption of mechanized and precise DSR in collaboration with the Foundation for Advancement of Agriculture and Rural Development (FAARD) and Azamgarh KVK (ANDAUT) and UP-PRAGATI Accelerator Program in eastern UP.
- ISARC has extended technical support for evaluating and scaling of sustainable rice production in Assam through the Assam Agribusiness Rural Transformation Project (APART) funded by the World Bank. A total of 1,050 demonstrations on mechanical transplanting of rice (MTR) and 1,350 demonstrations on DSR were conducted in the Sali season 2023. Also, there were a total of 38,854 beneficiaries of 863 capacity building events, with 33.1% women participation in mechanized methods of crop establishment.
- Convergence Platform, institutionalized gender inclusive strategy in Eastern India: DMS Odisha and PRERNA became part of the Convergence Platform in 2023 in addition to Jeevika. Agro advisories were sent to around 36,800 farmers (22% women) in Eastern UP and 719,624 farmers (21% women) in Bihar.
- Gender Inclusive technology development, dissemination, and evidence generation- Cereal Systems Initiative for South Asia (CSISA) has nurtured a strong partnership with women-targeted developmental programs such as JEEViKA in Bihar for on-field activities and robust evidence generation and convergence platform for inclusive extension system and now expanding the learning to Department of Mission Shakti (DMS) in Odisha, and PRERNA in UP through convergence platform in 2023. 22% and 27% women participated in different training, and capacity-building programs organized in Bihar and Odisha respectively. 13% of demonstrations were led by women farmers. Women master trainers have been developed with DMS Odisha and Jeevika Bihar on mechanized DSR, Zero till and early wheat sowing.

- Gender Equality and Social Inclusive (GESI) modules introduced and made mandatory in the ongoing landscape crop assessment survey (LCAS) Surveys including the segments on Production, Income, Time Management, Financial Services and Credits, Group Affiliations/Membership, and Extension Access to fill the gender data gap and generate robust evidence generation around gender. Introduced in the Landscape Diagnostic Survey (LDS) Pulse survey in 8 districts of UP and 6 districts of Haryana in March 2023, to date 5600 data points have been generated.
- To develop and improve the rice pests and diseases diagnostic and management solutions for the community of rice farmers in UP, a successful collaboration has been made with the Plantix Digital Agriculture Team (Germany) at ISARC, Varanasi.
- In Bangladesh, many experiments were laid out to evaluate crop diversification, nano-urea, varieties suitable for DSR conditions, optimizing planting dates, and integrated nutrient management in rice production systems.
- A mechanization hub on mechanized seed-to-seed solutions for rice and succeeding crops (pulses, wheat, maize, and oilseeds), transplanting of paddy, and in-situ and ex-situ straw management has been established at ISARC. It has also been supporting CEIRD in strengthening the capacity of the stakeholders.
- The effectiveness of different direct seed planters in combination with the use of laser land leveller (LLL) for direct seeding and their impact on the Global Warming Potential (GWP) is being tested. The experiment involves LLL, planting seeds in wet terrain using a precision planter, drum seeder, and multi-crop planter. The study aims to assess several factors, such as cost economics, greenhouse gas emissions, and percentage changes in yield.
- Hermetic storage like super bag and cocoon were introduced in collaboration with BHU (KVK, Barkachha) for efficient seed storage for different crops. Reduction of paddy loss through utilization of combine harvesters,

dryers and rice crop residue management including byproducts development are areas of future activities.

- ISARC has introduced compost turner as an innovative farm implement, developed by IRRI in collaboration with Nong Lam University (NLU), Vietnam. It converts paddy straw into biocompost within 45 days, whereas the conventional method takes 120 days. It optimizes decomposition efficiency and organic fertilizer quality by integrating physical and bio-chemical processes, specifically tailored for the eastern Indo Gangetic Plains. To demonstrate the potentiality of the compost turner, a 3-day hands-on training was organized at ISARC during 15-17 December 2022. An experiment on the preparation of rice straw-based compost was conducted at ISARC, Varanasi during the Rabi season 2022-23. As evidenced from the results, mechanical compost turner can efficiently convert the paddy straw (1000 kg) and cow dung (1620 kg) to valuable compost (C/N: 11.06, N: 0.81%, K: 0.8%, EC: 6.24 dSm/m and pH: 8.13).

2.5 Natural Resource Management (NRM)

- Two strategic trials (regenerative and conservation agriculture) are ongoing at ISARC that are evaluating and developing evidence for natural farming practices.
- An adoptive experiment for evaluation and screening of different biochar, bio-inputs, crops, cropping systems (enhancing farmer profitability) and varieties that respond differently to natural, organic, and regenerative farming systems is ongoing in collaboration with NDUAT and farmers at the field-level.
- Accelerating digital agriculture innovation and site-specific nutrient management in rice-based cropping systems with Rice Wheat Crop Manager (RWCM) and FarmRise app in different districts of UP.
- An experiment is ongoing in pan India (UP, Bihar, Odisha, Telangana, Tamil Nadu, and Karnataka) for greenhouse gas, water, and soil health measurements in farmer fields under rice-based systems and different rice growing agro-ecologies in partnership with Bayer Crop

Science, IRRI and different stakeholders/universities (BHU, BAU, IMMT, UAS and TNAU).

- The Natural Resource Management Team engaged with different partners (ICAR, Bayer Crop Science, WWF-India, IDH-The Sustainable Trade Initiative, DSM Shriram foundation, Grameen foundation, CIFF-Children's investment fund and Sambodhi) to develop, evaluate and scale improved soil, water, and energy use technologies, water and nutrient management practices, nature-based solutions, and effective farming practices. Additionally, resource use efficiency, carbon sequestration and low carbon agriculture in different management systems, including regenerative and organic farming systems, were evaluated across various states of India.
- Evaluation of cotton farming practices and impact on the livelihood of cotton growing farmers under the Better Cotton Initiative project in Telangana started in October 2023. The project is in collaboration with IRRI-ISARC, BCI and H&M.
- Conducted field events and awareness programs, extension programs, awareness demonstrations and hands-on training on farmer fields, and on-station at ISARC, Varanasi to enhance farmers' capacity development for improved nutrient management and soil health assessment.

Key highlights:

- Soil metagenomics study of organic and inorganic rice fields was performed and organically amended soil showed remarkably increased bacterial and fungal communities as compared to inorganic rice field soil samples. The study revealed better soil health under organic farming practices compared to chemical-based farming.
- There were noticeable crop differences in natural and organic systems, namely, Mustard was found to be highly susceptible to aphid attack under natural farming systems, Mentha was found highly suitable for organic systems, and Indigenous rice varieties like Kalanamak and Kalamegha and basmati responded better than hybrids under organic systems.

- Expected outcomes under regenerative and natural farming practices: Enhanced nutrient use efficiency by 10-15 %, increased soil organic carbon (SOC) stock by 0.3-0.5 %, increased WUE by 10-15%, increased soil health in terms of soil microbes and related ecosystem and enhance adoption of new models for improving natural resources and habitat.
- More than 1,000 soil samples were analysed in 2023 for various qualitative research programs and soil health assessments.
- More than 10,000 farmers of eastern UP and 6,000 extension staff including DoA, NGOs, private partners and rural youth became aware of digital agriculture and smart farming technology and more than 6,000 fertilizer advisories were received.
- More than 2000 small landholder farmers (~1200 male and 800 female) from different districts of UP were trained in 2023.
- Documented the nutrient content and basic properties of more than 10 low-cost bio-inputs and the easy farming strategy was standardized for rice-based cropping systems using a standard protocol.
- Organized an event "SAARC Regional Training on Climate Smart Agriculture in South Asia: Technologies, Policies and Digital Innovation" on 25 to 28 July 2023 at ISARC Varanasi with different SAARC countries participants.

2.6 Value Chain and Entrepreneurship Development (VED)

- Investigated food supply chains for supplying healthy foods, and factors in the food environment that influence access to and purchase of nutritious food for poor consumers in India, Bangladesh and Nepal. The major drivers of high carbohydrate-based diets were found to be lower income, culturally driven dietary preferences, challenges in market accessibility, and large family size. Both female and male shoppers had similar perceptions about the safety, acquisition, affordability, and enjoyment of healthy and unhealthy food items. Unhealthy ultra-processed foods were found to

have better availability and affordability compared to less processed healthy food in rural South Asia.

- Implemented a behavioural experiment for crop and variety choice diversification in Odisha to understand the drivers and barriers (including social and gender) of adoption of improved varieties, crop diversification, and mechanized DSR. Preliminary results indicate that most of the farmers adopted seed trial packs of green gram and groundnut varieties and mechanized line sowing. Variety replacement is found to be very low and requires genotyping exploration. Farmers are more interested in cultivating vegetables in winter as it can fulfil their dietary demands and reduce consumption expenditure. The private seed delivery system has a competitive environment that ensures a better seed promotion and delivery system.
- Investigating the adoption and effects of DSR on yield, income, labor displacement, livelihoods, and well-being, and women's role in adoption/disadoption in Odisha and Punjab. The success stories on advantages of mechanized Direct Seeded Rice (DSR) and mechanized seeding of non-rice crops (green gram, oilseeds, etc.) were documented in Odisha. District- and state-level workshops on the 'Policy Dialogue on Agricultural Mechanization in Odisha' were organized, and policy recommendations on agricultural farm mechanization were shared.
- Investigated reasons for rice fallow and adoption of stress-tolerant rice varieties (STRVs), mechanical transplanting (MTR) and direct sowing (DSR). The project interventions generated high demand for machinery and improved the local quality and seed availability of improved STRVs.
- Using multiple data sets, assessing extreme climatic indices in Haryana's districts and the impact of climate change on crop yields and water resources through integrated modelling for developing strategies to adapt to changing climatic conditions.
- Developed results framework for Monitoring,

Evaluation and Learning (MEL) for ISARC phase II and a web-based dashboard for ISARC is being developed to showcase the progress and outcomes achieved.

- Mapped the technologies developed at ISARC that have commercialization and market potential and DPR is being developed for selected technologies. Designed labels for value-added products of rice such as cookies, muesli etc., that have been prepared and printed for increasing the brand and market visibility. Developed a grading tool to assess the viability of FPCs for promotion of service- and product-based entrepreneurship development in Assam. A stakeholder workshop-cum-seed dialogue was conducted, strengthening market linkages and promoting collaboration among stakeholders. A total of 2,215 farmers (37% women) have benefited from training and other interventions in Assam.
- As a part of the Credits Offsetting Rice Emissions (CORE) project, ISARC organized two master training programs and hands-on demonstrations on alternate wetting and drying (AWD) technology for irrigation water management in rice cultivation, for 90 trainers (around 70 were women) from MP and Haryana. GHG emission of rice cultivation is being measured through on-farm trials in Haryana. A National Stakeholders Workshop of the CORE Project was jointly organized by IRRI, GIZ, UN Women and Olam Agri, with the aim of introducing the CORE project to key stakeholders from across India, including those at the national and state levels, as well as representatives from various development agencies.
- Impact of agro-advisory was analysed using gender disaggregated data on awareness/knowledge gain of advisories, adoption, and gender aspects in Bihar. The results indicate that there is a significant and positive impact of advisories on knowledge gained on planting date, varieties, irrigation, and herbicide. Gender parity gap and spillover effect were found to be the two important dimensions in gender intentional extension programming.
- **Projections during Jan-March 2024:** Complete consumer preference intervention of

crop diversification experiment in Odisha; Analyse data of photovoice study in India and Bangladesh and develop research outputs; Organize training on Rice-based business development to FPC members in Assam and initiate the development of seed business and rice milling and processing business; Create environmental functions to formulate an optimization algorithm and validate diversification models; and implement DSR survey in Punjab.

3. Center of Education, Innovation, and Research for Development (CEIRD)

The Centre for Education, Innovation and Research for Development, CEIRD is the educational unit at ISARC and is 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 unit has five verticals i.e. short and long courses, scholars and youth engagement, online learning, knowledge sharing and advisory around CapDev 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 2023.

3.1 Short and long courses:

- Conducted a total of nine Capacity Development Programs including 533 stakeholders comprising policymakers, scientists, extension officials, research associates, research technicians, government officials, farmers, women, youth, and students. The programs were conducted in collaboration with the South Asian Association for Regional Collaboration (SAARC) Agricultural Centre, World Bank Group, Indian Council of Agricultural Research (ICAR), Department of Agriculture and Farmers Empowerment, Government of Odisha, Bihar Agricultural University and Dr. Reddy's Foundation.
- ISARC organized a two-day training-of-trainers capacity development program on direct-seeded rice for farmers hailing from seven districts of UP (Gonda, Gorakhpur, Raebareli, Azamgarh, Bahraich, and Balrampur & Basti) at ISARC,

Varanasi from 7th - 8th June 2023. The program was hosted by World Bank Group and was done in collaboration with Uttar Pradesh Program for Agricultural Transformation & Increased Incomes (UP PRAGATI) Accelerator Program.

- ISARC in collaboration with the SAARC Agricultural Centre organized a four-day training Program for SAARC member countries on 'Climate-Smart Agriculture in South Asia: Technologies, Policies, and Digital Innovation' at the International Rice Research Institute (IRRI), Varanasi from 25th - 29th July 2023. A total of 28 senior government officials from Bangladesh, Bhutan, India, Maldives, Nepal and Sri Lanka underwent the program.
- ISARC organized a 3-day training program for officials from The Directorate of Agriculture and Food Production, Odisha from 26th to 28th September 2023. The program was organized as a part of Odisha Integrated Irrigation Project for Climate Resilient Agriculture (OIIPCRA), with the aim to expose the officials of OIIPCRA to the various agricultural innovation and climate resilient technologies that will help them in dealing with the existing and emergent climate related constraints to improving productivity and profitability of agri-food systems in the state of Odisha.
- As a part of IRRI-BAU collaboration, an eight-day exposure visit from 9th -16th October 2023 for Bihar Agricultural University professors and lecturers was organized at IRRI, HQ Philippines to provide an opportunity to gain an understanding of IRRI's research projects, infrastructure, and potential areas for collaboration. Through this visit, BAU Professors and officials engaged with IRRI researchers and scientists and gained insights into the latest developments and emerging trends in rice research.
- Plan to conduct 4 Capacity Development Training Programs as a part of collaboration with Bihar Agricultural University, Department of Biotechnology Project & IRRI-ICAR Workplan in the duration January - March 2024.

3.2 Scholar and youth engagement:

- Hosted a total of 92 scholars (54 Female, 38 Male) from Bangladesh, India, Indonesia, Myanmar, Nepal, Pakistan, and Sri Lanka. These scholars included on-the-job trainees, PhD, MS, BS and interns.
- Organized learning and exposure visit for Agri-students enrolled in Banaras Hindu University and Mahatma Gandhi Kashi Vidyapeeth as a way to pique students' interest in Agriculture, showcase them the facilities and provide them with exposure.
- Under the NAHEP program, students from G.B.Pant University of Agriculture & Technology (GBPUAT), CSK Himachal Pradesh Krishi Vishvavidyalaya (CSKHPKV), Navsari Agricultural University (NAU), Assam Agricultural University (AAU), Sri Karan Narendra Agriculture University (SKNAU), and Rajmata Vijayaraje Scindia Krishi Vishvavidyalaya, Gwalior were hosted at IRRI HQ, Philippines for month-long internship programs.
- Plan to onboard 5 interns from Agricultural Universities in Uttar Pradesh for a month-long internship program under IRRI-ICAR Workplan in the duration January - March 2024.

3.3 Online learning and knowledge products development:

3.3.1 Global platform development to support national and international communities:

- The development was conceived to democratize access to agricultural knowledge globally through an open-source platform, based on research in food, land, and water systems. It aims to be a centralized channel for disseminating agricultural knowledge insights fostering a global community of learners and experts.
- In July 2023, the platform went live, becoming available at <https://openlearning.cgiar.org/>
- Within three months, the platform achieved 50,000 views and 2,500 users. This engagement indicates a significant demand for accessible agricultural knowledge.



Picture: Micromodules deployed on Openlearning.cgiar.org.

3.3.2 Knowledge products development (microlearning, open online and self-paced courses):

- To promote robust learning methods like blended learning for better outcomes and to provide diverse and in-depth learning experiences to national and international beneficiaries, more than 10 Open Online Courses (OOCs) were developed. The initiative also aimed to benefit Indian scholars across all agricultural universities in collaboration with the Indian Council of Agricultural Research (ICAR).
- OOCs delved into topics such as Rice Straw Management, Basic Research Data Management, Laser Land Levelling, Leadership theories and application, basic and advanced breeding methods, and Research Management. Pilot testing for open enrollment and blended learning allowed for refining the courses based on user feedback, showcasing adaptability to blended learning and resulting in a 95 percent completion rate.
- Micromodules were conceived to provide learners with bite-sized, focused content built on research and innovations around food, land, and water systems. Over 60 micromodules were meticulously crafted in English and Hindi, covering diverse categories such as Digital and Regenerative Agriculture, Rice Breeding Innovations, Water Management and many more.

- The initiative didn't stop at development; it explored innovations in digital microlearning and ventured into collaborations with CGIAR systems and NARES, creating cutting-edge micromodules like Solar Irrigation for Agricultural Resilience in South Asia, Seed System, and Product Management for various stakeholders.
- To provide outreach of agricultural knowledge in an easy and digestible manner to Indian farmers and extension communities, we are developing joint hosting of Hindi micromodules with the Department of Agriculture, Government of India.

3.3.3 Knowledge management through digital cropping systems knowledge bank:

- The transition to the Rice-based Cropping Systems Knowledge Bank (RCSKB) to create a specialized repository that extended beyond the confines of rice-based information. Regular content updates, stakeholder workshops, and user feedback sessions ensured the RCSKB's relevance and responsiveness.
- The inclusion of English and Assamese content, the production of videos and publications, and the development of 100+ Fact Sheets demonstrated a commitment to reaching diverse audiences. The initiative conducted stakeholder meetings and content workshops, fostering collaboration and knowledge committee setups.
- Two end-user training sessions, conducted in Assam, specifically in Jorhat and Dhubri, brought the knowledge directly to the local community, ensuring practical and hands-on learning experiences. The successful development of the RCSKB website's information architecture reflected a meticulous approach to knowledge organization.

4. Facility Development

ISARC's facilities have been upgraded with the 500 mbps bandwidth internet connectivity for smooth network operations of data service and

equipment as well as 200 mbps internet connectivity for the backup. Safety and security systems have been further extended up to farm buildings bringing the entire campus under CCTV surveillance. Two high-end drones, one equipped with a multi-spectral sensor-based imaging system and the other designed for precision spraying have been acquired. The staff strength of the centre is in continuous progression and has crossed over 121. In order to provide a quality work environment to staff, an admin block has been created to accommodate admin and finance staff. Development of a new block for the project management unit is underway. Additionally, ISARC has expanded GIS lab capabilities by purchasing a Hyperspectral Spectro Radio Meter System as well as additional workstations, enabling more researchers to engage in geospatial analysis.

An EduTech studio is being developed at ISARC library to create a dynamic learning environment. The farm infrastructure is being improved by adding an overtop shade, with male and female washrooms, and an additional farm implement platform. Additional farm land Acquisition: with the support of the Department of Agriculture, Govt of UP, a 0.932 hectares of additional farm land was allotted to ISARC before the start of Kharif season 2023. The lease deed has been signed on Oct 30, 2023. This allocation underscores the commitment of the state government to furthering agricultural research and development in the region.

5. Communication Initiatives

Our commitment to effective communication and knowledge dissemination is evident through several key initiatives. We are publishing our bi-monthly newsletter, "CULTIVATE," providing our stakeholders with insights and updates on our activities and achievements. We have developed a range of communication tools in both English and regional languages, including brochures, leaflets, videos, booklets, event collateral, training resources, and workshop materials tailored to our various thematic verticals to ensure clear and informative communication. We regularly

disseminate information through press releases, op-eds, articles, and research papers, utilizing both internal and external media sources to project our insights, findings and activities to a larger audience. To enhance our reach on digital platforms and increase our visibility amongst our stakeholders, we are also equally active on our social media platforms. ISARC has a separate Facebook page (<https://www.facebook.com/isarcofficial/>) and twitter (<https://twitter.com/isarcofficial>). Soon, we are also planning to start our LinkedIn profile to connect and register our presence with a more targeted set of audience.

6. Events, Meetings, and Strategic Visits

- **Visit of delegates from Government of Bangladesh: January 17-23, 2023** - The International Rice Research Institute (IRRI) organized a week-long learning visit for a four-member delegation from the Government of Bangladesh, to gain and exchange knowledge around a number of important initiatives that the food sector in Bangladesh needs to improve their rice system further. The visit was hosted at ISARC, Varanasi. The delegates represent the Department of Agricultural Extension (DAE), Ministry of Agriculture led by Dr. Muhammad Emdadul Haque, Director of Planning for Project Implementation and ICT Wing. He was accompanied by Dr. Rahana Sultana, Mr. Sotten Kumar, Mr. Rakibuzzaman Khan. During the visit, participants learned about seed system innovations, breeding and varietal development, advancing and scaling climate-smart agronomy, advances in GIS and remote sensing, direct seeded rice techniques, regenerative agricultural practices, and observation of various lab instruments and facilities at ISARC.
- **Visit of high-end delegates from Govt. of UP at Rice 2.0 Workshop: February 3, 2023** - The IRRI and the World Bank's 2030 Water Resource Group (2030 WRG) organized a workshop titled "Rice 2.0- Transforming Rice Cultivation in UP" on lowering carbon and water footprints, and enhancing farm income

of rice farmers at ISARC, Varanasi, UP. This multi-stakeholder workshop aimed to capture the experiences of the farmers from the ongoing DSR interventions in UP and other states like Punjab and Odisha that can be contextualized locally for rapid adoption and scaling up. The workshop was attended by Dr. Devesh Chaturvedi, Additional Chief Secretary; Shri Anurag Yadav, Secretary, Department of Agriculture; Shri. Manoj Kumar, Agriculture Production Commissioner, Department of Agriculture. Govt. of UP; Dr. K.V. Raju, Economic Advisor to UP Chief Minister, delegates from Bill & Melinda Gates Foundation and 2030 WRG and other eminent dignitaries

- **IRRI-ICAR work plan signing: April 19, 2023**
- Dr. Himanshu Pathak, Secretary DARE & DG ICAR and former IRRI DG Dr. Jean Balié signed the five-year IRRI-ICAR workplan at ISARC, Varanasi. Dr. TR Sharma, DDG (Crop Science) ICAR; Dr. Ram Krishna Shrestha, Joint Secretary, (AD) Nepal, Dr. Ajay Kohli, DDGR, Dr. A.K. Singh, Director, ICAR-IARI, and Dr. R.M. Sundaram, Director, ICAR-IIIRI joined the event.
- **ISARC-Bangladesh Cooperation Meeting: April 20, 2023**- A discussion meeting between IRRI scientists and Bangladesh delegates on ISARC-Bangladesh Cooperation was organized at ISARC, Varanasi. Ms. Wahida Akter, Secretary, Agriculture, Government of Bangladesh was present as the special guest and the meeting was chaired by Dr. Ajay Kohli, DDG-R, IRRI.
- **ISARC Coordination Committee (ICC) Meeting: April 20, 2023** - ISARC successfully concluded the 6th ISARC Coordination Committee (ICC) Meeting on April 20 in Varanasi. IRRI leaders, along with government partners, took stock of project activities and lessons learned over the past year to carve a new strategic path for the Government of India and ISARC for the next year. Present in the meeting were Dr. Jean Balié, Director General, IRRI, the chairperson of the ISARC Coordination Committee; Ms.

Wahida Akter, Secretary, Ministry of Agriculture, Government of Bangladesh; Dr. Ram Krishna Shrestha, Joint Secretary (Agri Development), Ministry of Agriculture and Livestock Development, Government of Nepal; Dr. T.R. Sharma, DDG - Crop Sciences, ICAR; The ICC meeting was also attended by Dr. Shahjahan Kabir, Director General, Bangladesh Rice Research Institute (BRRI); Mr. P. C. Peiris, DG (Agri. Tech) Sri Lanka. Mr. Manoj Ahuja, Secretary, Department of Agriculture and Farmers' Welfare, who also co-chairs the ICC, and Dr. Devesh Chaturvedi, Additional Chief Secretary, Government of UP joined online.

- **MoU with four UP state agricultural universities: April 21, 2023** - ISARC initiated bigger steps to transform agriculture into an engine of growth for UP through MoU signed on 21 April 2023 between IRRI and 4 state agricultural universities viz. Acharya Narendra Deva University of Agriculture and Technology (ANDUAT) Kumarganj, Ayodhya, Banda University of Agriculture and Technology (BUAT) Banda, Chandra Shekhar Azad University of Agriculture and Technology (CSAUAT) Kanpur and Sardar Vallabhbhai Patel University of Agriculture and Technology (SVPAT), Modipuram. Dr. Jean Balié, IRRI DG; Dr. Bijendra Singh Vice-Chancellor of ANDUAT and CSAUAT; Dr. Surendra Kumar Singh, Registrar BUAT and Dr. Anil Sirohi, Director Research, SVPAT signed the MoU. The event was graced with the presence of Shri. Surya Pratap Shahi, Honorable Minister, Agriculture, Agricultural Education and Research, Govt. of UP, and Dr. Devesh Chaturvedi, Additional Chief Secretary, Agriculture, Agricultural Education and Research, Agricultural Marketing, International Agricultural Trade and Export Promotion, Govt. of UP. UP Council for Agricultural Research (UPCAR), Director General Dr. Sanjay Singh; IRRI DG, Dr. Jean Balié; IRRI DDG-Research Dr. Ajay Kohli along with other dignitaries also attended the event.

- **Visit of delegation from Bangladesh Agricultural Development Corporation (BADC): May 16, 2023**- A delegation from the BADC visited ISARC, Varanasi to harness IRRI's knowledge and experiences in modern rice research. This visit featured demonstrations and interactions around IRRI's latest developments in rice technologies such as varietal development and testing protocols, quality seed production, varietal positioning methods, value chain propositions, and post-production practices.
- Workshop on "Prioritizing Agronomy in Changing Environment (PAiCE)": (November 26, 2023)- The event was jointly organised by EiA-CSISA & ICAR-CRIDA to identify and evaluate adaptation options to minimise impact of climatic hazards on crop yields in Eastern UP and Bihar.
- Visit of Dr. S. K Pattnayak, Member of the Central Administrative Tribunal and former Secretary, Ministry of Agriculture, Government of India: December 03, 2023- During his visit, Dr. Pattnayak discussed issues like the agricultural system of the country and the state, advanced smart agriculture towards sustainable development, carbon emissions, climate change etc with the scientists.
- Letter of Intent (LoI) signed between IRRI and ICAR- NBPGR: December 06, 2023- IRRI signed a LoI with the Indian Council of Agricultural Research - National Bureau of Plant Genetic Resources (ICAR-NBPGR) to promote cooperation in research and development work related to rice genetic resources. This LoI was signed within the purview of the existing Memorandum of Agreement (MoA) between ICAR and IRRI of 1974. Additionally, it aligns with the IRRI - ICAR work plan signed by the Director Generals of the respective organizations on 19 April 2023 for the period from 2023 to 2027.
- Memorandum of Understanding (MoU) with Sam Higginbottom University of Agriculture, Technology and Sciences (SHUATS), Prayagraj, U.P. and Mahayogi Gorakhnath University Gorakhpur, U.P. (MGUG): MoU was signed

between IRRI and both universities; SHUATS (4 Dec 2023) and MGUG (15 Dec 2023) to strengthen the research and development programs for rice-based agri-food systems in Uttar Pradesh.

7. ISARC's participation in high-level events

ISARC actively participates in outreach events on regional, state, national, and international levels to showcase the activities being carried out by the institute in the field of rice research and development. Details are given below-

- Workshop on "Krishi Udan Scheme" jointly organized by APEDA and Ministry of Civil Aviation in Varanasi on 1 Dec 2023.
- Kisan Mela organized at State Agriculture Universities; BUAT (October 27-29), ANDUAT (October 10-11), and CSAUAT (October 8-10), 2023.
- XVI Agriculture Rice Congress in Kochi, Kerala on October 13, 2023.
- Global symposium on Farmers' Rights organized in New Delhi from September 12-15, 2023.
- ICAR-Indian Institute of Vegetable Research's Inception Day celebration on September 28, 2023.
- UP International Trade Show organized at Greater Noida from September 21-25, 2023.
- G20 technical workshop on "Climate Resilient Agriculture" in Hyderabad from September 4-6, 2023.
- Prayagraj and Varanasi Mandal Kharif Kisan Gosthi organized at Girija Devi Sanskritik Sankul, Varanasi on June 30, 2023.
- Flagging off event organized by APEDA in Karkhiayon, Varanasi on June 26, 2023.
- Exhibition stall setup for G20 dignitaries on April 19, 2023, at Trade Facilitation Centre, Varanasi.
- Krishi Mela organized at ICAR-Indian Institute of Seed Science, Mau on February 25, 2023.

- Three days State-Level Farmers Fair and Industry Exhibition organized at ANDUAT, Kumarganj from March 17-19, 2023, at Kumarganj, Ayodhya.
- Siddharthnagar Mahotsav organized by Govt. of UP at Naugarh, Siddharthnagar from Jan 28-Feb 01, 2023.

8. Publications and patents :

- ISARC team published 58 knowledge products including high-rated and impactful research papers in international and national journals like Nature Food, LWT, Field Crop Research, etc.
- Patented two farm implements "Precision Hill Seeder with Urea Deep Placement

Applicator for Rice" and "Electric Seeder Machine for Rice." Both were developed in collaboration with Jawaharlal Nehru Krishi Vishwavidyalaya (JNKVV), Jabalpur for the promotion of scale-appropriate mechanization.

9. Recognition and contribution to high level committees:

9.1 Borlaug Field Award for IRRI Scientist Dr Swati Nayak:

In recognition of her outstanding community contribution in the field of farmers-centred seed system improvement, IRRI scientist Dr Swati Nayak has been conferred with the prestigious Borlaug Field Award by the World Food Prize Foundation.



Picture: Dr Swati Nayak received the Norman Borlaug Field Prize at World Food Prize Foundation in Des Moines, Iowa (October 24, 2023)

9.2 David and Betty Hamburg Award for Science Diplomacy to Dr. U. S. Singh:

Dr. U.S. Singh and Dr. Abdelbagi Ismail jointly received 2023 American Association for the

Advancement of Science (AAAS) David and Betty Hamburg Award for Science Diplomacy for their work on the promotion of Seed Without Border in South Asia and Southeast Asia.



Picture: Dr U.S. Singh received the 2023 AAAS David and Betty Hamburg Award for Science Diplomacy in AAAS Annual Meeting at Washington, DC, USA (March 5, 2023)

9.3 ISARC scientists have been appointed as members of high-level committees; SpeedBreed Establishment (MA&FW), Mahalanobis National Crop Forecast Centre (MNCFC), NSRTC Restructuring (MA&FW), National One Soil Unified

Information System for Soil (MA&FW), roadmap for DSR in UP, Farmers' Prosperity Commission, (UP Govt.), Quinquennial Review Teams member in ICAR institutes and Academic Council member in SAUs.



Picture: Collection of different pigmented rice at CERVA



Picture: Value added products from traditional landraces and PQR



Picture: Field evaluation of Kalanamak selected accessions at Gorakhpur (October 5, 2023)



Picture: "Malviya Manila Sinchit Dhan 1," developed in collaboration with Banaras Hindu University (BHU) during 2023



Picture: Evaluation of breeding lines under TPR and DSR condition at ISARC farm, Varanasi during Kharif season 2023



Picture: Crop Cafeteria for early testing and participatory selection of genotypes along with awareness generation in Assam during Sali season 2023



Picture: Demonstration of variety Gangasagar 2 in Kanchanpur in Nepal



Picture: Community-based seed production in Gaibanda, in Bangladesh



Picture: Evaluation of nano fertilizers under puddle transplanted and direct-seeded conditions at ISARC farm, Varanasi during Kharif season 2023



Picture: Assessment of water productivity, and soil health under direct seeded rice at ISARC farm, Varanasi during Kharif season 2023



Picture: Trainers and farmers in district-level training programme on mechanized and precise DSR at Sonbhadra, Uttar Pradesh during Kharif season 2023 (July 13, 2023)



Picture: Training of trainers on “alternate wetting and drying and sustainable management practices” at Mandla, Madhya Pradesh during Kharif season 2023 (July 21-22, 2023)



Picture: On-going experiment in different rice based cropping system of natural farming practices at ISARC farm Varanasi during Kharif season 2023



Picture: Standardization of packages & practices for alternate farming systems and bio-input at ISARC farm during Rabi season 2022-23 and Kharif season 2023



Picture: Training and capacity building events for women farmers in eastern UP during Kharif season 2023



Picture: GHG sample collection at farmers' field in Nalgonda district, Telangana during Kharif season 2023



Picture: Advisors to UP Chief Minister at ISARC stall observing interventions in rice research and development at UP International Trade Show organized in Greater Noida (September 21-25, 2023)



Picture: ISARC Director explaining the centre's research and development activities to the Principal Secretary to the Prime Minister of India, Dr. P.K. Mishra & other delegates at ICAR-IIVR Inception Day Celebration in Varanasi (September 28, 2023)



Picture: UP chief Minister observing the ISARC's exhibition stall during APEDA's flagging off event in Karkhiyayon, Varanasi (June 26, 2023)



Picture: High-end level delegates at Rice 2.0 Workshop organized at ISARC Varanasi (February 03, 2023)



Picture: Secretary DARE & DG ICAR Dr. Himanshu Pathak and former IRRI DG Dr. Jean Balié at IRRI-ICAR Workplan signing (April 19, 2023)



Picture: IRRI interim DG Dr. Ajay Kohli and Government of Bangladesh Agriculture Secretary Ms. Wahida Akter at ISARC-Bangladesh Cooperation Meeting (April 20, 2023)



Picture: ISARC's 6th Coordination Committee meeting at ISARC, Varanasi (April 20, 2023)



Picture: Updating UP Chief Minister Shri Adityanath about ISARC's progress in rice research and development and briefing about the MoU signing with four state agriculture universities (April 22, 2023)



Picture: UP Agriculture Minister Shri Surya Pratap Shahi and former IRRI DG Dr. Jean Balié with other delegates at IRRI-SAUs MoU signing at Lucknow (April 21, 2023)



Picture: Delegates from Bangladesh Agricultural Development Corporation interacting with ISARC scientists about latest advancements in rice research and development (May 16, 2023)

National Seeds Corporation Limited: National Seeds Corporation Limited is a schedule- B Central Public Enterprises under the administrative control of the Department of Agriculture and Farmers Welfare. It enjoys Mini Ratna (Category-1) status with ISO 9001: 2015 certification. The performance of NSC during 2022-23 is as under:-

During 2022-23 NSC has produced/ procured 15.06 lakh quintals raw 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, fodder, fibers, green

manure, potato and wide range of vegetable crops. During the financial year 2022-23 NSC has distributed 12.63 lakhs qtls of seed in the country. NSC earned Profit After Tax (PAT) of Rs. 53.30 crore during 2022-23.

The company is producing all kind of: seeds i.e. Test Stock, Breeder seed, Foundation Seed and Certified Seed. The seed is being produced in the company's own farms and through seed growers. In addition to seed, the company is providing sapling of fruits and forestry trees and fish seeds to the farmers. Focus is to increase production of seeds of Oilseeds, Pulses, Fodder and Vegetable crops

Chapter-22

Sub Mission on Agricultural Mechanization (SMAM)

22.1 Overview

Agricultural Mechanization is one of the key driver for sustainable development of agriculture sector. Mechanization helps in increasing production, productivity & household income by better & efficient management of the inputs like seeds, fertilizers, water, labour etc. It also helps to enhance the productivity of inputs, reduce losses, reduce operational time and drudgery associated various farm operations. Agricultural mechanization also helps in value addition and improving the quality farm produce for better market price.

Mechanization has been well received in India. In those States where agricultural mechanization has made good progress, its benefits are being shared by all farmers irrespective of the size of their operational holdings. However, the farm mechanization in India, notwithstanding inherent advantage, could not achieve a meager growth rate in last few decades. Degree of farm mechanization is expressed as a ratio of mechanical power to cultivable unit area which stands at about 2.49 kW/ha (2018-19). However, still there is disparity in its spread in various parts of the country and it is also compared lower to developed countries. For achieving optimum farm productivity, the farm power availability needs to be increased to at least 4kW/ha by 2030.

22.2 Government Initiatives

Sub Mission on Agricultural Mechanization (SMAM): Ministry of Agriculture & Farmers Welfare is already promoting agricultural mechanization through various schemes and programmes. However, in order to lay a special emphasis on farm mechanization and to bring more inclusiveness, a dedicated scheme 'Sub-Mission on Agricultural Mechanization (SMAM)' has been started from 2014-15. SMAM is now being implemented under the umbrella of Centrally

Sponsored Scheme of Rashtriya Krishi Vikas Yojana (RKVY) and it has been decided that all the mechanization components under various schemes will now be implemented under SMAM.

- 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.

22.2.1 SMAM have the following major components:

- (I) **Custom Hiring Centres (CHCs) and Hi-Tech, High Productive Equipment Hubs for Custom Hiring:** aims at creating infrastructure for making available machines and equipments to the farmers on rental basis. Financial assistance @ 40% of the project cost is provided to Rural Entrepreneurs (Rural youth and farmer as an entrepreneur), Cooperative Societies of farmers, Farmer Producer Organizations (FPOs) and Panchayats. The project cost of CHCs can be up to Rs. 60 lakhs and that of Hi-tech hubs can be up to Rs. 250 lakhs.
- (ii) **Establishment of Farm Machinery Banks:** Provides financial assistance @ 80% to

Cooperative Societies, FPOs and Panchayats to set up Farm Machinery Banks of project cost up to Rs. 10 lakhs in identified villages in low mechanized States. For the North-Eastern States, the rate of financial assistance is @95% of the project cost for the projects up to Rs. 10 Lakhs.

(iii) **Financial assistance for purchase of agricultural machines:** financial assistance for purchase of agricultural machines and equipments by the farmers on individual ownership basis is provided to the small and marginal farmers, Scheduled Caste/Scheduled Tribe farmers, Women farmers and North Eastern Region Farmers @50% of the cost of machine with applicable ceiling limits. For other farmers the rate of financial assistance is @40% of the cost. There is special provision for North Eastern States under which financial assistance @ 100% of the cost of machines costing up to Rs. 1.25 lakhs/machine is provided as subsidy.

(iv) Financial assistance for Kisan Drone Promotion:

(a) **Demonstration of Drone technologies in farmers' fields:** financial assistance @ 100% of the cost of agriculture drone up to a maximum of Rs. 10 lakhs per drone is provided as grant for purchase of drones by the Farm Machinery Training & Testing Institutes (FMTTIs), ICAR institutes, Krishi Vigyan Kendras (KVKs), State Agriculture Universities (SAUs), State and other Central Government Agricultural Institutions/ Departments and PSUs of Government of India engaged in agricultural activities. The Farmers Producers Organizations (FPOs) are provided grants up to 75% of the cost of agriculture drone for its demonstrations on the farmers' fields.

A contingency expenditure of Rs.6000 per hectare is provided to implementing agencies that do not want to purchase drones but will hire drones for demonstrations from Custom Hiring Centres, Hi-tech Hubs, Drone Manufacturers and Start-Ups. The contingent expenditure to implementing agencies that purchases drones for drone demonstrations is limited to Rs.3000 per hectare.

(b) Providing agricultural services through drone application: In order to make available drone services to farmers on rental basis, the financial assistance @ 40% of the basic cost of drone and its attachments up to a maximum of Rs. 4.00 lakhs is provided for purchase of drones by Custom Hiring Centers under Cooperative Society of Farmers, FPOs and Rural entrepreneurs. Agriculture graduates establishing Custom Hiring Centers are eligible to receive financial assistance @ 50% of the cost of drone up to a maximum of Rs.5.00 lakhs per drone.

(c) Financial assistance for purchase of drones by farmers on individual ownership basis: Small and Marginal Farmers, SC/ST Farmers, Women Farmers and the Farmers of the North Eastern States are provided financial assistance @ 50% of the cost of drone up to a maximum of Rs. 5.00 lakhs. The other farmers are provided financial assistance @ 40% of the cost of drone up to a maximum of Rs. 4.00 lakhs.

(d) Other Initiatives for Kisan drone Promotion

(I) Standard Operating Procedure (SOP) for the use of Kisan Drones for use in the application of pesticides for crop protection and for spraying soil and crop nutrients in agriculture, forestry on cropped areas etc. are released. Standard Operating Procedure (SOP) on Crop specific Standard Operating procedure for 10 crops for the application of pesticides with drones is released. Preparation of Crop Specific "Standard Operating Procedure (SOPs)" for the application of various forms of soil and plant nutrients in Agriculture through drones are underway and a Committee of the experts members from SAUs, ICAR and Concerned Divisions/Departments of this Ministry has already been constituted.

(ii) The Northern Region Farm Machinery Training and Testing Institute (NRFMTTI), Hisar (Haryana) has been approved by DGCA as Remote Pilot Training Organization (RPTO) for training of Drone Pilots. The institution is partnering with WOW Go Green LLP, A 1715,

Green Field Colony, Faridabad, Haryana for this centre in Public Private Partnership model.



(iii) The funds provided to the States and various institutions and ICAR for Kisan drone promotion is indicated in **Table 2**



Demonstration of Kisan Drone

(v) To supplement the efforts for promotion of agricultural mechanization in the country, the SMAM also have the following sub-components:

(a) Skill Development in Farm Mechanization:

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 wide range of beneficiaries that includes, Farmers, Rural

Youth, Migrant Labourers, Women Farmers, Technicians, Engineering Students, Diploma Students, ITI Student, Apprentice Training Programmes for Graduate Engineers, ITI Certificate holders, in service executives & technical officers from Govt & NGO engaged in the area of Farm machinery and allied Fields and representatives of agricultural machinery manufacturers.

For farmers, lodging is provided free of cost. A stipend of Rs. 200 per day per farmer is provided to meet boarding expenses. To and fro travel is provided on actual basis limited to a total of Rs. 500/- per trainee.

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://fmtibudni.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. Garladimuru-515731 Distt. Anantapur (Andhra Pradesh)	
	Phone : 08551-286441	E-Mail : fmti-sr@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@nic.in Website: http://nerfmtti.nic.in/

(b) Demonstration of Newly Developed Agricultural/Horticultural Equipment on

farmers' fields: conducted by the FMTTIs, ICAR Institutions, State Governments and

other Central Institutes, FPOs etc. The institutes conducting the demonstrations are provided 100 percent grants for purchase of machines/technologies to be demonstrated and also contingent expenditure to conduct demonstrations on the farmers' fields. Total 479 field demonstrations have been conducted

by the FMTTIs during the financial year 2021-22. During the year 2022-23, total 374 field demonstrations were conducted. During the year 2023-24 (Up to 31st December, 2023), a total 374 demonstrations including demonstrations of kisan drones were conducted.



Demonstrations Activities at FMTTIs

- © **Testing and Evaluation of Farm Machinery & Equipment:** The Farm Machinery Training and Testing Institute at Budni is engaged in conducting commercial tests on agricultural tractors, 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 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 combine harvesters under

CMVR 1989. The FMTTI at Garladinne has been specialized to test power tillers and conduct tests on various agricultural implements & equipments. The FMTTI at Biswanath Chariali (Assam) engaged in conducting commercial tests on 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 383 machines of various categories, including tractors, power-tillers, combine harvesters, and other machinery and equipments, till 31st March, 2022 against the target of 320. During the year 2022-23, total 385 machines were tested. During the year 2023-24, total 345 machines were tested (Up to December, 2023).



Drawbar Test of tractor at CFMTTI, Budni



PTO Test of Tractor at CFMTTI, Budni

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.

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. To simplify the process of testing of tractors, promote trust-based governance and to promote Make in India initiative of the Government and further enhance the ease of doing business in the country, the consolidated guidelines have been issued on 28th August, 2023.

22.2.2 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.

22.3 Financial & Physical Progress under SMAM Since 2014-15 till December, 2023

Table 1: Financial and Physical Achievement under SMAM

Financial & Physical achievement under SMAM w.e.f April, 2014 (As on 31 st December, 2023)										
Year	Allocation of funds			Achievements						
	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 Centres 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	93840	4612	103	3420
2022-23	914.73	914.73	543.06	15434	1064	133806	4194	72	3670
2023-24	859.45		265.84	14823	1248	52631	1936	41	136
Total	7265	5429.08	6286.63	1239382	13075	1576151	24954	516	20597

Table2: Funds provided for Kisan Drone Promotion under SMAM

State/ Implementing Agency	Funds Released Specifically For Drone (Rs. in Lakhs)	Demonstration		Individual Subsidy (No. of Drones)	Strengthening/Establishment of CICs (No. of Drones)
		No. of Drones to be procured	Demonstrations to be conducted (Ha)		
2021-22					
Kerala	225	14	4000		
IGFRI, Jhansi	11.15	1	50		
IHWBR, Karnal	20.6	2	20		
Total	256.75	17	4070		
2022-23					
ICAR	5250	300	75000		
Kerala	11.6			24	
Madhya Pradesh	1000			200	
Uttar Pradesh	400			92	
Uttarakhand	48.0			2	10
Puducherry	12.5			5	
Arunachal Pr.	10			2	
Andhra Pradesh	5900				1475
Chhattisgarh	200				50
Nagaland	8				2
Bihar	25			5	
Karnataka	113			17	7
Maharashtra	100				25
Manipur	16				04
Total	13198.5	300	75000	347	1563
2023-24					
Tamil Nadu	50			10	
Madhya Pradesh	500			100	
West Bengal	10.50			4	
Uttarakhand	123				22
Total	683.5			114	22

22.4 Gender Friendly Equipment for Women:

Under the skill development programmes, a total 7937 women have been trained during the Financial Year 2021-22, whereas, during 2022-23 total 8244 women have been trained up to 31st

March, 2023. During the year 2023-24 (Up to December, 2023), a total 7177 women have been trained. A list of about 30 identified gender-friendly tools and equipment developed by the Research and Development Organization for use in

different farm operations have 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.



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 as indicated in **Table 3**.

Table 3: Year wise sale of tractors and power tillers.

Year	Tractor Sales (Nos.)	Power tiller Sale (Nos.)
2018-19	8,97548	51,523
2019-20	7,85,059	46,476
2020-21	9,88,028	54,175
2021-22	9,07,645	53,653
2022-23	10,43,911	55,025
2023-24 till September, 2023	5,19,446	36,671

22.5 Digital India

Digital Platform for Farm Mechanization and Technology: This centralized portal is an initiative of Digital India & in line with the Government Policies of "Ease of doing business". The portal encompasses an application of Direct Benefit Transfer of farm machinery subsidies, Centralized Farm Machinery Performance Testing Portal for online submission of testing application and monitoring of testing & related activities and FARMS (Farm Machinery Solutions) Mobile App for renting and hiring of agricultural machines and equipments.

22.6 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.



22.7 Crop Residue Management Scheme.

In order to support the efforts of the concerned state governments to address air pollution and to subsidize machinery for management of crop residue, a Scheme on Crop Residue Management in the States of Punjab, Haryana, Uttar Pradesh and NCT of Delhi' was introduced in 2018-19. The scheme focuses on management of crop residue through various in-situ and ex-situ management options.

22.7.1 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 management of crop residue by retention/incorporation into the soil and establishing appropriate supply chain for further utilization through the deployment of appropriate mechanization inputs;
- (iii) Creating awareness among stakeholders through demonstration, capacity building activities and differentiated Information, Education and Communication strategies for effective utilization and management of crop residue

22.7.2 In-situ Management

- (i) The Scheme promotes the usage of machines such as Super Straw Management Systems, Happy Seeder, Super Seeder, Smart Seeder, Surface Seeder, Zero till seed cum fertilizer drill, Mulcher, Paddy Straw Chopper, Hydraulically Reversible Mould Board plough, Crop reapers and Reaper

binders for in-situ management of crop residue.

- (ii) Under the scheme, financial assistance @ 80% of the project cost for the projects costing up to Rs. 15 lakhs is provided for establishment of Custom Hiring Centres (CHCs) of crop residue management machinery by Rural Entrepreneurs, Cooperative Societies of Farmers, Self Help Groups (SHGs), Registered Farmers Societies, Farmer Producer Organizations (FPOs) and Panchayats to make available machines and equipments on rental basis.
- (iii) Financial assistance @ 50% of the cost of machinery is provided to farmers for procurement of crop residue management machinery on individual ownership basis.

22.7.3 Ex-situ Management

- (i) Subsidy for balers @ 50% of the cost for individual farmers and @ 80% under CHCs is provided.
- (ii) With a view to enable efficient ex-situ management of paddy straw, provisions have been made w.e.f. 2023-24 to establish techno-commercial pilot projects for paddy straw supply chain under the bilateral agreement of beneficiary/ aggregator (Farmers, Rural entrepreneurs, Cooperative Societies of farmers, Farmers Producer Organizations (FPOs) and Panchayats) and Industries utilizing the paddy straw. Financial assistance @ 65% on the capital cost of machinery costing up to Rs. 1.50 crores is provided by the Government. Industry as primary promoter of the project

has to contribute 25% of the project cost and the balance 10% will be the contribution of beneficiary/aggregator. The intervention aims at establishing a robust supply chain of paddy straw for various end user industries in biomass power generation and biofuel sectors.

22.7.4 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, Demonstration of Bio-decomposer Technology on farmers' fields: etc.



22.7.5 Financial Progress under Crop Residue Management Scheme:

Year	Allocation (Rs. in Crores)		Funds Released (Rs. in Crores)							
	BE	RE	Punjab	Haryana	UP	MP	NCT Delhi	ICAR & Oth	Total	
2018-19	591.80	591.80	269.38	137.84	148.60	0	0.00	28.51	584.33	
2019-20	600.00	600.00	273.80	192.06	105.28	0	4.52	18.48	594.14	
2020-21	600.00	600.00	272.50	170.00	120.20	0	0.00	8.00	570.70	
2021-22	700.00	700.00	331.94	193.35	159.59	0	0.00	6.02	690.90	
2022-23	700.00	700.00	278.83	223.46	180.00	0	1.53	14.18	698.00	
2023-24 (Up to December, 23)	600.00		105.00	90.00	0	17.0	0	0	212.24	
Total	3791.8	3191.8	1531.45	1006.71	713.67	17.0	6.05	75.19	3350.31	

22.7.6 Physical Progress under Crop Residue Management Scheme

State/	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	2023-24	Total	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	Total
Punjab	27747	23068	25811	13796	27250	19735	137407	3888	5140	12100	3073	916	300	25417
Haryana	10627	14078	29020	19052	7294	9699	89770	1194	1685	1345	2551	0	0	6775
Uttar Pradesh	23306	7054	13631	14697	5274	4439	68421	2300	1650	1652	1844	594	349	8389
NCT of Delhi	0	111	51	85	0	0	247	0	0	0	0	0	0	0
MP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	61680	44311	68533	47630	39818	33873	295845	7382	8475	15097	7468	1510	649	40581

Chapter-23

Sub-MISSION ON PLANT PROTECTION AND PLANT QUARANTINE (SMPPQ)

23.1 Overview

Plant Protection continues to play a significant role in achieving targets of crops production. The major thrust areas of plant protection are promotion of Integrated Pest management, ensuring availability of safe and quality pesticides for sustaining crop production from the ravages of pests and diseases, streamlining the quarantine measures for accelerating the introduction of new high yielding crop varieties, besides eliminating the chances of entry of exotic pests and for human resource development including empowerment of women in plant protection skills. The Plant Protection Division performs regulatory, monitoring, Surveillance and Human Resource Development functions through attached office – Directorate of Plant Protection, quarantine & Storage (DPPQ&S) and autonomous body, National Institute of Plant Health Management (NIPHM) and one Project – Monitoring of Pesticide Residue at the National Level (MPRNL) administered through ICAR-IARI.

(A) Directorate of Plant Protection Quarantine & Storage, Faridabad

(A) Directorate of Plant Protection Quarantine and Storage, Faridabad 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.

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 **2023-24** Pest Risk Analysis (PRA) was conducted for **77** agricultural commodities to determine potential bio-security risk if imported. In which **32** agriculture commodities PRA completed and **45** agriculture commodities PRA are under process. Whereas **08** agriculture commodities granted market access for import and **02** for export have been notified. During the period Import Release Order (IROs) were issued for **77227** nos. consignment of plant and plant materials and Phytosanitary Certificates (PSCs) issued for **324061** nos. of consignments of export.

Table-1. Details of Export /Import inspection & Certification

S.No.	Details	2023-24 (01.04.23-15.01.2024)
1.	Import Quantity (Mt)	13912860.32
2.	Export Quantity (Mt)	30616109.06
3.	Import Permit Quantity (MT)	159744.95
4.	No. of Imported (IRO) consignment	107385
5.	No. of Exported (PSC) consignment	426222
6.	No. of Import Permit (JP)	160
7.	Revenue by Import Inspection (in Crors Rs.)	284.49
8.	Revenue by Export Inspection (in Crors Rs.)	2.40
9.	Revenue by issuance of Import Permits(in Crors Rs.)	0.216
10.	Total Revenue (in Crors Rs.)	286.92

Table 2. Status of PRA and market access 2023-2024 till date 15.01.2024

Sl. No.	Continent	PRA		Market access	
		Under Process	Completed	Granted (Import)	Gained (Export)
1.	Africa	12	06	02	01
2.	North & South America	08	05	01	01
3.	Asia & Oceania	25	17	01	01
4.	Europe	-	03	04	-
	Total	46	31	08	03

Table 3. Details of agencies/facilities accredited during 2023-2024 (till 15.01.2024) and total till date

S.No.	Agencies for fumigation/treatment	2023-24 (till 15.01.2024)	Total till date
1.	Methyl Bromide (MBr) under NSPM-12	48	826
2.	Aluminum Phosphide (ALP) under NSPM-22	72	832
3.	Forced Hot Air Treatment (FHAT) under NSPM-09	53	813
4.	Hot Water Immersion Treatment (HWIT) of Mango under NSPM-15	04	52
5.	Irradiation under NSPM -21,	00	04
6.	Vapour Heat Treatment (VHT) under NSPM -20	02	11
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 2023-2024 (till 15.01.2024) and total till date

S.No.	Pack houses/processing units	2023-24 (till 15.01.2024)	Total till date
1.	Export of Rice to USA,	21	217
2.	Export of Rice to China	17	144
3.	Processing units for export of peanut	09	138
4.	Dry chilli Warehouses	01	158
5.	Pack houses for fresh fruit and vegetables export to European Union,	10	121
6.	Mango Pack house for USA	03	21
7.	Farm Units for Export of Cut flower to Australia and	02	05
8.	Pack house for export of pomegranate fruits to Australia.	02	03
9.	Pack house for export of pomegranate Aril to Australia.	04	06
10	Pack house for export of pomegranate Aril to USA	03	06

Plant Quarantine stations played an important role in biosecurity during the inspection of imported commodities for various countries during 2023-24

intercepted Quarantine/Non Quarantine pests at various PQ stations. List of intercepted plant quarantine pests were mentioned below.

Table 5. Details of the pest interception during the period 2023-2024 (01.04.23-15.01.2024): Import

Sl.No.	Commodity [Common / Scientific Name]	Plant Part	Country of Origin	Number of Quarantine Pest Intercepted
1.	Cashew Nuts (Raw)	Nuts	Cote De Ivory	32
			Ghana	58
			Tanzania	02
			Mozambique	31
			Senegal	10
			Nigeria	05
			Burkina Faso	04
			Benin	10
			Guinca	01
			Guinea Bissau	02
2.	Pinus	Wood	Togo	13
			USA	26
3.	Dates	Fruits	UAE	24
			Iran	01
			Iraq	01
4.	Garlic	Bulbs	Iran	01
5.	Oak	Wood	France	01
6.	Teak Logs	Wood	Colombia	01
			Brazil	01
			Mexico	01
			Cameron	01

			Benin	02
			Togo	01
			Ghana	01
7.	Lentils	Pulses	Canada	01
8.	Shorealaevis	Wood	Indonesia	03
9.	Sal/Selanganbatu	Wood	Indonesia	01
10.	Dried Cocoa Beans	Cocoa	Uganda	01
			Guinea	02
			Indonesia	07
11.	Pigeon pea	Grains	Malawi	01
			Myanmar	01
12.	Dragon fruit	Fruits	Vietnam	01
13.	Populusnigra	Wood	Belgium	01
14.	Summer Squash	Seeds	China	01
15.	Cut Flowers	Cut Flowers	Netherlands / Holland (01 Nos)	01
16.	Areca spp	Dried nuts	Sri Lanka (01 Nos)	01
17.	Chick Pea	Grain	Sudan (01 Nos)	01
18.	Cinnamomum cassia	Dried Bark	Vietnam	06
19.	Coffee	Beans	Vietnam	09
20.	Dried Fig	Dry fruit	Afghanistan	01
	Total			280

Integrated Pest Management (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 2023-24 (Kharif season) a total number of 103 Nos of Farmer Field Schools and 49 Nos of two days Human Resources Development programs were successfully conducted in which 3605 No's of farmers were trained and 2731 No's of farmers, pesticide dealers and State extension officials were trained about Integrated Pest Management techniques. 05 nos of five days programmes and 01 number of season long training programme on Cotton crop was also conducted during Kharif 2023-24 in which 200 nos of AEOs, Pesticide dealers, NGOs, Lead Farmers, Private Entrepreneurs and 40 nos of master trainers were trained in these programmes respectively. 103 No. of FFS, 49 No. of 2 Day HRD & 05 No. of 5 Day HRD Programmes and 1 Number of Season Long Training Programme (SLTP) for Mango crop are allotted to 36 CIPMCs and 8 Locust-cum-IPM centers for the Season Rabi 2023-24, out of which

91 FFSs are ongoing and remaining programmes will be conducted before 15th March 2024.

Apart from conducting FFS, the CIPMCs carry out pest/disease monitoring, production, release and conservation of bio-control agents. During 2023-24 (up to 15.01.2024), the pest and disease situation was surveyed covering 857.623 thousand hectares area. A total of 2799.013 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 775.392 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 continuous efforts of DPPQ&S the area of Maize affected by FAW was decreased significantly.

During 2023-24, IPM Division issued 09 Nos. of advisories/forewarnings on various pest/disease up to 15.01.2024.

"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 Co-operation and Farmers Welfare (DAC&FW) during Kharif and Rabi seasons involving State Departments of Agriculture and CIPMCs. Till date (Kharif and Rabi upto 15.01.2024) 307 nos of Seed Treatment campaigns and 230 nos of safe & judicious use of pesticides awareness programmes were conducted by IPM Division in which 7461 and 6083 nos of farmers participated respectively.

Participation of Women Farmers in IPM activities:- 6208 numbers of women farmers were participated in FFS, 2 Day HRD training programmes, Seeds treatment campaigns and safe and judicious use of pesticides programmes conducted by 36 CIPMC's during 2023-24 (till 15.01.2024).

Central Insecticide Board & Registration Committee (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 trial purposes.

Major achievements of the CIB&RC from 01.04.2023 to 15.01.2024

Certificate Issued:

S.No.	Category of Certificate, U/S	Number of Certificates issued
1	9(3)TI	24
2	9(3)FI	10
3	9(3)TIM	13
4	9(3)-F	77
5	9(3)B/F	147
6	9(3b)B/F	0
7	9(3)-E	1218

8	9(4)-TI	89
9	9(4)-FI	5
10	9(4)-TIM	366
11	9(4)-F	52682
12	RTT	176
13	Shelf life	104
14	Free sale certificate	587
15	Non-insecticidal use	203
16	Endorsement	1944
17	Insecticides in Schedule (Inclusion)	0
Total		57645

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

Objectives:

- (a) To analyze such samples of insecticides sent to it under the Act by any officer or authority and submission of certificates of analysis to the concerned authority
- (b) To carry out such investigations as may be necessary for the purpose of ensuring the conditions of Registration of Insecticides;

- © To determine the efficacy and toxicity of insecticides;
- (d) To carry out such other functions as may be entrusted to it by the Central Government or by a State Government with the permission of the Central Government & after consultation with the Central Insecticides Board.

Types of Samples analyzed in Central Insecticides Laboratory (CIL)

- (a) **Referred sample:** (through Hon'ble courts of Law or Central/ State Governments) collected by Insecticides Inspectors (2nd portion out of 3 portion collected by Inspector during Post-Registration Quality Control) from manufacturer/Importer/ Dealer are sent by hand, by post or by courier.
- (b) **Pre-registration verification sample:** Received through CIB & RC for analysis prior to giving registration
- (c) **Investigational Sample:** Received through Hon'ble courts of Law, Central/State Govt. Authorities, Customs, revenue Department etc.

NABL Accreditation of CIL:

CIL is a NABL accredited Laboratory as per ISO 17025:2017 in the field of biological and chemical testing with validity of certificate till 11.11.2024. The Desktop Surveillance as required under ISO 17025:2017 was successfully completed on 03.11.2023 by the laboratory.

During this financial year, essential equipment like Fourier Transform Infrared Spectrometer (FT-IR) and Deep Freezer were purchased and installed in the Laboratory for smooth analysis of referee and PRV samples.

The progress reports of various Divisions of CIL are as under:

A. CHEMISTRY DIVISION: The targets and achievements of Chemistry Division, CIL for the duration April 2023 to 15th January, 2024 are summarized as below:

Objectives: To discharge the Techno-Legal requirements as specified under Rule 5 of

Insecticides Rules, 1971. In addition, following activities are also undertaken by Chemistry Division of CIL:

- (a) Technical guidance & support to SPTLs/ RPTLs.
- (b) To assist in the formulation of Indian Standards for pesticides and their formulations.

Achievements: 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 2023- 15 th January 2024	1600	Referral samples	638
		PRV samples	465
		Investigational samples	78
		Total	1181

B.BIOASSAY DIVISION

Objectives:

- a. To evaluate Bio-Pesticides on quality control parameters for Pre-registration verification such as Bio-efficacy, Phytotoxicity, Translocation, Compatibility and Development of resistance in the targeted crop.
- b. To evaluate Chemical and Biological pesticides for Bio-effectiveness & Phytotoxicity in Laboratory as well as field conditions for post registration.
- c. Evaluation of Pesticides of Botanical origin.
- d. Development of Bioassay techniques.

Divisions of Bioassay:

Entomology Unit:

- To conduct laboratory and field trials/ experiments for evaluating Bio-effectiveness and Phytotoxicity of insecticides.

- In-vitro evaluation of house hold insecticides against housefly, mosquitoes and store grain pests.
- Rearing of laboratory culture of target insect pest for in-vitro experimentation.

Pathology Unit:

- Evaluation of Bio-pesticides on quality control parameters for Pre-registration verification.
- Participation in Inter Laboratory Comparison Program (ILCP) under NABL.
- Maintenance of reference cultures of bio-pesticides and plant pathogenic fungi cultures.
- To impart trainings to the state/central officials on quality control of bio-pesticides.

Herbicides Unit:

- To conduct laboratory and field

trials/experiments for evaluating Bio-effectiveness and Phytotoxicity of Herbicides samples.

Collection and maintenance of weed seeds in the laboratory.

Achievements:

Year	Annual Capacity	Achievements/Samples analysed (Includes all three categories of samples: PRV, Referral & Investigational)*	
April 2023- 15 th January 2024	60	Chemical pesticides (5D)	35
		Bio-pesticides (5D)	29
	Not Fixed	PRV samples	210
Total			274

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.

Objectives: Toxicity/Safety evaluation/status of pesticides by *conducting Acute Oral LD 50 Toxicity Study in albino rats* on the pesticides

samples received by state governments for post verification.

1. Toxico-vigilance activities regarding pesticides and related health effects by collecting data **Current status of Pesticide Poisoning Cases** for Safety Evaluation and Status of notification of functionaries for reporting poisoning cases through Zonal Conferences.
2. Training on **safe and judicious use of pesticides** for users/farmers and distribution of booklets to the farmers published by the Division periodically.
3. Preparation of technical material on pesticide toxicity.
4. Preparation of **posters** to be placed at various National and International Exhibition.
5. Conduct **Institutional Animal Ethics Committee Meeting** regularly with the members of the Committee nominated by CPCSEA for doing study on animals.

Achievements:

Name of study	Annual Capacity	Achievements	Remarks
Acute Oral LD50 Study	20	04	-

Sent the analysis reports of the samples received from different State Directors of Agriculture.

C. PACKAGING&PROCESSING DIVISION

Objectives:

- a. Pre and Post registration verification of the packaging and labeling claims/ requirements made by the manufacturers / registrants.

- b. Verification / analysis of the Packaging &labeling samples received under Rule 5 (C) of the Insecticides Act, 1968 and rules there under in the context of the conditions laid down on the certificate of registration issued under Insecticide Act, 1968.
- c. Technical guidance to the BIS, in formulating, updating and amending the standards of pesticides quality control, safety, storage,

transportation and use etc.

- d. Imparting training to the enforcement functionary of states/ UTs on various aspects of pesticides relating to packaging & processing, labeling and other required parameters.

- e. Verification of data on shelf life claims of pesticides and their formulations as per protocol approved by the registration committee and Bureau of Indian Standards (BIS) on quality control & packaging.

Achievements:

YEAR	Annual Capacity	Achievements
April 2023- 15 th January 2024	150	31

BRIEF OF ACHIEVEMENTS OF CIL

Year	Achievements/Samples Received and analysed	
April 2023- 15 th January 2024	Chemistry Division	1181
	Bioassay Division	274
	Medical Toxicology Division	04
	Packaging & Processing Division	31
	Total	1486

- 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 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:

The provisions of the Act and Rules are executed by the State Agriculture Authorities. The licence to manufacture, sale, stock, exhibition for sale or distribution of any insecticides is issued by the licensing officer appointed by the State Governments after payment of the prescribed licence fee. Licenses are granted only after satisfying the availability of necessary plant and machinery, safety devices, first aid-facility, equipped with proper storage accommodation for avoiding any hazards etc in the premises where the insecticides is proposed to be manufactured or sale or distribution.

As per the Insecticide Act, 1968, the quality control of pesticides is primarily a responsibility of the States. Insecticide Inspectors appointed by the Central or State Governments (section 20) have been vested with powers to search premises, seize documents, stop distribution or sale of insecticides and take insecticide samples for analysis (section 21). Such analyses are carried out by Insecticide Analysts appointed by Central or State Governments (section 19). Dispute over analytical test reports are resolved through confirmatory tests in the Central Insecticides Laboratory (CIL)

which has been established under section 16 of the Act.

At present, 11080 officers of various State Governments are notified as Insecticide Inspectors to check the quality of pesticides. To ensure availability of quality pesticides, 70 State pesticide testing laboratories (SPTL) are established in 25 States and 2 Union Territories with a total annual capacity to test 77,675 samples.

The Central Government supplements the resources of State/UT Governments in quality control testing of pesticides. At present, 191 Central Government officers are notified as Central Insecticide Inspector and there exists one Central Insecticide Laboratory at Faridabad and two Regional Pesticides Testing Laboratories at Chandigarh and Kanpur under the Directorate of Plant Protection, Quarantine & Storage (DPPQ&S) with an annual testing capacity of 4,700 samples.

Offences related to import, manufacture or sale of 'misbranded' insecticides, which include use of deceptive or faulty labels, use of improper packaging, higher toxicity or counterfeiting of the product etc. are punishable with imprisonment up to two years, or with fine between Rs. 10,000 to 75,000, or with both.

Total Number of samples analyzed at RPTLs is given below in Table :-

No of samples received from CII	Total samples analyzed at RPTL Kanpur	Total samples analyzed at RPTL Chandigarh	Total samples analyzed at RPTLs	Total samples found Misbranded at RPTLs
207	1170	2509	3679	136

Details of samples analyzed at State Pesticide Testing Laboratory for Year 2023-24 (April,2023- 15th January,2024) is given below in Table :-

Sr. No.	Year	No. of Samples analyzed	Misbranded	Prosecution Launched	Accused Convicted
1	2023-24 (April ,2023- 15 th January, 2024)	32220	928	142	1

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 scheme 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 2.05 lakh sq km of the Scheduled Desert Area (SDA) mainly in the states of Rajasthan and Gujarat and partly in Haryana. The Scheme 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 Organization (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 HQs. Faridabad. Satisfactory locust control potential is being maintained in the form of pesticides, plant protection equipment, wireless sets, GPS, eLocust3, eLocust3mpo 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.

Participation in the Indo-Pak Border monthly meetings (June to November) for exchange of locust situation information between two Countries for effectively monitoring the situation ensuring preparedness to tackle the emerging locust threat, if any.

Issuance of Desert Locust Situation Bulletin at fortnightly intervals to inform all the concerned stakeholders about the prevailing locust situation in India.

To maintain desert locust culture for conducting research on bio-efficacy of pesticides and bio-pesticides against desert locust at Field Station for Investigation on Locusts (FSIL) Bikaner.

Target and Achievement for the year 2023-24 up to December, 2023

S.No.	Activities	Annual targets	Achievement
1.	Locust Surveillance (area in Lac ha.)	150.035	138.557
2.	No. of Locust Bulletins	24	18
3.	Indo-Pak Border Meeting(in Nos)*Instead of Indo-Pak Border meeting, 06 nos. SWAC-TOC conducted by Secretary, SWAC through virtual mode.	06	6*

As per agreement signed between M/s. HIL (India) Ltd and Dte. of PPQS for supply of malathion 96% Technical ULV grade pesticide for control of Desert

Locust in the states of Rajasthan & Gujarat. During 2022-23 season, no locust activity was observed. During August, 2023 a small scale outbreak was

observed and controlled

Desert Locust Control (August, 2023): -More than normal pre monsoon rain left behind favourable ecological conditions for locust breeding. Egg Laying probably would have been happened during the end of the June, soon after the cyclone "Biporjoy" approached at Indo-Pak border. First information of hopper emergence was received from village Sutharmandi, Mohangarh, Jaisalmer district on 09.08.2023. After confirmation of low density hoppers of the desert locust in a limited area, well equipped control teams each from Jaisalmer, Barmer, Phalodi and Bikaner were deployed at the infested site to combat the situation. Desert Locust Control was carried out in **836** ha area from 10.08.2023 to 17.08.2023.

FAO launched eLocust3mPro (android and iOS version app which acts) as new tool to facilitate quick and easy transmission of survey data as similar to eLocust tabs functions. Successful adoption of eLocust3mPro in place of eLocust3 tabs have been made by all LCOs.

Two day Training Programme on use of "elocust3mpro":-

Two days training programme was organized on use of elocust3mpro, an android based application by using smart phones on 12th, 13th July, 2023 at LWO, Jodhpur. A total of 32 no. of participants participated in training programme.

FAO developed a monitoring tool eLocust3g, a satellite based tool collection and supplied 65 nos. of eLocust3g devices to DPPQS through FAO representative India in May, 2022. These devices will be used by the trained Govt. Officials in Scheduled Desert Areas of Rajasthan, Gujarat & Haryana States of India. Since there is network connectivity problem in Scheduled Desert Areas these devices can be used in such areas for Desert Locust data reporting as these are satellite based.

In 32nd SWAC meeting a concept note was proposed to develop country specific dashboard so that various task can be assigned and monitored through eLocust3mPro application. The proposal was appreciated during SWAC meeting and dedicated fund is allocated for developing country

specific dashboard. After implementation of dashboard in existing eLocust3mPro. Data can be retrieved as and when required, the extent of survey & control operations carried on day basis and monthly basis can be monitored.

Bilateral Cooperation with respect to Locust Control and Research:

Mr. Mariano Behran, Agricultural Attache& Mr. Kamlesh Mishra, Agricultural specialist Embassy of Argentine visited Hqr in August, 2023. and discussed technical cooperation in Locust control & Management between India & Argentina under Bilateral cooperation aspect. Both countries may exchange more information by making physical visits in future to understand, learn and gain practically from each other's system, challenges, experiences etc.

Contribution in International efforts in Plant Protection

17th Session of Commission on Phytosanitary Measures (CPM):

Sh. Ashish Kumar Shrivastava, Joint Secretary (PP) & Dr. J.P. Singh, Plant Protection Adviser represented India in the seventeenth session of the Commission on Phytosanitary Measures (CPM), the governing body of the International Plant Protection Convention (IPPC) in Rome, Italy during 27-31 March 2023. Session adopted amendments to four plant health standards ISPM, 5, 18, 20 & 28 and the IPPC Communications Strategy 2023-2030 which will guide national and regional plant protection organizations (NPPOs, RPPOs) in their communication and advocacy planning

9th Asia Pacific Seed Association (ASPA) Phytosanitary expert consultation:

Dr. Mir Samim Akhtar, DD (E) and Dr. S. Sivarama Krishnan AD (E) participated in the 9th ASPA Phytosanitary expert consultation held at Bangkok, Thailand during 7th to 9th March, 2023. Dr. J.P. Singh, Plant Protection Adviser, DPPQS delivered a special address in virtual platform on Plant Quarantine regulation for hassle free export- import of seeds. The outcome of the APSA expert consultation meeting is to implement the ISPM 38- International movement of Seeds & ISPM 45- Requirements for

National Plant Protection Organizations if authorizing entities to perform Phytosanitary actions at Asia Pacific region level.

International Workshop: APPC Workshop on Systems Approach for Management of Fruit Flies on Mango

The APPC Workshop on “Systems Approach for Management of Fruit Flies on Mango” was

convened from 19 – 23 June 2023 in Mumbai, India with the participation of 36 delegates from 14 Countries. Out of the total participants attended the workshop, three have joined virtually. The workshop reviewed the status on systems approach for management of fruit fly in Mango & its successful implementation in the member countries of APPC besides having discussions on various provisions under the relevant ISPMs.



The workshop covered pre-harvest Integrated Plant Health Management of mango pest, pre-treatment handling of the fruits, post-harvest treatment facilities and orchard field visits. The aspects of record keeping production and export of pest free mango fruits were also dealt in the workshop. The participants were taken on a field

trip to mango orchard at Narayangaon, Pune, India to demonstrate successful adoption of Good Agricultural Practices (GAP) for the management of fruit flies in India. The visits to pack house & treatment facilities displayed the efforts of India in management of fruit fly by development of improved treatment procedures.



Global Forum on Biological Control (GBFC)

National Focal Points (NFP) for implementation of Global Action for Fall Armyworm Control in Asia and the Pacific have participated in Global Forum on Biological Control (GBFC) meeting held on 26th& 27th June 2023 in Nairobi, Kenya. Dr. S. N. Sushil, Director, ICAR-NBAIR & Dr. Sunita Pandey Deputy Director (E) participated from India.



**Season long training programme on Cotton crop from
27 September 2023 to 26 October, 2023**

International Conference on Chemical Management (ICCM 5):

Dr. Vandana Seth, Joint Director (Chemistry), Secretariat of CIB&RC, participated in Fifth session

Conference of Parties to the Basel, Rotterdam & Stockholm Conventions:

Dr. Archana Sinha, Joint Director (Chemistry) participated in the meeting of the "Conference of Parties to the Basel, Rotterdam & Stockholm Conventions" to collectively advance the sound management of chemicals and waste held at Geneva, Switzerland during 8-12 May, 2023.

of the International Conference on Chemical Management (ICCM 5) held at Bonn, Germany during 25th to 29th September, 2023 as a member of Indian Delegation.



Seed Treatment campaign



Five days HRD Orientation training Programmes at RCIPMC, Lucknow



Field visit and AESA activity during two-days IIRD Programme



Five days IIRD Orientation training Programmes at RCIPMC, Lucknow

Five days IIRD Orientation training Programmes at CIPMC, Ernakulam



Two days HRD Orientation training Programmes





B) Research/review Paper Publications:

Raju, J., Thimmegowda, P.R., Elangovan, C., Sunita Pandey and J. P. Singh, 2023. Occurrence, characterization and management of Srilankan Cassava Mosaic Virus (SLCMV) in cassava growing Namakkal district of Tamilnadu, Journal of Eco-friendly Agriculture, 18 (2):377-381.

Special Achievements & Awards:

A) An MOU was signed between DPPQ&S, Department of Agriculture & Farmers Welfare, MoA&FW, GoI, by Dr J P Singh, PPA and Ms. Jane Karkada, Senior Director, Confederation of Indian Industry on 31.05.2023 for developing Integrated Pesticide Management System (IPMS)



B) Dr. J. P. Singh, PPA conferred with "Rao Bahadur Yelseti Ramachandra Rao Memorial Award 2023"



Dr. J. P Singh, Plant Protection Adviser was conferred with "Rao Bahadur Yelseti Ramachandra Rao Memorial Award 2023" during 5th National Conference on "Recent advances in Agricultural & Industrial Entomology, Environmental Science and their impact on Environment and Food Security held at Loyola College, Chennai on 29th & 30th of September. The award was jointly conferred by Dr. B. Vasantraj David Foundation, Chennai and Entomology Research Institute, Loyola College, Chennai.

(A) 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 over all insight into Plant Protection and Food Security Measures and contribute to Policy making together with understanding 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 5842 agricultural officials and farmers. NIPHM is also conducting research through program oriented projects.

The details of Training programs conducted for the period from April to December 2023 is furnished below:

No.of training programs conducted:208

No.of trainees attended: 5842

NIPHM has four main divisions through which the mandate of this institute is executed:

1. Plant Biosecurity Division
2. Plant Health Management Division
3. Pesticide Management Division
4. Plant Health Engineering Division

PLANT BIOSECURITY DIVISION **TRAINING PROGRAMS CONDUCTED (APRIL-OCTOBER, 2023)**

Name of trainings & Purpose	Period	No. of participants
Forced Hot Air Treatment - Treatments for packaging material under ISPM - 15	17 th -21 st April 2023	70
	10 th July to 14 th July 2023	35
Fruit fly Surveillance and Management - To learn about fruit fly, fruit fly surveillance, collection and identification of fruit flies	10 th - 14 th April 2023 and 22 nd - 26 th May 2023.	
Plant Quarantine Procedures for Export and Import - International Regulation w.r.t. plant health, National regulations, export and import procedures w.r.t. Agricultural and Horticultural commodities and export promotion	8 th -12 th , May 2023	16

Orientation for Phyto sanitary Certificate Issuing Authorities -	29 th May to 02 nd June 2023	7.
Pest Risk Analysis - Importance of international conventions, National regulations, SPS obligations spread and the risk management	5 th to 9 th June, 2023	10
Fumigation as Phyto sanitary Treatment (MBr and ALP) - To understand the guidelines laid in NSPM-11, 12 (MBr fumigation) and NSPM-22 (Phosphine fumigation) and to conduct appropriate fumigation procedures.	12 th to 26 th June, 2023	16
Quarantine regulations for export and import of Agricultural commodity - International regulatory framework, plant quarantine system in India export and import procedures.	22 nd June 2023	50 students and 5 faculties of Agricultural College and Research Institute.,
Phytosanitary measures for Safe Trade of Spices- Training organised for officers of Spice Board	07 th -11 th August, 2023	27
Plant Biosecurity & Incursion Management (PBIM) - biosecurity concepts, impact of invasive alien species, exotic pest threats, pest risk analysis and plant pest incursion management	25 th -29 th September, 2023	Online course
Detection and Diagnosis (including Molecular Techniques) of Plant Pathogens / Quarantine Pathogens - Awareness about the detection techniques available for various plant pathogens / quarantine pathogens,	9 th -13 th , October, 2023	9 officers from State Department of Agriculture, Associate Professors and Assistant Professors from State Agricultural Universities
Export and Import of Planting Material including Tissue Culture plants - For private industry production and certification protocol for tissue culture plants, export and import procedure for propagative material, Post Entry Quarantine	3 rd to 5 th October	15
Pest Free Area - In collaboration with Australian High Commission- Department of Australian Plant Health Policy has organized an Indo-Australia Webinar on Pest Free Area	11 th October, 2023	65 international and national officials
Assayers training for technical staff of Warehouses - To train the technical staff of warehouses registered with WDRA.	04 th -08 th September, 2023	11
Warehouseman Training Programme -WDRA - To train In-charge/ Managers/ Supervisors/ representatives/ PACS of warehouses registered with WDRA	09.10.2023 to 13.10.2023	17

Certificate course on Urban Integrated Pest Management - The programme was organized for the structural pest management professionals	25.04.2023 to 09.05.2023 and 16.08.2023 to 30.08.2023	
Rodent Pest Management - Training to Agricultural Extension officers and scientists of SAUs, ICAR	08 th -11 th May 2023 and 11 th -15 th Nov 2023. Online training programme from 11.09.2023 to 15.09.2023.	17 officers and 69 Agricultural extension officers (AOs/ ADAs/ Scientists) 69 agricultural extension officers & scientists from SAU, ICAR
Level 1 Training on "Urban Pest Management for Technicians - for the Technician (Level 1) at KVK, Puducherry	15 th - 16 th May 2023.	25
Online Training on "vertebrate pest management - wild boar, monkey and birds	Online training programme from 06 th - 08 th June 2023.	35 scientists/ agriculture officers
Non insect Pest Management – Mites, Crabs, Slugs, Snails and Avian - Training for AO/ Scientists of SAUs, KVks	Online training programme from 4 th - 6 th July 2023.	30 scientists/ agriculture officers
Eco-friendly approaches for management of vertebrate pests in agriculture and horticultural ecosystem	17 th -21 st July, 2023.	26 officers, scientists from SAU, ICAR
Urban Pest Management for Proprietors/ Owners/ Technicians	13.09.2023.	123
Urban Pest Management for Tamil Nadu Warehousing Corporation officials (TNWC	21.09.2023 to 22.09.2023	65
Vertebrate Pest Management -Wild boar, monkeys and bird	09 th to 12 th October, 2023.	21
Area wide management of fruit flies in Mango Orchard - Program was conducted for farmers at Khetireddypally, Shadnagar, Rangareddy District	03.05.2023	24
Export potential and export procedures for Agricultural commodities - Online training program for farmers of Madhya Pradesh	25 th July, 2023	46
One day awareness programme on Fruitfly management in fruit/cucurbit crops- Farmers at Jeedikal, Jangoan District.	16.08.2023	21
Mosambi Export Promotion and its Problems in Maharashtra - Online training programme for KVK, Extension staff, FPOs and Farmers from Jalana, Aurangabad, Parbhani and Nanded Districts of Maharashtra		100

WDRA trainings at KVK -Madanapuram, KVK-Jammikunta, CWC- Jangaon, KVK -Jammikunta and KVK- Gaddipally	Total five 1-day programmes were conducted on 31.05.2023, 05.06.2023, 09.06.2023, 15.06.2023 and 22.06.2023.	51
Special programmes sponsored by APEDA - "SPS Measures, Good Agricultural Practices and Food Safety	<ul style="list-style-type: none"> ◦ Krishivigyan Kendra, Jagdalpur on 04th October, 2023 ◦ Krishi Vigyan Kendra, Raipur on 06th October, 2023 	120
Farmers Awareness Programme on WDRA and eNWR	05.06.23 at KVK Jammikunta 09.08.2023 at DAATC Mahabubnagar 25.08.2023 at TSWC, Jadcherla 15.09.2023 at TSWC, Kodad 25.09.2023 and 29.09.2023 at KVK Jammikunta	50 50 50 50 50 each
Training on "Rodent Pest Management for farmers - for farmers at Kanha Shanti Vanam Ashram, Kanha Village, NandigamaMandal, Rangareddy District, Telangana	30.05.2023	12
Farmers training on rodent pest management	07 th July, 2023	56
Training on vertebrate pests for the farmers	28.07.2023	30



ONGOING RESEARCH PROJECTS

- i. Commercial scaling up of irradiation protocol as phytosanitary measure for major cut flowers (funded by BARC-Board of Research in Nuclear Sciences (BRNS), Department of Atomic Energy (DAE), GOI).
- ii. Survey and field evaluation of sterile insect technique for the management of Oriental fruit fly, *Bactrocera dorsalis* (Diptera: Tephritidae) infesting economically important fruit crops(funded by BARC-Board of Research in Nuclear Sciences (BRNS), Department of Atomic Energy (DAE), GOI).
- iii. Development of eco-friendly and integrated stored grain pest management techniques for food grain storage in FCI godowns (multi-locations)- Funded by FCI.
- iv. Hot Water Immersion Treatment (HWIT) of Chillies at Commercial scale (APEDA).
- v. Evaluation of Animal Out repellent against the wild boar & rodents:-Industry Project
- vi. In-house study on Feeding preference and development of stored pests in different millets and screening of plant powders for management.



MoU signed between NIPHM and APEDA:
NIPHM and APEDA signed an MoU on 09.05.2023 in the august presence of Director General-NIPHM, Director - Plant Biosecurity, NIPHM,

EDUCATIONAL PROGRAMS

- **MOOCs in Plant Biosecurity:** Forty seven and sixteen participants attended the course.
- **Rodent and Household Pest Management MOOCs Certificate Course:** Forty seven and thirty one participants attended the course.
- **KERALA PGDPHM:** Students are engaged in their project work.

OTHER SIGNIFICANT ACTIVITIES:

- PBD faculty attended the PMA Annual Conference on Fission-2023 organized at Jaipur, Rajasthan from 14.04.2023 to 15.04.2023.
- ✓ The Director General (NIPHM) and Director (PB) has graced the event as Chief Guest and Guest of Honour respectively. ASO (VPM) has also attended the Conference. Around 120 delegates from the pest control industry have attended the training.
- ✓ The Handbook on Urban Pest Management has been released during the event.

The event information and advertisement on sale of book has been posted in the NIPHM website, Face book page for wider publicity

Registrar- NIPHM and Mr. R. P. Naidu, Regional Head, APEDA to carry out the studies on "Hot Water Immersion Treatment for Chillies" at NIPHM, Hyderabad

TRAINING PROGRAMS CONDUCTED (NOVEMBER- DECEMBER, 2023)

Name of trainings & Purpose	Period	No. of participants
Workshop on Fumigation as a Phytosanitary Treatment: Present and Future (for private stakeholders)	01 st - 02 nd November, 2023	50
Detection and Diagnosis of Pests, Pest Risk Analysis and Phytosanitary Treatments - ITEC-MEA (International Programme)	07 th -20 th November, 2023	24
Rodent Pest Management in Grain Storage for FCI officials	13 th -17 th November, 2023	05
Training on Safe & Judicious Use of Glyphosate (2 Programmes)	16 th -17 th November, 2023 22 nd November, 2023	50
Training on Urban Pest Management for the Technicians	20 th November, 2023	68
Good Agriculture Practices, Phytosanitary Measures and Food safety- for Cluster Development Programme Meghalaya	19 th -21 st November, 2023	07
Pest surveillance	11 th -15 th November 2023	20
Fumigation as Phytosanitary Treatment (MBr and ALP) - To understand the guidelines laid in NSPM-11, 12 (MBr fumigation) and NSPM-22 (Phosphine fumigation) and to conduct appropriate fumigation procedures.	28 th November- 12 th December, 2023	34
Forced Hot Air Treatment: for private industry (ISPM 15 & NSPM 9 for heat operators)	18 th - 22 nd December, 2023	55
Urban Integrated Pest Management - for private industry	01 st - 15 th December, 2023	43
Farmers awareness programme on WDRA and eNWR at APSWC, Jaggaliahpet	14 th December, 2023	50
Farmers awareness programme on WDRA and eNWR at Anajipuram at Rythukendram	14 th December, 2023	50
Farmers awareness programme on WDRA and eNWR at Jammikunta	18 th December, 2023	50
Farmers awareness programme on WDRA and eNWR at Madanapuram	20 th December, 2023	50
Farmers awareness programme on WDRA and eNWR at Tenali	21 st December, 2023	50
Farmers awareness programme on WDRA and eNWR at Duggirala	22 nd December, 2023	50



Workshop on Fumigation as a Phytosanitary Treatment: Present and Future



Detection and Diagnosis of Pests, Pest Risk Analysis and Phytosanitary Treatments - ITEC-MEA (International Programme)



Detection and Diagnosis of Pests, Pest Risk Analysis and Phytosanitary Treatments - ITEC-MEA (International Programme)



Training on Safe & Judicious Use of Glyphosate



Fumigation as a Phytosanitary Treatment (MBr & AlP Fumigation):



Forced Hot Air Treatment



Certificate course on Urban Integrated Pest Management





Visit to Stirling University, UK: Dr. Girish A G., Deputy Director (PP) visited the Sterling University under the collaborative project.



Plant Health Management Division

Integrated Pest Management Model Demonstration Farm for training extension officials and farmers-NIPHM Farm

As model demonstration farm to showcase the Plant Health Management technologies in different field and vegetable crops (Paddy, millets, Okra, Brinjal, Tomato, Groundnut, Bitter gourd, Ridge

gourd) NIPHM is maintaining model IPM demonstration farm. Crops will be grown following plant health management technologies such as Ecological Engineering following the good agricultural practices, application of organic manures and bio-pesticides, predators and parasitoids, ITK concoctions, installation of light traps, sticky traps, pheromone traps and lures. Further fruit crops like Mango, Banana and Papaya were also grown in NIPHM farm.





NIPHM Polyhouse

NIPHM has open ventilated Poly house for demonstration of Plant Health Management under protected cultivation in different vegetables crops. NIPHM bio-products like biofertilizers, biopesticides and biocontrol agents were used in

polyhouse grown vegetable crops viz., Cucumber, Tomato and leafy vegetables. Also Organized two 5 days training programmes on 'PHM in protected cultivation' to demonstrate different PHM techniques in polyhouse specific crops. Further all the trainee officers and progressive farmers visit the polyhouse during training programs.



Capacity building programs

PHM division has conducted 62 training programs for Officers, Students and farmers

from April 2023 to December 2023 and trained 2290 trainees on various aspects of Plant Health Management

Special training programs conducted during April 2023-October 2023

Name of trainings & Purpose	Period	No. of participants
Sustainable Management of Fall Armyworm in Maize - National institute of Plant Health Management (NIPHM), Hyderabad in collaboration with Food and Agriculture Organization (FAO) conducted 15 training programmes (five for officers and ten for farmers)	For 2 days from August to October	102 officers and 299 farmers
Production Protocol for Bio-fertilizers and Bio-pesticides – On farm production of bio-fertilizers, mass production of entomopathogenic fungi and NPV, quality control of bio-pesticides	29.05.2023 to 02.06.2023	20

Training of Trainers (TOT) on "On farm Production of Biocontrol Agents and Microbial Biopesticides" Sponsored by IRRI, Assam - For officers working under Assam Agribusiness and Rural Transformation Project(APART) of IRRI	20.06.2023 to 23.06.2023 & 09.10.2023 to 12.10.2023	39
ITEC-MEA sponsored training on 'Techniques in Mass production and Quality control of Bio-fertilizers & Microbial Bio-pesticides' - Mass production and quality control of biofertilizers and bio-pesticides	27.07.2023 to 09.08.2023	17 international delegates
Training on PHM in organic farming for officials of Organic Research and Training Centre a unit of Central Tibetan Relief Committee (CTRCC) - On farm production of bio-control agents and bio-pesticides, Diagnosis of major insect pests and diseases, management of fruit fly	12.09.2023 to 14.09.2023	15 Agriculture Extension officers
Orientation training to Master Trainers for 'Safe and Judicious use Glyphosate by PCOs - To create a cadre of master trainers and pool of Pest Control Operators (PCOs) for safe and restricted use of Glyphosate herbicide.	Various session between 14.06.2023 to 25.10.2023	585
Sustainable Plant Health Management Practices in FCV tobacco	14.11.2023 to 16.11.2023	15 officers (Auction Superintendent/Field officers/Field Assistants) from Tobacco Board, Andhra Pradesh
Scientific Exposure to PHM Practices	16.11.2023 to 22.11.2023	07 P.G. Students from College of Agriculture, RLBCAU, Jhansi,
Certificate Course on Plant Health Management in Organic& Natural Farming (CCONF) (Phase-I)	06.12.2023 to 26.12.2023	19 rural youth / farmers



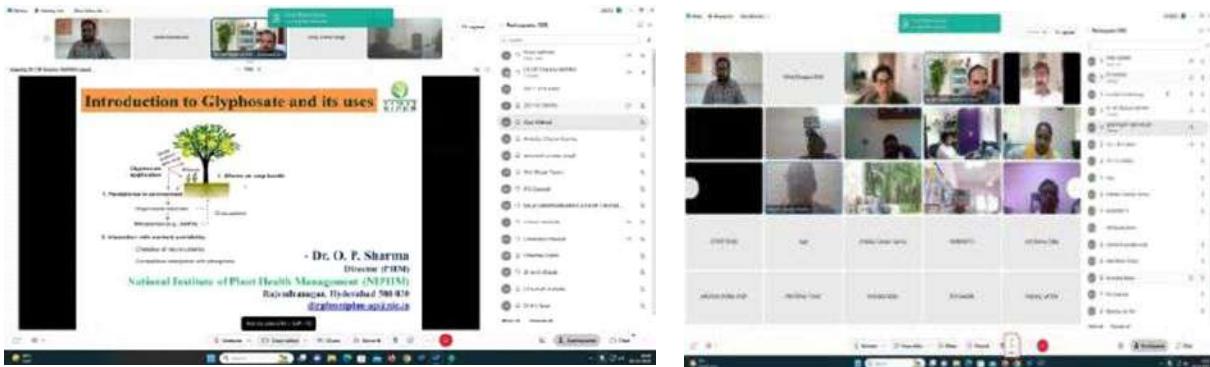
Glimpses of FAO training program at NIPHM



Glimpses of FAO training program on Sustainable management of FAW in Maize



Glimpses of ITEC training programs at NIPHM



Glimpses of Glyphosate training programs at NIPHM



Glimpses of IRRI funded APART project training program



Glimpses of tobacco board training program



Glimpses of Scientific exposure to PHM practices



Glimpses of training program on
**Certificate Course on Plant Health
Management in Organic& Natural
Farming (CCONF) (Phase-I)**

Glimpses of training program on
**Certificate Course on Plant Health
Management in Organic& Natural
Farming (CCONF) (Phase-I)**

Special Events Organised

1. International Day of Plant Health 2023 at NIPHM

National institute of Plant Health Management (NIPHM), Hyderabad celebrated the occasion of International day of Plant Health at NIPHM, on 12th May 2023. About 80 participants from NIPHM, neighbouring ICAR institutes and State Agriculture University attended the program. The programme was inaugurated by honourable Director General Dr. Sagar Hanuman Singh, IPoS and participated by staff

of NIPHM. During this event, Dr. Sarath Babu, President, Plant Protection Association of India has invited as guest of honour. Dr. Sarath Babu delivered an elaborative talk on ***challenges of plant health management*** and emphasized on general public on the importance of Plant health and spread the message of protecting plant health and legal aspects of plant health protection. In the program the Director General emphasised on the importance of maintaining good plant health using available natural resources in order to have good human health as plants are the foundation of food pyramid.



2. Parthenium awareness week from 16-22, August 2023

The *Parthenium* awareness week was observed from 16-22, August 2023 at NIPHM comprising different activities throughout the week. The programme was inaugurated by Director General, Dr. Sagar Hanuman Singh, IPoS and given a message on creating awareness on noxious weed and its

control measures at community level. During the week of observation awareness was created to farm labour & housekeeping labour, mass removal activity done by staff members, contractual staff and outsourcing staff, trainees at NIPHM campus, laboratory premises, NIPHM field and residential staff quarters under the leadership of the Director-General, NIPHM and emphasized *Parthenium*-free campus.





Other activities:

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 their quality control. During April-November, 2023 NIPHM has analysed 30 samples from 8 States.

PESTICIDE MANAGEMENT DIVISION

(Period: From 1st April to 31st October 2023)

CORE ACTIVITIES OF PESTICIDE MANAGEMENT DIVISION:

1. CAPACITY BUILDING PROGRAMS

Pesticide Management Division conducts training programme in the following areas

for the officials/Analysts working in the Central and State Agricultural Departments.

2. PROFICIENCY TESTING

Proficiency Testing Centre (PTC) was established during 2015-16 at NIPHM for conducting Proficiency Testing (PT) Programmes in the field of Pesticide Formulation and Residue Analysis. The PTC is accredited in accordance with the standard ISO/IEC 17043:2010 (*Conformity Assessment-General requirements for Proficiency Testing*) in the field of Chemical Testing by NABL.

CAPACITY BUILDING PROGRAMS CONDUCTED

Pesticide Management Division has conducted a total of 15 programmes during **1st April to 31st October 2023**. Details of programmes conducted for officials are as follows:

S. No.	Name of the Program	Training Period	Number of Programme	Number trained
A. Online mode (Official)				
1.	Inspection and Sampling of pesticides under Insecticides Act, 1968 (ISPP)	10.04.2023 to 12.04.2023	1	35
2.	Role of PT and ILC in Quality Assurance and maintaining accreditation as per the ISO 17025:2017	17.05.2023	1	50
B. Offline mode (Official)				
3.	Laboratory Quality Management System and Internal Audit as per ISO/IEC 17025:2017	19.06.2023 to 23.06.2023 04.09.2023 to 08.09.2023	2	59

4.	Inspection, Sampling and Prosecution Procedures under Insecticide Act, 1968 (ISPP)	04.07.2023 to 07.07.2023	3	61
		08.08.2023 to 11.08.2023		
		31.10.2023 to 03.11.2023		
5.	Sampling of Fruits, Vegetables and other items for Pesticide Residue Analysis	10.07.2023 to 11.07.2023	1	7
6.	Sampling of Fruits, Vegetables and other items and Calibration of laboratory equipment for Pesticide Residue Analysis	10.07.2023 to 14.07.2023	1	5
7.	Pesticide Formulation Analysis	18.07.2023 to 15.09.2023	1	18
8.	Testing of Physiochemical properties of Pesticide formulations	11.09.2023 to 15.09.2023	1	3
9.	Calibration of laboratory glassware for Pesticide Quality Testing Laboratories	03.10.2023 to 04.10.2023	1	4
10.	Method validation and Measurement of Uncertainty in Pesticide Formulation Analysis	09.10.2023 to 13.10.2023	1	10
C.	Training not in the schedule (Offline mode: Payment basis)			
11.	Basic Training on Pesticide Residue Analysis	19.06.2023 to 23.06.2023	1	4
12.	Handling/Operation of GC-/MS/MS and LC-/MS/MS for analysis of chemical	6.11.2023 to 10.11.2023	1	4
		Total	15	278

During the period, a total of 278 participants from various State Agriculture Department, Gov. of India were trained.

Further, Pesticide Management Division has also contributed to other division of NIPHM by delivering lectures in various training programmes and providing inputs to webinars.

Training & Educational Programs:

Certificate Course on Insecticide Management (CCIM) to Insecticide Dealers:

As per the Insecticide (Amendment) Rules, 2020, the existing Pesticides dealers/distributors, who possess a valid license as on 01.02.2017 and

without qualification prescribed in Insecticides (Second Amendment) Rules, 2017 shall undergo a certificate course on Insecticides Management to continue their services as authorized Dealers/ Distributors of pesticides. Considering certain constraints faced by the dealers/ distributors in attending the course physically, an online module is launched for the course in June 2023. Six hundred and twenty seven (627) existing insecticide dealers had registered for this course till October, 2023.

TESTING/ANALYSIS ACTIVITIES

A. Pesticide Formulation and Residue Analytical Centre (PFRAC)

1) 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 imported fruits and farmers 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). Each sample was tested for presence of 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.



Fig: Pesticide Residue analysis laboratory

2) Analysis of Customers Samples for Pesticide Residue Analysis

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. A total of **186 samples** were received from Tobacco Board and analyzed for pesticide residues.

b) Analysis of samples received from other Customer:

The analytical facilities at NIPHM also utilized for analysis of samples received from customers (Govt. institute/ organization). A total of 8 samples received from farmers and 90 samples from other customer were analyzed.

3) 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 chemical pesticides at traces levels.

A total of **197 samples** received from Insecticide Inspectors of various State Departments of Agriculture and Central Insecticide Inspectors were analyzed during the period. Out of 197 samples analyzed, 22 (11.17%) samples were detected with chemical pesticides at a concentration above 0.01%. The details of bio-pesticides analyzed are presented below.

Table 3: Details of Bio product sample analysed during April to Oct. 2023

Sl. No.	Description	No. of Samples Analysed	No. of Samples detected with pesticides above 0.01 %
1.	Telangana	18	1
2.	Kerala	12	3
3.	Maharashtra	44	2
4.	Bihar	96	10
5.	Gujarat	12	2
6.	Other states	15	4
Total		197	22 (11.17%)

Note: Frequently detected pesticide were *Ahamectin, Chlorantraniliprole, Hexaconazole, Emancelin Benzoate, Fipronil, Thiamethoxam*

**Fig: Sample preparation and analysis of Bio product Sample**

4) Analysis of Pesticide Formulations:

Pesticide Formulation samples (**93 samples**) received from government customers such as National Seed Corporations (NSC), Food Corporation of India (FCI) and private customers were analyzed.

A total of **109 samples** received from CIL/PTL under Interlaboratory comparison (ILC) programme were also analyzed.

POFICIENCY TESTING (April to October 2023)

Proficiency Testing Centre (PTC), NIPHM is accredited by NABL as per the ISO/IEC: 17043:2010 as a Proficiency Testing Provider in the field of Pesticide Formulation Analysis and Pesticide Residues in Agricultural Commodities and water. 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).

PT - Pesticide Residue Analysis:

Three PT programme in Pesticide Residue Analysis were conducted during **November 2022 to October 2023**

S. No.	Matrix / Item	Month	No. of Pesticides Spiked	No. of Participants
1.	Brinjal	December 2022	08	28
2.	Capsicum	August 2023	10	31
3.	Rice Powder	August 2023	10	36
				Total - 95



Fig: Preparation of PT item (Rice, PTC/PR/02/23-24)



Fig: Preparation of PT item (Capsicum, PTC/PR/01/23-24)

PTC in collaboration with CPCB Conducted Analytical Quality Comparison (AQC) in Water (Pesticide Residue) in the month of June 2023:

- 1] PT schemes were completed in Pesticide Quality Control Analysis. 01 AQC Exercise in water.

Sl. No.	Matrix / Item	Month	No. of Pesticides Spiked	No. of Participants
1.	Water	June 2023	11	110

2) PT-Pesticide Formulation Analysis:

Proficiency testing Programs for State Pesticide testing Laboratories are being organized for testing of active ingredient and other physico-chemical

parameters to evaluate their competency.

A total of Three PT programme on **Pesticide Formulation Analysis** were conducted during the period. The details are given below:

S. No.	Item	Month	Test Parameters	No. of Participants
1.	Profenofos Technical	May, 2023	Active Ingredient	42
2.	Thiophanate Methyl WP	May, 2023	Active Ingredient	45
3.	Lambda Cyhalothrin EC	May, 2023	Active Ingredient	48
<i>Total No. of participants in PT-PFA</i>				135



Fig: PT PFA items preparation (Weighing, Packing and Packaging)

PT performance assessment of Laboratory results for the May 2023 programme:

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.	Profenofos Technical	PTC/PF/01/23-24	38 (97.44%)	01	00	03
2.	Thiophanate Methyl WP	PTC/PF/02/23-24	40 (95.24%)	02	00	03
3.	Lambda Cyhalothrin EC	PTC/PF/03/23-24	46 (100.00%)	00	00	02

Note: Percentage of satisfactory z-score is derived considering the number of laboratories submitted the results.

ACCREDITATION ACTIVITY (April to October 2023)**1) Accreditation of Testing (PFRAC) : ISO/IEC 17025:2017**

Pesticide Formulation and Residue Analytical Centre (PFRAC) is accredited laboratory by National Accreditation Board for Testing and Calibration Laboratories (NABL) as per ISO/IEC

17025 in the field of chemical analysis since May, 2012 and the accreditation status is continuously updating to comply. 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: 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 (<i>Gazette Notified CIL activity</i>)	105 pesticides

2) 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 (*conformity Assessment-General requirements for Proficiency Testing*) 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: Number of pesticides under Scope of Accreditation of PTC

S. No.	Area of Analysis	Test
1.	Pesticide Residues in Water	40 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

3) Conducting / Participation in Inter Laboratory Comparison (ILC) and Proficiency Testing (PT) programs:

As a part of improvement of laboratory management system towards quality

assurance and to assess the competence of the analysis, PFRAC, PMD has conducted and participated Inter Laboratory comparison (ILC) and Proficiency Testing (PT) programmes during the period.

Table: 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, Haryana	Carbofuran 3% CG	Active Ingredient	Result Awaited
		Cartaphydrochloride 50% SP	Active Ingredient	
		Pretilachlor 50% EC	Active Ingredient	
2.	University of Agricultural Science, Raichur Karnataka	Fenvalerate EC	Active Ingredient, Emulsion stability, Cold test	Laboratory performance is found satisfactory based on z-score result.
		Hexaconazole SC	Active Ingredient	
		Fipronil SC	Active Ingredient & pH	
3.	SPTL, Sriganganagar, Rajasthan	Mancozeb 75% WP	Active Ingredient	Result Awaited
4.	SPTL, Bharatnagar, Rajasthan	Sulphur 80% WDG	Active Ingredient	Result Awaited
		2,4 D Amine Salt 58% SL	Active Ingredient	

PLANT HEALTH ENGINEERING DIVISION

Executive Summary

Plant Health Engineering Division mainly focuses for maintaining the plant health using interventions through engineering principles. In this context, this division has contributed in the areas of pesticide application techniques, safety measures while handling pesticides, application of Remote Sensing & Geographical Information Systems in plant health management, post-harvest management and storage techniques and also in micro-irrigation. Out of these areas, the division's

major programme is in the area of pesticide application techniques and safety measures. There are many incidences such as Yavatmal in Maharashtra where more than 22 spray operators died due to the improper application of pesticides. Application of pesticides cannot be avoided and hence continues to play a significant role in reducing crop losses due to pests even under IPM as a last resort. The proper techniques of application of these chemicals need to be adopted by the farmers to attain result without health issues, so that incidents like Yavatmal are not repeated. In this context, division continually conducts training

programmes in application and safety aspects to Agricultural/extension Officers, farmers and entrepreneurs.

PHE division has organized 16 training programmes (08 officers, 03 farmers, 02 students programme and 03 exposure visits) and trained 408 participants.

As part of Research and Development, different projects viz., a) Nozzle wear study with municipal water as carrier.

With focus on creation of improved awareness in pesticide application techniques, the Plant Health Engineering Division conducted significant number of trainings in pesticide application techniques, safety measures while handling pesticides. This was with the back drop of various alarming incidents of untimely death and health issues of farmers due to incorrect application of pesticides. In addition to this, training programmes in Remote Sensing & Geographical Information Systems in Agriculture, post-harvest management and storage techniques, water resources, micro-irrigation and agricultural drone were taken up during the year. Application of pesticides continues to play a significant role in reducing crop losses due to pests even under IPM as a last resort and hence proper techniques need to be adopted by the farmers to attain result without health issues. Also, PHE division has organized one webinar on "Synergising Drone Applications in Agriculture".

Most of the trainings programs were organized in online mode. Few off-campus programs were organized for officers and farmers by following

Covid protocol. The various trainings conducted at diversified levels of participants, research and development activities of the division, visits/participation in trainings/ webinars, books/booklet publications etc are detailed below.

Capacity Building Programme:

Capacity building in the area of Plant protection is the major focus of the division. Keeping this in view, trained and skilled manpower should be available to train and empower the farmers/ operators to select, calibrate and operate the spray application equipment. Sensitization and exposure of extension functionaries of State Governments, and other stakeholders to the vital aspects of pesticides application technology is essential for ensuring safe & judicious use of pesticides for enhancing food safety and global trade. Water, an important component for plant also plays an important role in maintaining proper plant health. Similarly, right farm equipment helps for timely plant health management. Also, advanced technology and tools such as Remote Sensing (RS) and Geographical Information System (GIS) help in decision making of plant health management in a quicker manner which contributes in efficiency of overall agricultural management practices. The importance of produce produced has to be taken care from possible damage due to various factors to improve the shelf life and quality and also storage. Improper harvesting, handling transportation and distribution of fruits and vegetables result in the significant losses which cause ultimately economic loss. Emphasis of these scenarios is all covered in the divisional training programs.

Name of trainings & Purpose	Period	No. of participants
Pesticide Application Techniques and Safety Measures - To the state extension functionaries of Agriculture/ Horticulture/ SAUs/ ICAR	03.07.2023 07.07.2023 21.08.2023 25.08.2023	to 36 41
Post-Harvest Management and Storage Techniques -	04.09.2023 08.09.2023	to 76
Remote Sensing and Geographical Information Systems Applications in	02.05.2023 04.05.2023	TO 27

Agriculture - Introduction to Remote sensing and GIS, Remote sensing and GIS applications in disease/ pest management		
Irrigation Systems and Advancements - Irrigation techniques	11.07.2023 to 13.07.2023	22
Digital Agriculture - Innovative business models and partnerships, designing an ideal ICT solution for various needs, various principles of digital development, importance of feasibility studies, Requirements Analysis with focus on agriculture applications, the SDLC process, various software development process etc.	24.07.2023 to 26.07.2023	9
Farm equipment for Plant Health Management - status of farm mechanization in India, equipment and practices for land preparation, transplanting, plant protection equipment, weeders and dusters, innovations in plant protection equipment, use of drones in agriculture	02.05.2023 to 04.05.2023	41

PESTICIDE CONSUMPTION: GLOBAL & INDIAN SCENARIO

Region	Consumption (kg)
India	121,60,404.5
China	121,60,404.5
USA	11,26,159.36
World Total	133,86,563.86
Residual	5,542 kg

Crop Sprayer App

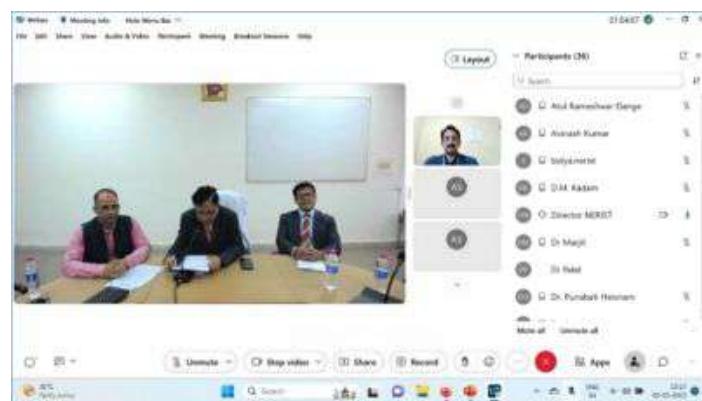
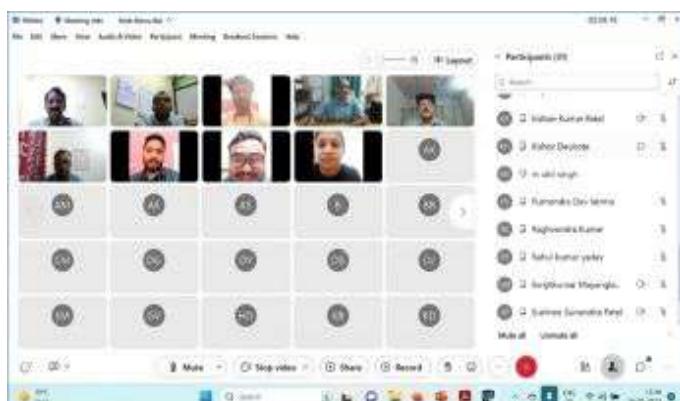
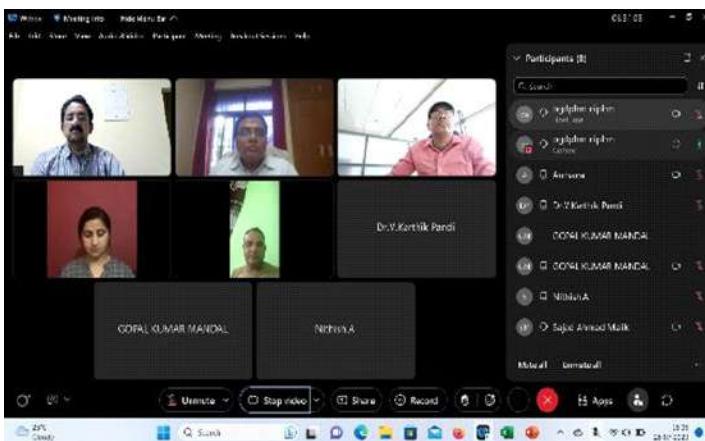
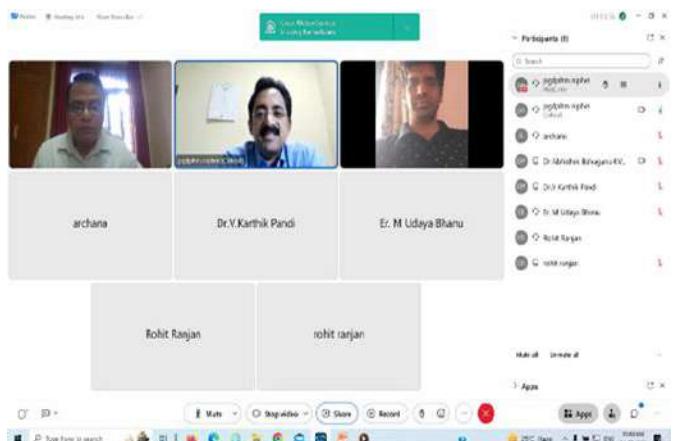
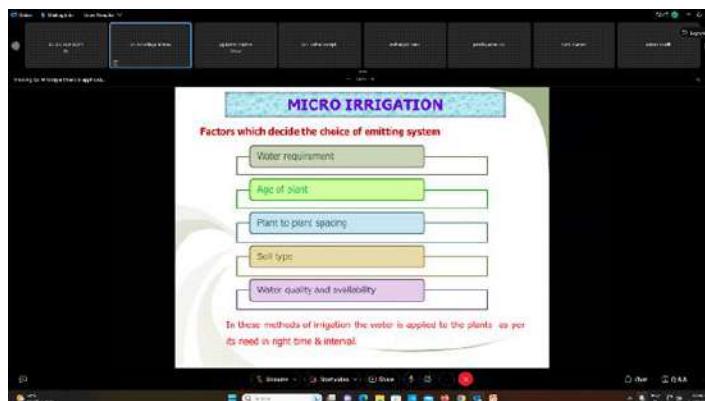
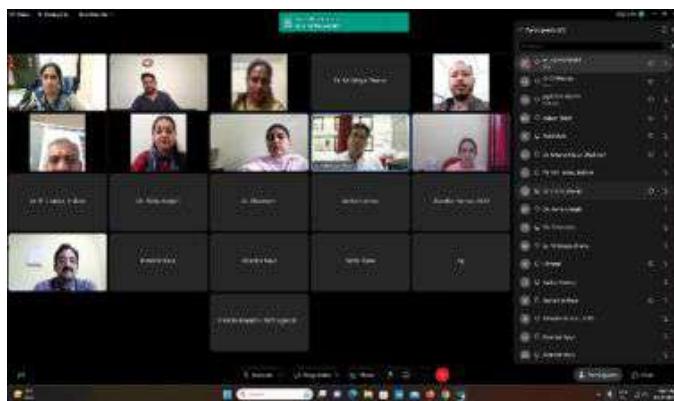
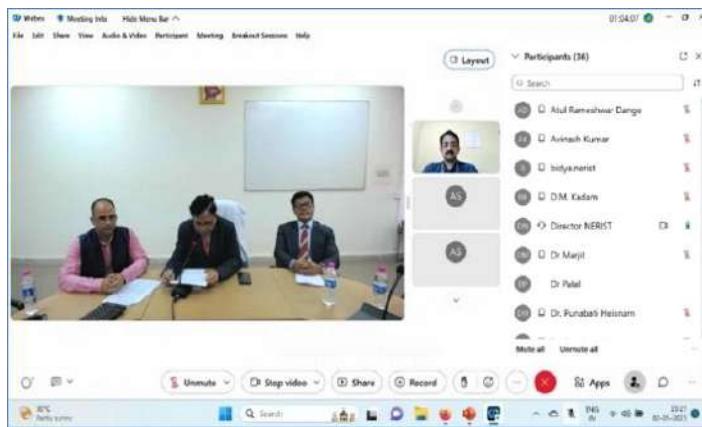
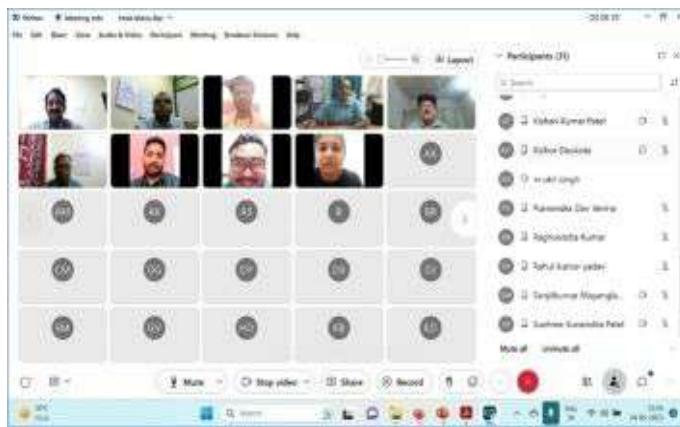
A free Android app that enables users to calculate how much pesticide to use based on user-inputted values when treating their crops.

Benefits

- Downloadable pack of country-specific databases.
- Calculate how much pesticide concentrate to put in different types of pesticide mixtures.
- Calculate how many spray tanks are needed to spray an area.
- Calculate total amount of pesticide concentrate required.
- Languages: English, Spanish, French, Kannada.

Participants

- Dr. Sunit
- Dr. Jagdish Singh
- Praveen Singh
- Mr. Mudit Marjan, CDR, IITB
- Dr. M. Gidya Shashi
- Host
- Mudit Marjan, CDR
- ADA/DR, Kakinada
- Arati Barde
- Ayushi Bagal
- A. Veni
- B. Ravindra Kengar
- Mukul
- Showkat



I) Special Training programmes

- **Pesticide Application Techniques and Nozzle selection (BCI):**

A special 3 days training on “Pesticide Application Techniques and Selection of Nozzles” for the *Better Cotton Initiatives*

officials at the NIPHM campus on from 08th to 10th August 2023 on payment basis. Twenty-five officials registered and attended the training programme. Total twenty-five participants 23 male and 2 female attended the programme.



ii) 'Programmes for Students:

- **Pesticide Application Techniques and Safety Measures:**

Pesticide Application Techniques and Safety Measures" training conducted for the Agricultural Engineering students from Kerala (St Thomas College of Engg& Technology). A total of 21 students attended 8 days training programme from 11th to 18th September 2023. The program

emphasized on adverse impact of pesticides, principles of spraying, application techniques and selection of sprayer, nozzles and its selection criteria, calibration, advanced spraying equipment, safety measures while handling pesticides, care and maintenance of equipment, formulations and compatibility, pesticide drift management, droplet size, AI in spraying, Drones in Agriculture, a special session from CABI on digital tools.



- Pesticide Application Techniques and Safety Measures**

"Pesticide Application Techniques and Safety Measures" conducted for the Agricultural Engineering students from TN (Sri Shakti College of Engg& Technology. A total of 59 students attended the 2 days training programme from 19th to 20th September 2023. The program emphasized on adverse impact of

pesticides, principles of spraying, application techniques and selection of sprayer, nozzles and its selection criteria, calibration, advanced spraying equipment, safety measures while handling pesticides, care and maintenance of equipment, formulations and compatibility, pesticide drift management, droplet size, AI in spraying, Drones in Agriculture



- Exposure visits:**

Two exposure visits to officers were organized exclusive on engineering aspects one May 2023 for 30 participant and second one for 18 participants during

August 2022. Total 48 participants attended exposure visit. The participants were enriched with advanced plant protection techniques. The participants were briefed on techniques like electrostatic spraying, drone spraying etc.



iii) Programmes for Farmers:

- Pesticide application Techniques and Safety Measures**

An off-campus farmers training was organized on “Pesticide Application techniques and safety measures” at Udaraspally village, Shabad, Telangana state. Program started with welcoming NIPHM

faculty. Total 33 farmers (Male-33) are mobilized from nearby village Ahmed Nagar attended the training program. The program emphasized on adverse impact of pesticides, principles of spraying, application techniques and selection of sprayer, nozzles and its selection criteria, safety measures while handling pesticides



- Pesticide application Techniques and Safety Measures**

An off-campus farmers training was organized on “Pesticide Application techniques and safety measures” at Golluriguda village, Shabad, Telangana state. Total 18 farmers (Male-33) are mobilized

from nearby village Ahmed Nagar attended the training program. The program emphasized on adverse impact of pesticides, principles of spraying, application techniques and selection of sprayer, nozzles and its selection criteria, safety measures while handling pesticides.



iv) Drone trainings

- Basic Remote Pilot Certification:**

This training is part of the Drone Academy who trains and certifies the Drone Pilots for use of drones in various applications. The academy has been certified as RPTO (Remote Pilot Training Organization) in association with an Industry partner (M/s MarutDrones). Total 2 training programme for 09 candidates (7 male and 2 female) attended the 5-day programme, conducted during April to May 2023. Lectures were arranged on topic viz., Introduction on international civil aviation organization, RPAS with in ICAO frame work,

formation of RPAS, Classification of drones, Drone operation zones, ATC procedure , radio telephony and flight radio telephony, Basic principles of flight, Types of wind designs, Battery maintenance, Rotorcraft operations and aerodynamics, Application of drones in each sector, Hybrid operations and aerodynamics, Weather and meteorology, Risk assessment and analysis safety management system, drone maintenance etc. The lab assembly and maintenance of drones and simulation experiments for drone flying also was included in the curriculum. Exclusive 2 days of on-field flying classes also were conducted in dual as well as solo mode.



- Agricultural Drone Remote Pilot Certification:**

NIPHM started conducting agricultural chemical spraying training through drones. One batch of trainees was conducted in association with M/s Syngenta Foundation. Total 11 programme for 78 candidates attended the 7-day programme, conducted during April to October 2023. In addition to

general aviation topics like International civil aviation organization, RPAS with in ICAO frame work, Classification of drones, Drone operation zones, ATC procedure and radio telephony and flight radio telephony, etc, Agricultural Standard Operating procedures during chemical spraying, Crop specific SOPs, Nozzles and their functionality, Dos and Don'ts in chemical spraying, safety, care and maintenance of drones and agri sparing

system etc. also were dealt in detail. Lab assembly of drones and simulation experiments of drones also were conducted.



Exclusive three days of flying also were arranged for the trainees.



Projects 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

(A) Monitoring of Pesticide Residues at National Level Achievements - 2023-24:

The central sector project on "Monitoring of Pesticide Residues at National Level (MPRNL)" was initiated during 2005-06 by DA&FW to monitor pesticide residues in food commodities and water. These samples are collected by the participating laboratories and analysed by the NABL accredited testing laboratories.

The main objectives of the project include:

- Test pesticide residues in food commodities and environmental samples like water
- Identify crops and regions having preponderance of pesticide residues
- Promote Good Agricultural Practices among farmers and implementation of Integrated Pest Management (IPM).

The MPRNL project is monitored by two committees, namely, Steering Committee and Technical Committee. The policy decisions related to the scheme are under the preview of the Steering Committee headed by the Joint Secretary (Plant Protection), Department of Agriculture & Farmers Welfare while the decisions related to the technical issues are under the purview of the Technical Committee, headed by the Assistant Director General (Plant Protection & Biosafety), Indian Council of Agriculture Research (ICAR). The Network Coordinator, All India Network Project on Pesticide Residues, IARI, New Delhi is the Scheme In-Charge and is the nodal person for the day-to-day implementation of the project related to financial and technical matters and submission of monthly reports, annual reports and need based information to the Department of Agriculture & Farmers Welfare.

Under the project, there are 35 participating laboratories that collects the samples of food commodities such as vegetables, fruits, cereals, pulses, spices, herbs, milk, egg, fish/ marine, meat and tea as per the approved technical programme approved during the annual workshop of the scheme from various Agriculture Produce Marketing Committee (APMC) markets, local markets, farm gate, organic outlets and surface water from intensive agricultural fields from various parts of the country and analyse for the possible presence of pesticide residues. The participating laboratories represent Ministry of Agriculture & Farmers Welfare, Ministry of Health

and Family Welfare, Ministry of Environment and Forest, Ministry of Chemical and Fertilizer, Ministry of Commerce, Indian Council of Agriculture Research, Council of Scientific and Industrial Research and State Agricultural Universities across the country.

The funds released by the DA&FW are distributed to the various participating laboratories for the procurement of chemicals, glassware, reagents, CRMs, spare parts, maintenance of equipments, sample collection, participation in workshop, training, hiring of contractual manpower, sample testing, report submission and funds to laboratories on per sample basis.

In order to ensure the uniformity in the methodology like sampling, extraction and cleanup of the samples, the "Pesticide Residue Analysis Manual" reviewed and published by the Indian Council of Agricultural Research, has been provided and followed by all the participating laboratories. In addition to this, need based new analytical methods are developed, validated and adopted by the laboratories.

All the testing laboratories are selected on the basis of NABL accreditation status and availability of the instrument's facility under the project, are involved in the sample collection as well as analysis of the samples. All the testing laboratories under the project are maintaining NABL accreditation as per ISOIEC 17025:2017 in the field of pesticide residue analysis to generate reliable & credible data. The sample collection laboratories collect samples from

the uncovered areas and transport the same to the sample testing laboratories for analysis. To evaluate the technical competence of the testing laboratories under MPRNL project, proficiency testing (PT) programme are conducted by NIPHM, Hyderabad which is an approved PT provider as per ISO/IEC 17043. The performance of the labs is evaluated in terms of z score. The reports are shared with the participating centers for corrective actions and the summary of the z scores are reported to the Scheme In charge. In case of any deviation root cause analysis is conducted. During April-September 2023-24 NIPHM, Hyderabad conducted two PT programmes in capsicum and rice.

The hands-on training programmes are conducted to enhance the knowledge and skills of the scientists/ researchers in the scheme. To gain exposure to advances in field of food contaminants at international level, scientists participate in trainings/ seminars/ workshops/ Codex meetings. The 36th Technical Committee meeting was conducted for technical decisions under the scheme. The 13th Steering Committee meeting was held to review the policy related decisions under the scheme. The monthly Technical Programme for the year 2023-24 was circulated to the participating laboratories. During 2023, two new laboratories (SKUAST, Srinagar and TRA, Jorhat) have been included as sample testing laboratories under the project, for monitoring of samples from uncovered states of Jammu & Kashmir and Assam, respectively.





Glimpses of Training Programme

During April-September 2023, 13,780 samples of vegetables, fruits, spices, cereals, pulses, milk, fish/marine, tea, meat, egg, curry leaves and ground water were collected and analysed for the presence of possible residues of pesticides by the participating laboratories. Out of these samples 4.1% samples were detected with pesticide residues above FSSAI MRLs.

Monthly progress report of the project is submitted to DA&FW regularly. The information generated under the project regarding the samples detected with pesticide residues above MRL and detection of offlabel pesticides is utilized by the State Agricultural Departments to promote safe & judicious use of pesticides among the farmers. Need based information is provided to the Parliamentary Standing Committee on Agriculture, Reply to Parliament question, Honourable court of law, Right-to-Information (RTI), Food Safety and Standards Authority of India (FSSAI) and other regulatory agencies in India.

Scheme in charge of MPRNL was the part of Indian delegation of 54th session of Codex Committee on Pesticide Residues (CCPR) held during June 26- 1

July, 2023. She chaired the session on Monitoring the purity and stability of certified reference material of multiclass pesticides during prolonged storage and provided inputs on other agendas related to management of unsupported compounds without public health concern scheduled for periodic review by JMPR, Revision of the Classification of Food and Feed, Enhancement of work management of CCPR and JMPR, National registration of Pesticides and Establishment of CCPR schedules and Priority lists for the evaluation/re-evaluation of pesticides by JMPR.

Based on the monitoring data on spices generated under MPRNL project, CCPR54 agreed to advance the MRL of 0.1 mg/kg of acetamiprid for cardamom seed for adoption at Step 5/8. Further, India proposed to submit the monitoring data of thiamethoxam, azoxystrobin, tebuconazole, difenoconazole and pyraclostrobin on cumin for JMPR evaluation for fixation of Codex MRLs. The five pesticides have been included in the periodic list with thiamethoxam, azoxystrobin and tebuconazole being scheduled for review in the year 2024 and difenoconazole and pyraclostrobin in the year 2025.



Participation in 54th Session of Codex Committee on Pesticide Residues

Chapter-24

GENDER PERSPECTIVE IN AGRICULTURE

24.1 Overview

Women play a very important role in agriculture and rural development in our country. Agriculture, the single largest production endeavor in India is contributing substantially to the GDP and is increasingly becoming a female activity.

As per the Economic Survey 2022-23, 65 percent (2021 data) of the country's population lives in the rural areas and 47 per cent of the population is dependent on agriculture for livelihood. The Government's emphasis on rural development has been by way of improving the quality of life in rural areas to ensure more equitable and inclusive development. The aim of engagement of the government in the rural economy has been "transforming lives and livelihoods through proactive socio-economic inclusion, integration, and empowerment of rural India."

Rural women are increasingly participating in economic activity. The economic survey notes the noticeable rise in Rural Female Labour Force Participation Rate (FLFPR) from 19.7 per cent in 2018-19 to 27.7 per cent in 2020-21. This upturn in the FLFPR is a positive development on the gender aspect of employment and could be attributable to rising rural amenities freeing up women's time and high agricultural growth over the years.

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. The increasing percentage of female operational holders during different Agriculture Censuses indicates the participation of more and more women in the operation and management of agricultural holdings in the country.

In the field of agriculture, women farmers are contributing extensively to the development of the

sector and play multiple roles from being a producer, cultivators and entrepreneurs. There is empirical evidence that women have a decisive role in ensuring food security and preserving local agrobiodiversity. Rural women are responsible for the integrated management and use of diverse natural resources to meet daily household needs. The agricultural sector is an essential source of economic growth, employment, poverty reduction, food and nutritional security. Women play a vital role in agriculture and therefore, gender-inclusive growth and development projects in agriculture tend to be effective, socially and economically. Bridging the gender gap in access to productive resources in agriculture boosts agricultural productivity and income.

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 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.

The Gender Budget has been made a part of the Union Budget of India since 2005 and entails fund allocation towards programmes/schemes dedicated to women. Through this effort, the Government is promoting gender equality with a focus on alleviating the gender gap in all sectors and at all levels of governance. The Department of Agriculture & Farmers Welfare is earmarking funds to be used in schemes and programmes aimed at bridging the gender gap.

24.2 CURRENT INITIATIVES OF NGRCA

Being a Nodal Centre for Women in Agriculture in DA&FW, the centre is involved in the following activities:-

- In collaboration with the Extension Education Institute, Anand celebrated 'Mahila Kisan Diwas' or 'International Rural Women Day' on the theme "**Sustainable Agriculture through Gender Inclusion and Participation**" in hybrid mode on 15th October, 2023 at the Anand Agriculture University, Anand. Officials from DA&FW and various institutions participated in the said event. A book titled **Motivational Stories of Women in Agriculture** compiled and edited by NGRCA was launched by dignitaries on the occasion with the purpose of cross learning and replication of the stories narrated, offering valuable resources and information to the women farmers. The event also featured an exhibition where women farmers and entrepreneurs exhibited their products. 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. Events including trainings and felicitation of women farmers and agripreneurs were also organized across the country on the occasion of Mahila Kisan Diwas by the States/UTs and institutions working under the aegis of the Department of Agriculture& Farmers Welfare.
- **Side events on Women led development 2023** - National Gender Resource Centre in Agriculture, Directorate of Extension, Department of Agriculture & Farmers Welfare organized various side events across the country on the theme 'Women Led Development' during India's presidency of G20 with focus on Gender Mainstreaming and highlighting the contribution of women in Agriculture. Meetings/events/workshops were organized in collaboration with State Agricultural Universities, Indian Council of Agricultural Research and institutions working under the aegis of the Department of Agriculture& Farmers Welfare making it a Peoples' Event (Jan Bhagidari).
- Undertaking macro/micro level studies in critical thrust areas including assessing the gender contents and impact of various ongoing 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.
- Looking into the budgetary commitments of various schemes/programmes of DA&FW through Gender Budgeting Cell (GBC) to ensure proportionate flow of funds and benefits to women farmers.
- As a part of convergence strategy, NGRCA is initiating collaborations with Ministries/ Departments/ eminent institutions working for women in agriculture.

24.3 GENDER MAINSTREAMING EFFORTS OF VARIOUS DIVISIONS OF DA&FW

The various gender mainstreaming and gender budgeting efforts of various 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 – Krishonatti Yojana. It is under implementation in 739 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 as 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, 2023), a total 1,65,66,062 farm women (26.83 % of the total benefited farmers) have participated in farmer oriented activities like Exposure Visits, Trainings, Demonstrations, Farm Schools& Kisan Melas. During FY 2023-24 (up to 31st December, 2023); 15,10,720 farmers including 4,70,951 farm women (31.17%) 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 initiatives / advisories / modern technologies related to agriculture and allied sectors for the welfare of farming community through Electronic, Print Media and Social Media added to harness the potential & growth in spread of mobiles & internet usage in the rural areas.

The 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 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.

The scheme is being implemented through Doordarshan, DD Kisan and All India Radio to telecast & broadcast the sponsored agriculture and allied sector programmes.

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 , Twitter, Instagram, Youtube and other social media platforms are also being utilized.

Establishment of 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 of the Scheme on behalf of Government of India and is monitoring credit support to Agri-Clinics and Agri-Business Centres through Commercial Banks.

Candidate from Women category are entitled for an additional benefit of 44% subsidy on the Total Financial Outlay (TFO) as against to 36% for General Category Candidates. There is provision for awarding exclusively women agri-preneurs under the programme. Also women agri-preneurs can co-obligate parents/ husband for availing credit facilities.

7831 women candidates have been trained and 2670 agri-ventures have been established by them in the country during the period of implementation of the Scheme upto December, 2023. Out of these

ventures established, 218 have been subsidized as on December, 2023. During the year 2023-24, 430 candidates have been trained and 139 agri-ventures have been established and 18 ventures have been subsidized upto December, 2023. Details of the programme are available on the website www.agriclinics.net.

Extension Education Institutes (EEIs):

Ministry of Agriculture and Farmers Welfare has established four Extension Education Institutes on regional basis at Nilokheri (Haryana); Hyderabad (Telangana); Anand (Gujarat) and Guwahati/ 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 2023-24 (upto December, 2023), the Extension Education Institutes (EEIs) conducted training courses with 4083 extension functionaries including 1000 women extension functionaries.

Diploma in Agricultural Extension Services for Input Dealers (DAESI): DAESI is 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 and State Agricultural Universities. There is a course fee of 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 2023-24 (upto December 2023), under DAESI programme, training was provided to 4949 input dealers including 345 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 organizations, 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 2023-24 (upto October, 2023), a total number of 2186 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 disaggregated data is being collected in Agriculture Census. The scope of collection of gender disaggregated 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 the latest Agriculture Census 2010-11 and 2015-16 is given below:

Sr.	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.

C. AGRICULTURAL MARKETING

Central Sector Scheme for "Formation and Promotion of 10,000 Farmer Producer Organizations (FPOs): The Central Sector Scheme for "Formation and Promotion of 10,000 Farmer Producer Organizations (FPOs)" was launched in the year 2020, to form and promote 10,000 FPOs by 2023-24 with a total budgetary outlay of Rs.6865 Crores which includes committed liability of Rs. 2370 Crore for a period from 2024-25 to 2027-28 towards handholding support to FPOs for 5 years.

Under the scheme, the FPOs are to be developed in produce clusters, wherein agricultural and horticultural produce is grown/cultivated for leveraging economies of scale and improving market access for members. Formation and promotion of FPOs are to be done through Implementing Agencies (IAs), which further engage Cluster Based Business Organizations (CBBOs) to form & provide professional handholding support to FPOs for 5 years. Under the scheme, there are special provisions in the operational guidelines to empower women farmers such as providing special focus, inter-alia, to include women farmers/women Self Help Groups (SHGs), as members to make FPOs more effective and inclusive; and making provision to prefer women farmers" as its shareholders. Women are an integral part of FPOs and therefore, farmer

members both men & women are mobilized during its formation stage through awareness creation.

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 off 25%.

D. CREDIT

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

Pradhan Mantri Fasal Bima Yojana (PMFBY) aims at supporting sustainable income in crop production, especially in adverse climatic conditions by way of providing financial support to farmers suffering

crop loss/damage arising out of unforeseen events, stabilizing the income of farmers to ensure their continuance in farming, encouraging farmers to adopt innovative and modern agricultural practices, ensuring credit worthiness of the farmers, crop diversification and enhancing growth and competitiveness of agriculture sector besides protecting the farmers from production risks.

In the scheme, all farmers including women, sharecroppers and tenant farmers growing the notified crops in the notified areas are eligible for coverage as per the laid down terms and conditions as per the scheme guidelines.

E. 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 (Shree Anna) 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 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.

F. 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 the 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 is 3,02,94,901 (as on 30/11/2023).

- **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 payout.

Under PM-KMY Scheme, any small and marginal farmer having cultivating landholding 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 from inception of Scheme is 8,00,898 (as on 12/12/2023).**

G. HORTICULTURE

Mission for Integrated Development of Horticulture (MIDH)

The Mission for Integrated Development of Horticulture (MIDH), a Centrally Sponsored Scheme is under implementation w.e.f. 2014-15, for holistic growth of the horticulture sector covering fruits, vegetables, root and tuber crops, mushrooms, spices, flowers, aromatic plants, coconut, cashew, cocoa and bamboo. Mission subsumes National Horticulture Mission (NHM), Horticulture Mission for North East and Himalayan States (HMNEH), National Horticulture Board (NHB), Coconut Development Board (CDB) and Central Institute of Horticulture (CIH), Nagaland. Government of India (GOI) contributes 60% of total outlay for development programmes in all the States except the States in North East and Himalayas, 40% share is contributed by State Governments. In case of North Eastern States and Himalayan States, GOI contribution is 90%. Similarly, for programmes of National Horticulture Board, Coconut Development Board, Central Institute for Horticulture, Nagaland, UTs and the National Level Agencies, GOI contribution is 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'.

Directorate of Arecanut and Spices Development (DASD):

The Directorate is ensuring that the MIDH programmes implemented through SAUs and ICAR institutes are prioritizing women beneficiaries such as women farmers, women SelfHelp Groups, women entrepreneurs etc. in all the development programmes. The implementing agencies have 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 spices / aromatic crops.

Directorate of Cashew nut and Cocoa Development (DCCD):

Cashew crop has emerged as the most popular commercial horticulture crop in India as it fetches considerable foreign exchange to the Indian exchequer. Nearly one million farmers are engaged in the cultivation of cashew, of which 5 lakh persons

work in processing sector involving 95% women workers. Cashew, therefore plays a prominent role in Indian Agrarian economy and provide sizeable employment especially for women. The DCCD has been provided adequate provision for women empowerment in cashew and cocoa sector under HRD programmes under MIDH. A special scheme on training for women with 100% participation is envisaged to popularize the usage of cashew apple for preparation of value added products which will be imparted to the unemployed women in association with Cashew Research Stations and State Agriculture Universities(SAUs). The duration of the training is one day with 25 people per batch. A provision of Rs. 20,000 per training will be provided for conducting the training. During 2023-24, this training will be benefitted to 500 unemployed women. This training on processing of cashew apple add substantial income to the beneficiary and also avoids the nutritional loss.

Apart from this, 30%(1,125 No's) participation is also ensured in the one day farmer level training programmes on "Cashew and Cocoa production technologies" envisaged in the action plan of the Directorate , which is conducted with class room training and field visit.

Central Institute of Horticulture (CIH) : Central Institute of Horticulture, Medziphema, Nagaland has conducted various training programmes, skill development & certificate courses, demonstrations for women involved in horticulture and agriculture sector for empowerment as well as to respond to the needs of farm women. Various activities have been taken up by the Institute and the broad areas of activities related to extensions are focused on developing resource management by women horticultural labourers, mobilization of rural women through women selfhelp groups, exposure trips and training offarm women and beneficiaries to empower them and make them independent through selfemployment.

Women beneficiaries trained under Improved production of Horticultural crops, Post harvest management & Value addition including off farm demonstrations

2023-24	Farmers training	205 female out of 431 participants
2023-24	Off farm demonstration	To empower women SHGs, the Institute established demonstration on Integrated

		Horticulture Model covering an area of 0.5 ha at farmers' field under Peren district of Nagaland. The beneficiaries comprise of 60 women. The Institute is providing technical support in the form of trainings, distribution of quality planting materials of Jitchi var. Muzzaffapur, Shahi and Tezpur Seedless.
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H. 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.

I. MECHANIZATION AND TECHNOLOGY

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)** is being implemented 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 platform for converging 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:

The four Farm Machinery Training and Testing Institutes (FMTTIs) 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 customized Training programmes and field demonstrations as well. The duration of the training varies from 2-5 days for which they are paid to and fro 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.

State Governments have been directed to earmark 30 per cent of total funds allocated under SMAM for women beneficiaries.

A total number of 7177 women received training at the 4 FMTTIs during the FY 2023-24 (up to

31.12.2023).

For **promotion of Drone Technology**, financial assistance is extended to beneficiaries like FPOs 75 % cost of Drone up to a maximum Rs. 7.5 Lakh , for individuals Farmers like SC, ST, Small, Marginal, Women and NE state Farmers 50 % cost of Drone up to a maximum Rs. 5 Lakh and for other individuals farmers 40 % cost of Drone up to a maximum Rs. 4 Lakh.

J. NATURAL RESOURCE MANAGEMENT

Sub-Mission on Agro-forestry (SMAF) was implemented from 2016-17 to 2021-22 to encourage and expand tree plantation on farm land, with the motto of "Har Medh Par Ped", along with crops/ cropping system under national Mission of Sustainable Agriculture (NMSA) as part of the recommendation of the National Agro-forestry Policy 2014. However, the SMAF scheme was discontinued w.e.f. 1st April 2022 as per recommendation of EFC. The scheme has now been restructured with focus on Quality Planting Material as an Agro-forestry component to be implemented as one of the components of Rashtriya Krishi Vikas Yojana (RKVY).

The scheme aims to ensure availability of Quality Planting Material like seeds, seedlings, clones, hybrids, improved varieties, etc. As such, tree farming combined with agriculture is perhaps the only way forward to optimize the farm productivity and thus, enhancing livelihood opportunities of small farmers, landless and the women as well as only option to green cover out of the forest. Plantation will optimize the farm productivity and income thereby enhancing livelihood opportunities of small & marginal farmers including women. 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.

K. PLANT PROTECTION

Directorate of Plant Protection Quarantine and Storage (DPPQ&S), Faridabad

The primary aim of this DPPQ&S is 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 alien species. The sub mission also seeks to facilitate exports of Indian Agricultural commodities to global markets and to promote good agricultural practices, particularly with respect to plant protection strategies and techniques. The Destructive Insect and Pests Act, 1914 and the Insecticides Act, 1968 provide the legal framework for the regulatory function. The Government has established Central Integrated Pest Management Centres (CIPMC) in 28 States and two Union Territory in the country. These Centers impart field oriented training to extension functionaries and farmers through Farmers' Field Schools (FFSs), 2 days & 5 days Human Resource Development programmes to promote IPM. CIPMC are conducting FFS, 2 days HRD programme, Seed treatment campaign and safe & judicious use of pesticides awareness programmes regularly in which women farmers are actively participating and taking knowledge on various IPM technologies. 5064 numbers of women farmers were participated in these programmes conducted by 36 CIPMC's during Kharif season 2023-24 (till date).

L. RAINFED FARMING SYSTEMS (RFS)

Under the 'Rainfed Area Development scheme' for promoting Integrated Farming System and 'Per Drop More Crop' scheme for promoting micro-irrigation, the guidelines of these schemes/programmes entails that, at least 50% of beneficiaries should be small and marginal farmers and out of which 30% of the budget allocation is earmarked for women beneficiaries/farmers.

M. RASHTRIYA KRISHI VIKAS YOJANA (RKVY)

Rashtriya Krishi Vikas Yojana (RKVY) is a Centrally Sponsored (State Plan) Scheme. The funds are released to the State Governments as Grants-in-Aid on the basis of projects in agriculture & allied sectors approved in the State Level Sanctioning Committee Meeting (SLSC) headed by the Chief Secretary of the concerned State, which is the empowered body on the matter. States have been provided flexibility and autonomy for selection,

planning approval and execution of projects/programmes under the scheme as per their need, priorities and agro-climate requirements.

No gender specific budget is allocated under RKYV. The above scheme envisages that while selecting beneficiaries under any project, adequate coverage of small and marginal farmers, Scheduled Castes, Scheduled Tribes and women and other weaker segments of society is ensured by the State Governments so that the benefits of implementation of a particular project or the scheme as a whole accrue to the intended beneficiaries in accordance with policies of the Government.

Department is implementing "Innovation and Agri-Entrepreneurship Development" programme under Rashtriya Krishi Vikas Yojana (RKVY) from 2018-19 with an objective to promote innovation and agripreneurship by providing financial support and nurturing the incubation ecosystem in the country.

So far, 380 women led start-ups working in various field of agriculture & allied sector have been trained and provided financial support through selected Agri Business Incubators under this programme.

N. SEEDS

Under Sub-Mission on Seeds and Planting Material (SMS), the Seed Division is implementing the Seed Village Programme to upgrade the quality of farmer's saved seeds. Under the programme, financial assistance for distribution of foundation/certified seeds at 50% subsidy for cereal crops and 60% for pulses, oilseeds, fodder and green manure crops for production of quality seeds is available/ provided for farmers including women farmers. The objective of this scheme is to make available improved /high yielding varieties seeds to the farmers in time to achieve self-sufficiency in respect of seeds at village level itself.

The scheme is demand driven and implemented by the concerned State for welfare of all farmers including that of women farmers. There is no separate budget allocated/ earmarked and released exclusively for woman farmers. However, implementing States/ agencies are requested to cover adequate participation of women farmers' in the scheme.

THE WAY FORWARD:

Women farmers are backbone of the Indian agriculture and are actively involved in every aspect of the agricultural sector, farming and food production, value chain management to the development and decision making. Involve women in project planning, monitoring and execution stages of development projects through Public Private Partnerships and investments using Gender Action plans; undertaking Gender Analysis; ensuring Gender involvement and consultations; Capacity Building and gender mainstreaming skills of the staff involved in project development and implementation; supporting wider activity of women across project life cycle; support complementary measures and may be inclusive of income generating opportunities. To provide women with better growth opportunities, they should be provided with better education, skilling and micro-financing opportunities. A multi-sectoral strategy to raise awareness among women about the government's initiatives and mechanisms should be devised. To ensure the engendering development, specified pro-women initiatives and actions at the lowest level of governance, improvement in basic amenities at rural level for reducing their duality of burden and working towards the Women Development to Women Led Development. Women farmers should be re-imagined as architects of agriculture sector's progress and development rather than being passive recipients of the fruits of development. The ripple effects of Women Led Development are undeniable as an educated and empowered woman will ensure education and empowerment of future generations. Initiatives are being implemented to address these challenges and promote gender equality in agriculture. Organizations and governments are working to increase women's access to land, credit, and markets, as well as providing training and education opportunities specifically tailored to women in agriculture. By empowering women in agriculture and recognizing their vital role, it is possible to improve their livelihoods, enhance food security, and promote sustainable rural development.

In conclusion, women in agriculture are crucial to global food production and rural development. Their contributions are significant for ensuring

food security, reducing poverty, and promoting sustainable agricultural practices. Therefore, recognizing and addressing the challenges they

face is necessary to ensure gender equality in the sector and unlock the full potential of women in agriculture.







Chapter-25

ACCOUNTING ORGANIZATION OF DEPARTMENTAL

25.1.1 Overview

The Secretary is the Chief Accounting Authority in the Department of Agriculture & Farmers' Welfare. Secretary discharges his functions with the assistance of Additional Secretary & Financial Adviser (AS & FA) and Chief Controller of Accounts.

25.1.2 As per Para 1.2.2 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.

25.1.3. The Chief Controller of Accounts, Department of Agriculture & Farmers' Welfare performs his duties with the assistance of 2 Controller of Accounts, 1 Assistant Controller of Accounts and 9 Principal Accounts Officers (Admn/Estdt; Accounts, Treasury Payments, IAW & IAP) at HQs and with the help of 11 Pay & Account Offices attached with Ministry of Agriculture & Farmers' Welfare and Ministry of Fisheries, Animal

Husbandry and Dairying. Zonal Internal Audit Parties headed by Senior Accounts Officers is also stationed at Kochi who works under the control of IAW (HQ). The Departmental of Accounting Organization set-up in Ministry of Agriculture & Farmers Welfare regarding distribution of work in the Office of Chief Controller of Accounts are given at **Exhibit 'A'**. The Department of Agriculture & Farmers' Welfare has 155 NCDDOs & 20 CDDOs attached with the PAOs. The Accounting Information flow chart is given at **Exhibit 'B'**

25.1.4. Roles and Responsibilities of CCAs as Heads of Accounting Organization in Ministry/Department

In terms of O/o CGA OM No. TA-2-01001/2/2020-TA-II(Comp 2001)/596 dated 23rd July, 2021, the Pr.CCAs/CCAs/CAs(IC) of the Ministries/ Departments concerned are the Heads of the Accounting Organization in the respective Ministries/Departments. Their broad functions are prescribed as below-

a. Receipts, Payments and Accounts:

- I. Oversee that effective and efficient systems with necessary internal controls are in place for accounting of all receipts and payments of respective Ministry/Departments of the Central Government.
- ii. Supervise payments and receipts through Pay and Accounts Offices and Cheque Drawing and Disbursing Offices (CDDOs) of various Central Civil Ministries/Departments in conformity with prescribed Rules and regulations.
- iii. Supervise timely payment to claimants (Government servants, vendors, grantee and loanee institutions etc. including payment to suppliers w.r.t procurement through GeM) as per codal provisions.

- iv. Ensure efficiency, accuracy and timely submission of monthly and annual accounts to o/o of CGA.
- v. Ensure timely, accurate, comprehensive, relevant and useful Financial Reporting.
- vi. Ensure accuracy and timely submission of monthly reports to o/o CGA
- vii. Monitor efficient service delivery to the Ministry/Department by the accredited/authorized banks and monitor their system for timely realization of receipts into Government Accounts.
- viii. Monitor adherence to prescribed accounting standards, rules and principles.
- ix. Ensure timely submission of Audited Annual Appropriation Accounts duly signed by Chief Accounting Authority of the Ministry/Department to o/o CGA.
- x. Ensure preparation of annual 'Accounts at a Glance' in r/o their Ministry/Department.
- xi. Examine the proposal of Ministries/ Departments for opening of a Personal Deposit Account or framing accounting procedure in respect of a newly created Fund in the Public Account of India for making it operational.
- xii. Review of payment sanctions (including GST refunds sanction) by Pr.CCA /CCA /CA as per the monetary limit prescribed by O/o CGA from time to time.
- xiii. Monitor the clearance of balances under Debt, Deposit, Suspense and Remittance (DDSR) heads and take timely corrective actions to clear adverse balances under the heads.
- xiv. Monitor opening of appropriate heads of account for new schemes as per Budget circular and LMMHA.
- xv. Monitor timely and accurate authorization of pension and other retirement benefits to retiring Government servants.
- xvi. Coordinate with GeM Standing Committee on the matters relating to procurement and related payments.

In respect of the above responsibilities, the Pr.CCAs/CCAs/CAs(IC) shall function under the

direction, superintendence and control of the Controller General of Accounts.

b. Budget formulation including Outcome Budget:

- I. PrCCA/CCA/CA (IC) shall monitor and assist in preparation of budgetary proposals and assist the administrative Ministries Departments in better inter-se programme prioritization/ allocation within the budgetary ceilings, based on the analysis of expenditure and of each programme/sub-programme.
- ii. Provide necessary support to the administrative Ministries/Departments in preparation of Outcome Budgets/Output-Outcome Monitoring Framework (OOMF) in accordance with the time schedule/ guidelines laid down from time to time by Ministry of Finance.
- iii. Furnish the budget estimates in respect of Public Account transactions to Budget Division and Composite Demands controlled by Budget Division for their inclusion in the Budget.
- iv. Furnish budget estimates for interest on Provident Fund balances of employees and on various deposits in the Public Account including Reserve Funds.
- v. Monitor all reports and statements related to Budget documents.

c. Estimation of Non-Tax Revenue Receipts:

- I. Assist FA in periodical reviews of various non-tax revenue receipts of the Ministries/ Departments with the Administrative Divisions and furnish estimates of non-tax Revenue Receipts to Budget Division, DEA.
- ii. CCA, Finance shall be responsible to furnish non-tax revenue receipts estimates relating to Group Insurance Scheme for Central Government employees to the Budget Division for its inclusion in the Budget [Specific to CCA(Fin)]

d. Internal Audit/Risk Based Audit:

- I. Discharge the duties of Member Secretary of Internal Audit Committee headed by the administrative Secretary to review audit

- paras of PAC, C&AG and Internal Audit and concomitant compliance/course correction.
- ii. They are responsible to conduct special audit in Ministries/Departments as per the direction of Chief Accounting Authority or CGA. The Internal Audit Wing working under the control and supervision of the Pr.CCAs/CCAs/CAs would move beyond the existing system of compliance /regulatory audit and would focus on:
 - a. Assessment of adequacy and effectiveness of internal controls in general, and soundness of financial systems and reliability of financial and accounting reports in particular;
 - b. Identification and monitoring of risk factors (including those contained in the Outcome Budget/OOMF Framework);
 - c. Critical assessment of economy, efficiency and effectiveness of service delivery mechanism to ensure value for money; and
 - d. Providing an effective monitoring system to facilitate mid-course corrections.
 - iii. Furnishes financial appraisal of schemes and monitors projects and schemes through regular Internal Audit.
 - iv. Conducts audit of accredited banks, authorised/other banks/CPGs and Focal Point Bank branches including e-FPBS in respect of Government transactions in organisations where it has been required.
 - v. Conducts Internal Audit of collections of the National Small Savings Scheme. (Specific to M/o Finance)
 - vi. Shall ensure to prepare the annual Audit Plan and Annual Internal Audit Review.

The above functions shall be carried out as per the guidelines issued by the CGA from time to time.

e. Public Financial Management System & IT projects:

- I. Monitor the usage of PFMS and its different modules including coordinating with

Ministry and PFMS Division of O/o CGA for timely, accurate and useful financial reporting for the purpose of tracking flow of funds to the last level implementing agency/beneficiary and its utilization under Central Sector/Centrally Sponsored/Direct Benefit Transfer schemes of Government of India.

- ii. Coordinate integration of data bases and processes for establishing a Government Integrated Financial Management Information System (GIFMIS).
- iii. Render professional expertise in the functioning of the financial management system, from the system point of view and making it more effective.
- iv. Monitor the implementation of security guidelines issued for access control and other related security aspects of PFMS and ensuring data security by regular monitoring of the system.
- v. Ensure correct mapping of the accounting basket of Central Sector and Centrally Sponsored Schemes for accurate expenditure reporting.
- vi. Regular review of reports and information in PFMS and to present it to the Executive for decision making.
- vii. Monitor all reports and dashboard on regular basis to ensure accuracy of reports relating to performance of the schemes in their respective Ministries.
- viii. Ensure timely weeding out of dormant registration of Agencies and etc.

f. Expenditure and Cash Management:

Coordinate with Ministries/Departments for compliance of Cash Management system guidelines issued by Budget Division, MoF (Monthly Expenditure Plan [MEP]/Quarterly Expenditure Plan [QEP] limits, implementation of TSA system for release of funds to Autonomous bodies in 'Just-in-time".

g. Disclosure and reporting requirements under FRBM Act.

Assist in preparation of the disclosure statements

required under the FRBM Act in respect of their Ministry/Department for incorporation in the consolidated statement compiled by the Ministry of Finance for the Government as a whole.

h. Monitoring of Assets and Liabilities:

Assist Ministries/Departments for maintaining comprehensive record of Assets and Liabilities and monitoring of Government Guarantees.

I. Interaction between Ministry of Finance and the FAS:

The Pr.CCAs/CCAS/CAS (IC) shall provide required material and assistance for the quarterly meeting of FAs with Secretary (Expenditure) and other financial inputs as required by FAs from time to time.

j. General Administration and Coordination:

- i. Exercise the powers of the Head of the Department for the Accounting Organisation and is responsible for the Administration and Establishment related functions.
- ii. Discharge of responsibilities in terms of the statutory powers to be exercised being the Appointing Authority/Disciplinary Authority.

Note:

- a. In Ministries/ Departments which are headed by Pr. CCAs, these items of work may be delegated to CCAs/CAs as per their administrative convenience, subject to codal provisions.
- b. In addition to the above, Pr.CCAs/CCAS/CAS shall also be responsible for any other works assigned by Chief Accounting Authority/Controller General of Accounts.
- c. In addition, Budget section of the ministry should ordinarily function under the control of CCA and CCAs are expected to act as Nodal Officer for PFMS inter alia in resolving issues relating to its smooth function and efficient running in terms of Para 43 and Para 44 of Charter for Financial Adviser issued vide FS & Secretary (Expenditure) D.O. Letter No.23(3)/E.Coord/2018 dated 13/06/2023.

25.1.5. Banking Arrangements

State Bank of India is the accredited bank for PAOs and its field offices in the Department 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 11 (Eleven) Pay & Accounts Offices. 05 PAOs are located in Delhi/NCR, One each in Chennai, Cochin, Kolkata, and two in Mumbai, 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.

25.1.6. Internal Audit Wing

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 value, influences change that enhances governance, assists risk management and control processes and improves accountability for results. Internal Audit Committee has been constituted in the Department of Agriculture & Farmers' welfare under the Chairmanship of Secretary (Agriculture). There are 175 Audit Units / DDOs in the Department of Agriculture & Farmers' welfare excluding Autonomous Bodies & other Grantee Institutions.

25.1.7. 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.

I. Employees Information System (EIS) Module:

This module has been implemented in the Drawing and Disbursing Office of Department of & Farmers' Welfare.

II. EAT Module of PFMS:

All Autonomous Bodies of Department Agriculture & Farmers' Welfare have been on-boarded on Expenditure Advance Transfer (EAT) module of PFMS.

III. Online Portal (Bharat kosh) for collection of Non-Tax Revenue

NTRP Portal in M/o Agriculture & Farmers' Welfare is functional from April, 2017. The collection of Non-Tax revenue of the Department of Agriculture & Farmers' Welfare in the Financial Year 2023-24 up to 31.12.2023 is Rs. 458.66 crore which has been collected through Bharat Kosh on NTR e-Portal.

FAQs on NTRP are available at website link <http://cga.nic.in//Page/FAQs.aspx>.

25.1.8 New Initiatives by Ministry of Finance and O/o Controller General of Accounts

A. e-Bill system'

- a) The Union Minister for Finance & Corporate Affairs Smt. Nirmala Sitharaman launched the e-Bill system for Central Government Ministries on the 46th Civil Accounts Day. New e-Bill system to enable paperless submission and end to end digital processing of bills.
- b) In a phased manner, the new system will make the entire process of submission and backend processing of bills completely paperless and transparent. Thus, it is a major step forward in realizing the vision of "Digital India" and promoting ease of doing business.
- c) The objectives of the system are to:
 - i) Provide convenience to all vendors/

suppliers of the government to submit their bills/claims at any time, from anywhere.

- ii) Eliminate physical interface between suppliers and government officers.
- iii) Enhance efficiency in processing of bills/claims.
- iv) Reduce discretion in processing of bills through "First-In-First-Out"(FIFO) method.
- d) Currently, the suppliers of various goods and services to the Government have to submit physical, ink signed copies of their bills to the respective Ministries/Departments/offices of the Government of India. Similarly, the government employees also need to submit hard copies of their claims. At the backend too, the processing of bills is done through a mixed system of physical and digital modes. So, the suppliers/vendors or their representatives need to visit the offices to deliver bills. Moreover, they are able to track the status of processing of their bills.
- e) Under the newly launched e-Bill system, vendors suppliers can upload their bills online along with supporting documents from the convenience of their homes/offices at any time through digital signature. For those not having a digital signature, the facility of e-sign using Aadhaar has also been provided. So, the suppliers will no longer be required to visit the offices concerned for this purpose.
- f) At the backend too, the electronic bill received will be processed by the authorities digitally at every stage and finally, the payments will be credited digitally to the bank account of the vendor. The vendor/supplier would be able to track the status of processing of their bills online. Thus, the new system will bring in lot of efficiency and transparency in the system and is a big citizen-centric decision of the Government of India.
- g) The e-Bill system has been developed by the Public Financial Management System (PFMS) Division in the office of the Controller General

- of Accounts in the Department of Expenditure, Ministry of Finance. The bills will be processed by First-In-First-Out (FIFO) method.
- h) In addition to promoting ease of doing business and bringing convenience to lakhs of vendors/suppliers, the e-Bill system will be environment friendly, eliminating the need to submit crores of paper bills annually and will thus save tonnes of paper every year. The e-Bill system has an elaborate digital storage facility for retrieval of documents and a robust audit trail.
- B. 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:
- a) Every State Government will designate a 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.
 - b) 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.
 - c) 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.
 - d) 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.
 - e) 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.
 - f) 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.
- C. Revised procedure for release of funds under Central Sector Schemes:**
- In suppression 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:-
- I) **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.
 - II) **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:

- a) Identification of Central Sector Schemes for Implementation through Model I or Model-II.
- b) Notification of ABS/CPSEs/Implementing Agencies as Central Nodal Agencies (CNA).
- c) Open Assignment Account with RBI (e-Kuber) for each scheme under Model-I.
- d) Open an Account for each scheme in scheduled commercial banks (SCB) under model II.
- e) Listing & Closure of existing Bank Accounts of CNA & Sas.
- f) 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.
- g) Interest earned from the funds is remitted to the Consolidated Fund of India (CFI) under Model II.
- h) Mandatorily use of EAT module of PFMS or integration of their systems with the PFMS.

D. 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 user 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.
- vi) Avoid downloading and installing pirated software.
- vii) Internet-connected computers should not be used for drafting/storing sensitive official documents/correspondences.

E. Some Other New Initiatives

- Implementation of DoE guidelines on TSA/SNA/CNA in letter and spirit.
- The statement of scheme-wise expenditure, unspent balances, outstanding UCs, scheme wise and state wise MIS of excess/deficit transfer from treasury to SNA, fund available in SNA account, interest remitted to CFI, status of legacy data are being shared with the program division on weekly basis for monitoring of fund flow and helping them in just in time (JIT) release.
- A series of training has been organized by Principal Accounts Office on e-bill and TSA module of PFMS to all the stake holder including divisional heads.
- A special drive was launched for settlement of outstanding MEA debit claims.
- Delay in payment to seller/supplier in government e-market place (GeM) and status

of pending bill with reference to block budget as per PFMS are being informed to respective Head of Department with a copy to PPS to Secretary and AS & FA so that payment could be released within stipulated timeline prescribed by DoE.

- Internal Audit Committee headed by Chief Accounting Authority i.e. Secretary (DA&FW) have been set up in terms of O/o CGA OM. A special drive for liquidation of outstanding internal audit paras have been launched in 2022-23 and periodical review of outstanding paras has taken place in SoM chaired by Secretary on weekly basis.
- Setting up of committee for NPS oversight mechanism and uploading of quarterly report in NPS dashboard along with comments of Financial Advisor.
- Designation based e-mail has been opened for all officials of Principal cum Pay & Accounts Office.
- Special campaign 2.0 for disposal of pending matter including RTI, PG and VIP references.
- Pan India training cum Roll-out plan for electronic bill system (e-bill) of PFMS in 2022-23.
- Operationalization of revised/new Object Heads of Accounts under Rule (8) of DFPR issued vide DoE notification dated 12.12.2022 and O/o CGA OM dated 15.12.2022 and a workshop was also organized by Principal cum Pay & Accounts Office in this regard.
- To improve the internal control and upgradation of skills, officers/officials working in Principal cum Pay & Accounts Office have been transferred as per CVC, DoP&T guidelines and instructions issued by O/o CGA.
- Implementation of 2nd factor biometric authentication through FIDO device to access PFMS.
- Opening of Scheme-wise bank account for

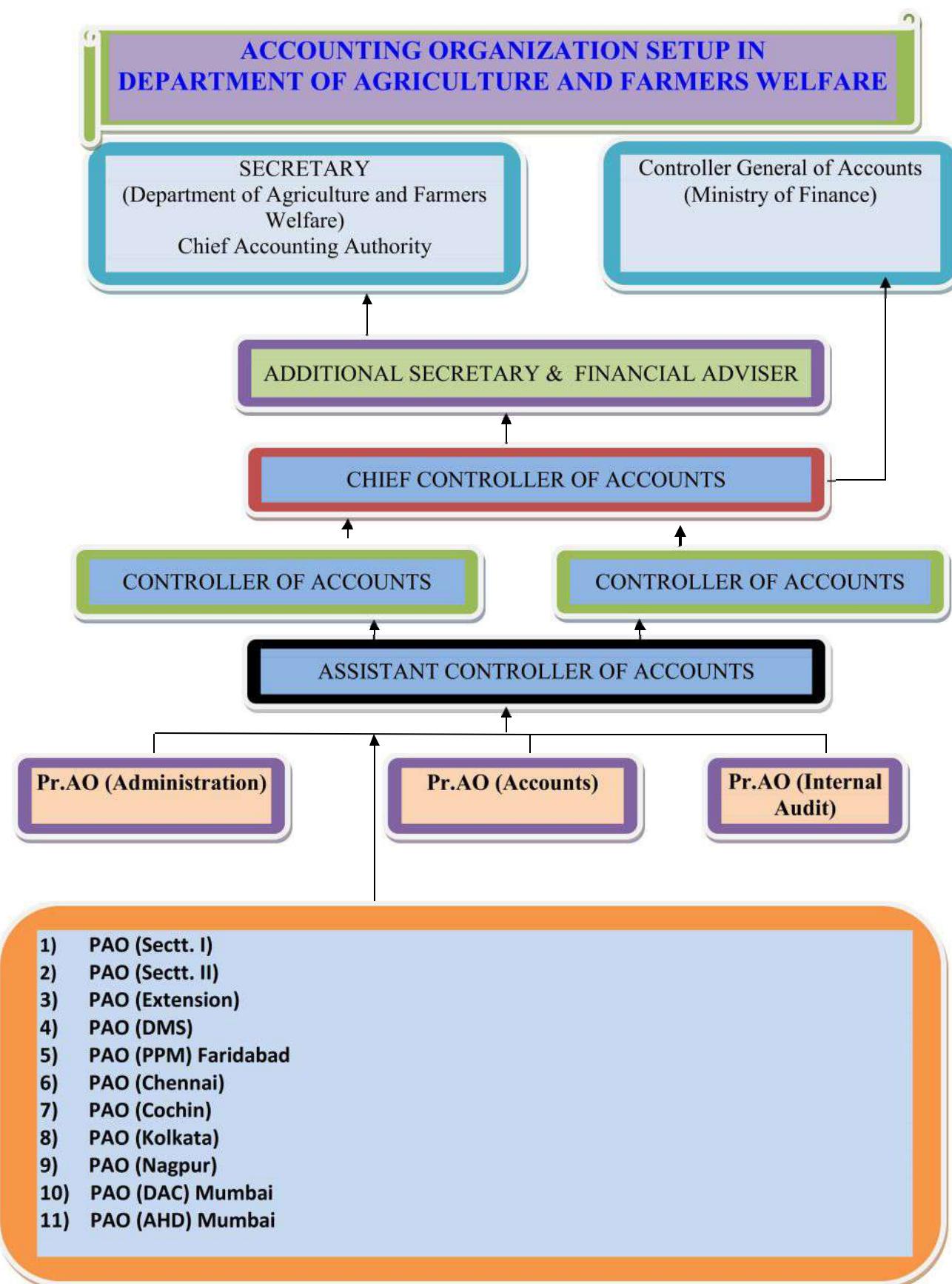
release of 100% Central Financial Assistance to implementing Agencies and GIA (Salary, General & Creation of Capital Assets) to ABs other than TSA/SNA/CNA route.

- Celebration of Civil Accounts Week from 01.03.2023 to 07.03.2023.
- Enhancing efficiency of payment process by way of monitoring TM-02 report (under CAM report in payment tab) of PFMS on weekly & monthly basis.
- Constitution of PFMS cell in Principal cum Pay & Accounts Office under the chairmanship of DCA as the first port of call for the PD and IFD for any PFMS related issue in pursuance of MoF, DoE, PFMS division OM F.No. 8/(01)/PFMS/2023 dated 17.04.2023.
- Risk based audit of DA&FW schemes in terms of O/o CGA guidelines.
- Implementation of new window based digital signing utility in place of existing Java based utility in the sanction module of PFMS.
- Special drive for issue of qualifying service certificate by Head of Office to government servant in consultation with PAOs on time in

terms of Rule 32 of Central Civil Pension Rules, 2021.

- Reconciliation of expenditure between PAO & DDO on monthly basis.
- Dealing with pension matters sensitively and on time.
- Special drive for liquidation of CGA and C&AG audit paras.
- Roll-out of processing of Electronic Inter Government Adjustment Advices (e-IGAA) in PFMS.
- Preventive measures at various level to avoid any financial irregularities in terms of O/o CGAOM dated 19.07.2023.
- Pradhan Mantri Fasal Bima Yojana (PMFBY) and Formation and Promotion of Farmers Producers' Organization have been onboarded on Treasury Single Account (TSA) in the ongoing FY with the objective of (Just in Time) releases of the DoE in Central Sector Schemes.

25.1.9. The expenditure as on 31.01.2024 with reference to the B.E/R.E 2023-24 is given at Exhibit- 'C'.



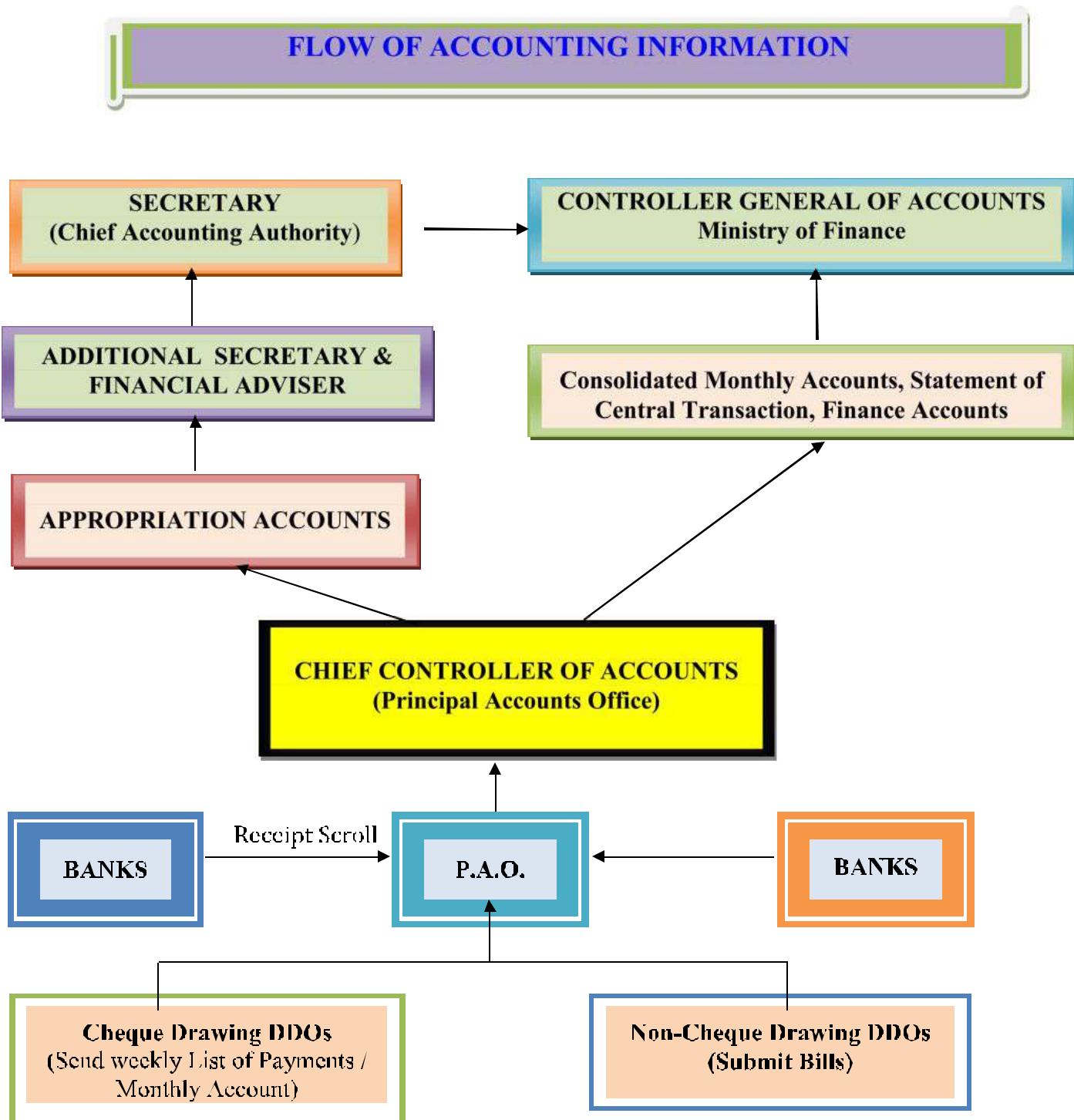


EXHIBIT- 'C'

Grant No. 01						
Department of Agriculture and Farmers' Welfare						
Report on Monitoring of Expenditure over BE and RE						
Transaction Date : 01.04.2023 to 31.01.2024 (tentative)						
						(Rs in Crores)
Sr. No.	Name of Scheme/Description	BE 2023-24	RE 2023-24	Progressive Exp. upto 31.01.2024 (Provisional)	%age of expenditure over BE	%age of expenditure over RE
1	Establishment Expenditure of the Centre	2	3	6	7	8
1.1	Secretariat	239.79	192.68	144.69	90.34%	75.11%
1.2	International Cooperation	45.92	58.00	1.81	3.94%	3.12%
1.3	Other Attached and Subordinate Offices					
(i)	National Seeds Research and Training Centre	6.89	7.37	1.76	23.54%	23.25%
(ii)	National Project on Promotion of Organic Farming	20.25	27.55	10.77	79.23%	49.98%
(iii)	Central Fertilizer Quality Control and Training Institute	10.55	15.88	6.12	58.01%	38.54%
(iv)	Directorate of Plant Protection Quarantine and Storage	163.80	223.68	123.74	84.82%	58.01%
(v)	National Rafted Area Authority	4.11	3.71	2.58	78.11%	69.51%
(vi)	Crop Directories	13.30	16.25	9.14	68.72%	56.25%
(vii)	Support to Central Institutes / Dept. of Extension	17.66	17.77	14.68	83.41%	92.61%
(viii)	Directorate of Economics and Statistics	31.16	32.00	24.34	77.52%	76.06%
(ix)	Commission for Agricultural Costs & Prices	7.54	9.00	7.18	95.23%	79.78%
(x)	Mahalanobis National Crop Forecasting Centre	697.20	460.26	2.62	0.38%	0.55%
(xi)	Practical Training and Testing Institutes	79.52	63.68	28.76	70.08%	47.16%
(xii)	Directorate of Oil Seeds Development	2.90	2.75	1.58	54.48%	57.45%
(xiii)	Directorate and Institute of Development of Horticulture	9.38	11.00	6.28	66.95%	57.09%
(xiv)	Soil & Land Use Survey of India	36.60	45.00	28.22	77.10%	82.71%
(xv)	Directorate of Marketing and Inspection	55.59	68.82	42.92	77.21%	67.57%
	Total - Other Attached and Subordinate Offices	1119.66	1019.59	319.69	28.55%	31.05%
	Total - Establishment Expenditure of the Centre	1405.37	1270.24	166.19	33.17%	36.70%
2	Central Sector Schemes/Projects					
2.1	Prahladan Mantri Basu Bhara Yojana	13525.00	16500.00	12399.33	91.00%	77.15%
2.2	Modified Interest Subvention	23300.00	29500.00	12862.54	53.92%	65.96%
2.3	Implementation of Market Intervention Scheme/Price Support Scheme (MIS-PSS)	0.01	40.00	0.00	0.00%	0.00%
2.4	Prahladan Mautti Aankada Aay Sanakshan Abhiyan (PM-AASHA)	0.01	2200.00	0.00	0.00%	0.00%
2.5	Distribution of Poles to State/Union Territories for Welfare Schemes	200.00	446.30	0.00	0.00%	0.00%
2.6	Prahladan Mantri Kisan Samruddhi Nidhi (PM-KISAN)	60000.00	62000.00	39237.25	55.40%	63.29%
2.7	Prahladan Mautti Kisan Mandhan Yojana	100.00	135.00	100.00	100.00%	72.46%
2.8	Formation and Promotion of Farmers Producers Organizations	375.00	450.00	250.10	66.19%	57.56%
2.9	Agriculture Infrastructure Fund	500.00	600.00	293.51	58.70%	48.93%
2.10	National Beekeeping Honey Mission (NBHM)	0.01	50.00	0.00	0.00%	0.00%
	Total - Central Sector Schemes/Projects	90930.03	101924.30	65142.73	63.81%	63.91%

3	Other Central Sector Expenditure					
3.1	Statutory and Autonomous Bodies					
(i)	Protection of Plant Varieties and Farmers Rights	56.42	37.60	19.60	34.73%	52.13%
(ii)	National Institute of Plant Health Management	16.53	22.00	13.69	82.37%	62.23%
(iii)	National Institute of Agriculture Extension Management (NAEAM)	5.00	7.00	5.00	100.00%	71.43%
(iv)	Chaudhary Charan Singh National Institute of Agriculture Marketing	4.53	5.00	4.00	80.00%	80.00%
(v)	National Horticulture Board	24.09	24.00	12.00	50.00%	50.00%
(vi)	Coconut Development Board	39.13	35.00	30.00	76.67%	85.71%
	Total - Statutory and Autonomous Bodies	145.57	130.60	81.29	57.90%	61.54%
3.2	Others					
(i)	Agriculture Economics and Statistics	220.00	220.00	176.00	80.00%	80.00%
(ii)	Agriculture Census	80.00	85.00	30.20	37.75%	35.53%
(iii)	KRI South Asia Regional Centre	75.00	50.00	18.75	75.00%	62.50%
	Total - Others	325.00	335.00	225.56	69.40%	67.33%
	Total - Other Central Sector Expenditure	470.57	465.60	309.85	65.85%	66.55%
4	Centrally Sponsored Schemes					
4.1	Jashnayak Krishak Vikas Yojana (JKVY)	7150.35	6630.35	3343.00	46.75%	50.27%
4.2	National Mission on Natural Farming	459.00	100.00	14.47	3.15%	14.17%
4.3	Krishikoni Yojana					
(i)	Food and Nutritious Security	1623.00	1442.00	571.00	38.67%	60.40%
(ii)	Edible Oil - OJ Park	900.00	725.00	270.56	29.73%	49.25%
(iii)	Edible Oil - OJ Seeds	600.00	425.00	188.21	31.37%	44.28%
(iv)	Organic Value Chain Development for NES Region	200.00	238.00	134.17	67.09%	56.37%
(v)	Integrated Development of Horticulture	1053.27	1307.97	892.15	48.22%	59.24%
(vi)	Integrated Development of Horticulture (ZAP-I)	40.00	0.50	0.00	0.00%	0.00%
(vii)	Agriculture Extension	850.00	580.00	557.73	65.69%	63.33%
(viii)	Digital Agriculture	450.00	200.00	53.07	11.79%	26.54%
(ix)	Agricultural Marketing	550.00	1160.00	256.19	46.58%	22.03%
	Total (Krishikoni Yojana)	7066.47	6378.47	3213.08	45.47%	50.37%
	Total - Centrally Sponsored Schemes	14675.82	13128.82	6570.55	44.77%	50.05%
	Total (Grant No. 01)	115531.79	116788.96	72489.32	62.74%	62.07%

Annexure 1.1

Details of pulses, oilseeds & copra procured at MSP under PSS from 2019-20 to 2023-24						
Year	Oil seed		Pulses		Total	
	Quantity Procured (in MTs)	MSP Value (in lakh Rs)	Quantity Procured (in MTs)	MSP Value (in lakh Rs)	Quantity Procured (in MTs)	MSP Value (in lakh Rs)
2020-21	295,212.34	158,516.96	817,046.85	452,867.33	1,112,259.19	611,384.28
2021-22	151,634.73	84,261.64	3,030,956.91	1,663,569.77	3,182,591.64	1,747,831.41
2022-23	1,170,847.37	660,079.57	2,831,401.10	1,612,872.31	4,002,248.47	2,272,951.87
2023-24*	1,55,625.96	1,64,121.73	35,237.25	30,156.04	1,90,863.21	1,94,277.77
Total	17,73,129.66	10,66,850.96	67,14,642.11	37,59,465.44	84,87,771.77	48,26,316.40

*Procurement ongoing

Annexure 1.2

Details of Sanction accorded under MIS from 2019-20 to 2022-23 (as on 30.10.2023)							
S.N.	Year	Period	Commodity	State	Market Intervention Price (MIP) (Rs. Per MTs.)	Sanctioned Qty (in MTs.)	MIP Value (Rs in Lakhs)
1	2019-20	09.09.2019 to 31.03.2020	Aopla	Jammu & Kashmir	Gardened by MIP fixed by the Delegated Price Committee	1,200,000	
2	2020-21	22.10.2020 to 31.03.2021	Aopla	Jammu & Kashmir	Gardened by MIP fixed by the Delegated Price Committee	1,200,000	
3	2021-22	05.10.2021 to 05.11.2021	Potato	Nagaland	8,620	14,200	1224.04
4	2022-23	07.06.2022 to 06.07.2022	Onion	Rajasthan	7,780	256,400	19947.92
5	2022-23	07.06.2022 to 06.07.2022	Garlic	Rajasthan	29,570	107,836	31887.11
6	2022-23	27.07.2022 to 25.08.2022	C-grade Aopla	Himachal Pradesh	12,960	144,936	18783.71
7	2022-23	27.07.2022 to 25.08.2022	Mango	Himachal Pradesh	11,700	1,250	146.25
8	2022-23	10.03.2023 to 08.04.2023	Potato	Uttar Pradesh	6,500	1,000,000	65000.00
9	2022-23	22.03.2023 to 20.04.2023	Turmeric	Karnataka	66,940	22,006	14730.82

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 & Crop Insurance Division
6. Crops & Post Harvest Management of Foodgrain
7. Digital Agriculture
8. Drought Management
9. Economic & Statistics
10. Extension
11. Farmers Welfare
12. Policy & 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. RKVY
22. Rainfed Farming System
23. Seeds
24. Oil Seeds
25. Agriculture Trade Policy, Promotion & Logistics Development
26. Vigilance
27. O&M/PG/RTI

CHAPTER - 2
FUNCTIONS AND ORGANIZATIONAL STRUCTURE
INVENTORY OF FIELD FORMATIONS

I. ATTACHED OFFICES

1. Commission for Agricultural Costs and Prices, Shastri Bhavan, 'F' Wing, Second Floor, New Delhi.
2. Directorate of Plant Protection, Quarantine and Storage, N.H.IV, Faridabad (Haryana).
3. Directorate of Marketing & Inspection, N.H.IV, Faridabad (Haryana).
4. 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, Biswanath 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, Ilimayat Nagar, Hyderabad (A.P).

13. Directorate of Pulses Development, 8th Floor, Vindhyaachal 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.

I. PUBLIC SECTOR UNDERTAKINGS

1. National Seeds Corporation, New Delhi.

II. 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.

III. AUTHORITIES

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.

State-wise allocation, release and utilization of RKVY during 2021-22 and 2023-24
as on 01.01.2024

Sl. No	Name of the State/U.T	2021-22		2022-23		2023-24	
		Allocation	Release	Utilization	Allocation #	Release	Utilization
1	Andhra Pradesh	214.7	97.19	91.00	183.20	15.80	0.00
2	Armenian Pradesh	12.74	6.27	6.27	18.66	9.34	2.57
3	Assam	150.05	60.72	60.72	226.86	113.44	0.00
4	Bihar	140.95	69.77	69.77	71.80	0.00	0.00
5	Chhattisgarh	91.03	25.27	40.27	30.84	40.22	20.21
6	Goa	7.94	0.00	0.00	17.80	4.45	0.00
7	Gujarat	145.84	69.19	69.19	70.70	55.16	29.85
8	Haryana	83.89	67.23	42.12	57.39	28.81	13.02
9	Himachal Pradesh	23.54	11.68	7.43	27.37	0.00	0.00
10	Jammu & Kashmir	0.58	0.00	0.00	50.57	0.00	0.00
11	Jharkhand	60.92	0.00	0.00	206.09	51.53	0.00
12	Karnataka	218.84	113.08	111.19	27.88	71.1	25.95
13	Kerala	63.11	50.44	47.84	55.74	45.12	0.00
14	Madhya Pradesh	194.6	96.62	52.41	180.20	57.73	0.00
15	Maharashtra	249.23	120.32	120.32	229.1	129.18	64.73
16	Manipur	25.75	17.47	6.83	31.57	7.90	0.00
17	Meghalaya	25.76	10.79	0.00	51.91	0.00	0.00
18	MPower	55.65	16.11	0.00	49.37	12.55	0.00
19	Nagaland	7.14	26.95	7.64	22.64	11.32	5.56
20	Orissa	107.26	99.58	12.46	90.06	19.61	19.61
21	Punjab	151.20	75.36	0.00	85.22	0.00	0.00
22	Rajasthan	179.64	87.80	87.80	66.37	83.18	71.72
23	Sikkim	9.40	4.12	3.21	14.20	3.25	0.00
24	Tamil Nadu	197.96	171.20	164.92	182.32	136.71	88.71
25	Telangana	207.61	0.00	0.00	186.00	0.00	0.00
26	Tripura	52.31	52.27	29.72	-4.28	37.12	14.22
27	Uttar Pradesh	302.7	145.10	140.82	255.27	134.17	48.90
28	Uttarakhand	52.15	30.94	0.50	52.83	26.40	10.05
29	West Bengal	188.0	97.75	65.91	70.85	170.45	101.78
30	Total States	3228.71	1673.94	1089.00	3005.08	1132.64	396.43
31	A & N Islands	2.61	1.30	0.26	2.60	0.00	0.00
32	Chandigarh	0.53	0.00	0.00	0.10	0.00	0.00
33	Dadra & Dho	0.1	0.00	0.00	0.10	0.00	0.00
34	Delhi	0.23	0.00	0.00	0.10	0.00	0.00
35	Jammu & Kashmir	2.61	1.30	0.26	9.90	2.25	5.21
36	Lakshadweep	0.10	0.00	0.00	0.10	0.00	0.00
37	Mahe	4.02	0.00	0.00	4.00	0.43	0.13
38	Total UTs	16.32	1.30	0.00	26.00	2.68	0.00
39	Grand Total	3245.02	1675.24	1089.26	3031.08	1135.32	396.43
							756.07
							1341

Rs. 2.35 crore for A&N Island could not be utilized, fund may be released by the U.T. DRP Component only

Annexure 16.2 [a]

Sector wise Approved Projects No. 2021-22 (as on 01.01.2024)																					
Sr No	State	CROP	HORT	SERI	ANHB	OTHER	FISH	COOP	IPMT	SEED	FLNFM	AMEC	EXTN	MKT	NONF	TEC	AGRE	NRM	IRRIGATION	DIFM	Total
1	ANDHRA PRADESH	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	
2	ASSAM	9	10	5	8	3	8	0	0	0	0	6	1	0	0	0	0	1	7	58	
3	Bihar	9	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	
4	GUJARAT	2	5	0	3	1	5	1	3	0	1	2	1	0	0	0	0	0	0	78	
5	HARYANA	4	3	0	4	2	6	0	2	1	1	0	0	0	0	0	2	0	2	52	
6	HIMACHAL PRADESH	-	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
7	KARNATAKA	-	15	8	5	5	2	7	0	1	0	1	1	0	0	0	13	0	0	60	
8	KERALA	6	5	0	0	0	0	0	1	1	0	0	0	1	0	1	0	1	0	25	
9	MADHYA PRADESH	0	14	0	4	0	1	1	0	5	0	2	7	1	0	2	1	0	0	40	
10	MAHARASHTRA	-	3	0	4	1	0	0	1	1	1	1	1	0	0	0	1	1	2	18	
11	MEGHALAYA	0	4	0	6	5	0	0	0	0	1	1	0	0	0	0	0	0	0	23	
12	NAGALAND	0	3	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	
13	ORISSA	-	0	0	6	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2	
14	RAJASTHAN	-	1	0	4	1	1	0	3	0	0	0	0	0	0	0	0	0	0	18	
15	TAMIL NADU	5	4	0	0	0	0	0	0	15	2	1	2	6	3	2	0	0	2	2	
16	JHARKHAND	2	3	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	13	
17	UTTAR PRADESH	5	5	1	6	0	0	0	8	0	0	6	0	0	0	48	0	0	0	79	
18	UTTRAKHAND	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2		
19	WEST BENGAL	8	10	3	5	2	4	1	1	3	1	5	3	2	0	1	0	1	6	67	
	Total	56	88	17	61	23	43	14	10	27	6	24	26	10	1	2	111	23	13	582	

Total Projects No. 582

CROP - CROP DEVELOPMENT; HORT - HORTICULTURE; SERI - SERICULTURE; ANIB - ANIMAL HUSBANDRY; OTIR - INNOVATIVE PROGRAMMES OTHERS; FISH - FISHERIES; COOP - COOPERATIVES COOPERATION; ITMI - INTEGRATED PEST MANAGEMENT; SEED - SEED; FLNM - FERTILISERS AND INM; AMEC - AGRICULTURE MECHANISATION; EXTN - EXTENSION; MVRK - MARKETING AND POST HARVEST MANAGEMENT; NONF - NON FARM ACTIVITIES; MKT - INFORMATION TECHNOLOGY; TEC - INFORMATION TECHNOLOGY; NRM - NATURAL RESOURCE MANAGEMENT; IRR - MICRO/MINOR IRRIGATION; ORRI - ORGANIC FARMING; BIO FERTILISER; IDEV - DAIRY DEVELOPMENT

Note: Source of data - Entered by the State Govt. in RKMVY - RMSMS, Rest of the States are not entered the Data in RKMVY - RMSMS portal

Annexure 21.1

Seeds Programmes in North-Eastern States									
S. No.	Schemes/Programmes & Activities Appended	Details of Schemes/Programmes Advised taken	Target for 2019-20	Achievement 2019-20	Target for 2020-21	Achievement on 2020-21	Target 2021-22	Achievement 2021-22	Target 2022-23
1.	Transfer Seeds to North Eastern States including Sikkim, Meghalaya, Assam, Arunachal Pradesh and Nagaland areas of West Bengal.	(i) Transfer of seeds to North Eastern States including Sikkim, Meghalaya, Assam, Arunachal Pradesh and Nagaland areas of West Bengal.	For a quantity of 2,53,450 quintals transported.	As mentioned in Col.4	For a quantity of 1,672,840 quintals transported exclusively by NL States, an amount of Rs. 19,217.6 lakh has been reimbursed.	For a quantity of 1,672,840 quintals transported exclusively by NL States, an amount of Rs. 294.73 lakh has been reimbursed.	As mentioned in Col.4	For a quantity of 6,257.06 quintals transported exclusively by NL States, an amount of Rs. 111.77 lakh has been reimbursed.	As mentioned in Col.4
		(ii) Reimbursement of 100% difference between total actual transportation cost to implementing States Agency for movement of seeds produced by the states and transferred to identified state capital district Headquarters.	As per requirement for movement of seed, Within the State from State Capital district Headquarters to sole out-of-state customers is being reimbursed by Implementing State Agency.	As per requirement for movement of seed, Within the State from State Capital district Headquarters to sole out-of-state customers is being reimbursed by Implementing State Agency.	As per requirement for movement of seed, Within the State from State Capital district Headquarters to sole out-of-state customers is being reimbursed by Implementing State Agency.	As per requirement for movement of seed, Within the State from State Capital district Headquarters to sole out-of-state customers is being reimbursed by Implementing State Agency.	As per requirement for movement of seed, Within the State from State Capital district Headquarters to sole out-of-state customers is being reimbursed by Implementing State Agency.	As per requirement for movement of seed, Within the State from State Capital district Headquarters to sole out-of-state customers is being reimbursed by Implementing State Agency.	As per requirement for movement of seed, Within the State from State Capital district Headquarters to sole out-of-state customers is being reimbursed by Implementing State Agency.



राष्ट्रपति नियम

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