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COUNTRY AGRICULTURAL EXTENSION PROFILE

INDIA

AEPSA

Agri Extension Platform for South Asia

Network for Next Gen Agri Extension

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Abbreviations

Abbreviation	Description
AARDO	African-Asian Rural Development Organization
AAU	Anand Agricultural University
AC&ABC	Agri-ClinicandAgri-Business Centre
ACCNet	Agricultural Credi tand Cooperation Network
ADB	Asian Development Bank
AE&AS	Agricultural Extension and Advisory Services
AFC	Agricultural Finance Corporation
AMMA	Assured Maximum Services to Marginal people in All villages
AMMP	Agricultural Mission Mode Project
APEDA	Agricultural & Processed Food Products Export Development Authority
ASCI	Agricultural Skill Council of India
ASEAN	Association of Southeast Asian Nations (ASEAN)
ATARIs	Agricultural Technology Application Research Institutes
ATIC	Agricultural Technological Information Centres
ATM	Assistant Technology Manager
ATMA	Agricultural Technology Management Agency
BAMETI	Bihar Agricultural Management & Extension Training Institute
BAPs	Block Action Plans
BAR	Brackish water Aquaculture Resource
BATs	Block Action Teams
BFACs	Block Farmer Advisory Committees
BPL	Below Poverty Line
BTTs	Block Technology Teams
CAUs	Central Agricultural Universities
CDAP	Comprehensive District Agricultural Development Plan
CDB	Coconut Development Board
CFTRI	Central Food Technological Research Institute
CGIAR	Consultative Group on International Agricultural Research
CIBA	Central Institute of Brackish water Aquaculture
CIGs	Commodity Interest Groups
CIMMYT	International Maize and Wheat Improvement Center
CIRDAP	Centre on Integrated Rural Development for Asia and the Pacific
CM	Convergence Matrix
CSC	Common Service Centres
CoopNet	Networking of Cooperative Societies
DAAPs	District Agriculture Action Plans
DAC&FW	Department of Agriculture, Cooperation and Farmers Welfare
DAD&F	Department of Animal husbandry, Dairying and Fisheries
DAESI	Diploma in Agricultural Extension Services for Input Dealers
DAP	District Action Plan
DCB	District Cooperative Banks
DCP	District Credit Plan

DEEs	Directorates of Extension Education
DIP	District Irrigation Plan
DLBC	District Level Bankers Committee
DMI	Directorate of Marketing and Inspection
EAS	Extension and Advisory Service
EAs	Extension Agents
EEI	Entrepreneurship Extension Institute
EEI	Extension Education Institutes
ESPs	Extension Service Providers
ETCs	Extension Training Centres
FACs	Farmer Advisory Committees
FAO	Food and Agriculture Organization
FF	Farmer Friend
FFDAs	Fish-Farmers Development Agencies
FFF	Female Farmer Friend
FFSs	Farmer Field Schools (FarmSchools)
FIGs	Farmer Interest Groups
FKGs	Farmer Knowledge Groups
FLDs	Frontline Demonstrations
FMTTI	Farm Machinery Testing and Training Institutes
FNGs	Farmer Knowledge Groups
FPCs	Farmer Producer Companies
FPOs	FarmerProducersOrganizations
FTAs	Farm Tele Advisers
FTCs	Farmer Training Centres
GAP	Good Agricultural Practice
GIS	Geographical Information System
HRD	Human Resource Development
IAAP	Intensive Agricultural Area Programme
IADP	Intensive Agricultural District Programme
ICARDA	International Center for Agricultural Research in the Dry Areas
ICM	Institutes of Cooperative Management
ICMR	Indian Council of Medical Research
ICRISAT	International Crops Research Institute for the Semi-arid Tropics
ICTs	Information and Communication Technologies
IDRC	International Development Research Centre
IDWG	Inter Departmental Working Group
IFFCO	Indian Farmers Fertilizer Cooperative
IGNOU	Indira Gandhi National Open University
IGSI	Indian Grain Storage Institute
IIFPT	Indian Institute of Food Processing Technology
ILRI	International Livestock Research Institute
IMAGE	Instituteon Management of Agricultural Extension
ISAM	Integrated Scheme on Agriculture Marketing
ISRO	Indian Space Research Organization
IVLP	Institute Village Linkage Programme

IWMI	International Water Management Institute
JICA	Japan International Cooperation Agency
KCC	Kisan Call Centre
KCCs	Kisan Credit Card
KKMS	Kisan Knowledge Management System
KRIBHCO	Krishak Bharati Cooperative
KVK	Krishi Vigyan Kendra
MANAGE	National Institute of Agricultural Extension Management
MBDE	Multi-Billion Dollar Enterprise
MCJE&T	Mass Communication and Journalism Education and Training
MCS	Monitoring, Control and Surveillance
ME&IT	Ministry of Electronics & Information Technology
MEAL	Monitoring, Evaluation and Learning
MFIs	Micro Financial Institutions
MGNREGA	Mahatma Gandhi National Rural Employment Guarantee Act
MIDH	Mission for Integrated Development of Horticulture
MPEDA	Marine Products Export Development Authority
MSD&E	Ministry of Skill Development & Entrepreneurship
NABARD	National Bank for Agriculture and Rural Development
NADRS	Networking National Animal Disease Reporting System
NAEP	National Agricultural Extension Project
NARP	National Agricultural Research Project
NATP	National Agricultural Technology Project
NCCD	National Centre for Cold-chain Development
NCCT	National Council for Cooperative Training
NCIP	National Crop Insurance Programme
NCUI	National Cooperative Union of India
NDDB	National Dairy Development Board
NDP	National Dairy Plan
NES	National Extension Service
NFAES	National Fisheries and Aquaculture Extension Service
NFDB	National Fisheries Development Board
NFSM	National Food Security Mission
NGOs	Non-Governmental Organizations
NGRCA	National Gender Resource Centre in Agriculture
NHB	National Horticulture Board
NIAM	National Institute of Agricultural Marketing
NIC	National Informatics Centre
NIH	National InstituteofHorticulture
NIMSME	National Institute for Micro, Small and MediumEnterprises
NIN	National Institute of Nutrition
NIPHM	National Institute of Plant Health Management
NIRD&PR	National Institute of Rural Development and Panchayat Raj
NLRFW	National Level Ranking Frame Work
NMAET	National Mission on Agricultural Extension and Technology
NMOOP	National Mission on Oilseeds & Oil Palm

NMSA	National Mission for Sustainable Agriculture
NRAA	National Rainfed Area Authority
NRLM	National Rural Livelihoods Mission
NRSC	National Remote Sensing Agency
NeGP	Nationale-Governance Plan
PA&RDBs	Primary Agricultural and Rural Development Banks
PACs	Primary Agricultural Cooperative Societies
PDS	Public Distribution System
PMGDISHA	Pradhan Mantri Gramin Digital Saksharta Abhiyaan
PPV&FRA	Protection of Plant Varieties and Farmers Rights Authority
QPs	Qualification Packs
RFE	Research-Farmer-Extension
RKVY	Rashtriya Krishi Vikas Yojana
RPL	Recognition of Prior Learning
RRBs	Regional Rural Banks
SAME	Sub Missionon Agricultural Extension
SAMETI	State Agriculture Management & Extension Training Institute
SAUs	State Agricultural Universities
SC	Scheduled Castes
SCARDBs	State Cooperative Agricultural and Rural Development Banks
SCB	State Cooperative Banks
SEWA	Self Employed Women's Association
SEWPs	State Extension Work Plans
SFDA	Small and Marginal Farmers Development Agencies
SHGs	Self Help Groups
SLDB	State Land Development Banks
SMAM	Sub Mission on Agricultural Mechanization
SMPP	Sub Mission on Plant Protection and Plant Quarantine
SMS	Subject Matter Specialist
SMSP	Sub Missionon Seed and Plantingmaterial
SNC	State Nodal Cell
SPV	Special Purpose Vehicle
SREP	Strategic Research and Extension Plan
ST	Scheduled Tribes
T&V	Training and Visit
TBIs	Technology and Business Incubators
ToT	Transfer of Technology
UAS	University of Agricultural Sciences

COUNTRYAGRICULTURALEXTENSIONPROFILE(C-AEP)–INDIA

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Sr. No.	PROFILE PARAMETER
I.	I- BASIC DETAILS OF FARMING **1.1 Cultivable Area(Million Ha)** As per Land Use Survey (LUS) statistics for 2021-22, the geographical area of India 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 (**Annexure I**). **1.2 Farming Population (million)** As per Agricultural Census 2015-16 total operational holdings in the country are 146.45 million comprising marginal land holders (100.25 million), small (25.80), semi medium (13.99 million), medium (5.56 million) and large (0.83 million). The highest percentage share in 2015-16 was observed in marginal category (68.5%) followed by small (17.6%), semi-medium (9.6%), medium (3.8%) and large category (0.6%) **(Annexure II)**. **Performance of Agriculture and Allied Sectors** - India has recorded impressive growth in the recent past in the sectors like food production, horticulture, milk and fisheries production, export promotion of agri commodities, flow of agricultural credit etc. as detailed in the **Annexures III to IX**
II.	AGRICULTUAL EXTENSION INVENTORY– SCHEMES & PROGRAMMES INTRODUCTORY **a.** Growth of Agricultural Extension Services in India Series of voluntary projects in pre-independence era, such as Community

Development Program (CDP-1952) and National Extension Service Blocks (NES-1953)were the major earlier extension efforts. Subsequently, Pre-Green Revolution interventions implemented include: Intensive Agricultural District Program (IADP,1961) and Intensive Agricultural Area Program (IAAP, 1964). Followed by Green Revolution (1967), duly supported by intensive extension efforts like National Demonstrations (ND- 1965), Farmers Training Centres (FTC-1966), Small and Marginal Farmers Development Agencies (SMFDAs-1971), Krishi Vigyan Kendras (KVK-1974,-731) and lab to land program (1979- that subsumed in KVKs).

In 1974-75, a very major extension intervention through World Bank Funded Training and Visit (T&V)system resulted in restructuring of the extension system. Following its significant impact, it was expanded throughout the country from 1984 to 1995 through National Agricultural Extension Projects (NAEPs). Further, the process of Extension Reforms was strengthened under National Agricultural Technology Project (NATP,1998) by establishing Agricultural Technology Management Agency (ATMA) at district level, now covers 676 districts in 29 States/3 UTs under the National Mission on Agricultural Extension & Technology (NMAET).

2.1 BRIEF DETAILS OF EXTENSION SCHEMES AND PROGRAMMES

A. DEPARTMENT OF AGRICULTURE AND FARMERS WELFARE (DAF&W), GOVT. OF INDIA

a. The Sub Mission on Agricultural Extension (SMAE) under Green Revolution – is Krishonnati Yojana

This 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. Objectives and Achievement of Major Schemes are as under:

i. 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 SubMission 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 de centr ali ze d fa rm e r -d r iven and farme r accountable exte nsion system throu gh a n ins titutiona l a rrange ment fo r te chnol og y 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 a ctivitie s 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 ofthe 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
- Farming system approach
- Farmer centric extension services
- Convergence
- Mainstreaming gender concerns

Implementation Status

Institutional arrangements viz. Inter Departmental Working Group (IDWG)/ in 28 States and 5 Union Territories, ATMA Core Committees – Governing Board (GB) & ATMA Management Committee in 739 Districts; Block Technology Team (BTT) in 6092 Blocks & Block Farmer Advisory Committees (BFACs) reconstituted in 5025 Blocks; District Farmer Advisory Committees (FACs) have been constituted in 537 districts and State Level FACs in 20 States. State Extension Work Plans (SEWPs) of 28 States/4 UTs have been prepared and approved based on District Agriculture Action Plans of 739 ATMA districts.

ii. Mass Media Support to Agricultural Extension (MMSAE)

This Scheme is utilizing country wide 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 ofthe Scheme is to enhance and boost the Agriculture Extension system in the present scenario. Major components of this Scheme are:

- DD National Programme
- DD Regional Programme
- Doordarshan (DD) Narrowcasting
- All India Radio (AIR) FM Broadcast
- Support to Community Radio Stations (CRS)
- Print Media
- Focused Publicity & Awareness Campaign

Details of these components are given in Section 6.1

iii. 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 components 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 a 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 backended subsidy @ 36% ofthe 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 Scheduled Caste/Scheduled Tribes(SC/ST), Women and all categories of candidates from North-Eastern and Hill States. Now, benefits of Micro Units Development & Refinance Agency(MUDRA) Scheme loans also are made available to the entrepreneurs establishing agri-ventures under the Scheme. 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 up to December, 2023.

iv. Kisan Call Centers (KCC)

The KCC Scheme was launched on 21 January 2004 toprovide answer to farmers'queries on agriculture and allied sectors throughtoll 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

22official languages. KCCs are in operational from 17 locations in the country covering all the Sates and UTs. Calls are attended from 6.00 AM to 10.00PMon all 7 days ofaweek.

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 Farm Tele Advisor (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 ofunique 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.

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.

v. 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.

a. The National Institute of Agricultural Extension Management (MANAGE) plays a crucial role in Human Resource Development (HRD) by enhancing the skills and competencies of agricultural extension professionals. *(Refer 2.7. Public Institutions Heading - for Complete details)*

b. 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. c. Diploma in Agricultural Extension Services for Input Dealers (DAESI): Realizing the important need to educate input dealers, MANAGE started a one-year Diploma in Agricultural Extension Services for Input Dealers (DAESI) in 2003 with an objective to transform input dealers into para extension workers. It is being successfully organised at district level in collaboration with SAMETIs through contact classes in local languages by agricultural experts and practitioners at more than 600 nodal training institutes comprising of SAUs, agricultural colleges, KVKs, ATMA, farmers training centers and NGOs. d. Skill Training of Rural Youth (STRY) Skill Development of Rural Youth is a flagship scheme of the Government. The Ministryof Agriculture & Farmers Welfare, Govt. of India, in compliance with National Policy on Skill Development & Entrepreneurship 2015, has taken the initiative to implement the Skill Development Component, namely Skill Training of Rural Youth (STRY) under Sub-Mission on Agricultural Extension (SMAE) of National Mission on Agricultural Extension & Technology (NMAET) during2015–16. e. Certified Farm Advisor MANAGE has launched a new initiative called "Certified Farm Advisor/Certified Livestock Advisor" program to develop Agricultural Extension Personnel into Specialists in a particular Crop / Livestock. f. Farmer Field Schools (FFS) Farmer Field Schools (FFS) are a participatory extension approach that brings together groups of farmers to learn by doing through hands-on, field-based experiential learning. Typically conducted over an entire cropping

season, FFS sessions focus on integrated crop management, pest control, and sustainable farming practices. It has empowered farmers, particularly smallholders, to make informed decisions, leading to better yields and strengthened community cooperation and knowledge-sharing networks.

vi. 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.

B. DARE /ICAR Schemes:

a. Agricultural Extension Division of ICAR

The major activities of Agricultural Extension Division are technology assessment, demonstration and capacity development through a network of 11 Agricultural Technology Application Research Institutes (ATARIs) and 731 KrishiVigyan Kendras (KVKs). These ATARIs coordinate and monitor the extension activities being carried by KVKs in their respective zones under the directions of the Subject Matter Division (SMD) of Agricultural Extension Division, ICAR, New Delhi. The Agricultural Extension Division at National level is headed by Deputy Director-General (Agricultural Extension) and supported by two Assistant Director-Generals, four Principal Scientists, Director, Deputy Secretary and Under Secretary.

b. ICAR-Agricultural Technology Application Research Institute (ATARI):

Refer 2.7. Public Institutions Heading - for Complete details of working of these institutions

c. Krishi Vigyan Kendra (KVK):

Krishi Vigyan Kendras (KVKs), now 731 in the country are district level multidisciplinary scientific institutions for frontline extension and are mandated for technology assessment and demonstration for its application and capacity development under different farming situations across the country through on-farm testing (OFTs) of new technologies to identify location specific technologies in various farming systems; frontline demonstrations (FLDs) for exhibiting the production potential of the technologies and capacity development of farmers, farm women, rural youth and extension personnel. KVKs also provide technological inputs, information and knowledge to different stakeholders and serve as knowledge and resource centres at the district level in the country. Besides these activities, important programmes namely Out scaling of Natural Farming, Formation and Promotion of Farmer Producer Organizations (FPOs) as Cluster Based Business Organizations (CBBOs), Technological backstopping to FPOs, Demonstrations through Agri-drones, Farmers FIRST, Attracting and Retaining Youth in Agriculture (ARYA), Cluster Frontline Demonstration of pulses and oilseeds, Cereal Systems Initiatives for South Asia (CSISA), National Innovations in Climate Resilient Agriculture (NICRA), Pulses Seed hubs, Mera Gaon Mera Gaurav and Awareness creation on government schemes, etc. were taken up to address various challenges and national priorities like, engaging youth in agriculture, brining self-sufficiency in production of pulses and oilseeds, sustainable agriculture, etc.

d. Nutri-Sensitive Agricultural Resourcesand Innovation (NARI):
To tackle the problem of malnutrition by ensuring nutrition security for every person specially for women and child a new initiative "Nutri-Sensitive Agricultural Resources and Innovation" started by the Indian Council of Agricultural Research through Krishi Vigyan Kendras across the country. Under NARI programme, each KVK established at least one Nutri-SMART Village in their jurisdiction area and promoting nutrition-related interventions to ensure nutrition security.

e. Value Additionand Technology Incubation Centrein Agriculture (VATICA):
It was conceptualized by ICAR to create a facility to provide incubation training to rural youth in processing and value addition. KVK s arestrategically located and linked with agricultural universities and ICAR institutes to identify different trades and establish trade specific value addition and incubation centres for educating youth and the farmers to practice various components of technology management at the incubation centres and with the support from different lending agencies they can establish their ownprocessing and value addition units for commercial purposes

f. ARYA-Attracting and RetainingYouth in Agriculture -ICAR

Indian Council of Agricultural Research (ICAR) has initiated a programme on "Attracting and Retaining Youth in Agriculture (ARYA) during 2015-16. Under this scheme, special efforts are being taken up to attract the rural youth under the age of 35 years in agriculture to provide income generating opportunities and engage them in agriculture. The oriented youth groups may functionasrole model for other youths bydemonstrating thepotentialityofthe agri-based enterprises and also by imparting training to others.

g. Farmer FIRST programme
This is a new initiative of ICAR, aims at enriching Farmers –Scientistinterface, technology assemblage, application and feedback, partnership, institution building and content mobilization. It provides a platformto farmers 4 Policy Paper 120 and scientists for creating linkages, capacity building, technology adaptation and application, on-site input management, feedbackand institution building. The project is under operation in 51 centres under ICAR and SAUs spread across 20 states of the country. The scientists, under this project, are working with 48291 farm families under different models namely, crop, horticulture, livestock, NRM, IFS and agro enterprises.

h. 'Mera Gaon Mera Gaurav' (MyVillage My Pride)
This program was launched in August 2015. Under this program, a group of 4 scientists, each belonging to different disciplines from ICAR Institutes and agricultural Universities, adopted 5 villages for giving suitable advice to the farmers on technical and other related aspects within a stipulated time frame through personal visits or by telephone. Scientists are also creating awareness among farmers about climate change, other customized technologies, protective measures, Swachh Bharat Abhiyan, and other issues of local and national importance. In this process of socio-techno transformation, scientists also involve local Panchayats, development agencies, NGOs and private organizations. The objective is to effectively promote direct interface of scientists of ICAR Institutes and State Agricultural Universities with the farmers to hasten the lab to land process.

i. Convergence-based extension & Climate smart village model (NICRA)
This model was conceptualized keeping integration of technology with social dimensions in view, and established at 151 vulnerable districts in the country. Climate Resilient village is conceptualized as a village where all the villagers contribute to mitigate the impacts of climate change by adopting climate resilient technologies.

j. IARI-Voluntary Organization Partnership Extension Model
It is another innovative outreach strategy adopted by the ICAR-IARI in collaboration with active Voluntary Organizations (VOs). IARIhaspartnership

	with 28 VOs spread across 14 states of India since 2010. The model was designed on the principles of sharing the strength of partners, IARI in technology, and the VO partners in robust network at the grassroots level.

C. STATE GOVERNMENT SCHEMES

Different States Agricultural Schemes are available at the below mentioned url,

https://www.manage.gov.in/fpoacademy/SGSchemes/state-schemes.asp

A few major extension schemes of different states are mentioned below:

a. Karnataka

i. Krushi Bhagya Scheme: Introduced in the year 2014-15. The main aim is improving rainfed agriculture scenario with the efficient management of rain water and enhancing the farm productivity.

ii. Krishi Yantra Dhare Yojane: Establishment of Farm machinery CustomHire and Service Centres at hobli level through registered Charitable Trusts/NGOs to help farmers to provide agricultural equipment for timely agricultural operations.

iii. Rashtriyae - Market Services Limited (ReMSL): This scheme was established to facilitate online trading system to sell the agricultural produce of the farmers in the markets through electronic trading system. So far, 156 markets are brought under Unified Market Platform.

iv. Rythu Sampark Kendra (RSK): The government of Karnataka has established RSKs at the Hobli level, covering about 15-20 adjoining villages to strengthen extension and input delivery services.

b. Telangana

Rythu Bandhu Scheme

Rythu Bandhu is a direct benefit transfer scheme where farmers receive financial support for crop inputs before the beginning of the sowingseason. Timely financial aid has reduced farmers' reliance on high-interest loans from moneylenders.

c. Andhra Pradesh

Rythu Bharosa Kendras

Rythu Bharosa Kendras (RBKs), orFarmer AssuranceCentres, arevillage-level centers in Andhra Pradesh that provide agriculture-related services to farmers.

d. Odisha

KALIA Scheme

KALIA (Krushak Assistance for Livelihood and Income Augmentation) provides financial aid to small and marginal farmers and landless agricultural households.

e. Jharkhand

Mukhyamantri Krishi Ashirwad Yojana

This scheme provides direct cash transfers to farmers to boost their financial ability to purchase farm inputs. Extension services are geared up accordingly to strengthen advisory services for timely and judicious application of essential farm inputs.

f. Punjab

Farm Advisory Service Centres (FASCs)

Farm Advisory Service Centers were started by Punjab Agricultural University in 1962 primarily with the objective of quick transfer of technology among the farmers of the state and getting first hand feedback of their field problems at all the 11 erstwhile districts.

2.2 OTHER SECTORAL PROGRAMMES/SCHEMES

Highlights of major sectoral schemes of Ministry of Agriculture -

- PM Kisan Samman Nidhi scheme helped improve the lives of farmers with the Disbursement of Rs 3.46 lakh crore
- Under pradhan Mantri Fasal Bima Yojana, farmers received financial assistance of Rs 1.70 lakh crore
- The 'Sustainable Income' Initiative allocates Rs 2 lakh crore for MSP, aiming to boost farmers' livelihoods and ensure fair prices for their produce.
- Under the PM-Aasha Yojana, a provision of Rs 35,000 crore ensure remunerative prices for farmers
- With a financial outlay of Rs. 1 lakh crore, the Agriculture Infrastructure Fund (AIF) offers loan guarantees up to Rs 2 crore for modern agricultural infrastructure, benefiting farmers.
- Release of 109 high-yielding and climate-resilient crop varieties to reduce farmers' expenses
- Distribution of more than 24.60 crore soil health cards to boost crop yield for farmers
- Per Drop More Crop Scheme covers nearly 95 lakh hectares of area under micro irrigation
- Over 9,000 FPOs have been registered, benrfiting 23 lakh farmers
- The registration of 1,410 mandis on the e-NAM portal provides a new boost to the agriculture sector
- The Namo Drone Didi scheme, with a Rs 1,261 crore provision, aims to make 15,000 women SHGs self-reliant. So far, 1,000 drones have been distributed

1. CROPS SECTOR

a. National Food Security Mission (NFSM)

National Food Security Mission was launched in 2007-08. The Mission aims at increasing production of rice, wheat, pulses, coarse cereals (Maize and Barley) and Nutri-Cereals through area expansion and productivity enhancement in a sustainable manner in the identified districts of 28 States and 2 UTs (i.e., J&K and Ladakh). The strategy of the Mission is to promote and extend improved technologies of package of practices of crops through various types of demonstrations involving FLDs and Cluster FLDs

b. The International Year of Millet (IYM) -

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 ofAgriculture& Farmers Welfare.

c. National Food Secuarty Mission (Oil Seeds)

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.

d. Pradhan Mantri Fasal Bima Yojana (PMFBY)

PMFBYwaslaunched in2016 inordertoprovide asimpleandaffordablecrop insurance product to ensure comprehensive risk cover for crops to farmers against all non-preventable natural risks from pre-sowing to post-harvest andto provideadequateclaimamount. Thescheme is demanddrivenandavailable for all farmers A total of 5549.40 lakh farmer applications were insured under the scheme since 2016-17 and Rs 150589.10 crore has been paid as claim.

e. Paramparagat Krishi Vikas Yojana (PKVY)

Paramparagat Krishi Vikas Yojana (PKVY) aims to increase soil fertility and thereby helps in production of healthy food through organic practices without the use of agro-chemicals. The scheme is implemented in a cluster mode with unit cluster size of 20 hectares

2. HORTICULTURE SECTOR

a. Mission for Integrated Development of Horticulture (MIDH)

Mission for Integrated Development of Horticulture (MIDH) is a Centrally Sponsored Scheme launched in 2014-15 for the holistic growth of the horticulture sector covering fruits, vegetables, root & tuber crops, mushrooms, spices, flowers, aromatic plants, coconut, cashew, cocoa and bamboo.

b. National Horticulture Board (NHB)

NHB implements programmes as sub-scheme of Mission for Integrated Development of Horticulture (MIDH). NHB will also house the national level TSG under MIDH including NHM and NBM and extend administrative, logistical and personnel support towards their implementation.

c. Integrated Scheme for Agriculture Marketing (ISAM)

ISAM supports state governments in governing the agricultural produce marketing through creation and improvement of market structures, capacity building and generating access to market information. During 2017-18, National Agriculture Market known as e-NAM scheme has also been made part of the same. e-NAM) is a pan-India electronic trading portal which networks the existing APMC mandis to create a unified national market for agricultural commodities. Small Farmers Agribusiness Consortium (SFAC) is the lead agency for implementing eNAM under the aegis of Ministry of Agriculture and Farmers' Welfare, Government of India.

3 . ANIMAL HUSBANDRY AND DAIRYING SECTOR

a. Rashtriya Gokul Mission

The Rashtriya Gokul Mission (RGM) is being implemented for development and conservation of indigenous bovine breeds since December 2014. The scheme is important inenhancing milk production and productivityof bovines to meet growing demand of milk and making dairying more remunerative to the rural farmers of the country. The scheme is also continued under umbrella scheme Rashtriya Pashudhan Vikas Yojna from 2021 to 2026 with a budget outlay of Rs.2400 crore.

b. National Livestock Mission

The focus of the scheme is on entrepreneurship development and breed improvement in poultry, sheep, goat and piggery including feed and fodder development. The scheme is implemented with the following three Sub-Missions:

i. Sub-Mission on Breed Development of Livestock & Poultry
ii. Sub-Mission on Feed and Fodder development
iii. Sub-Mission on Extension and Innovation

c. *Sub-Mission on Research & Development, Livestock Insurance, Extension and Innovation:*

The sub-mission aims to incentivize the Institutes, Universities, Organizations carrying out researchand development relatedto sheep, goat, pig and feed and fodder sector, extension activities, livestock insurance and innovation.

d. National Programme for Dairy Development (NPDD):

The NPDD scheme aims to enhance quality of milk and milk products and increase share of organized milk procurement.

3. FISHERIES

a. National Fisheries Develoipment Board (NFDB) – major activities :

- "Innovations and Innovative Projects/ activities, Technology demonstrations including start-ups, incubators and pilot projects".
- Popularize new and innovative technologies emerging in the field so as to improve fish production and productivity in the country.
- Demonstration of growth performance, health status and meat quality of Biofloc raised fish in Northern India
- Pilot scale implementation of "Smart Packing technology: fish freshness indicator"
- Entrepreneur Models in Fisheries and Aquaculture - NFDB is implementing Entrepreneur Models in Fisheries and Aquaculture under Central Sector component of PMMSY to attract enhanced private investment in the fisheries and aquaculture sector.

4. FARM CREDIT

Kisan Credit Card (KCC) Scheme

The Kisan Credit Card (KCC) scheme was introduced in 1998 for issue of Kisan Credit Cards to farmers on the basis of their holdings for uniform adoption by the banks so that farmers may use them to readily purchase agriculture inputs such as seeds, fertilizers, pesticides etc. and draw cash for their production needs.

Flow of Institutional Credit to Agriculture Sector Extended by Various Agencies is given at **Annexure - IX**

5. AGRICULTURE INFRASTRUCTURE FUND (AIF)

In order to address the existing infrastructure gaps and mobilize investment in agriculture infrastructure, Agri Infra Fund was launched under Atma Nirbhar Bharat Package.

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).

6. FORMATION & PROMOTION OF NEW 10,000 FPOS

The Government of India launched the Central Sector Scheme (CSS) for "Formation and Promotion of 10,000 Farmer Producer Organizations (FPOs)" in the year 2020.

Details of FPOs formed Statewise are at **Annexure - XIV**

7. AGRICULTURAL MECHANIZATION

Sub Mission on Agricultural Mechanization (SMAM) is being implemented w.e.f April, 2014 which aims at catalyzing an accelerated but inclusive growth of agricultural mechanization in India with the objectives of 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 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 and Ensuring performance testing and certification at designated testing centers located all over the country.

Promotion of Drone Technology under SMAM

Looking into the unique advantages of Drone technologies in agriculture, a Standard Crop Specific Operating Procedures (SOPs) released the for use of drones in pesticide and nutrient application in public domain on 20.04.2023, which provides concise instructions for effective and safe operations of drones.

Namo Drone Didi

The Government has recently approved a Central Sector Scheme for providing drones to the Women Self Help Group (SHGs) for the period from 2024-25 to 2025-26 with an outlay of Rs. 1261 Crores. The scheme aims to provide drones to 15000 selected Women Self Help Group(SHGs) for providing rental services to farmers for agriculture purpose (application of fertilizers and pesticides). Under this Scheme, Central Financial Assistance @ 80% of the

cost of drone and accessories/ancillary charges upto a maximum of Rs. 8.0 Lakhs will be provided to the women SHGs for purchase of drones.

8. OTHER FARM ENTERPRISES (MUSHROOM, BEEKEEPING, SERICULTURE, ETC.) NATIONAL BEEKEEPING AND HONEY MISSION (NBHM)

Keeping in view the importance of beekeeping, a new Central Sector Scheme entitled National Beekeeping & Honey Mission (NBHM) was launched in 2020 under Atma Nirbhar Bharat Abhiyan for its implementation in the field for overall promotion and development of scientific beekeeping & to achieve the goal of "Sweet Revolution". 100 Honey FPOs targeted under 10,000 FPOs scheme in the country. 88 FPOs have been registered by NAFED, NDDB & TRIFED.

9. RASHTRIYA KRISHI VIKAS YOJANA: RASTRIYA KRISHI VIKAS YOJANA - DETAILED PROJECT REPORT BASED SCHEMES (RKVY- DPR):

The scheme focuses on creation of pre & post-harvest infrastructure in agriculture and allied sectors that help in supply of quality inputs, market facilities, etc. to farmers. It provides flexibility and autonomy to states to implement projects as per the local farmers' needs and priorities from a bouquet of activities in agriculture and allied sectors. The scheme aims to fill the resources gap of agriculture and allied sectors by providing financial support to states for undertaking various activities to increase in overall growth of agriculture and allied sectors and farmers' income.

10. EXTENSION PROGRAMME OF RURAL DEVELOPMENT MINISTRY (IRDP)

a. Pashu Sakhi

It is a Community Animal- care Service Provider (CASP), which enables the last mile coverage in rural areas, where clinical services for livestock is not

	available on time or is expensive to afford for rural poor. Pashu Sakhi is envisaged to create awareness and carry out capacity building of the community on livestock-based livelihood activities, and facilitate aggregation and marketing of the livestock products. Anganwadi workers are also engaged as change agents for promotion of nutritional security. Institutions and Organisations in Allied Sectors are at **Annexure – XII**

2.3 EXTENSION NETWORK–IN PUBLIC SECTOR

I. BRIEF EXTENSION NETWORK/FORMATIONS IN THE SECTORS INDICATED

Directorate of Extension (DOE) and National Institute of Agricultural Extension Management (MANAGE) operate at National level whereas Extension Education Institutes (EEIs) – one in each of the four Regions of the country – are the regional hubs to provide training and HRD support to the extension functionaries. State Agricultural Management and Extension Training Institutes (SAMETIs) operate at the State Level. ATMA promotes decentralized farmer-driven and farmer-accountable extension system through an institutional arrangement for technology dissemination at district level.

The Indian Council of Agricultural Research (ICAR) is anautonomous organisation under the Department of Agricultural Research and Education (DARE), Ministry of Agriculture and Farmers Welfare, Government of India. With 113 ICAR institutes and 74 agricultural universities spread across the country this is one of the largest national agricultural systems in the world.

a. DEPARTMENT OF AGRICULTURE & FARMERS WELFARE

The DA&FW is organized into 28 Divisions and has five attached offices and twenty-one subordinate offices 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 Undertakings, nine autonomous bodies, ten national level cooperative organizations and two authorities are functioning under the administrative controlofthe Department. *Refer 2.7. Public Institutions Heading - for Complete details of working of these institutions*

b. THE INDIAN COUNCIL OF AGRICULTURAL RESEARCH (ICAR)

The Indian Council of Agricultural Research (ICAR) is an autonomous organisation under the Department of Agricultural Research and Education (DARE), Ministry of Agriculture and Farmers Welfare, Government of India.

The Council is the apex body for co-ordinating, guiding and managingresearch and education in agriculture including horticulture, fisheries and animal sciences in the entire country. With 113 ICAR institutes and 74 agricultural universities spread across the country this is one of the largest national

	agricultural systems in the world. The ICAR has played a pioneering role in ushering Green Revolutionand subsequent developments in agriculture in India through its research and technology development.

2.4 EXTENSION NETWORK–IN PRIVATE SECTOR

BRIEF EXTENSION NETWORKS IN THE SECTORS INDICATED

1. ExtensionNetwork in PrivateSector

   Extension Network in Private Sector includes the following:

   - Input agencies (dealing with seeds, fertilisers, pesticides, equipments),
   - Large agri-business firms (involved in manufacture and sale of inputs and purchase of farm produce)
   - Farmer organisations and producer co-operatives,
   - Non-governmental organisations (NGOs),
   - Media (print, radio and television) and web-based knowledge providers
   - Financial agencies involved in rural credit delivery, and
   - Consultancy services
   - Agri-startups
   - ICT Service Providers–Mobiles, Internet
   - Mass Media–Television, Radio, Print Media
   - Agriculture Traders
   - Millers
   - Agriculture Insurance Service Providers
   - Logistic Service Providers-Transport, Cold Storage, Godown,

2. Inventory of Private Extension Services Providers at the Federal/ Provincial and District/Block levels

   Details of Private Extension Services Providers (**Annexure - XVIII)**

2.5 EXTENSION NETWORK OF CGIAR AND OTHER INTERNATIONAL INSTITUTIONS

The extension services of CGIAR and other International Institutions in particular in various domains in India

a) CGIAR Research Centers

- CGIAR Research Centers are non-profit research organizations conducting innovative research. Home to more than 9,000 scientists, researchers, technicians and staff, the Centers work to transform food, land and water systems in a climate crisis.

- ICAR works closely with the Consultative Group on International Agricultural Research (CGIAR), which is an international R&D network having 15 Research Centers as under:

  i. Africa Rice Center - Abidjan - Cote d'Ivoire
  ii. Center for International Forestry Research (CIFOR) - Bogor - Indonesia
  iii. CIMMYT - Texcoco - Maxico
  iv. International Center for Agricultural Research in the Dry Areas (ICARDA) - Beirut - Lebenon
  v. International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) - Patancheru - India
  vi. International Food Policy Research Institute (IFPRI) - Washington DC - USA
  vii. International Institute of Tropical Agriculture (IITA)- Ibadan - Nigeria
  viii. International Livestock Research Institute (ILRI)- Cohost Kenya and Ethiopia
  ix. International Potato Center (CIP) - Lima - Peru
  x. International Rice Research Institute (IRRI) - Los Banos - Philippines
  xi. International Water Management Institute (IWMI) - Colombo - Sri Lanka
  xii. The Alliance of Bioversity International and the International Center for Tropical Agriculture (CIAT) - Italy
  xiii. The Alliance of Bioversity International and the International Center for Tropical Agriculture (CIAT) - Colombia
  xiv. World Agroforestry (ICRAF) - Nairobi - Kenya
  xv. WorldFish - Peneng - Malayasia

- Other important programmes of CGIAR institutes are briefly mentioned below:

  - **CGIAR Research Programme on Climate Change, Agriculture and Food Security (CCAFS)**

The CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) marshals the science and expertise of CGIAR and its partners to catalyse positive change for climate-smart agriculture (CSA). CCAFS positions CGIAR - the world's largest agricultural research partnership to play a major role in bringing to scale the practices, technologies and institutions that enable agriculture to meet triple goals of food security, adaptation and mitigation. CCAFS's work is carried out with the support of the CGIAR Trust Fund donors, as well as through bilateral funding agreements.

- Borlaug Institute for South Asia (BISA)

BISA was established on October 5, 2011, through an agreement between the Government of India (GoI) and the International Maize and Wheat Improvement Center (CIMMYT) and was bolstered by the globally credible name of Nobel Laureate Norman Ernest Borlaug. The institution draws on the decades of experience and success by CIMMYT, the Consultative Group on International Agricultural Research (CGIAR), and a global network of partners in using research to generate tangible benefits for farmers internationally. BISA is supported by a growing number of national stakeholders in South Asia. It is committed to stronger collaborations for accelerated impact, most prominently with the Indian Council of Agricultural Research (ICAR) and the three state governments (Punjab, Bihar, and Madhya Pradesh) where BISA farms are located.

- Cereal Systems Initiative for South Asia (CSISA)

The Cereal Systems Initiative for South Asia (CSISA), since its inception in 2009, has benefitted over 8.5 million farmers. CSISA undertakes impact-driven research to enhance the productivity of cereal-based cropping systems and improve the livelihoods of smallholder farmers. The initiative drives sustainable agricultural transformation by integrating advanced agronomic research with innovations in big data analytics. The project is led by the International Maize and Wheat Improvement Center (CIMMYT) and implemented in partnership with the Indian Council of Agricultural Research (ICAR), the International Food Policy Research Institute (IFPRI), and the International Rice Research Institute (IRRI).

- India is a donor member of CGIAR System from decades and contributes substantially through CGIAR System Council mechanisms. Out of these 15 Centers, International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) has its headquartered at Hyderabad in the State of Telangana, India.
- The remaining CGIAR research organizations have headquarters elsewhere,

but have a strong presence in India in the form of a country or South Asia regional offices in India. Through mutual agreements and work plans, ICAR participates in global agricultural research that benefits Indian agriculture.

- The broad areas of research collaboration with CGIAR system involves enhanced cooperation in their areas of priority besides germplasm and technology development to achieve targeted crop and animal productivity and quality in India, focused strategies for joint efforts to address the issues like utilization of rice fallows, watershed development, rain fed/dryland agriculture and water management and working together for doubling farmer's income.
- In addition to these, DARE/ICAR has entered into several collaborations through country's bilateral arrangements to benefit from knowledge sharing and gaining of overall experience and exposure to the latest development of technology from/for various countries.

b) Other International Platforms:

i. 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.

ii. Bay of Bengal Programme Inter-Governmental Organisation (BOBP-IGO)

The Bay of Bengal Programme Inter-Governmental Organisation (BOBP-IGO) has evolved from the erstwhile Bay of Bengal Programme of the Food and Agriculture Organization of the United Nations. It is a Regional Fisheries Advisory Body (RFAB) of the countries bordering the Bay of Bengal region. It serves as the think tank on transboundary and contemporary national issues of the member countries concerning fisheries management. BOBP is committed to accelerate the transformation of the fisheries sector of this region towards real-time, evidence-driven and ecosystem-based management, leveraging its global knowledge networks and effective partnership with the national governments and their constituent research and academic institutions.

c) Cooperation with International Organizations:

i. Food and Agriculture Organization (FAO):

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 (UNSDCF2023-27), 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.

ii. World Food Programme (WFP):

Established in 1961, 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 Corporates 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. Other International Organizations: In addition to the FAO & WFP the Department of Agriculture & Farmers' Welfare represents India in the following International Organizations (IOs):

- Asia and Pacific Plant Protection Commission (APPPC)
- TrustFundofFAOforDesertLocustinEasternRegion.
- Trust Fund for International Desert Locust.
- Organization for Economic Cooperation & Development (OECD).
- International Coconut Community (ICC)[formerly known as Asia and Pacific Coconut Community (APCC)].

d) 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. e) 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.

2.6 EXTENSION MANPOWER

a) Status of manpower in Agricultural Extension

States	Holdings Number(A)	Agriculture Extension manpower in position*(B)	No. of operation holdings per extensi official (A/B)
ANDHRAPRADESH	13175100	4167	3162
ARUNACHALPRADESH	109298	1145	95
ASSAM	2720223	2779	979
BIHAR	16191391	10231	1583
CHATTISGARH	3746480	4313	869
GOA	78020	95	821
GUJARAT	4885610	3501	1395
HARYANA	1617311	3018	536
HIMACHALPRADESH	960765	1084	886
JAMMU&KASHMIR	1449397	5812	249
JHARKHAND	2708928	4129	656
KARNATAKA	7832189	3226	2428
KERALA	6830789	3933	1737
MADHYAPRADESH	8872377	10775	823
MAHARASHTRA	13698965	15770	869
MANIPUR	150620	629	239
MEGHALAYA	209561	402	521
MIZORAM	91880	538	171
NAGALAND	178411	1053	169
ODISHA	4667466	3794	1230
PUNJAB	1052554	1398	753
RAJASTHAN	6888436	5495	1254
SIKKIM	74928	357	210
TAMILNADU	8118224	8320	976
TRIPURA	578479	2913	199
UTTARPRADESH	23325456	12976	1798
UTTARAKHAND	912650	1031	885
WESTBENGAL	7123347	6164	1156
ALLINDIA	13,83,48,461	1,19,048	1162

(Source: DFI Committee Report, 2017)

b) Extension Manpower at Various Levels–Public Sector in India.

The public sector agricultural extension system is primarily managed by state departments of agriculture, which employ around 119,048 agricultural extension workers. These workers serve a vast agricultural area, covering approximately 141 million hectares and 158 million operational holdings. However, the ratio of extension workers to farmers is notably low, with one extension officer serving about 1,162 operational holdings, which is

significantly higher than the recommended ratio of 1:750. The distribution of extension personnel varies widely across states. For instance, in Jammu & Kashmir, one extension worker is responsible for only 249 operational holdings,while in Andhra Pradesh, the ratio is 1:3162. Despite the large workforce, the effectiveness of public extension services is limited, as they only reach about 6.8% ? of farmers due to inadequate staffing and multiple non- extension responsibilities assigned to personnel.

Around 1.2 lakh number of extension functionaries are available under the umbrella of public extension in the country. With inclusion of vacant positions (approximately 30 per cent as on date), manpower available with ICAR organizations, Agricultural Universities and KVKs, public extension has the largest manpower base in service of farmers in the country. Other advantages of public extension are coverage of broad spectrum of agriculture (horticulture, field crops, animal husbandry, fisheries) and reaching every corner of the country. Of this however, around 15 per cent of the manpower available in extension operates at supervisory and administrative positions which are not available for field level extension. Hence, the present farmers to extension functionary ratio of 1156:1 stands to be further affected. *(DFI 2017)*

c) Extension Manpower at Various Levels–Private Sector

This sector includes agribusiness firms, agri-clinics, and other private entities that offer advisory services, inputs, and training to farmers.

Approximately 15,000 to 20,000 individuals are actively involved in rural development initiatives across India. These efforts are largely facilitated by various Non-Governmental Organizations (NGOs) that operate at different capacities, implementing a wide range of programs aimed at improving the socio-economic conditions of rural populations.

d) Others

2.7 EXTENSION INSTITUTIONS – PUBLIC SECTOR

I. Department of Agriculture & Farmers Welfare:

The DA & FW is organized into 28 Divisions and has five attached offices and twenty-one subordinate offices 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 Undertakings, nine autonomous bodies, ten national level cooperative organizations and two Authorities are functioning under the administrative control of the Department.

1. At National Level

a) Directorate of Extension (Extension Division):

The Directorate of Extension /Extension Division is the nodal agency in the Department of Agriculture and Farmers Welfare, Ministry of Agriculture and Farmers Welfare for agricultural extension programmes. It assists and encourages the State Departments in organizing, maintaining and operating professional extension services. The role of the Extension Division/Directorate of Extension is essentially supportive, guiding, providing technical support to the Extension Department. At present the Directorate of Extension has four major functional areas which include extension management, extension training, agricultural information and agricultural women development.

b) National Institute of Agricultural Extension Management (MANAGE):

MANAGE as an autonomous Institute was established in 1987, as theNational Centre for Management of Agricultural Extension at Hyderabad, by the Ministry of Agriculture & Farmers Welfare, Government of India. MANAGE is the Indian response to challenges of agricultural extension in a rapidly growing and diverse agriculture sector. The policies of liberalization and globalization of the economy and the level of agricultural technology becoming more sophisticated and complex,called for major initiatives towards reorientation and modernization of the agricultural extension system. Effective ways of managing the extension system needed to be evolved and extension organizations enabled to transform the existing set up through professional guidance and training of critical manpower. MANAGE is the response to this imperative need.

Vision: To be counted among the most pioneering, innovative,user friendly and self-supporting agricultural management institutes in the world.

Mission: Facilitating the Acquisition of Managerial and Technical skills by Extension Officers, Managers, Scientists and Administrators in all sectors of Agricultural economy to enable them to provide most effective support and services to Farmers and Fishermen for practicing Sustainable Agriculture.

Professional Services:

MANAGE offers its services in the following five streams viz.,

- Management Training
- Consultancy
- Management Education
- Research
- Information Services

2. At Regional Level

a) Extension Education Institute (EEI)

This is a regional level institute with the main mandate of providing capacity building to middle-level extension functionaries of the departments and organizations of agricultural development, particularly in the discipline of Extension Education. The Department ofAgriculture and Cooperation (DAC), Ministry of Agriculture, Govt. of India has established four EEIs for four regions ofthe country: EEI (Southern Region) at Hyderabad, Andhra Pradesh, EEI(NorthernRegion)at Nilokheri,Haryana,EEI(WesternRegion)at Anand, Gujarat, and EEI (NE Region) at Jorhat, Assam.

The Vision of the Institute

- Achieving excellence as a premier institute in facilitating capacity building of extension functionaries for sustainable development of agriculture in NE states of India.

The Mission of the Institute

- Developing competencies of extension personnel in providing professional extension service to the farming community.
- Enhancing the effectiveness of extension systems in planning, implementation, monitoring and evaluation of programmes andprojects for sustainable agricultural development.
- Developing and improving approaches, methodologies, tools and techniques relating to training and extension education.

Specific objectives of the EEIs are:

- Developing linkages between SAUs, regional and State level institutes associated with agricultural extension management and development.
- Organization of on-campus and off-campus training for middle level field extension functionaries working under agriculture and allied departments of States/ UTs.
- Conducting research studies on thrust areas of agricultural extension management and development.
- Capacity building of field extension functionaries in the areas of communication technology, extension methodology, training management, Agriculture Knowledge Information System (AKIS) and Information Technology.
- Conducting regional workshops, seminars and conferences on thrust areas of agricultural extension management and development and also undertaking consultancies, research, documentation and dissemination.
- Conducting induction/refresher programmes for newly recruited/promoted block/taluk level extension functionaries of agriculture and line departments of allotted states / UTs.
- Monitoring and Evaluation of on-going extension programmes. The Directorate of Extension releases grants-in-aid for functioning of these institutions and monitors effective implementation of HRD activities as

per approved Annual Action Plan.

Activities of Extension Education Institutes (EEIs) is given at **Ammexure – XX**

3. At State Level

a) State Agricultural Management & Extension Training Institute (SAMETI):

- It is the state level Institutional mechanism for extension provided under ExtensionReforms Scheme for catering the training and HumanResource Development needs of the middle level Extension functionaries of Agriculture, Horticulture, Animal Husbandry and other line departments.

Aims and Objectives of SAMETI

- To provide extension management input for extension functionaries of agricultural and allied departments.
- To develop systematic linkages between the allied departments, state universities and regional and national institutes of outstanding accomplishments in the field of agriculture.
- To studythe AgriculturalExtension Management Systems and policies together with operational problems and constraints at all levels.
- To promote and develop the management tools for improving the effectiveness of agricultural extension Services.
- To organize need based trainings for developing skills of all extension functionaries.

List of State Agricultural Management & Extension Training Institutes (SAMETIs) is at **Annexure – XIII**

4. DistrictLevel

a) AgricultureTechnologyManagementAgency(ATMA)

In 1998, the Indian Government, with the support of world Bank, introduced the Agriculture Technology Management Agency (ATMA) under the Innovation in Technology Dissemination (ITD) component of the National Agricultural Technology Project (NATP). It was first introduced in 28 districts in seven states from 1998 to 2003 under the guidance of MANAGE.

ATMA promotes decentralized farmer-driven and farmer-accountable extension system through an institutional arrangement for technology dissemination at district level.

ATMA involved in the preparation of a strategic research extension plan (SREP) and District Agriculture Action Plan (DAAP) at the district level. The SREP listed out the existing extension programmes in the district and the gaps required to be filled. It also identified the research extension linkages which

forms the basis of the state extension work plan.

ATMA now implemented in704 districts of 28 states & 5UTs of the country.

The organizational structure of ATMA at various levels is given at **Annexure - XXII**)

5. Block Level

- The Block ATMA Cell consisting of Block Technology Team(BTT) (a team comprising officers of agriculture and other allied departments within the block) and Block Farmers' Advisory Committee (BFAC) (a group exclusively consisting of selected farmers of the block) prepare the Block Action Plan (BAP) and provide necessary extension support within the Block in its execution.
- At the block level, Agricultural Technology Information Centers (ATICs) and Kisan Call Centers provide localized support and information to farmers.
- At the village level the BTTs operate through Farmer Friends (for every two villages there is on farmer friend) who are innovative farmers of the area with broader social network amongst fellow farmers.

II. The Indian Council of Agricultural Research (ICAR):

The Indian Council of Agricultural Research (ICAR) is an autonomous organisation under the Department of Agricultural Research and Education (DARE), Ministry of Agriculture and Farmers Welfare, Government of India.

The Council is the apex body for co-ordinating, guiding and managing research and education in agriculture including horticulture, fisheries and animal sciences in the entire country. With 113 ICAR institutes and 74 agricultural universities spread across the country this is one of the largest national agricultural systems in the world.

1. At National Level

a) Agricultural Extension Division of ICAR

The Agricultural Extension Division at National level is headed by Deputy Director-General (Agricultural Extension) and supported by two Assistant Director-Generals, four Principal Scientists, Director, Deputy Secretary and Under Secretary.

The major activities of Agricultural Extension Division are technology

assessment, demonstration and capacity development through a network of 11 Agricultural Technology Application Research Institutes (ATARIs) and 731 KrishiVigyan Kendras (KVKs). These ATARIs located at Ludhiana, Jodhpur, Kanpur, Patna, Kolkata, Guwahati, Umiam, Pune, Jabalpur, Hyderabad and Bengaluru coordinate and monitor the extension activities being carried by KVKs in their respective zones under the directions of the Subject Matter Division (SMD) of Agricultural Extension Division, ICAR, New Delhi.

2. At Regional Level

a) ICAR-Agricultural Technology Application Research Institute (ATARI): The ICAR has established 11 Agricultural Technology Application Research Institutes (ATARIs) across the country for monitoring, reviewing and coordinating the KVK system. Agricultural Extension Division, one of the eight divisions of ICAR, New Delhi has established strong network of Krishi Vigyan Kendras (731 KVKs) all over the country.

There are 11 ICAR-ATARIs formerly known as Zonal Project Directorates (ZPDs) functioning under Division of Agricultural Extension.

Region-wise ATARIs & KVKs covered under by each are indicated in the table below:

Zone	Name of ATARI	States covered	No. of KVKs
I	ICAR-ATARI-Ludhiana	Punjab (22), Uttarakhand (13), Himachal Pradesh (13), Jammu & Kashmir (20), Ladakh (4)	72
II	ICAR-ATARI-Jodhpur	Rajasthan (47), Haryana (18), Delhi (1)	66
III	ICAR-ATARI-Kanpur	Uttar Pradesh (89)	89
IV	ICAR-ATARI-Patna	Bihar (44), Jharkhand (24)	68
V	ICAR-ATARI-Kolkata	West Bengal (23), Odisha (33), Andaman & Nicobar (3)	59
VI	ICAR-ATARI-Guwahati	Assam (26), Arunachal Pradesh (17), Sikkim (4)	47
VII	ICAR-ATARI-Umiam	Tripura (8), Nagaland (11), Manipur (9), Mizoram (8), Meghalaya (7)	43
VIII	ICAR-ATARI-Pune	Maharashtra (50), Gujarat (30), Goa (2)	82
IX	ICAR-ATARI-Jabalpur	Madhya Pradesh (54), Chhattisgarh (28)	82
X	ICAR-ATARI-Hyderabad	Andhra Pradesh (24), Telangana (16), Tamil Nadu (32), Puducherry (3)	75
XI	ICAR-ATARI-Bengaluru	Karnataka (33), Kerala (14), Lakshadweep (1)	48

The mandates of ATARIs are:

- Coordination and monitoring of technology application and frontline extension education programmes.
- Strengthening agricultural extension research and knowledge management.
- Various Line Departments: State and district-level departments also provide extension services, although they often work in isolation and face challenges in coordination.

3. At State Level

a) State Agricultural Universities (SAUs):

- These are autonomous organizations with state-wide responsibility for agricultural research, education and training or extension education. The establishment of the SAUs, based on a pattern similar to that of the land-grant universities in the United States, was a landmark in reorganizing and strengthening the agricultural education system in India. These universities became the branches of research under the ICAR and became the partners of the National Agricultural Research System (NARS) (**Annexure - XXI)**.
- The essential feature of the agricultural university system is the acceptance of the philosophy of service to agriculture and to rural communities with the following mandates:
- State-wide responsibility for teaching, research and extension education.
- Integration of teaching, research and extension at all levels of the university administration.
- Multi-disciplinary teamwork in the development programs of education, research and extension.
- Acceptance by all concerned in the university of a philosophy of service to agriculture and the rural community and emphasis on programs that are directly and immediately related to solving social and economic problems of the countryside.
- Quick communication of new knowledge to students in classrooms, to extension personnel and to farmers.
- Programs giving specialized training to the rural youth and adult men and women who are not candidates for degrees, through departments involved in responsibility for the subject matter being taught.

4. At District Level

a) KVK-Krishi Vigyan Kendras:

The first KVK was established in 1974 at Puducherry. The total number of

KVKs operating are 731. The KVK scheme is 100% financed by Govt. of India and the KVKs are sanctioned to Agricultural Universities, ICAR institutes, related Government Departments and Non-Government organizations (NGOs) working in Agriculture.

Mandate

- The mandate of KVK is Technology Assessment and demonstration for its Application and Capacity Development.

KVK Activities

i. On-farm testing to assess the location specificity of agricultural technologies under various farming systems.

ii. Frontline demonstrations to establish production potential of technologies on the farmers' fields.

iii. Capacity development of farmers and extension personnel to update their knowledge and skills on modern agricultural technologies.

iv. To work as Knowledge and Resource Centre of agricultural technologies for supporting initiatives of public, private and voluntary sector in improving the agricultural economy of the district.

v. Provide farm advisories using ICT and other media means on varied subjects of interest to farmers

vi. In addition, KVKs produce quality technological products (seed, planting material, bio-agents, and livestock) and make it available to farmers, organize frontline extension activities, identify and document selected farm innovations and converge with ongoing schemes and programs within the mandate of KVK.

Detailed list of Krishi Vigyan Kendras is available at the link https://icar.org.in/krishi-vigyan-kendras

III. State Government Field Initiatives:

1. Regional/District Level

Various Line Departments: State and district-level Agriculture and allied departments also provide extension services. Directorate of Agriculture in each state tailor programs to local needs and ensure effective technology transfer to farmers. In Maharashtra, for example, there are 7 agricultural Divisions comprising 4-5 Districts in each headed a Divisional level Joint Director, whereas specific implementation of field programmes is administered by the district (SAO/DAO) and taluka level officers (TEO) . The field operations are carried forward by agriculture officer (AO) and

agriculture supervisor (AS).

2. Sub-District/Circle/Village Level (Some examples)

a) Raitha Samparka Kendra (RSK) – Karnataka:
In order to have more decentralized extension network below the district level for effective dissemination of modern agricultural technologies, Government of Karnataka has launched "Raitha Samparka Kendra (RSK)" during 2000, with the objective of providing extension services to the farmers at Hobli (Cluster of 15-20 villages) level. Presently there are over 745 RSKs located at Hobli level functioning under the Administrative control of Zilla Panchayat.

b) Rythu Bharosa Kendra (Andhra Pradesh):

The Government of Andhra Pradesh has established Rythu Bharosa Kendras (Farmer Assurance Centres) at the village level to take the agriculture-related services to the doorsteps of the farmers. Within three years of their advent, RBKs have found a place in the list of national best practices and NITI Aayog is proposing to replicate the model in other states. While decentralised service delivery is a positive development, the long list of its mandated services is proving to be a bottleneck for effective service delivery.

c) VillageLevel

The following mechanism is involved in disseminating information in the villages:

- The Farmer Friend (FF) serves as a vital link between extension system and farmers at village level (one FF for every two villages).
- Agri-entrepreneurs, Diploma holders in Agricultural Extension Services for Input Dealers (DAESI), Input Dealers and extension workers in non-governmental sector supplement the efforts ofextension functionaries.
- Commodity Interest Groups (CIGs), Farmer Interest Groups (FIGs) and Food Security Groups (FSGs) serve as a nodal point for information & technology dissemination among its members.
- Farm Schools set up on the field of progressive/ awardees serve as a mechanism for farmer-to-farmer extension.
- Farmer Field Schools are organized at villege/community level have been quite effective in addressing specific problems through and community action.
- Local PRI, agri-cooperatives, farmers' organizations, community leaders, SHGs, FPOs, FPCs, NGOs etc. are also involved in technology dissemination process as and when needed.

	● Besides, there are peoples institutions like seed villeges, community seed/fodder/labor banks, custom hiring centres, para extension workers etc supplementing the technology transfer efforts at the cutting edge level. They work closely at the field level in each state to tailor programs to local needs and ensure effective technology transfer to the farmers.

2.8 EXTENSION INSTITUTIONS – PRIVATE SECTOR

Extension Institutions/Organizations at the Federal/Provincial/District/ Block level/ field level

a) Private and voluntary sector initiatives

Many of these extension initiatives in India emerged as a demend driven local initiative, some times with active state support.

i. Input agency extension

- Many agro-input companies perform some extension functions. This may also be viewed as one function of marketing and often it is the marketing officers who oversee the extension related functions.
- Major categories of agro-input companies include, those dealing with seeds, fertilisers, pesticides and agro-machinery. A few of them also take up few demonstrations to publicize new products. Many of them sponsor farmer meetings or seminars organised by line departments such as DoA. These companies generally do not provide any extension support to individual growersor farmer groups as they employ only limited manpower intheir target area.
- Large seed companies have one marketing officer to take care of its products (linking with the dealers, create demand and match supply with demand) for a district or agroup of districts and one or two marketing assistants to helpthem. The companies prefer graduates in agriculture for this job, but this is not an essential qualification.
- Pushing sales being their primary mandate, the marketing officers/assistants seldom deal directly with farmers. But in high value crops such as flowers, there are input firms, which provide total extension support to their growers. These include, advice fromsite selection to technological guidance throughout the growing period and advice on marketing. The cost of this service forms a part of the input cost.

- Nuziveedu Seeds, one of the largest seed company inIndia has been investing heavily in extension activities. Various farmer training programmes, known as ‘Subeej Krishi Vignan “are organized by the company (Renganathan, 2010).

- Several initiatives by the agro and related corporates like Tata Kisan Kendras (TTKs) initiated by Tata Chemicals Limited, an agro-chemical company, Hariyali Kisan Bazaars (HKB), a chain of agri-input retail stores to provide end-to- end support to farmers by DCM Shriram Consolidated Limited (DSCL) were effective in input delivery mechanism and farmers’ capacity

building.

- AGROCEL another agro-chemical company based in Gujarat provides all inputs and necessary technical guidance to farmers through its "Agrocel Service Centres" in Gujarat, Jammu and Kashmir, Maharashtra, Orissa, Haryana and Uttaranchal.

ii. Agri-business firms (aggregators, processors)

- Major agri-business firms ITC and Pepsico during the last few years have initiated innovative arrangements to provide farmers with integrated production and marketing support.
- Indian Tobacco Company (ITC)'s extension effort revolve around e-chaupals, which are essentially village internet kiosks run by a local farmer (sanchalak), selected from the village and provided with short training. .
- ITC has also established Choupal Saagars, comprising its collection and storage facilities and a unique rural hypermarket that offers multiple services under one roof.

- Contract Farming Model-PepsiCo

  PepsiCo was a pioneer in the concept to contract farming under which the company transfers agricultural best practices and technology and procures the produce at a guaranteed price. To support the initiative, PepsiCo set up a 27-acre research and demonstration farm in Punjab to conduct farm trials of new varieties of tomato, potato and other crops. The programme, which includes seed production, has successfully evaluated several varieties of basmati rice, chilli, corn, peanut and tomato.
- Heritage Foods India Limited, which operates fresh fruits and vegetable retail chain in South India engages a team of professionals in agriculture to manage its production, procurement and extension activities.

iii. Few other Private Institutions/Organizations operating at various levels providing extension services:

  -
  - Private Banks- Yes Bank, ICICI Bank, Axis Bank etc.
  - NGOs
  - Donor Agencies–National, International
  - ICT Service Providers–Mobiles, Internet
  - Mass Media–Television, Radio, Print Media
  - AgricultureTraders and Aggregators
  - Agro-processing companies
  - Agriculture Insurance Service Providers
  - Contract Farming operators
  - Value Chain Management Agencies, Logistic Service Providers-Transport, Cold Storage, Godown,

iv. Private Companies extending extension services in their identified clusters - Examples

- Indo-American Hybrid Seeds www.indamseeds.com/
- ASPEE India www.espee.com/
- AgroTech www.agrotech-india.com/
- Good Earth www.goodearth.in/
- Mahindra Shubhlabh Services, Ltd.www.mahindra.com
- ITC Limited www.itcportal.com/-India
- CAICO www.caico.in/
- Rasi Seeds www.rasiseeds.com
- DuPont India
- National Agro Industries www.nationalagroinds.com/
- Poabs Organic www.poabsorganic.com
- Phalada Agro Research Foundation www.phaladaagro.com
- Advanta India Ltd. www.advantaindia.com/
- Monsanto India Ltd www.monsantoindia.com
- Syngenta India Ltd. www.syngenta.com/country/in/en/

2.9 NGOs IN AGRICULTURAL EXTENSION

Brief details of NGO efforts in extension at the Federal/Provincial/ District/block/field levels

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NGOs have been active extension service providers in their local catchments supplementing the efforts of mainstream extension agencies. In particular, they have been found to be effective in community mobilization, social actions, women empowerment, youth involvement, reaching out the disadvantaged areas and groups etc.

a) Aga Khan Rural Support Programme (India)

Aga Khan Rural Support Programme (India) is a non-denominational, non-government development organization. AKRSP(I) works as a catalyst for the betterment of rural communities by providing direct support to local communities.

b) Gramya Resource Center for Women

Founded to promote women's rights, Gramya focuses on the well-being of the farming community, particularly marginalized groups. It addresses issues like farmer suicides and supports victims' families through community-based efforts.

c) End Poverty

This NGO aims to reduce poverty through sustainable livelihoods and education. It operates in multiple states and focuses on supporting landless and marginal farmers, providing training and capacity-building programs.

d) Shree Kshetra Dharmasthala Rural Development Project (SKDRDP)

The SKDRDP provides higher priority for developing agriculture as it is the main occupation of villagers. All the programs for developing agriculture come under Agriculture division. The agriculture and related programs are generally geared towards head of the family and also has specialized organization structure inside SKDRDP to implement the following programs: better.

- Yantradhara: The SKDRDP and Agriculture Department, Govt. of Karnataka came together to establish Yantradhara - Custom Hire Service Centers at Hobli level .
- Green Energy: The SKDRDP encourages the use of renewable indigenously-available energy sources .
- SKDRDP finances the installation of solar lighting systems, solar driers and gobar gas plants.
- Pragathivana: In order to motivate the villagers to protect the environment, SKDRDP has taken up environment conservation initiatives.
- Pragathi Bandhu Groups: Developed by SKDRDP, "Pragathi Bandhus" are unique models of male-member Self-help Groups for mutual help in the cultivation of crops and micro credit assistance.

e) Mysore Resettlement and Development Agency (MYRADA)

- MYRADA is a non-government organisation started in1968 working in backward and drought-prone areas. MYRADA work with more than a million families in 18 districts of Karnataka, Andhra Pradesh and Tamil Nadu, forming and strengthening Community Based Oganisations (CBOs), promoting livelihood activities, management and development of natural resources, improving health and education status of the community and building capacities of the community to raise and manage resources independently.
-

f) Tata-Dhan Academy

- Tata-Dhan Academy is a collaboration between DHAN Foundation and Sir Ratan Tata Trust. It focuses on training and capacity building for rural development and agricultural extension.

g) Bhara tAgro-Industries Foundation (BAIF)

- BAIF Development Research Foundation has adopted the Gandhian approach to rural prosperity with emphasis on Climate Change Mitigation and Resilient

and Sustainable Community Livelihoods. With its mult idisciplinary team of about 6000 employees and associates, BAIF is implementing major Nature-positive programmes such as Livestock Development, Natural Resources Management, Agri-Horti-Forestry (*Wadi*) and Agro biodiversity Conservation for Sustainable Livelihoods and Enriched Environment.

h) Professional Assistance for Development Action (PRADAN)

Founded in 1983, PRADAN has evolved over the past three decades as one of the most prominent Indian NGOs working on poverty alleviation.

PRADAN work in the poorest regions of India to help vulnerable communities organize collectives that help people, especially women, earn a decent living and support their families. We also help them access government programs and other entitlements as citizens.

i) Dilasa Sanstha

Dilasa Sanstha works in the Vidarbha and Marathwada regions of Maharashtra. It advocates for sustainable irrigation methods and organic farming. Dilasa has established over 7,650 self-help groups for women .

j) Marathwada Navnirman Lokayat (MANAVLOK)

It works on sustainable agriculture, natural resource management, and rural livelihoods. MANAVLOK promotes organic farming, vermicomposting, and water conservation techniques among farmers.

k) Syngenta Foundation, India (SFI)

SFI has been instrumental in helping marginalized farmers adopt high quality production technology for better productivity and improved incomes through unique models of agriculture extension.

l) Rama Krishna Mission

The multifarious rural development activities of Ramakrishna Mission Ashrama, Morabadi, Ranchi are now well known. The emphasis on integrated approach and quality assurance has been the hallmark of these activities, so much so that the 'Divyayan' Unit of the Ramakrishna Mission Ashrama, has been able to establish linkages with different Departments of the State and Central Governments, Indian Council of Agricultural Research (ICAR), and other national Institutes of repute. As many as 70 organizations collectively called 'Vivekananda Seva Sangha', established at the initiative of the ex-trainees of Divyayan work for the all-round development of their own villages.

m) Chinmaya Mission

CORD (Chinmaya Organisation for Rural Development) is the service wing

	of Chinmaya Mission and operates as a Trust and NGO. It has been active in the field of holistic rural development for over two decades. It facilitates integrated, participatory and sustainable Rural Development in villages of Himachal Pradesh, Orissa, Tamil Nadu and Andhra through guidance, funding and monitoring. n) KVKs Hosted and Opreated by the NGOs Out of 731 KVKs oprational in the Country, 101 of them are hosted and oprated by the NGOs. This NGOs are of different categories like District level, States level and National level. The technical support this NGOs is provided by the respective States Agricultural Universities and ICAR Institutions.

2.10 FARMER ORGANIZATIONS IN EXTENSION

a) Brief details of Farmer Organization (SHGs, FIGs, CIGs, Farmer Federations, Farmer Producer Organizations, Farmer Producer Companies, CBOs, etc.):

i. Self Help Groups:

SHGs are groups of farmers with identified common objectives, tasks, group identities and neighbourhood. Details of SHGs and their members social category wise are given at **Annexure -XV.**

ii. Farmer Interest Groups (FIGs):

FIGs is a self-managed, independent group of farmers with a shared goal and interest.

iii. Community Based Organisations:

CBOs are small, informal organisations based within the local communities they serve,

iv. Producer Organisations (POs):

A Producer Organisation (PO) is a legal entity formed by primary producers, viz. farmers, milk producers, fishermen, weavers, rural artisans, craftsmen.

v. "Farmers Producer Organisation"
(FPO): It is one type of PO where the members are farmers.

vi. Farmer Producer Company:

A producer company is basically a corporate body registered as a Producer Company under Companies Act, 1956 (As amended in 2002). Its main activities consists of production, harvesting, processing, procurement, grading, pooling, handling, marketing, selling, export of primary produce of the members or import of goods or services for their benefit.

vii. Producers' co-operatives

These are often formed to improve the marketing prospects in specific commodities where existing mechanisms are disadvantageous to producers. Some of these organisations also provide extension services to farmers.

b) Efforts in delivery of extension services at the Federal/ Provincial/ District/ Field levels

i. Promotion of FPOs

Under the scheme of "Formation of 10,000 FPOs" a total of 8875 FPOs

formed (As on 30.06.2024). Progress is as under:

- 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 tilldate.

- FPOs promoted by SFAC- Old Schemes (901), and targated 10,000undeer new schemes: State wise details
- Formed by SFAC: 3594
- Formed by NCDC: Target (763), Formed (672)
- Formed by NABARD:685
- Formed by NBB:100 - TRIFED (14 nos.), NAFED (60 nos.) and NDDB (26 nos.)

c) Successful models of Farmer empowerment through other commodity/ aggregated groups

i. Grape Growers Association of Maharashtra (Maharashtra Rajya Draksha Bagaitdar Sangh or MRDBS).

ii. United Planters Association of Southern India (UPASI)
The apex body of tea, coffee, rubber and cardamom growers in South India, has a long tradition in leadership, research and extension services in the plantation industry.

iii. The Kerala Horticulture Development Programme (KHDP)
It has formed SHGs of vegetable and fruit growers to help promote new technology and participatory technology development (PTD) skills, help farmers access credit and strengthen their negotiating power through collective marketing.

iv. MAHA FPC-
MAHAFPC is a State Level Farmer Producer Company which is a consortium of Farmer Producer Companies registered under the Company Act 1956. MAHAFPC is giving Farm Gate Level Quality Services through various training & business models.

v. Others
- Federation of Small Farmers' Associations of Khaddar Area, North India and Sunstar Overseas, Ltd.

	- Consortium of Indian Farmers Associations. - Turmeric Farmers' Association of India. - Farmers'Association Pomegranate. - Association of Farmer Companies http://www.aofcindia.org/ - Organic Farming Association of India(OFAI) http://ofai.org/ - Punjab Young Farmers' Association(India). - Indian Farmers' Association. State wise details of FPOs under Central Sector Scheme for Formation and Promotion of 10,000 FPOs by SFAC as on 13-06-2024 is at **Annexure - XIV**

2.11 FARM COOPERATIVES

a) Brief details of Farm Cooperatives at Federal/Provincial/District/ Village level

India has about 5,80,000 cooperatives including 3,75,000 agricultural cooperatives with 280 million-member farmers.

The details of cooperatives formed in agriculture and allied sectors are given below (Source: Ministry of Coopertatives Website):

- Primary Agricultural Credit Societies: 99,359
- Dairy Cooperatives: 1,43,500
- Farmers Service Societies: 592
- Fisheries Cooperatives: 25,894
- Bee Farming Cooperatives:332
- Livestock and Poultry Cooperatives: 16,735
- Sericulture Cooperatives: 498
- Sugar Cooperatives: 287
- Agriculture and Allied Cooperatives: 27,143
- Agro Processing Cooperatives: 22925

(Details of All India Cooperative Societies – Sectorwise are at Annexure X)

Details of cooperative structure at different levels is given as under:

i. **At National Level:**

a. Bharatiya Beej Sahakari Samiti

This is set up with the approval of Union Government and registered under Multi State Cooperative Societies Act 2002 on the 25th dayofJanuary2023 is hereby conferred status of National Cooperative Society (hereinafter referred as the society). BBSS is jointly promoted by Indian Farmers Fertilizer Cooperative Limited (IFFCO), Krishak Bharati Cooperative Limited (KRIBHCO), National Agricultural Cooperative Marketing Federation of India Limited (NAFED), National Dairy Development Board (NDDB) and National Cooperative Development Corporation (NCDC) as promoter members and among them, KRIBHCO is the Chief Promoter of this society.

b. The National Agricultural Cooperative Marketing Federation of India (NAFED)

NAFED is an apex organization of marketing cooperatives for agricultural produce in India, National Agricultural Cooperative Marketing Federation of India Ltd,

Official website. *NAFED* is now one of the largest procurement as well as marketing agencies for agricultural products in India. With its headquarters in NewDelhi, NAFED has four regional offices at Delhi, Mumbai, Chennai and Kolkata, apart from 28 zonal offices.

c. The National Cooperative Development Corporation (NCDC)

The objectives of NCDC are planning and promoting programmes for production, processing, marketing, storage, export and import of agricultural produce, foodstuffs, industrial goods, livestock and certain other notified commodities and services on cooperative principles and for matters concerned therewith or incidental thereto.

d. The National Dairy Development Board (NDDB)

The Dairy Board was created to promote, finance and support producer-owned and controlled organisations. NDDB's programmes and activities seek to strengthen farmer owned institutions and support national policies that are favourable to the growth of such institutions. Fundamental to NDDB's efforts are cooperative strategies and principles.

e. Indian Farmers Fertilizer Co-operative Limited (IFFCO)

IFFCO is a multi-state cooperative society. IFFCO is wholly owned by Cooperative Societies of India. The society is engaged in the business of manufacturing and marketing of fertilizers. IFFCO is headquartered in New Delhi, India. Started in 1967 with 57 member cooperatives, it is today the biggest co-op in the world by turnover on GDP per capita (as per World Cooperative Monitor 2021), with around 35,000 member cooperativesreaching over 50 million Indian farmers.

f. Krishak Bharati Cooperative (KRIBHCO)

KRIBHCO) is a premier National level Cooperative Society of India engaged in fertilizer production and distribution. It is mandated to produce and distribute high-quality agricultural inputs,mainly chemical fertilizers, through cooperatives and institutional agencies.

- List of 19 National cooperative societies **Annexure - XVI**

ii. At State Level

a. Anand Milk Union Limited (AMUL):

Amul is a cooperative formed in1946. It is the live laboratory to study success of farmers' co-operative.The Amul Model of Gujarat has helped India to emerge as the largest milk producer in the world. More than 16 million milk producers pour their milk in 185903 dairy cooperative societies across the country. Their milk is processed in 222 District Co-operative Milk Unions and marketed by 28 State Marketing Federations.

- Workingof AMUL Model is given at **Annexure - XXIII**

b. Malabar Regional Co-operative Milk Producers Union (MRCMPU):

MRCMPU is a part of Kerala co-operative milk marketing federation and operates through 429 producer societies.Its extension cell organizes technical inputs, training and extension, artificial insemination and veterinary services. Under the women cattle care programme, knowledge is transferred through women who act as 'village change agents'.

b) Efforts in delivery of extension services at the Federal / Provincial/ District/Field levels

i. Primary Agricultural Credit Societies (PACS) are basically credit societies that are registered under the Cooperative Societies Act of the State concerned. They are grassroots-level institutions in villages with individual farmers, artisans, and other weaker sections as member shareholders.

III	**FARM RESEARCH SET UP AND THEIR BACKUP TO EXTENSION**

3.1 Details of Federal Research Institutes and their extension operations

The Department of Agricultural Research and Education (DARE) was established in the Ministry of Agriculture, Government of India in December 1973 to coordinate and promote agricultural research and education in the country. DARE provides necessary government linkages for the IndianCouncil of Agricultural Research (ICAR), the premier research organization for coordinating, guiding and managing research in areas including crop science, horticulture science, natural resource management, agricultural engineering, animal science, fisheries science, agricultural education and agricultural extension in the entire country. With 113 ICAR institutions and 74 agricultural universities spread across the country, this is one of the largest national agricultural research systems in the world. Apart from ICAR the Department of Agricultural Research and Education has other autonomous bodies, viz. Agricultural Scientists Recruitment Board, the Central Agricultural Universities (CAUS) at Imphal (Manipur), Jhansi (Uttar Pradesh), andPusa (Bihar); Agrlnnovate India Limited, New Delhi, under its administrative control. The Agrinnovate India Limited (incorporated on 19 October 2011) aims to work on the strengths of DARE and ICAR and promotes technology commercialization.

The ICAR Institutes are spread across seven major areas namely: crops, horticulture, animal husbandary, agricultural engineering, fisheries, agricultural extension, natural resource management and agricultural education.These research institutes besides core research in the specialized areas are also involved in the outreach programs, which include activities like training for farmers, entrepreneurs, development functionaries, adoption of villages to demonstrate potential technologies, hoasting of KVKs (selected institutes), production of seed and planting materials, taking up PPPs, production of information material in the respective areas, etc.

List of Major ICAR Research Institutes Sectorwise may be seen at: https://icar.org.in/institutes

3.2 Regional (e.g. ATARI-India)/District(e.g.KVK –India) level set-up and their programmes

Agricultural Technology Application Research Institutes (covered under section 2.7).

Details of Technology Assessment, Demonstration and Capacity Development of ICAR-Update on Extension /Outreach programs of the Council is given as under:

A total of 6,036 technological options in various crops were assessed by the

	KVKs at 15,180 locations by carrying out 33,128 trials in farmers' fields in order to provide technological alternatives to the identified problems across the country (reference). The KVKs assessed 1,099 technological options pertaining to different thematic areas of production and management of cows,buffalo, sheep, goat, poultry, pig and fish at 3,633 locations through 6,771 trials. As part of technology assessment, 339 technologies pertaining to farm women were assessed through 3,066 trials at 1,344 locations with the aim to promotewomen empowerment (reference). Division of Agriculture Extension, ICAR, New Delhi implemented Cluster Frontline Demonstrations (CFLDs) programme through KVKs on major pulse and oilseed crops under National Food Security Mission (NFSM) of Department of Agriculture and Farmers' Welfare, Government of India, New Delhi to demonstrate the production potential of different technologies of these crops. Besides these activities, important programmes namely Out scaling of Natural Farming, Formation and Promotion of Farmer Producer Organizations (FPOs) as Cluster Based Business Organizations (CBBOs), Technological backstopping to FPOs, Demonstrations through Agri-drones, Farmers FIRST, Attracting and Retaining Youth in Agriculture (ARYA), Cluster Frontline Demonstration of pulses and oilseeds, Cereal Systems Initiatives for South Asia (CSISA), National Innovations in Climate Resilient Agriculture (NICRA), Pulses Seed hubs, Mera Gaon Mera Gaurav were taken up to address various challenges. Under capacity development, a total of 23.16 lakh farmers/farmwomen, rural youth and extension personnel were trained on various aspects through 74,065 training programmes includingthe sponsored training courses. During the reporting year (2023-24 ?), KVKs organized a total of 6.19 lakh extension programmes using various methods and means. These included advisory services, celebrations of important days, diagnostic and clinic services, exhibitions, exposure visits, ex-trainees sammelan, farm science club conveners' meetings, farmers' seminars, farmers' visits to KVK, field days, film shows, group meetings, kisan ghosthi, kisan melas, lectures delivered as resource persons, mahila mandal conveners' meetings, method demonstrations, plant/animal health camps, scientists' visits to farmers' fields, self-help group meetings, soilhealth camps, soil-test campaigns, workshops, and other activities, wherein latest technologies related to agriculture and allied sectors were disseminated among 204.61 lakh participants including 200.58 lakh farmers and 4.54 lakh extension personnel. Additionally, KVKs are in the forefront for effective utilization of electronic and print media to have wider coverage of technology dissemination. KVKs produced technological products like seeds and plantingmaterials of improved varieties and hybrids, bio-products and elite

species of livestock, poultry and fish which benefited 11.18 lakh farmers in the country.

In addition to ICAR institutes, 55 Directorates of Extension Education (DEEs) in the SAUs/CAUs played pivotal role in technological backstopping to KVKs of the country. Timely and need based information to the farming community was provided by 594 KVKs by using mobile advisory services. Based on weather forecast, farmers were alerted and advised on suitable farm operations. Technology Demonstration Component (TDC) of National Innovations in Climate Resilient Agriculture (NICRA) which aims at enhancing resilience of Indian agriculture and making Indian farmers more adaptive to climatic vulnerabilities have been implemented through 151 KVKs in climatically most vulnerable districts of the country as per the latest risk categorization.

ICAR has stated Agri-Drone project, with funding support from Department of Agriculture andFarmers' Welfare, Government of India, with objective of creating awareness among the farmers and other stakeholders and demonstrating the use of drone in agriculture in farmers' fields.

The innovative initiative "Mera Gaon Mera Gaurav" aimed to promote the direct interface of scientists with the farmers to hasten the lab-to-land process. The objective of this scheme is toprovide farmers with required information, knowledge and advisories on regular basis by adopting villages particularly small and marginal farmers.

Farmer FIRST is a flagship programme initiated by ICAR to move beyond production and productivity; to privilege the smallholder agriculture; and complex, diverse and risk prone realities of majority of the farmers through enhancing farmers-scientists interface.

A total of 28,995 demonstrations were conducted, 2,972 extension programmes wereorganized, 1,03,492 animals (livestock and poultry) were benefited and 86,197 farm families were covered in all modulesduring the reporting period. Nutri-Sensitive Agricultural Resources and Innovations (NARI) Programme is a flagship programme initiated by ICAR at national level. Nutrition-sensitive agriculture puts nutritionally rich foods, dietary diversity, and food fortification at the heart of overcoming malnutrition and micronutrient deficiencies.

3.3 Provincial Agricultural Universities/Institutes and the details of their extension operations

- Teaching (UG, PG, Doctorate Programmes in various disciplines)

- Research(Basic, Strategic & Applied Research)
- Extension Outreach Programmes, Training, Farm Information

- SAUs work closely with the Indian Council of Agricultural Research (ICAR) to implement research-driven extension programs. ICAR, as the apex body for coordinating agricultural research in India, develops key research programs that SAUs adapt and implement at the local level.
- All India Coordinated Research Projects (AICRP): These are national programs initiated by ICAR that are implemented at SAUs across different states. AICRPs are designed to ensure that region-specific problems are addressed through research, which is then extended to the farming communities through training, demonstrations, and outreach activities (**Annexure - XIX**).
- SAUs also offer advisory services to farmers through helplines, mobile applications, field visits, and also byorganising farmers fairs etc., events.
- SAUs host (selectively) KVKs- their establishment, management and outreach Programmes.

(List of Agricultural Universities may be seen at the link https://icar.org.in/state-agricultural-universities and https://icar.org.in/node/11674

3.4 Linkages of Provincial Agricultural Universities to the extension programmes

Agricultural universities maintain close linkages with state departments of agriculture, ICAR institutes, and other extension organizations. These linkages ensure the dissemination ofresearchoutputstofarmingcommunitiesthrough multiple mechanisms:

- SAUs provide technical backstopping to the field extension programmes ofthe development departments like technical supports to ATMA.
- Capacity building programmes for the state functionaries.
- Major partner in zonal/seasonal research-extension linkage workshops.
- Participate in the regional committee meetings of ICAR and provide follow-up on the agreed actions.
- Provide quality seeds and planting materials to the farmers and other stakeholders.
- Organize annual and seasonal Kisan Melas/ Goshthis and make farmers aware about frontline technologies and advances in farm science.
- Provide technical support to the federal and state government operated agricultural and allied sectors schemes.
- Provide agro-climatic zone specific technologies,

	• Promoting PPPs in farm sector. • Partnership with regional, national and international institutes/organizations. **3.5 HRD interventions operated by the Provincial Agricultural Universities.** Human Resource Development (HRD) is a key component of the extension system at agricultural universities. HRD interventions include: • Training Programs: Universities organize various training programs targeting farmers, extension agents, and rural youth. • Capacity Building: Training programs offered through KVKs and Extension Education Institutes (EEIs) focus on building the capacity of field extension personnel.
IV.	**EXTENSION MODELS IN OPERATION** Introduction to Extension Models a. Public Sector Extension Models i) Research Institution Outlets (RIOs) under State Agriculture/ Horticulture/Veterinary Universities and ICAR institutes provide strong technology outreach windows like adopted villages, blocks & innovative system of KVKs, with focus on technology validation, demonstration and dissemination ii) Development Department Outlets (DDOs)under the State Departments of Agriculture, Horticulture, Animal Husbandry, Dairy, Fisheries, Sericulture, etc. do carry out extension through various State/GoI schemes. Agricultural Technology Management Agency (ATMA)-a semi-autonomous institution at district level has successfully attempted restructuring field extension services, iii) Commodity Boards (Tea Board, Coffee Board, Spices Board,Coconut Board, Fisheries Board, etc.) operate their extension efforts providing extension, production and market/export promotion support, etc. b. Private Sector including Farmers/NGO Driven extension iv) Extension innovations moving through agri-startups, entrepreneurs, partnerships, internet platforms, machine learning, sensors, artificial intelligence, etc. Private sector extension service providers/ entrepreneurs/input agencies supplement extension efforts while promoting their own products and services, v) Farmer Groups/Organizations/ Cooperatives, etc. are increasingly being recognized as essential institutions for mobilizing farmer participation, vi) Non-Government Organizations (NGOs) operate at local, national,

regional, and international level. They intend intense connect through participatory and mobilization approaches,

c. Media Driven Extension Models - Mass Media and Social Media

vii) Mass Media (traditional, print and electronic) play importantrole in information dissemination,
viii) Social-media platforms are gaining majorspace in the information processes, and

4.1 PUBLIC SECTOR EXTENSION MODELS

i. Evolution and Growth of Agri Extension Services - Details of Public Extension Models, Performance, Constraints, etc

Series of voluntary projects in pre-independence era, such as Community Development Program (CDP-1952) and National Extension Service Blocks (NES-1953) were the major earlier extension efforts. Subsequently, Pre-Green Revolution interventions implemented include: Intensive Agricultural District Program (IADP, 1961) and Intensive Agricultural Area Program (IAAP, 1964). Followed by Green Revolution (1967), duly supported by intensive extension efforts like National Demonstrations (ND- 1965), Farmers Training Centres (FTC-1966), Small and Marginal Farmers Development Agencies (SMFDAs-1971), Krishi Vigyan Kendras (KVK-1974, 732) and lab to land program (1979-that subsumed in KVKs). In 1974-75, a very major extension intervention through World Bank Funded Training and Visit (T&V) system resulted in restructuring of the extension system. Following its significant impact, it was expanded throughout the country from 1984 to 1995 through National Agricultural Extension Project (NAEP). Further, the process of Extension Reforms was strengthened under National Agricultural Technology Project (NATP, 1998) by establishing Agricultural Technology Management Agency (ATMA) at district level, now covers 676 districts in 29 States/3 UTs under the National Mission on Agricultural Extension & Technology (NMAET).

Year-wise Progression

During1950s

- The central task of extension was to help rural families help themselves by applying crude knowledge of farming, homemaking, and family and community living.
- Notable Extension Programmes in India during the period - Community Development Programme (CDP), National Extension Service (NES).

During1960s

- Emphasis was started laying on ‘rural education’- Agricultural extension became a system of ‘out-of-school education’ for rural people.

- Extension personnel had the task of bringing scientific knowledge to Farm families in the farms and homes. The object of the task was to Improve the efficiency of agriculture.
- Notable Extension Programmes in India during the period – Integrated Agriculture Development Programme (IADP), High Yielding Variety Programme (HYVP).

During1970s

- Notable Extension Programmes in India during the period -Krishi Vigyan Kendra (KVK), Training and Visit (T &V).

During 1990s

- Notable Extension Programmes in India during the period- National Agricultural TechnologyProgramme (NATP), Institute Village Linkage Programme (IVLP).

2000s onwards

- Re-shaping extension into pluralistic mode.
- Added thrust upon Research - Extension linkage.
- Structured initiatives in Public – Private – Partnership (P-P-P).
- Dependence on use of Information Communication Technology (ICT) tools.
- Notable Extension Programmes in India during the period:
  - National Agricultural Innovation Project (NAIP),
  - Agricultural Technology Management Agency(ATMA),
  - Kisan Call Centre (KCC),
  - Agri-Clinic and Agri-Business Centre (ACABC)

ii. FRONT-LINE EXTENSION MODELS SUPPORTED BY DARE/ICAR

a. All India Coordinated Project on National Demonstrations: This is a nationwide programme of demonstrations, known as National Demonstrations (ND) on majorfoodcrops. It was launched in1964. Therationale isthat farmersneedto seescientists successfully implement what they recommend. The project characteristics:

- It sets specific yield targets without separate control plots, using the memory of the farmers about previous yields as a control.
- Larger plots (around 1 hectare) are used for demonstrations to showcase feasibility.
- Demonstrations are carried out on small farmers' plots to ensure the results are not attributed to affluence but to good practices.
- Scientists work with local extension workers to conduct these demonstrations.

The project showed significant yield improvements in crops like wheat, rice,

maize, and sorghum, sometimes increasing yields by upto fivetimes. It provided evidence of the wide gap between potential and actual Production

b. Operational Research Project (ORP): The ORP, initiated in 1974-75, aimed at disseminating proven agricultural technologies on a watershed basis, covering entire villages or clusters of villages. Key features include:

- To test, adopt and demonstrate the new agricultural technology on farmers' fields in a whole village or in a cluster of few contiguous villages/watershed areas.
- To determine the profitability of the new technologies and their pace of spread among the farmers.
- To identify the constraints both technological as well as socio-economic which are barriers to rapid change.
- To demonstrate group action as a method of popularizing the modern technologies at a faster rate.

c. Lab-to-Land Programme (LLP): Launched in 1979, the Lab-to-Land Programme aimed to improve the economic conditions of small and marginal farmers, as well as landless laborers, particularly those from scheduled castes and tribes. The program's objectives were:

- To introduce low-cost agricultural technologies directly from research labs to farmers' fields.
- To help farmers develop farm plans based on their needs and available resources.
- To provide training and guidance on adopting these improved technologies and demonstrate their economic viability. The program aimed to transfer proven technologies from research institutions to the farmers and provide continuous guidance and feedback

d. Krishi Vigyan Kendra (KVK):

KVKs also known as Farm Science Centre are district-level institutions established to provide need-based, skill-oriented vocational training to the farmers, rural youth, and extension workers. The first KVK was established in 1974 at Puducherry. The number of KVKs has risen to 731.The KVK scheme is 100% financed by Govt. of India and the KVKs are hosted by the Agricultural Universities, ICAR institutes, related Government Departments and Non-Government Organizations (NGOs) working in agriculture.

KVK, is an integral part of the National Agricultural Research System (NARS), aims at assessment of location specific technology modules in agriculture and allied enterprises, through technology assessment, refinement and demonstrations. KVKs have been functioning as Knowledge and Resource Centre of agricultural technology supporting initiatives of public, private and

voluntary sector for improving the agricultural economy of the district and are linking the NARS with extension system and farmers.

KVK System: Mandateand Activities

The mandate of KVK is Technology Assessment and Demonstration for its Application and Capacity Development.

To implement the mandate effectively, the following activities are undertaken by each KVK

- On-farm testing to assess the location specificity of agricultural technologies under various farming systems.
- Frontline demonstrations to establish production potential of technologies on the farmers' fields.
- Capacity development of farmers and extension personnel to update their knowledge and skills on modern agricultural technologies.
- To work as Knowledge and Resource Centre of agricultural technologies for supporting initiatives of public, private and voluntary sector in improving the agricultural economy of the district.
- Provide farm advisories using ICT and other media means on varied subjects of interest to farmers.

In addition, KVKs produce quality technological products (seed, planting material, bio-agents, and livestock) and make it available to farmers, organize frontline extension activities, identify and document selected farm innovations and converge with ongoing schemes and programs within the mandate of KVK.

Krishi Vigyan Kendras are providing a high rate of return on expenditure. Impact study of KVKs revealed that KVKs' efforts generated an additional average net farm income of Rs.3568 per hectare. Cost: Benefit ratio for investment on KVK is very high at 1:12. One farmer trained by a KVK disseminates technology/knowledge to about 30 fellow farmers.
KVK Evaluation Studies are given at **Annexure XI**

e. Other ICAR Initiatives

There are – number of ICAR Institutes, Diractorats, Centres covering various production domains like Crops, Horticulture, Natural Resource Management, Animal Husbandary, Fishries, Agricultural Extension, Agriculture Engineering, etc. These Institute are primarily focuced on basic, strategic and applied research. However, they are mandated for limited outreach programmes for testing their technologies, products and services for their suitability for specific agro climatic conditions. In this processes the

Institutes and centres carry out demonstration, farm fairs, technology testing trials, bring out publications, organize tranning programme for the farmers and development fuctionaries and private sector agencies.

The important ICAR institutonal initiatives, are described below:

i). IARI-Voluntary Organization Partnership Extension Model

It is another innovative outreach strategy adopted by the ICAR-IARI in collaboration with active Voluntary Organizations (VOs). IARI has partnership with 28 VOs spread across 14 states of India since 2010. The model was designed on the principles of sharing the strength of partners, IARI in technology, and the VO partners in robust network at the grassroots level.

ii). Agricultural Technology Information Centre (ATIC)

ATICs are Agricultural Technology and Information Centers promoted by the ICAR across the country. These units are implemented mainly through the State Agricultural Universities and some of the ICAR Institutes. The ATIC is a single window support system linking the various units of research institution with both the intermediary users and end users (farmers) with decision making and problem-solving exercise. Considerable farm worthy technologies have been developed in various institutions were made available at ATICs in the form of knowledge, technologies, seed, planting materials and farm publications.

Mandate

- To provide a single window delivery system for agricultural information as well as products and technologies developed by the Research Institute with a view to deliver quality services to the clientele.
- To strengthen the farm advisory services by adopting a multi-disciplinary Approach to problem solving.
- To provide mechanism for feedback from the endusers to the research system.
- To function as a repository of agricultural information pertaining to farming skills and practices, farm inputs and agricultural education.
- To offer consultancy services to the different stakeholders in the state.

ATIC IARI, New Delhi has been studied as an example providing extension services, technologies, products of IARI to the farmers of NCT of Delhi and other States. The details of services provided by ATIC during 2023-24 are given at **Annexure - XVII.**

iii). 'Mera Gaon Mera Gaurav' (My Village My Pride)

This program was launched in August 2015. Under this program, a group of 4 scientists, each belonging to different disciplines from ICAR Institutes and agricultural Universities, adopted 5 villages for giving suitable advice to the farmers on technical and other related aspects within a stipulated time frame through personal visits or by telephone. Scientists are also creating awareness among farmers about climate change, other customized technologies, protective measures, Swachh Bharat Abhiyan, and other issues of local and national importance. In this process of socio-techno transformation, scientists also involve local Panchayats, development agencies, NGOs and private organizations. The objective is to effectively promote direct interface of Scientists of ICAR Institutes and State Agricultural Universities with the farmers to hasten the lab to land process. The project is intended to connect with 25,000 villages. Agricultural scientists are providing information on newer technologies to the farmers in 13,500 villages.

iv). Farmer FIRST programme,

This is a new initiative of ICAR, aims at enriching Farmers –Scientistinterface, technology assemblage, application and feedback, partnership, institution building and content mobilization. It provides a platformto farmers 4 Policy Paper 120 and scientists for creating linkages, capacity building, technology adaptation and application, on-site input management, feedbackand institution building. The project is under operation in 51 centres under ICAR and SAUs spread across 20 states of the country. The scientists, under this project, are working with 48291 farm families under different models namely, crop, horticulture, livestock, NRM, IFS and agro enterprises.

v). NICRA - Convergence- based Extension & Climate Smart Village model

- This model was conceptualized under National Initiative for Climate Resilient Agriculture (NICRA) keeping integration of technology with social dimensions in view, and established at 151 vulnerable districts in the country. Climate Resilient village is conceptualized as a village where all the villagers contribute to mitigate the impacts of climate change by adopting climate resilient technologies through measures for reducing greenhouse gasemissions, bringing positive behavioral change, and devising local solutions to reduce vulnerability towards climate change impacts, keeping in view the region's socio-economic, gender and bio physical constraints. It is built on the premise of community participation and stakeholders' convergence approach. Village level institutions viz. Village Climate Risk Management Committees (VCRMC), custom hiring centers, seed banks, were established.

iii. FIELD EXTENSION MODELS SUPPORTED BY DAC &F W :

a. World Bank Funded Training & Visit (T&V) System

This system was introduced in India in 1974 with the World Bank assistance. Training and Visit system became the dominant method of restructuring the extension services in over sixty countries in Asia, Africa and Latin America. The system aimed to achieve change in production technologies of farmers through professional assistance for the contact farmers from well-trained extension personnel on agricultural research and supported by supply, service And marketing facilities which were lacking inNational Extension Service.

The important features of T & V system are:(1) Professionalism, (2) Single lineofcommand, (3) Concentrationofefforts, (4)Time-boundwork,(5) Scheduled Field visits and farmer orientation, (6) Regular and continuous training of farmers and field functionaries and (7) Linkage with research.

b. Agriculture Technology Management Agency(ATMA)

In 1998, the Indian Government, with the support of World Bank, introduced the Agriculture Technology Management Agency (ATMA) under the Innovation in Technology Dissemination (ITD) component of the National Agricultural Technology Project (NATP). It was first introduced in 28 districts in seven states from 1998 to 2003 under the guidance of MANAGE (National Institute of Agricultural Extension Management), an institution promoted by Ministry of Agriculture, Government of India. It was later expanded throughout the countryin 2005. Presently ATMA model is a part of the Sub Mission on Agricultural Extension (SMAE) under the National Mission on Agriculture Extension and Technology (NMAET) which was launched by the Department of Agriculture and Farmers' Welfare (DACFW) in 2014-15 and takes a holistic view of extension by embedding components for technical support and training in four major sub-schemes. It aims to make the system farmer-driven and accountable by restructuring and strengthening existing agriculture extension programmes to enable the delivery of technology and to improve the current agronomic practices of farmers. Other supportive Sub-Missions of NMAET are, Sub-Mission on Seedand Planting Material (SMSP); Sub Mission on Agricultural Mechanization (SMAM); and Sub Mission on Plant Protection and Plant quarantine (SMPP) (**Annexure - XXII)**

iv. OUTREACH PROGRAMMES OF STATES

a. State Agricultura Universities:

The State Agricultural Universities is another important arm for promoting extension activities by providing technical backup to the frontline and field extension programmes, demonstrating technologies in the selected agro-eco

situations, providing technical materials and products to the farmers and other public private systems, organizing state /regional Kisan Melas, validation of technologies suiting to their agro-climatic zones, production of information-print audio-video material for the farmers and stakeholders, organizing training and capacity building programmes for the farmers and field functionaries.

The State Agricultural Universities are mandated primarily for teaching, research and frontline extension activities in the given State/Agro climatic Zone. While their main mandate is formal degree programmes in major agricultural disciplines, they provide extension and training support through the directorate of extension and education. The information flow is mainly from the universities to the KVKs which are responsible for training farmers. The information flow is largely linear, with little scope for feedback from famers. The SAUs are actively engaged in tranning and capacity building programmes for the farmers and field fuctionaries at various levels in agriculture and line departments. Further, SAUs under take technology demonstrations, organize farm fairs, provide information and publication support for technology dissemination programmes.

The list of Agricultural Universities covering allied sectors is given at the link https://icar.org.in/state-agricultural-universities and https://icar.org.in/node/11674

b. Decentralised Extension Models

i). Rythu Bharosa Kendra (RBK)-Andhra Pradesh

It is a village level farmer facilitation centre, a digitaland integrated modelfor knowledge and service deliveryto the farmers towards sustainable agricultural development.

ii). Rythu Sampark Kendras of Karnataka, Krishi Bhavans in Kerala

Rythu Sampark Kendras of Karnataka are set up at “Hobali level”, typically each Hobali comprising about 15-20 villages. These RSKs are providing input support services and farm advisories to the farmers. Similarly, Krishi Bhavans in Kerala are operating at Panchayat (Block/sub-block) level.

v. SUPPORTIVE EXTENSION MODELS OTHER FARM RELATED AGENCIES

a. Commodity Boards

Commodity Boards (Coffee board, Tea Board, Spice Board, Tobacco board, Coconut development board, Fisheries Development Board, Dairy Development Board, etc.) are extending crop/ commodity specific technical

know-how to the farmers through their schemes and programmes. Their outreach activities are limited extent as many of these boards do not have grass root level functionaries throughout the country.

b. Farmer Producer Organizations (FPOs)

These are being promoted both by the public and private sector extension systems. FPOs not only ensure a bargaining edge to farmers but also reducethe costs of cultivation, processing, value addition and marketing, thus leading to higher sale volume and remunerative prices. The FPOs promoted by SFAC is given at **Annexure - XIV.**

c.Other Para Extension Agents

Various States have promoted Para Extension Service Providers in various sectors like Prani Bandhu, Matchhya Bandhu, Udyan Bandhu etc. Their capacity building programmes are taken up through grassroots level trainning centres like KVKs, FTCs etc.

vi. EXTENSION MODELS SUPPORTED BY RURAL DEVELOPMENT MINISTRY :

a. Pashu Sakhi

It is a Community Animal- care Service Provider (CASP), which enables the last mile coverage in rural areas, where clinical services for livestock is not available on time or is expensive to afford for rural poor. Pashu Sakhi is envisaged to create awareness and carry out capacity building of the community on livestock-based livelihood activities, and facilitate aggregation and marketing ofthe livestock products. Anganwadiworkers are also engaged as change agents for promotion of nutritional security.

b. Krishi Sakhi

The Ministry of Rural Development under IRDP promotes women volunteers to work with the farmers and farm women and provide information about various schemes and programmes in agriculture and allied areas. They also provide information on input support services.

	Major Constraints Experienced by the Extension System Several constraints are observed over different extension models considerably affecting the technology dissemination process. Broadly the crucial ones include: i) policy support and systemic inadequacies, ii) inadequate investments and extension infrastructure, iii) gaps in need based deployment of manpower at various levels, iv) weak extension set-up in allied sectors like horticulture, livestock, fisheries, agro-forestry and specialty agriculture, etc. v) outreach constraints of existing extension models, vi) inadequate capacities of the district/block level extension agencies to respond/address the field problems, vii) need for convergence of extension efforts, viii) need for promoting private paid extension initiatives, ix) need for farm youth and farm women specific strategies, x) scope for strengthening R&E linkages and feedback management, xi) enhancing ICT application, xii) need for value-chain management, greater market integration and business orientation, xiii) technology specific and location specific extension requirements, xiv) skilling farmers, field functionaries, and stakeholders, xv) intensive research required in extension systems, xvi) need for in-built M&E for timely correctives in extension actions, and xvii) need for capturing international experiences for strategic advantages, etc. These constraints could be addressed through systematic policies, programs, investments and operational interventions at various levels. **4.2 PRIVATE SECTOR** **Details of Private Farm Extension Models, Their Performance, Constraints, Etc.** The Public Sector Extension efforts (Supported by the Government Agencies) are supplemented by the Private Extension Service Providers. Typically, these include various extension players like farm input support service providers (like seed companies, fertilizers companies – delers and distributors, plant protection

agencies, farm mechanization agencies, etc. While promoting their own products, they conduct extension activities like awareness campaigns, training programmes, field demonstrations, bringing out publicity materials, providing soil and water testing services, organizing field days, etc.

4.2.1 Private Sector Extension Interventions/ Programmes

Brief Details of Agri Extension Programmes Focused on Farm Entrepreneurs, Start-Up, Partnerships and Promoted by the Private Sector at Various Levels

- There are more than 100 agri-focused incubators in India, mostly in academic and research organizations, mainly at the ICAR institutes and agricultural universities. These incubators are supported by schemes like Start-up India, AtalInnovation Mission, NSTEDB, RKVY-RAFTAAR, and ICAR.
- There are 36 agriculture-based incubation centres in India supported and promoted under the NIDHI scheme of the Department of Science & Technology (DST). Only seven TBIs are located in NARES, mainly at ICAR-IARI, New Delhi; ICAR- NDRI, Karnal; ICAR-NAARM, Hyderabad, ICAR-IIHR, Bangalore; TNAU, Coimbatore and ICRISAT, Patancheru.
- Similarly, there are about 45 NIDHI PRAYAS centres in India, but only one (at NAARM) in the NARES.
- The ICAR has set up 50 Agribusiness Incubators (ABIs) in different research institutes with an annual budget of Rs10 crores (Rs 20 lakhs each ABI). Similarly, 29 ABIs have been set up at various state agricultural universities (SAUs) under the RKVY-RAFTAAR scheme ofthe MinistryofAgriculture & Farmers' Welfare with a Rs 2-3 crores grant to each R-ABI. These ABIs are currently supporting over 750 agriculture-based startups and agri- entrepreneurs, including farmer-entrepreneurs and producers' companies (FPOs).
- ISAP India Foundation:
  Formerly Known as Indian Society of Agribusiness Professionals is driven by the conviction that cutting edge technologies, in the hands of the farmers, will help accomplish the vision of increased agricultural incomes, ISAP is helping farmers in India build their own collective enterprises in the form of farmer producer companies(FPOs) under various programmes for the Govt as well as private sector. Enterprise promotion has been recognised as one of the key strategies of ISAP's intervention in agriculture particularly for the marginalized and vulnerable farming communities. ISAP has evolved a model styled as 'Enterprise for Impact (or, E4I)', where the focus is on outcome- riven implementation, ensuring social return on investment. With a hybrid approach of community

education and entrepreneurship, ISAP is leading the way – empowering farmers, enabling growth and productivity and supporting communities to lead from within towards sustainable futures.

The emphasis is to align the trainings carried out for multiple skills to the needs of the market. As part of its skill development initiatives ISAP India foundation has done capacity building and training of farmers in various govt projects and CSR projects. Further, a total of 18,732 out of trained 30,000 BPL rural youth have been placed under various Skill Development programs. Also, a total of more than 750,000 farmers have been trained on agribusiness skills.

i. Outreach Programmes of Selected Private Sector (Corporates, Foundations, Trusts, Cooperatives And Credit Institutions NGOs etc.)

a. Corporates

The small, emerging, medium and large companies and corporates are in involved in the process. Simalary, the private agri entrepreneurs, start-ups, PPPs, private electronic, print and social media are also enganged in farm extension activities.
The outreach programmes of some of the companies and corporates have CSR windows directed towards farm extension activities covering agriculture and allied sectors.

i). 'Tata Kisan Sansar' (TKS) model of Tata Chemicals Ltd.

- Providing need-based operation and advisory support to the farmers.
- A franchise based 'huband spoke' model that provides services like remote diagnosis, soil testing, house brands for cattle feed, sprayer, seed, pesticides etc
- There are now 32 hubs catering to 681TKSs covering around 2.7 million farmers, in 22,000 villages of 88 rural districts of the country.

ii). 'Hariyali Kishan Bazar'model of the DCM Shriram Consolidated Ltd

- Business model providing 'end-to-end'agri-business solution to the farmers.
- A Package of agri-input, extension, credit and produce-marketing.
- Operates in a chain of morethan300 rural retail stores across eight states, catering to 45, 00,000 farmers.
- Emerged as'rural superbazar'.

iii). E-Choupal model of ITC limited

- This was started by the ITC Limited for providing information to the farmers and supply chain reorganization, where farmers were treated as

	micro- producers. Under thisinitiative a VSAT-enabled internet connection at the village level allowed farmers to check prices in the local mandis before they moved their produce for sale. ● In its third phase, e-choupal model is promoting services and products considering farmers as micro-entrepreneurs. ITC- Meta Markets for Advanced Agriculture & Rural Services (ITC-MAARS) provides an eco-system through promotion of FPOs, artificial intelligence and machine learning driven personalized agro-advisory, providing quality inputs, facilitating planned harvesting based on weather forecasts, and procurement with transparency in pricing and convenience of farmgate pickup of the produce. ● ITC is also establishing light house farm at every FPO to showcase model demonstration farms. Presently they have promoted more than 200 FPOs and covering more than 2 lakh acres as demo farms. ● Physical model of delivery gives a good mix of both physical services and digital platforms for providing round the clock services to the farmers. ● Thee-choupal also provided access to information about weather and Innovative farming practices to the farmers. ● Other initiatives taken by ITC include the Choupal Saagars and Choupal Pradarshan Khet (CPK). Choupal Saagars mainly comprise of collection and storage facilities whichcreate a hypermarket in rural areas that serves multiple services under one roof. ● Choupal Pradarshan Khet is a demonstration plot which helps farmers to learn best agronomic practices to enhance their farm productivity. **iv).** BKC Aggregators ● This represents a commercial model of the private sector extension and knowledge dissemination without promoting any specific brand, product or service. It provides specific advisories to farmers through 'Fasal Salah' App to help prevent the damage to their crops and increase crop yields. ● BKC's unique innovation is ICT tool which hand holds the farmer for entire duration of the crop cycle from 'pre-sowing' to 'post-harvest' on individual basis based on the information about the name of crop and date of sowing, provided by the farmer on 'FasalSalah'. The variety cultivated by farmer on his soil is then tracked with some very accurate and granulated weather fore cast making crop cultivation weather resilient. ● Real time advisory prescriptions reduce input costs and optimize use of water, prevent damage from pests and diseases; as metGIS foresees weather 10 days ahead and can predict accurately the likely incidence of pests and diseases, and prescribe preventive measures thereto. Using this technology one farmer having same crop but two different sowing dates or different varieties receives separate sets of advisories. This ICT mode

cuts down the extension costs by 80% and provides advisories 24x7. The direct benefit transfer , if supported by DKT (Direct Knowledge Transfer) could more than double the farmers income.

v). Hyderabad based Nuziveedu Seeds

- This has done a lot of extension related work through its programme, 'SubeejKrishiVignan'. These extensionactivitiesare insupport oftheir product brand and seek to help the famer realize higher production (and thus returns) through necessary pre-sowing preparation, optimum seed rate, correct agronomic practices, application of nutrients and harvesting techniques.

vi). The 'Mahindra Krishi Vihar' model of Mahindra and Mahindra Ltd. –

One stop farmer solution shop

- Mahindra and Mahindra, the tractor giant has started a concept of "Farmer's One Stop Shop" where farmer can purchase all his inputs including information, machineries at one place. He can also sell his product there. The qualityofthe inputs is assuredand informationis providedthroughtechnically trained experts. Different machineries are sold and also rented for a fee. The yield is assured hence the accountability is inbuilt in the concept. The demonstration plots just opposite to one stop shop compare the traditional and improved, recommended technologies and convince the farmers. At present Units are operating in Andhra Pradesh,Tamil Nadu, Rajasthan, Madhya Pradesh, West Bengal and Punjab and are expected to expand the activities veryfast to other states.

b. Foundations and Trusts

i). Bharatiya Agro Industries Foundation (BAIF)

BAIF Development Research Foundation has adopted the Gandhian approach to rural prosperity with emphasis on Climate Change Mitigation and Resilient and Sustainable Community Livelihoods. With its multidisciplinary team of about 6000 employees and associates, BAIF is implementing major Nature-positive programmes such as Livestock Development, Natural Resources Management, Agri-Horti-Forestry (Wadi) and Agrobiodiversity Conservation for Sustainable Livelihoods and Enriched Environment.

BAIF is implementing these programmes with support from various Corporates under Corporate Social Responsibility (CSR), Philanthropic Organisations and Government Departments. BAIF is also collaborating with Corporates for achieving their Carbon Offsetting / Neutrality Goals. BAIF has been closely associated with several State Government Departments as either an Implementation Partner or as a Knowledge Partner for Rural Development Programmes. The focus of collaboration with International Institutes is for conducting state-of-the-art field-based Applied Research and Technology Transfer.

c. Cooperatives

ii). The Indian Farmers Fertiliser Cooperative (IFFCO)

IFFCO is the world's largest cooperative by turnover on GDP per capita and reaches over 50 million farmers in India. It has many outreach programs and initiatives to help farmers, including the following:

- Farmer development programs: These programs focus on improving soil health, educating farmers on the use of fertilizers, and promoting sustainable agriculture.
- Village adoption program: IFFCO has helped over 2,300 villages become more prosperous by providing financial assistance for farm mechanization technologies and spreading awareness.
- Save the Soil Campaign: This campaign focuses on soil rejuvenation and crop productivity enhancement.
- Social and promotional activities: These include building community centers, providing drinking water facilities, planting trees, soil testing campaigns, and distributing mini-kits.
- Cyber Dhabas & Kisan Sanchar: These are ICT initiatives for farmers.
- Collaborative research with ICAR: IFFCO has signed an MoU with ICAR for collaborative research and extension to help farmers reduce their consumption of chemical fertilizers.

iii). Krishak Bharati Cooperative Limited (KRIBHCO)

It is a premier National Level Cooperative Society of India engaged in fertilizer production, distribution and promotion. Founded in 1980 under Multi State Cooperative Societies Act (MSCS-2002), has membership of 9650 cooperative societies from all over the country.

iv). Krishak Bharati Sewa Kendras (KBSKs)

KRIBHCO is committed to extend various types of services and assistance to farmers. With a view to develop direct contact with farmers for providing services under single window approach, KRIBHCO way back in 1984 established retail outlets namely, Krishak Bharati Sewa Kendras. It is a channel based on Agro Service Centre concept with twin objectives of "Sales and Service". KRIBHCO operates 67 Krishak Bharati Sewa Kendras (KBSKs) across Uttar Pradesh (42), Haryana (16), Punjab (5), Rajasthan (1), and Madhya Pradesh (3).

d. Credit institutions

i). PNB Farmers` Training Centre

PNB Farmers Welfare Trust (PNBFWT) located at Vianzi village near Morogoro town is operating 12 Farmers` Training Centres (FTCs) across the country to provide training facilities to farmers, women and rural youth. The PNB FWT is implementing the following capacity building programmes, on free of cost basis.

- One-day duration training programmes at FTC premises on agriculture

and allied activities.

- 2 days' duration training programmes at FTC premises on agriculture and allied activities.
- 3 or more days` duration training programmes at FTC premises on agriculture and allied activities.
- Three months/six months programme on computer applications.
- Three months' duration training programme on cutting, tailoring and embroidery for ladies.
- Entrepreneurship Development Programme (EDP) for skill development.
- Residential programmes are also absolutely free of any charges.
- In addition, on-location training programmes are also arranged in the villages at the doorsteps of the farmers

Details of Private Sector Extension Interventions of Selected Group of Service Providers is available at the link https://ficci.in/public/storage/SPDocument/24049/G22q15wh60UzKpXkQFvz2vWzQz712eUJIN9x1DiW.pdf

ii. Constraints Facedby Private Extension Sector in India:

- Absence of credible inventory of private extension service providers in the district/block
- Accountability towards Clientele
- After-Sale service and maintenance
- Over emphasis on profit and market share
- Exploitation tendency towards farmers
- Quality concerns and regulation
- Limited coverage interms of geography as well as beneficiaries
- Drivenby profit motive and related incentives
- Constraints in scalability and replicability of successful private extension initiatives
- Limited policy support or convergence with Government programmes
- Limited accessto technologies developed by Public Institutions
- Limited collaboration between other private extension programmes

V

EXTENSION FOR FARM WOMEN AND FARM YOUTH

5.1 Brief details of agri extension programmes for farm women and farm youth funded by the Centre

1. Programmes supported by Central Government – ICAR/DAFW

a. Nutri-Sensitive Agricultural Resources and Innovation (NARI) – ICAR

To tackle the problem of malnutrition by ensuring nutrition security for every person specially for women and child a new initiative "Nutri-Sensitive Agricultural Resources and Innovation" started by the Indian Council of Agricultural Research through Krishi Vigyan Kendras across the country. Under NARI programme, each KVK promoted at least one Nutri-SMART Village in their jurisdiction disseminating nutrition-related interventions to ensure nutrition security. KVKs conducted demonstration on nutrition garden, bio-fortified varieties, value addition and other nutrition related aspects, organized capacity building programmes for farm women and anganvadi workers and awareness progammes to increase nutrition literacy. "Poshan Thali", "poshan rangoli", poshan garlands and poshan calendars were promoted to create awareness about the micro-nutrient rich food items and their sources. Small scale income generation activities also promoted for women empowerment.

The following extension approaches are being used for promotion of NARI programme

- Village Level Para Extension Workers (VPEW)
- Public Private Partnership (PPP)
- Participatory action research in Crop Production, Crop Protection, Horticulture, Animal Sciences, Fisheries
- Technology Demonstrations
- Farm Women Training programmes

b. Value Addition and Technology Incubation Centre in Agriculture (VATICA) - ICAR

It was conceptualized by ICAR to create a facility to provide incubation training to rural youth in processing and value addition. KVKs are strategically located and linked with agricultural universities and ICAR institutes. They identify different trades and establish trade specific value addition and incubation centres for educating youth and the farmers to practice various components of technology management at the incubation centres. With the support from different lending agencies KVKs are supporting in establising processing and value addition units for commercial purposes. The VATICA model is funded by RKVY, Ministry of Agriculture and Farmers welfare and also Ministry of Food Processing Industries.

These VATICA centres would cater the following objectives:

- Promotion of appropriate technologies to reduce post-harvest losses.
- Promotion of proven farm-based techniques for assuring quality of produce to match with market standards
- Promotion of proven cropping techniques for yield enhancement
- To incubate budding Agri-preneurs and Farmer Producer Organizations on PHM technology-based businesses.

c. ICAR-Central Institute for Women in Agriculture (CIWA), Bhubneswar

Established in 1996, it is an institution first of its kind in India that is exclusively devoted to gender related research issues in agriculture and allied sectors. The institute has been undertaking training, research and extension activities supporting participation of farm women and focusing on emerging opportunities form them. Besides women specific outreach programmes, the institute also collaborates with various agricultural universities and ICAR institutes in the areas of gender friendly technologies, improving dissemination processes, impact evaluation and gender empowerment. Extension Education developed out of multidisciplinary approach. It intends to serve farming communities providing latest technologies to increase status of livelihood of the farm women and farmers. Extension in ICAR-CIWA reaches and teaches women target group to lead quality life keeping harmony with environment in which they reside and work. It takes care of capacity building, skill improvement creating self confidence and enabling farm women to take right position in nation building process. ICAR-CIWA sincerely organizes various extension activities like Field Days, Exhibitions, Exposure visits, Demonstrations, TOT through Mass Media, etc. to acquaint the farm women with latest technologies. The Institute also conducts various capacity building programmes for gender sensitization among various stakeholders and to bring a change in knowledge, attitude and skill of farm women.

d. Skill Training of Rural Youth (STRY) - DAFW

- Skill Development of Rural Youth is a flagship scheme of the Government. The Ministryof Agriculture & Farmers Welfare, Govt. ofIndia, in compliance with National Policy on Skill Development & Entrepreneurship 2015, has taken the initiative to implement the Skill Development Component, namely Skill Training of Rural Youth (STRY) under Sub-Mission on Agricultural Extension (SMAE) of National Mission on Agricultural Extension &

Technology(NMAET)during2015–16andremainingperiodofXIIPlan.

Skill Training of Rural Youth (STRY) is aimed at imparting skill-based training to rural youth on agri-based vocational areas in agriculture & allied areas to promote employment of rural areas and for creation of skilled manpower to perform farm and non-farm operations. Rural youth of the age group of 18 years and above with minimum qualification up to 5thstandard passed (not mandatory) shall be considered for skill training. The Govt. of India has identified about 50 skilling areas spanning Agriculture, Horticulture, Animal Husbandry, Dairy and Fisheries.

e. ARYA-Attracting and Retaining Youth in Agriculture - ICAR

Indian Council of Agricultural Research (ICAR) has initiated a programme on "Attracting and Retaining Youth in Agriculture (ARYA) during 2015-16. Under this scheme, special efforts are being taken up to attract the rural youth under the age of 35 years in agriculture to provide income generating Opportunities and engage them in agriculture. The oriented youth groups may Function as role model for other youths by demonstrating the potentiality of the agri-based enterprises and also by imparting training to others.

Features of ARYA Scheme

- Project ARYA is implemented by the Krishi Vigyan Kendra situated in every district.
- The rural youth is being trained in several job functions and roles, like seed processing, creating vermicompost, managing poultry, soil testing, etc.
- Under project ARYA, assistance is being provided to those interested in establishing their entrepreneurial ventures by helping them make reports to apply for bank loans to get funds for their ventures.
- Project ARYA promotes green revolution and supports agriculture and allied activities.

Implementation of ARYA Scheme

- Krishi Vigyan Kendras (KVKs) are implementing project ARYA in one district ineachofthe28states inIndia. Around200-300ruralyouths have been identified in one district for skill development in entrepreneurial activities and opening establishments in related micro-enterprise units.
- KVKs work with the ICAR institutes and agricultural universities as technology partners under project ARYA. At KVKs, one to two enterprise units are established to serve as entrepreneurial training units for farmers. Training isgivento ruralyouth in mushroom, apiary, seed processing, poultry, soil testing, goatry, dairy, carp hatchery, vermicompost, etc.
- The purpose is to develop economic models for youth in the villages so that they get attracted to agriculture, and there is improvement in the overall rural situation. Concurrent monitoring, mid-term correction and evaluation are an integral part of this project implementation.

- Skill development of rural youths has helped improving their confidence levelsand encouraged them to pursue farming as a profession, generating additional employment opportunities to absorb under-employed and unemployed rural youth in secondary agriculture and service-related activities in rural areas.

f. Agri-Clinics & Agribusiness Centres (ACABC) - DAFW

- The Ministry of Agriculture and Farmers Welfare, Government of India, in association with NABARD has launched this unique programme to take better methods of farming to each and every farmer across the country.
- This programme aimed to tap the expertise available in the large pool of Agriculture Graduates. Irrespective ofwhether they are fresh graduate or not, or whether they are currently employed or not, they can set up their own AgriClinic or Agribusiness Centre and offer professional extension services to farmers.
- Committed to this programme, the Government is now also providing start-up training to graduates in agriculture, or any subject allied to Agriculture like Horticulture, Sericulture, Veterinary Sciences, Forestry, Dairy, Poultry Farming, and Fisheries, etc. Those completing the training can apply forspecial start-up loans for venture.
- As of November, 2024, about 40285agri-ventures have been established under the ACABC scheme.

Progress of Agriclinics and Agribusiness Centres Scheme (MANAGE)
Period From: 01-04-2002 To: 28-11-2024

S. No	Name of the State	No of Candidates Trained	No of Agri-ventures established
1	Andhra Pradesh	1763	516
2	Arunachal Pradesh	48	3
3	Assam	844	281
4	Bihar	4535	1626
5	Chandigarh	4	2
6	Chhattisgarh	1001	425
7	Delhi	43	6
8	Goa	18	10
9	Gujarat	2309	916
10	Haryana	751	251
11	Himanchal Pradesh	431	112
12	Jammu & Kashmir	1556	191
13	Jharkhand	825	222
14	Karnataka	4801	1941
15	Kerala	279	67
16	Madhya Pradesh	5496	2553
17	Maharashrta	24743	12652

18	Manipur	522	135
19	Meghalaya	37	4
20	Mizoram	52	0
21	Nagaland	187	22
22	Orisha	643	116
23	Pondicherry	155	88
24	Punjab	670	225
25	Rajasthan	4922	1944
26	Sikkim	9	1
27	Telangana	2354	664
28	Tamil Nadu	9655	4887
29	Tripura	6	2
30	Uttar Pradesh	20204	9868
31	Uttaranchal	601	212
32	West Bengal	1255	343
	Total	90719	40285

2. Programmes supported by Central Government - other Ministries

a. Mahila Kisan Sashaktikaran Pariyojana (MKSP-DAY-NRLM) :

Launched by the Ministry of Rural Development in:2010-11, The important feature of the schemes are as under:

- A Sub-component of the Deendayal Antodaya Yojana- National Rural Livelihood Mission (DAY-NLRM)
- Objective: MKSP recognizes the identity of Mahila as 'Kisan' and strives to build the capacity of women in the domain of agro-ecologically sustainable practices.
- To improve the present status of women in agriculture, and to enhance the opportunities available to empower her.
- Focus of MKSP: a) Community Managed Sustainable Agriculture (CMSA), b) Non- Pesticide Management, c) Zero-Budget Natural farming,and d) Pasu-Sakhi model for doorstep animal services.
- ferring one eminent women, Organizations and institutions.

b. Women Scientist Scheme (WOS): 2002-03

- Launched by Department of Science and Technology
- Objective: WOS under KIRAN (Knowledge Involvement in Research Advancement through Nurturing) addresses challenges confronting women in realm of S&T who had a break in career by providing suitable opportunities to them to return to mainstream science.

c. Developing Technology for Farm Women: 1995

- To develop women-oriented technologies, women specific jobs and their perspectives have to be identified.
- A 'Women's Angle' should be built into all technologies, which are relevant to women.

d. Self Help Group - Bank Linkage Programme

- Started by: NABARD
- Started in:1992
- Objective: To link the unorganized sector of our population to the formal banking sector.

e. Distance EducationProgrammeforWomen's Empowerment:

Central Government had started a certificate course in the Distance Education Mode on Women's Group Mobilization and Empowerment.

5.2 Brief details of agri extension programmes for farm women and farm youth funded by the Provincial agencies

a. Mission Shakti:2001

- Launched by: Odisha Government

  Objective: Mission Shakti empowers women by organizing them into Self Help Groups (SHGs).
- Promotion of Women's Self – Help Groups (WSHGs) has therefore been adopted as a key strategy for achieving women's empowerment.

5.3 Brief details of agri extension programmes for farm women and farm youth funded by Other Sources

a. The Ramakrishna Mission Vivekananda Educational and Research Institute (RKMVERI), Ranchi

The institute offers short-term vocational training programs for rural youth. The programs include:

- Watershed development projects
- Horticulture development projects
- Seed village programs
- Safe drinking water and safe sanitation programs
- Mobile agro-clinics and agro-services
- Field days
- Rural extension activities
- Front line demonstrations

- Organizing Kisan melas/agricultural exhibitions

b. Mysore Resettlement and Development Agency (MYRADA)

MYRADA is a non-governmental organization (NGO) that works for rural development in the southern states of India, including Karnataka, Tamil Nadu, and Andhra Pradesh. It offers a variety of farm youth programs, including:

i. Training in livestock rearing
   MYRADA offers training in sheep rearing, backyard poultry, bee-keeping, and organic cultivation.
ii. Training in entrepreneurship
   MYRADA's High Potential Rural Youth (HPRY) program trains youth in agri-business planning, networking, communication, branding, and budgeting.
iii. Internships
   MYRADA offers internships for college and university students in social work, agricultural engineering, and business management.
iv. Training in water management
   MYRADA offers training in water conservation, demand and supply side water management, and other water management topics.
v. Credit management groups
   MYRADA's Farm Credit Management Groups focus on managing savings, loans, and repayments.

MYRADA's projects are designed to promote equality and provide support to disadvantaged groups, such as landless people and marginal farmers

VI. MEDIA SUPPORT TO EXTENSION

6.1 Extent of Use of Print Media, Fairs and Exhibitions, Radio and Television (Public and Private), Community Radio

The Central Sector Scheme "Mass Media Support to Agriculture Extension" was launched on 21.1.2004 with a view to contribute to revamping The extension services in the country by using electronic media for transfer of technology/information to the farmers and other stakeholders. As a part of multi-pronged extension strategy, the primary objective of the Scheme targeting mass dissemination of information & spread oftechnologies is to use Television, Print Media and Radio. These media have the advantage of reaching a wide audience at a very low cost. The print and electronic media will, therefore, need to be made a part of the strategy being adopted for delivering farm level extension services.

The Objective of the Scheme:

- Broadcast /Telecast programmesthroughvarious modesofelectronic media covering in a timely and topical manner a wide spectrum of topics in agriculture and allied fields to cover the entire country, with special focus on tribal and remote areas.
- Disseminate agriculture related programmes in regional languages and local dialects for the specific needs of different regions.
- Promote live programming with interactive features such as phone-in feature.
- Undertake capacity building and training programmes to help upgrade the knowledge and expertise of Programme Executives/Producers of All India Radio (AIR) /Doordarshan(DD), ExtensionWorkers, Field-level Officials and other functionaries.
- Disseminate informationand spreaduseofappropriatetechnologiesthrough advertisements and write-ups in print media.

Components of the Scheme

- DD National Programme
- DD Regional Programme
- Doordarshan (DD) Narrowcasting
- All India Radio (AIR) FM Broadcast
- Support to Community Radio Stations (CRS)
- Print Media
- Focused Publicity & Awareness Campaign

Coverage of the Scheme:

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 methodologyofdelivering knowledgeto thefarmhastakenplace. Radio and TV have the advantage of reaching a wide audience at a very low cost.

a. Telecast of Krishi Darshan Programmes on Doordarshan: Under this Scheme, a 30 minute programme is being telecast 05 days a week through 01 National, 18 Regional Kendras of Doordarshan. 03 programmes namely – Krishi Darshan (30 minutes), Hello Kisan (60 minutes and Choupal Charcha (30 minutes) (5 days a week) on DD Kisan – 24 hour dedicated Channel for agriculture and farming community.

b. Broadcast of KisanVani Programme on All India Radio: Under this component, 96 FM/AM stations of All India Radio are broadcasting 30 - minute programme six days a week from 6.30-7.00PM. A programme 'Kisan Ki Baat', on the lines of Kisan Vani is being broadcast from news on AIR (Erstwhile FM Gold channel) Delhi, since September 2018. Each station is broadcasting separate programme in respective dialects/languages.

c. 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 Kisan Vani programme is being utilized for dissemination of advisories on all aspects of agriculture.

d. Focused Publicity & Awareness Campaign through other media platforms: Besides above, the 'Focused Publicity & Awareness Campaign' which would cut across all the Divisions of the Ministrywas launched on July 5, 2010 to create awareness about the assistance available under various Schemes ofthe Department ofAgriculture & 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.

e. Doordarshan National Telecast (DD-National)

The objective of Doordarshan-National programme is to disseminate information / knowledge on issues / subjects of national importance. This programme was launched on 16.05.2005. It is currently telecast on DD-1 Channel in Hindi in the morning from 6.30-7.00 AM. A thirty minute programme is being telecast six days a week. The Department of Agriculture & Cooperation provides tapes of programmes to be telecast on Saturday. These include success stories and good agricultural practices (including allied sectors).

f. Doordarshan Regional Telecast (DD–Regional)

The objective of Doordarshan Regional programme is to address information / knowledge needs of farmers throughout the region in the regional language. These programmes were launched on 01.06.2005. Regional programmes are telecast at 6.00/6.30 PM in theevening from18 Regional KendrasofDD. This 30 minute programme is telecast five days a week. As per the requirementsand feasibility, these programmes are sometimes repeated on the respective Regional Stations or Narrowcasting Stations.

g. Doordarshan Narrowcasting (DD-Narrowcasting)

The objective of narrowcasting programme is to address information needs of farmers through locally produced programmes in local language / dialect. Narrowcasting programmes are telecast at 6.00 / 6.30 P.M in the evening. Currently, these programmes are being produced at 36 Kendras and are being telecast from 180 High/Low Power Transmitters (HPT/LPT). This is a 30 minute programme and being telecast 5 days a week. More narrowcasting stations can be covered subject to availability of funds. Timings of the 5 programmes telecast bythe Regionaland Narrowcasting Centers are staggered so that both programmes can be viewed.

h. AIR-FM Programme

The purpose of All India Radio-FM broadcast is to use emerging FM technology to meet in formation/knowledge needs of farmers through radio broadcast of locally produced programmes in local language/dialect. This component asperrevisedschemewas launched on01.04.2005. 96FMstations of All India Radio are broadcasting 30-minute programme six days a week from 6.30-7.00 PM. Each of the currently covered 96 FM Stations are broadcasting separate programme in respective dialects/languages. With easy availability of FM Radio on mobile phones, FM Stations can have wider outreach than before. However, depending on cost-benefit ratio, it will be endeavor of the Department to go in for alternative technologies such as Amplitude Modulations (AM), Digital Radio etc.

i. 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 extensionbyutilizing the reachof 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.

j. PrintMedia

Curiosity of the stake-holders (particularly farmers) is expected to get vettedby the video and audio spots. More detailed inputs – preferably information having region specificity –continue to be given through print advertisements and write-ups in regional languages. The 6 national and regional newspapers are selected based on their circulation figures.

k. Focused Publicity &Awareness Campaign

Besides regular programmes broadcasting/ telecasting through All India Radio and Doordarshan under mass media schemes, the 'Focused Publicity & Awareness Campaign which would cut across all the Divisions ofthe Ministry was launched on July 5, 2010 to create awareness about the assistanceavailable under various schemes of the Department of Agriculture & Cooperation. This campaign continued during the 12th Plan also in an aesthetic, professional and politically neutral manner. Video Spots and Audio spots are being broadcast/telecast through 96 F.M. Stations of AIRunder 'Kisan Vani' programmes and through one (01) National, Eighteen (18) Regional and One Hundred Eighty(180) High Power Transmitters (HPT/ Low Power Transmitters (LPTs) of Doordarshan during 'Krishi Darshan' under the Scheme "Mass Media Support to Agricultural Extension" and also through DD-National and DD-Regional News and during entertainment programmes, films, etc. The spots are also telecast on Private TV Radio Channels operating at National & Regional Level during news, entertainment programmes, serials etc. As a next tier of mass awareness strategy, press advertisements (particularly schemes & programmes of the Ministry, advisories, success stories, good agricultural practices etc.) will also be released fromtime to time as per seasonal & topical relevance. These advertisements are designed ina farmer centric manner.

l. Monitoring and Evaluation

A multi – tier mechanism has been setup for the monitoring of the Scheme as follows:

- *National Level:* CentralApexCommittee
- ProgrammeAdvisoryCommittee
- State Level: State LevelCommittee(SLC)
- *DistrictLevel*-DistrictLevelCommittee(DLC)
- WebBasedMonitoringandArchivalSystems
- ThirdPartyMonitoring

FeedbackCollection

In order to plan for improvements in the content and quality of programmes being telecast/broadcast through DD/AIR, a multi-pronged strategy has been established for getting such feedback. Nineteen (01for National and 18 for Regional) Language Specific Groups comprising a coordinator from the Directorate of Extension and language/subject matter experts from DAC/ ICAR have been formed to review content & quality of programmes broadcast on DD & AIR. Experts from DAHDF have been also been co-opted as needed. In case of non- availability of experts from some languages, ICAR scientists with requisite language skills are also consulted.

6.2 Efforts Made in Developing and Delivering Contents, Treatment and Impact Assessment.

The existing infrastructure of DD and AIR is being utilized to produce and transmit programmes covering a wide spectrum of topics in agriculture and allied field for bringing the latest information and knowledge to the farming community. Besides this, private channels will continue to be utilized for "Focused Publicity & Awareness Campaign" Prasar Bharati is implementing the Scheme through the countrywide network of Doordarshan and All India Radio. As on date, there are 96 F.M. Stations of AIR under 'Kisan Vani' Programmes and 1 National, 18 Regional Kendras and 180 High Power Transmitters (HPTs) / Low Power Transmitters (LPTs) of Doordarshan (with 36 3 Programme Production Kendras) are also being used currently. The project envisions the use of broadcast/telecast through electronic media for the dissemination of knowledge/ information among farmers and other stakeholders – particularly women farmers and small & marginal farmers. Special focus is also given to tribal and remote areas. The underlying idea is to Cover all segments of the agriculture sectors. Therefore, Doordarshan has been asked to earmark one day in a week to Animal Husbandry, Dairying and Fisheries Sectors in National and Regional Kendras. Since outreach of electronic media is through airwaves, all sections, classes and strata of society get naturally covered. The target audience can be classified under the various groups i.e. Farmers, Extension Workers, Field - Level Functionaries, agriculture Scientists, Researchers and Policy Makers and the General Public.

VII.

ICT APPLICATION INNOVATIONS IN EXTENSION THROUGH PUBLIC AND PRIVATE SECTOR

7.1 Major ICT Application Initiatives in Agriculture & Allied Sector like Websites and Portals, Emails, Video Texts, Youtube Channels, Phonein Programme, Community Call Centres, Video Conferencing/ Webcasting, Mobile Apps, Etc.

a. **Government Digital Initiatives:** Digital initiatives taken-up in agricultural extension include;

- VISTAAR-Virtually Integrated Systems To Access Agricultural Resources being developed as a decision support system for Agricultural Extension
- Apurva AI- Capturing farmer innovations - Acts as a peer to peer learning Platform and provides content for advisory retrieval through VISTAAR.
- Wadhwani- Krishi 24X7 for Real time News monitoring, Tamil language and image-based cotton pest identification to be plugged in with FLEW/farmer profile mapping
- Kisan Call Centre – Integration withVISTAAR and other IT applications and with Kisan Sarathi (ICAR) for direct contact with Agri experts
- RAWE-Integration of Agri students for behavioral interaction through VISTAAR Bot and Feedback system
- India Meteorology Department-Weather forecast integrated through District AgricultureMeteorology Unit in selected KVKs along with advisory delivery through VISTAAR
- NRLM – Decentralised Extension Mechanism (Krishi Sakhi, Pashu Sakhi, Matsya Sakhi etc) - Capacity building on Digital Extension – VISTAAR

b. Digital Agriculture

The scheme aims to improve the existing National e- Governance Plan in Agriculture (NeGPA) by developing a digital public infrastructure for agriculture that will be built as an open source, open standard and interoperable public good to enable inclusive, farmer-centric solutions through relevant information services for crop planning and health improved access to Farm inputs, credit and insurance, help for crop estimation, market intelligence, and support for the growth of Agri Techs industry and start-ups.

c. Digital Agriculture Mission:

The Govt. of India approved Digital Agriculture Mission with an outlay of Rs. 2817 crore, including a central share of Rs. 1940 crore. The initiative, part of the government's broader digital transformation agenda, aims to revolutionize India's agricultural sector by building Digital Public Infrastructure (DPI), enhancing service delivery, and ensuring efficient data usage. Key components include AgriStack, Krishi Decision Support System (DSS), and Soil Profile Mapping. AgriStack will provide farmers with digital IDs linked to land records and other essential data, streamlining access to government schemes, credit, and advisory services. Pilots have already been conducted across several states, with a target of creating digital identities for 11 crore farmers. The Mission will support employment generation, boost crop production estimates, and improve transparency in service delivery for farmers, aligning with India's vision of agricultural modernization under Viksit Bharat@2047.

d. ICAR - ICT Initiatives:

i. KISAN SARATHI-System of agri-information resources auto transmissionand technologyhub interface: AnICT based interface solution “KisanSarathi” has be developed to support emerging need of multi ways and multilingual communication among various agricultural stakeholders. More than 3600 agricultural scientists and subject matter experts are registered with Kisan-Sarathi. The services of Kisan-Sarathi for the farmers are available through an IVR based calling system via toll free numbers 1800-123-2175 and a short number 14426. More than 65 Lacs farmers are already registered on thisportal.

To implement an intelligent on-line platform for supporting agriculture, Kisan SARATHI is being implemented and strengthened in association with Digital India Corporation, Ministry of Electronic and Communication Technology (MEITy), Government of India. The services of Kisan Sarathi are available to all the States and UTs since June, 2022. This is an on call advisory service for farmers of India, where any farmer can call or record their query in his own language automatically directed to respective KVK/ATARI for query redressal. The queries are being responded in the same language by the concerned KVK either online or by call later on based on the recorder queries of the farmer. This platform supports multilingual messaging system where bulk or individual SMS can be sent to group of farmers based on the location of the crops they grow.

ii. KCC-CHAKSHU (Kisan Call Centre- Collated Historically Aggregated Knowledge-based System with Hypertext User-interface): It provides insights and alerts to the farmers on production and post-harvest operations.

iii. KISAAN 2.0 (Krishi Integrated Solution for Agri Apps Navigation): It is an aggregator mobile app and provides information on 270+ agricultural related apps with interface in 11 languages.

iv. KVK App: The systems provide information about facilities and activities of KVKs, and access to District Agricultural Contingency Plans, Package of Practices, Agro-advisory and Agricultural Commodity Market prices to the farming community.

e. ICT Application Innovations in Extension

Information and Communication Technologies (ICTs) are mostly used to disseminate information to cover larger masses over a short period of time. Lack of local relevance of content, which is also not customized to the capacity of users. ICTs are very potential for training rural communities. ICTs largely applied in policy advocacy. ICTs as a tool for knowledge management. Human intermediation very important in ICT application: Organizational agenda and quality of intermediation. ICTs is emerging as a great support in distance learning.

If we look at old ICTs, they mostly involved digital and print media involving newspaper, printed, literature in the form of booklets, leaflets, brochures etc. Digital media was also confined to Radio and TV. While these channels are still relevant in the current context. ICT over years has undergone tremendous revolution moving from information kiosks to the present days video communication. The various formats of ICT being used for agricultural extension can be summarized in the following table:

Sl No.	**New ICTs**	**Functions**
1.	Community Radio Stations	Information dissemination, Raising awareness Advocacy communication at community level
2.	Internet-enabled computer centres (knowledge centres/ common service centres/telecentres) Example: Village Knowledge Centres of MSSRF; ITC's e-choupal; Government of India's Common Service Centres	- Dissemination of information - Training in computer skills - Forum for interactive learning when centres are owned/managed by rural development NGOs - Distance learning

3.	Portals - My Gov, Farmers Portal, agriwatch; Agmarknet, KKMS, Farmers Portal, mKisan	Dissemination of information, e-commerce, Distance learning
4.	Farmer Call Centres - India: Kisan Call Centre 1800-180-1551	Dissemination of information and interaction with experts (e.g., specific problems answered by experts)
5.	Mobile based extension	Information dissemination in the form of text messages and videos through SMS Service, Whats App Groups etc.
6.	Video on PoPs, new technologies, success stories used through projection system.	Information dissemination, Advocacy communication, Training , Capacity Building, Mobilisation
7.	Knowledge based Apps	Interactive information on technology, PoPs, Programmes and Schemes, Markets and Prices
8.	Digital Photography	Providing information, mainly on plant management
9.	Video and Teleconferencing Zoom, Webex, Skype, WhatsApp Audio/Video Calling	Information Dissemination , Knowledge exchange
10.	Remote Sensing and Geographic Information Systems (GIS)	Collecting and assessing information
11.	Social Media	Knowledge sharing by experts and communities
12.	YouTube – Video repository and video sharing, YouTube Channels	

Examples of YouTube Channels:

Name	**Operator**	**State**
Indian Farmer	Santosh Jadhav	Maharashtra
Desi Kheti	Nand Kishor Dhakad	MP
Farming Leader	Darshan Singh	Punjab
Agriculture India	DAC&FW	https://youtu.be/Vzp7Q7ewlPM
Indian Council of Agricultural Research	ICAR	https://youtu.be/w4dPilJKmK8
Indian Council of Agricultural Research	ICAR	https://youtu.be/i9rjavRJfCo

MANAGE India	MANAGE	https://youtu.be/_KyGaQuTI7A

Some Common Facebook Pages
Indian Agriculture
agriGoI
Farming Leader
Indian Farmers
Agribiz4u
Mushroom Growing
Himalay Nursery - Floriculture Farm

There is a plethora of Portals, Apps, Social Media platforms and Knowledge exchange technologies. However, either most of these are in English or not accessible to farmer (farmers not aware about them) and, hence, are seldom used by farmers. We have to look at ICT from farmers perspectives covering its various formats which can be easily accessed by them and has some utility for them. Some sort of handholding will also be needed to make the farmers aware about these ICT resources so that he is able to make a considered choice to select the most relevel.

f. Government launches geospatial decision support system for agriculture: 'Will be a milestone'

The Centre recently launched the Krishi-Decision Support System (K-DSS) portal, a satellite-based geospatial platform aimed at providing Indian farmers with critical agricultural information. Launched by Union Minister Bhagirath Choudhary, K-DSS offers data on weather, groundwater levels, soil health, and reservoir storage, alongside satellite images. The platform was unveiled during the National Conference on Space Driven Solutions for Agriculture Transformation in India, part of the lead-up to National Space Day 2024. The K-DSS, part of the Digital Public Infrastructure for Agriculture, is expected to boost farmers' income and food security by integrating geospatial data with government schemes. The initiative follows several space technology-based efforts, like YES Tech and WINDS, and aligns with India's broader goal of agricultural advancement through space technology.

7.2 Use of social mediainextension(facebook,whatsApp,Instagram,Twitter, Pinterest, LinkedIn, etc.)

a. Facebook

i. Livestock Information and Market Centre www.facebook.com/groups/Livestock.TN/:
This is a Facebook group of livestock farmers, extension personnel, scientists, local leaders, market functionaries, and consumers in the Indian state of Tamil Nadu to share information related to livestock production and management, marketing, etc.The members of thegroup nearly doubled in 2 years (increased from 49,483 in December, 2014 to 93,955 in March 2017). It is a very unique example of how various stakeholders in livestock sector can work together, share important information, and influence change.

ii. Mkulima Young (https://www.facebook.com/ mkulima.young/): Meaning Young Farmer, this community page is an information sharing platform started by ayoung farmer to attract other youths towards agriculture and to communicate with eachother. Withabove 102,824 followers in March, 2017 (39,082 ingroup nearly doubled in 2 years (increased from49,483 in December, 2014 to 93,955 in March 2017). It is a veryunique example of how various stakeholders in livestock sector can work together, share important information, and influence change. December, 2014), it mostly discusses about agro-advisory and market information.

iii. Agricultural Extension in South Asia https://www.facebook.com/groups/428431183848161/):

The group had more than 18,323 members as of March 2017 (7,550 in December,2014) and share information related to relevant publications on extension and advisory services, announcements of workshops and conferences, major policy decisions on extension, reports of meetings and workshops relevant to the broader theme of extension, examples of good practices, cases, tools and frameworks relevant for extensionists.

b. YouTube

i. Kissan Kerala (https://www.youtube.com/user/kissankerala): Kissan Kerala isan integrated, multi-modal Agriculture Information System for Kerala. Conceptualized, implemented and managed by Indian Institute of Information Technology and Management - Kerala (IIITM-K), Kissan Kerala provides several ICT enabled agricultural information services to the farming community. Information services are provided through multi-modal delivery platforms like online services, television program, mobile based information

services, touch screen kiosks etc. With 43,261 subscribers and more than 27 million views, this channel provides telecast quality informative videos on agriculture, animal husbandry, fisheries and allied topics.

ii. Green TV (https://www.youtube.com/user/Greentvindia1): Green TV is India's first premier agriculture television channel aiming to provide news updates ofnews and analysis on topical issues of national and international importance in agriculture. The channel also analyseissues involving biotechnology, farm mechanization, crop protection, horticulture, animal husbandry, food processing, agribusiness, research, high-tech agriculture etc. Since 2013, the channel has uploaded 912 videos, has 10,743 subscribers and 1,761,841 views in total on its videos.

iii. Digital Green (https://www.youtube.com/user/digitalgreenorg): Digital Green isa not-for-profit international development organization that has been using an innovative digital platform for community engagement to improve the lives of rural communities across South Asia and SubSaharan Africa since 2008. As of June2016, it hasreachedover1 millionindividualsacross13,592villagesthrough 4,426 videos, which showcase and demonstrate best practices. As many as574,222 viewers have adopted one or more ofthe best practices promoted through these videos and YouTube is one of the popular platforms of sharing the videos.

c. WhatsApp

i. eHorticulture: Created and maintained since 13th June, 2015 by Indian Institute of Horticulture Research (IIHR), Bengaluru, the group has 152 members and two administrators. A total of 78 posts on cultivation and management of horticultural crops, queries, press coverage, new technological innovations, etc. Experts of IIHR generally reply to the queries posted by farmers. Pictures were the most used media followed by URLs to web contents, documents, videos and audio files.

ii. Directorate of Extension (DoE), University of Agricultural Sciences (UAS), Raichur: The group is only for extension professionals of UAS Raichur and focuses on increased peer to peer communication. Majority of the posts are on trainings, press coverage, field visits, exhibitions/conferences, awards/facilitations, extension activities, etc. Images are the most popular multimedia followed by videos, URLto web contents, documents and audios.

d. Twitter

i. #AgChat (https://twitter.com/ agchat): AgChat Foundation is a community of

volunteers with collaborative mission of connecting consumers and producers to help initiate a better understanding of the farming process and the farmers' condition.The foundation thus helps farmers gain a better outlook of consumers' choices and cater to the market needs more efficiently. The twitter handle is an extension of the same work in social media to engage producers and consumers. Weekly chat sessionsare held ondifferent topicsrelated to farmand food. AgChat has given the farmers a voice and a platform to share their stories in their own words.

ii. #IFFCO (https://twitter.com/ IFFCO_PR): Indian Farmers Fertilizer Cooperative Limited (IFFCO) is one of India's largest cooperative society with an amalgamation of over 36,000 Indian cooperatives with diversified business interests. The Twitter handle is a platform for initiating dialogue and engaging with stakeholders on topics related to health, agriculture, and cohesive growth.

iii. #AgricultureIndia (https://twitter.com/AgriGoI):This is the official twitter handle of Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers Welfare, Government of India.With all its focus on Indian agriculture and farmers' development, the twitter handle shares information related to the sector and gives opportunity to people to share their views and ideas to influence policy and development.

Popular WhatsApp group of Farmer Members

Name of The group	**Information About members**	**Administrator of group**	**Type of Content Shared**
1.*Krishi Jagran* Group	Farmers of the states of Rajasthan, Uttar Pradesh, Madhya Pradesh, Maharashtra	Farmer entrepreneur	Informationabout crop varieties, soil management, irrigation practices, agricultural machinery, input companies, marketing prices of various commodities

		2.*PashuPalan* group	Farmersofthestatesof Rajasthan,Maharashtra, Madhya Pradesh, Uttar Pradesh Haryana and Gujarat	Veterinarian	Informationabout livestockbreeds, feedingandhealth management.
		3. Baliraja	Farmersofthestates of Maharashtra	Farmerentrepreneur	1.Picturesof agricultural Produce 2.Information on agriculturetopics
		4. Young Progressive Farmers group	Farmersofthestate of Punjab	Agricultural officer,Punjab	1.Information about seed treatment of wheatandpaddy, 2.Information about soil testing-based application of phosphate fertilizersinthe cultivation of paddy 3. Awareness regarding managementof yellow rust disease in addition to information about training camps to be organized.
		5.GoatOwners group	FarmersofPuneand Mumbai	ManagedbyFarmer Entrepreneur	1.Photosoflive animals 2.Negotiations about sellingandbuying

Popular Facebook groups of farmer members in India

NameofGroup/Community/Pages	Membersason April,2016	NumberofPosts inApril2016
1. PulseCropsPromotiongroup	10,433	187
2. KrishiJagranKisanClub	17,715	231
3. TurmericFarmersAssociation ofIndia	5718	0
4. NallaKeerai(GoodGreens)	22,079	6
5. *VivasayamKarkkalan*	7327	1
6. Howtodoprofitablepoultry, Emu&Cattlefarming?	11,000	2
7. *LabhkariPashupalanorMurgipalan KaiseKaren*	24,000	2

7.3 List of important web links of Extension Service Providers at different levels

a. Agri stack {https://agristack.gov.in}

AgriStack is the digital foundation being set up by the government to make it easier to bring various stakeholders together to improve agriculture in Indiaandenable betteroutcomesandresults forthefarmers byusingdataanddigital services.

Agri Stack architecture has the following foundational layers:-

- Core registries
- Base data bases
- Farmers Database: Farmers ID linked with land records
- Geo- referencing of plots
- Crop Survey, Crop planning and
- Soil Mapping, Soil Fertility
- Unified Farmers Service Interface for state, Pvt. Players
- Data Exchange

Agri Stack aims to make it easier for farmers to get easier access to cheaper credit, higher-quality farm inputs, localized and specific advice, and more informed and convenient access to markets. Agri Stack also aims to make it easier for governments to plan and implement various farmer and agriculture-focused benefit schemes.

b. Agricultural Extension Services Providers:

There are two predominant types of portals – those providing technical and market knowledge to end users at the grassroots level, and those helping with capacity development of extension personnel.
Knowledgeportals(www.knowledgebank.irri.org,www.rkmp.co.in),
e-Extensionportals(www.eXtension.org,www.agritech. tnau.ac.in,www.e-agriculture.gov.gh),
video-basedportals(www.accessagriculture.org,www.digitalgreen.org), market information portals (www.agmarknet.nic.in),
informationportals forruralpeople(www.vikaspedia.in) and
Institutionalportalsforextensionandadvisoryservices(www.nafis.go.ke, www.kilimo.go.ke) fall into the former category.
Portals like Agricultural Extension in South Asia (AESA) (http://www.aesa-gfras.net) and Modernizing Extension and Advisory Services (MEAS) (http://www.meas-extension.org) contain numerous resources and tools to

enable knowledge sharing and networking among service stakeholders, andfall into the latter category.

c. Web Links of Other Extension Service Providers

India has made impressive progress in the application of ICT to its rural and agricultural development programs. Dozens of agricultural commodities focused and technical discipline based public and private IT networks exist, with many of them reaching the village level. A few examples are as follows:

- Bhoomi: Under this program, 20 million land records of 6.7 million land owners in176 taluks of Karnataka State have been computerized.
- e-Choupal: http://www.echoupal.com e-Choupal is a rural digital infrastructure initiative by ITC that uses internet kiosks in villages to provide farmers with market information, connect them with agricultural knowledge, and improve their access to markets, ultimately aiming to enhance farm productivity and incomes. The program links farmers directly to agricultural and aquaculture products companies dealing in soya, coffee, prawns, etc. for the purchase of these commodities at competitive rates thus eliminating the middlemen. The program's principle is to inform, empower, and compete. Presently, there are more than 6,500 e- Choupals across 10 states in India.
- IKisan: IKisan has been developed by the Nagarjuna Group, based in South India, with an interest in agriculture, fertilizers and insecticides, among other areas. It is acomprehensive agriculture portal addressing the information, knowledge, and business needs of farmers, traders and farm input agencies (http://www.ikisan.com).
- Agriwatch: is said to be the largest agribusiness portal in India. It enables access to agribusiness information covering more than 15 sub-sectors of the agricultural and food industry. The website carries daily, weekly andfortnightly trade research reports.
- aAqua: It is one of the initiatives of the Indian Institute of Technology, Bombay presenting an online multilingual, multimedia agriculture portal for disseminating information fromand tothegrassrootsagricultural communities. The program integrates multiple databases.
- DEAL: DEAL is an initiativeoftheIndianInstituteofTechnology, Kanpur. It is an ICT enhanced network based on an established telecenter system for rural institutions such as village schools and agricultural extension centers at village level. It constitutes a digital knowledge base for the farmers and agricultural practitioners.
- e-Sagu:http://www.esagu.in/It is an IT-based personalized agricultural extension system for disseminating expert advice on agriculture to the farmerson time.
- Akshaya: http://www.akshaya.kerala.govt.in/ The Akshaya Project is a market- driven agricultural initiative through IT-enabled Agricultural

	Business Centersin Kerala State. It provides web-based solutions to all categories of farmers. ● The National Informatics Center (NIC) www.nic.in/ is a part of the Indian Ministry of Communications and Information Technology. It has launched several ICT initiatives for the benefit of rural people some of which are as follows: ✔ Computerized Rural Information Systems Project (CRISP) LandRecordsComputerizationProject(LRCP) ✔ eNRICH (for addressing the needs of rural people through networking, and facilitating communication between the government and citizens) ● AGMARKETNET (for providing information on marketing prices ofagricultural produce). ● ASHA: http://www.ashanet.org/(for providing agribusiness information for farmers and for linking buyers and sellers directly) ● Rural Bazar: http://www.rural.nic.in/sites/rural-bazar.asp (for showcasing of the agricultural products for ruralproducers as well as facilitating offline and online payments) ● National Panchayat Portal http://panchayat.nic.in: (Ensures vertical and horizontal integration in ruralPanchayat rajfacilities, facilitates communication, messaging, transfer of funds, monitoring of programs, etc..) ● e-Gram Vishwa Gram: (Keep records on village families and provide income, caste, home, etc. certificates to the rural population.) Website and Portal details are annexed (**Annexure - XXIV (a), (b) and (c)**.
VIII.	**<u>LISTING OF INNOVATIONS AND SCOPE FOR CROSS LEARNING</u>** **8.1 Listing of Extension Innovations Across Sectors and at Various Levels with Perceptible Impact** The extension models currently in operation at various levels and extension innovations under each of themare elaborated as under: a) Research Institution Outlets (RIOs) under State Agriculture/ Horticulture/Veterinary Universities and ICAR institutes provide strong technology outreach windows like adopted villages, blocks & innovative system of KVKs, with focus on technology validation, demonstration and dissemination, capacity building programmes, Farm Fairs, Agricultural Exhibitions etc. **Extension Innovations:** **i. Krishi Gyan Kendras of SAUs (Haryana Agriculture University, Hissar** **ii. District Agricultural Advisory and Technology Transfer Centres**

(DAATTCs),unique extension centres of Andhra Pradeshwere established in 1998 and have been functioning from KVK premises since 2017. DAATTC scientists (agronomy, plant protection and agricultural extension) prepare action plans based on resources of the district, conduct field trials, conduct extensive diagnostic visits to farmers' fields for pest and disease identification, diagnosis and to organize training for farmers and extension personnel.

iii. **Farm Advisory Service Centres:** Punjab Agricultural University (PAU) established district level farm advisory service centers (FASC) which implement various agricultural extension programmes to upgrade agricultural production efficiency with the aim to improve the livelihood of the farmers, but their efficiency needs to be assessed.

iv. **District level Agricultural Agronomists** as outreach specialists of SAUs in Maharashtra, with focussed task of linkages with development departments

v. **District level Livestock Extension Centres** of Tamil Nadu Veterinary and Animal Sciences University (TANVASU)

vi. KVKs as Outreach programme of SAUs hosting KVKs

vii. Agricultural Technology Information Centres (ATICs) hosted by SAUs

viii. Community Radio Stations run by SAUs like GBPUAT, NDUAT etc.

b)Development Department Outlets (DDOs) under the State Departments of Agriculture, Horticulture, Animal Husbandry, Dairy, Fisheries, Sericulture, etc. do carry out extension through various State/GoI schemes. Agricultural Technology Management Agency (ATMA)-a semi-autonomous institution at district level has successfully attempted restructuring field extension services.

Extension Innovations:

i. AgriculturalTechnologyManagementAgency (ATMA) - ATMA is a decentralized and farmer-driven agricultural extension model in India, designed to integrate research, extension, and farming activities at the district level. ATMA brings together multiple stakeholders, including government departments, research institutions, NGOs, and farmer groups, to deliver context-specific extension services. It aims to empower farmers by giving them a central role in planning and implementing extension activities. ATMA has significantly improved the outreach of agricultural extension services, leading to better adoption of modern farming technologies, enhanced crop productivity, and diversified income sources.

ATMA operates at Block and village level through functionaries like Block Technology Teams (comprising of Block Technology Manager (BTMs) and Assistant Technology Manager (ATMs) providing advisory services through Farmer Friends (FFs), FOs, SHGs, Farm Entrepreneurs, Startupos etc.

ii. Krishi Vigyan Kendras - KVK, is an integral part of the National Agricultural Research System (NARS- **Annexure - XXI**), aims at assessment of location specific technology modules in agriculture and allied enterprises, through technology assessment, refinement and demonstrations. KVKs have been functioning as Knowledge and Resource Centre of agricultural technology supporting initiatives of public, private and voluntary sector for improving the agricultural economy of the district. The KVK scheme is 100% financed by Govt. of India and the KVKs are sanctioned to Agricultural Universities, ICAR institutes, related Government Departments and Non-Government Organizations (NGOs) working in Agriculture. The number of KVKs has risen to 731. They focus on technology assessment, frontline demonstrations, capacity building, and trainings for farmers, rural youth, and extension workers, offering timely and region-specific advisory services on crop management. By facilitating farmer-scientist interactions and disseminating research outcomes, KVKs aim to bridge the gap between agricultural research and its practical application.

The contribution of the ATMA/ KVK models to extension programming has been notable. Yet, there is a need to revamp them through a review of their staffing pattern to bring in gretaer focus on post harvest extension programming.

Private extension in Indian agriculture has been largely an effort at promoting the brand diffusion of farm inputs. Getting them to participate in buy-back of farm produce would help leverage their farm outreach to extend market support to farmers.

iii. Extension Advisories on Soil Health Management therough Soil Health Card - The government issues soil health cards to farmers to promote balanced use of fertilizers, reducing the overuse of inputs. Farmers get detailed information on the nutrient status of their soil, leading to improved soil health and crop productivity.

c) Commodity Boards (Tea Board, Coffee Board, Spices Board, Coconut Board, Fisheries Board, National Horticulture Board, National Bee Board etc.) operate extension support through schemes and programmes like advisory services, quality planting material, production technologies and market/export promotion support, etc.

d) Private sector extension service providers/ entrepreneurs/input agencies supplement extension efforts while promoting their own products and services.

Extension Innovations

i. Contract Farming Models - Contract farming in India involves agreements between farmers and buyers (companies or processors) to produce specific crops under predetermined conditions regarding price and quantity. Notable examples include PepsiCo's contract farming for potato production in states like Punjab and Mahindra Agri Solutions' partnerships with farmers for soybean and groundnut cultivation, which ensure farmers receive assured markets and technical support.

ii. Input Supply and Advisory Services - Many private firms offer comprehensive input supply solutions combined with advisory services to help farmers optimize their production practices. Eg: Syngenta and Bayer

e) Public Private Partnership Model

Extension Innovations

i. Innovations in Public-Private Partnerships (PPPs) - Public-private partnerships (PPPs) in agricultural extension in India are agreements between the government and private sector to offer extension services to farmers and rural communities. These partnerships can help address challenges in the extension system, such as: Gap between extension workers and farmers, Government fiscal burden, and Transition to agricultural commercialization. The Hoshangabad Model implemented in Madhya Pradesh in partnership with Dhanuka Group successfully demonstrated the Public-private partnership model in India.

f) Farmer Groups/Organizations/ Cooperatives, etc. are increasingly being recognized as essential institutions for mobilizing farmer participation,

Extension Innovations:

i. Community-Based Extension (CBE) Approaches - Community-Based Extension (CBE) refers to a participatory and localized approach to agricultural extension services, where communities are actively involved in the design, delivery, and dissemination of agricultural knowledge and practices. CBE involves farmers as active partners, using peer-to-peer learning through local "lead farmers" or community extension agents. Key examples include Farmer Field School (FFS), Agricultural Technology Management Agency (ATMA), Farmer Producer Organizations (FPOs),Farmer Federations, and Self-Help Groups (SHGs).

ii. Farmer Field Schools (FFS) - Farmer Field Schools (FFS) area participatory extension approach that brings together groups of farmers to learn by doing through hands-on, field-based experiential learning. Typically conducted over an entire cropping season, FFS sessions focus on integrated crop management,

8.3	pest control, and sustainable farming practices. FFS has led to improved farm productivity, increased adoption of eco-friendly agricultural practices like Integrated Pest Management (IPM), and reduced reliance on chemical inputs. It has empowered farmers, particularly smallholders, to make informed decisions, leading to better yields and strengthened community cooperation and knowledge-sharing networks. **iii.** Farmer Producer Organizations (FPOs) - FPOs are collectives of small and marginal farmers who pool resources for input procurement, production, and marketing. Supported by both the central and state governments, FPOs help farmers gain market access and bargaining power FPOs enable economies of scale, better price negotiation, and collective access to finance and technology. Successful examples include, MAHAGRAPES, Sahyadri Farmers Producer Company, Vanilla India Producer Company Ltd (VANILCO), Chetna Organic Agriculture etc. **iv.** Self-Help Groups (SHGs) - Self-Help Groups (SHGs) in agriculture are grassroots collectives, primarily of women, that pool resources for farming activities, provide mutual support, and improve access to credit, training, and markets. India has about 1.2 crore Self Help Groups (SHGs), with88% ofthem being all-womenSHGs. SHGs have had a positive impact on women economically, socially, and politically. They have helped women become more familiar with handling money, financial decision-making, and improved social networks. g) Non-Government Organizations (NGOs) operate at local, regional, national and international level. Their outreach programmes are primarily focussed on mobilization of beneficiaries, reaching unreached, serving disadvantaged area through participatory and mobilization approaches. Examples, Rama Krishna Mission, MYRADA, Isha Foundation, Agha Khan Foundation, Bill and Melinda Gates Foundation, MSSRF, TAAS (promoting growth and advancement of agriculture through scientific partnerships, policy advocacy and puiblic awareness). h) Mass Media (traditional, print and electronic) play important role in information dissemination - India has unique advantage of mass media network spread across states and varied agro climatic zones. Content development, treatment, delivery and its impact are prominently visible across the production systems. i) ICT led Extension **Extension Innovation** i. Kisan Call Centers (KCC) - Launched by the Ministry of Agriculture, KCC provides farmers with agriculture- related advice through a toll-free number, 1800-180-1551 available in regional languages. Provides Access to real-time information on crop management, weather forecasts, pest control, and government schemes, thereby improving decision-making.

ii. Digital Agriculture Platforms - Private companies are leveraging digital technologies to deliver real-time information, weather updates, and market prices to farmers via mobile applications. Eg: Cropin, Digital Green, Plantix

j) Social-media platforms are gaining major space in the information processes, and

k) Extension innovations moving through agri-startups, entrepreneurs, partnerships, internet platforms, machine learning, sensors, artificial intelligence, etc.

i. Innovations in Private Sector Agri-Startups - Numerous startups have emerged that offer technology-driven solutions for farmers, such as precision farming, soil health analysis, and crop monitoring using drones. Eg: Ninjacart, AgriBazaar, Marut Drones.

8.2 Listing of Success Stories Across the Sectors

Extension services by public and private have played significant role in enhancing awareness of the farmers, facilitating adoption of technologies and promoting entreprize combinations suiting to local farm situations. Besides crops, the extension services have impacted allied sectoral activities too, covering horticulture, animal husbandry, dairy, fishery, poultry, farm mechanization, homestead farming etc. The extension services promoted by various models have also successfully addressed extension needs of farm women, farm youth, agri-entrepreneurs etc. ICT application, partnerships, futuristic extension strategies etc. have also been demonstrated by the innovative extension approaches.

8.3 Scope for Cross learning on Extension Innovations with other Provincial Agencies

Scope for cross learning of some key innovations that other states can adopt:

- Rythu Bandhu (Telangana):

  This direct financial transfer scheme provides farmers with funds before the sowing season, reducing dependence on high- interest loans. Other states can replicate this model to ease financial burdens on farmers and promote timely input purchases.

- Rythu Bharosa Kendras (Andhra Pradesh):

  RBKs act as one-stop centers offering farmers services like soil testing, seed certification, and crop advisories. States without integrated service centers can adopt this model to streamline agricultural services and enhance accessibility for smallholder farmers.

- KALIA Scheme (Odisha):

  KALIA provides financial support to small and marginal farmers, along with landless agricultural laborers. Its multi-faceted approach to livelihood and crop support can inspire other states to improve inclusivity in agricultural welfare.

- Mukhyamantri Krishi Ashirwad Yojana (Jharkhand):

  This cash transfer scheme helps farmers meet input needsat the startofthe sowing season. Other states can replicate this model to empower smallholder farmers and improve their access to essential resources.

- Krushi Bhagya (Karnataka):

  Focused on rainwater harvesting and dryland horticulture, this scheme has improved water use efficiency. States facing similar water challenges can adopt these techniques to enhance productivity in rain-fed areas.

- Krishi Yantra Dhare Yojane (Karnataka):

  This scheme allows farmers to rent farm machinery, making modern equipmentaccessibletosmallholder farmers. States with large smallholder populations can implement similarrental models to increase mechanization.

- Per Drop More Crop (PMKSY):

  Promoting micro-irrigation, this scheme enhances water conservation and productivity. State swith water scarcity issues can adopt these technologies to improve irrigation efficiency.

- e-Crop Registration (Andhra Pradesh):

  This digital platform improves transparency and access to real-time data on crops and market prices. States can replicate such systems to improve decision-making and enhance support for farmers.

8.4 Scope for Cross learning on Extension Innovations with other Partner Countries

With its diverse agro-eco- situations, rich agri-bio diversity across provinces, India can offer cross learning opportunities to all partner countries through following:

- Other countries can adopt India's structured public extension models, such as Krishi Vigyan Kendras (KVKs) and ATMA, which provide organized and focused agricultural extension services and technology transfer.
- Developing nations can leverage India's successful private sector models to

	foster innovation and efficiency in agricultural extension services. This could include adopting technology-driven approaches that enhance productivity. ● Other countries can support the model of extension support to farmers by seed/ planting material and other input supplying companioes ● Countries can study India's NGO-led initiatives to incorporate participatory development approaches that prioritize community engagement and capacity building. ● India's experiences with public-private partnerships (PPPs), like the Rythu Bharosa Kendra model, can guide other nations in designing effective collaborative frameworks that combine resources and expertise from both sectors. ● The success of cooperatives like AMUL and FPOs/FPCs can serve as a model for other countries to empower farmers through collective marketing and resource- sharing, enhancing their economic stability. ● Emphasizing inclusivity, particularly regarding youths, small, marginal and women farmers, can enhance the effectiveness of agricultural extension services. ● Countries can learn from India's implementation of ICT tools in agriculture, such as mobile applications and e-governance platforms, to facilitate better information dissemination among farmers. ● India has remarkable achievement in extension support for climate resillient agriculture through institutions like NICRA ● Replication of Indian extension experience of working with disadvanteged areas, groups, communities, intervening through local adaptation of extension models. ● India can provide specific extension strategies in the areas of promoting commercial crops, processing, value addition and marketing (domestic and export) involving agencies like APEDA. ● India has rich experience of designing and implementing extension strategies for sectors like animal husbandry, dairy, poultry, fisheries, homestead farming etc. with good number of innovations and successful examples (Amul, Uday-aqua, Venkateswara Hatcheries, Soumya Foods etc.) Detaild of selected success stories may be seen at, https://www.taas.in/OtherPublications.aspx https://icar.org.in/success-stories https://www.manage.gov.in/publications/SuccessStories/SuccessStories-STRY100.pdf https://www.manage.gov.in/publications/SuccessStories/SuccessStories-STRY.pdf https://drive.google.com/file/d/1GX2cp7Db_Wdc6BoMt4HlRINzZwA7RZ5L/view?usp=drive_link ARYA Success stories link- https://in.docworkspace.com/d/sIAa8_ohc9eirwQY

IX.	**LESSONS FOR FUTURE EXTENSION INTERVENTIONS AND COLLABORATIONS** Crucial extension innovations and reforms being promoted and practiced in India broadly include the following (Details could be seen in the relevant paragraphs dicussed earlier in the document), which could be further deliberated and considered for future collaboration amongst the partner countries: **i) Innovating institutional arrangements in public sector for technology delivery.** - Krishi Vigyan Kendras (KVKs) being a strong institutional mechanism at the district level need to be strengthened to function as Knowledge – Skill - Innovation Centers (KSICs), mini ATICs and Agri-Clinics to provide good knowledge as well as quality inputs.(Report of the High Power Committee under the chairmanship of Dr RS Paroda on KVKs has already been shared with the partner countries, the recommendations may be considered for possible collaborations. **ii) Flexi Funding by pooling and sharing of funds/resources** - Efficiency of field extension services needs to be enhanced by innovative measures like flexible funding options, pooling of extension resources and their need based allocation. Impact of these approached may be shared amongst partner countries for further replication. **iii) Convergence and Coordination** - The activities of public institutions (KVKs and ATMAs) and private extension service providers could be multiplied and made more effective by converging resources and progeammes at cutting edge level (Block/cluster) delineating roles and responsibilties through operational guidelines. -The outreach, interplay and performance of extension models need to be improved by widening the sectoral and area coverage, promoting partnerships and resource sharing, enhancing integrated delivery, improving penetration to the small producers, and promoting chains of extension agents across the production systems. **iv) Skilling farmers, field functionaries and other stakeholders, facilitating enhanced adoption of organic agriculture, climate resilience, agri-business opportunities, etc.** - Diversification of educational activities of SAUs beyond regular degree programs to embrace also the vocational training programs, (diploma/certificate courses) to impart specialised skills to the students enabling them to become extension agents, input providers, specialists and entrepreneurs, apart from

	meeting the manpower requirements of agri-corporate sector. - Strengthening the SAUs for playing a leadership role in coordinating the extension training activities in a State in collaboration with the SAMETIs/ATARIs. Their roles may be reviewed in the changing agricultural extension scenario (IncubationStartups- Entrepreneurships - Partnerships - Internet Platforms – eNAM etc,). Agricultural Universities and similar establishments in the partner countries may share their experiences for mutual benefits. The SAUs must urgently revisit their course curricula for agricultural extension giving due emphasis to the emerging areas like diversified agriculture, secondary agriculture, speciality agriculture, value chain and agricultural marketing, including export options, etc., which now demand innovations in agricultural extension education. **v) Strengthening public-private partnerships.** - Encouraging corporate Sector for investing part of their Corporate Social Responsibility (CSR) funds to create a private and more efficient extension systems/models to complement the on-going Government extension activities. - Sharing the learning from successful private sector models innovated by organizations like, BAIF, ITC, Jain Irrigation, IFFCO, etc. could be a good beginning to accelerate this process. Involving private sector in playing a proactive role in agricultural extension through enabling policy environment by the Government. **vi) Integrating extension needs of allied sectors and disadvantaged areas/groups in outreach programs of frontline extension.** - Extension for disadvantaged areas/groups needs be addressed through innovative extension solutions like combination of: a) extension service providers (ESPs), b) involving NGOs/Para-techs, c) intensive use of ICTs, and d) participation of local communities and institutions. - Further, the extension services must be oriented towards NRM efficient conservation agriculture to reduce GHGs emission and to benefit farmers through carbon trading, options of which are now emerging. **vii) Promoting agri-start-ups, entrepreneurships, business incubation, value chain and market-led extension interventions.** - Nced for involving farmer aggregates, for production, value chain management and better price discovery. Enhanced investments for market infrastructure (electricity, warehousing, rural roads, ICT, etc.) on a PPP mode.

- Encouraging private sector to come forward to support establishment of Agri-clinics and Agribusiness Centres (ACABCs) and the training of agri-extension functionaries, agri-entrepreneurs, agri-start-ups, e-platforms, etc.

- Encouraging agribusiness MBAs, IT graduates and farm youths (including women) for provide advisory services on payment basis (paid extension).

viii) Partnerships with CGIAR and other international institutions

- The upcoming extension-research coordination strategiesin the partner countries may also involve and learn from international and private sector organisations. Innovative agri-extension pilots may be initiated on collaborative mode for mutual advantage

ix) Intensive use of media, ICTs and internet platforms for extension delivery and also for enhancing farmer awareness on provisions under various Schemes/Programmes (Central/State) and modalities for availing the same. There is a need for exchange of experiences in this crucial area.

The dedicated channel on agriculture like DD Kisan, radio broadcasts and community radio stations (CRS) need to be strengthened for effective farmer related knowledge dissemination.

The linkage between common service centres (CSCs), operating under the Ministry of Information Technology and KVKs must be built to reach the last mile. Further, Kisan Call Centres (KCCs) providing country wide common eleven-digit toll free number 1800-180-1551 could be used effectively. The rural tele-centres could also be used for better information management.

Advanced technologies like drones, robotics, remote sensing applications, sensors, machine learning, data analytics, block chain, internet of things (IoT) as well as artificial intelligence (AI) need to be extensively used for precision farming, improved farm management, and providing real-time data.

Extensive use of Social media (WhatsApp, Facebook, Twitter, Instagram, Emails, Blogs, Appbased services, etc.) - Farm-portals like "Kisan SARATHI" providing information on production/ protection technologies, e-advisories, inputs/prices, e-marketing, e-platforms and mobile applications need to be promoted. Organizing farmer/farm women knowledge groups (FKGs/FWKGs) eco-region wise around the commodities/farming systems through FPOs. It will be advantageous if the use of internet in rural India enabling direct link to the farmers and e-Choupal like initiatives is enhanced for supply chain efficiency.

National Network of Agri-Journalists (NNAJ), initiated by MANAGE, and YouTube channel program initiated by IARI and other institutions can be replicated at the Provincial/ district level involving institutions like SAUs and

KVKs-ATMA jointly.

x) Empowering farmers, FOs, FPCs, FIGs, Farmer Cooperatives, etc. to promote farmer to farmer and group approach to extension delivery.

- Special efforts for skill enhancement of these aggregates in the area of business planning, production techniques, market integration, legal and financial compliances both by central and state extension agencies would be more effective.
- Promoting Farmer to Farmer Extension approaches - Farmers Field Schools (FFSs) have proved to be quite an effective extension system for farmer-to-farmer knowledge dissemination and for faster adoption of new innovations. Hence, FFS and Farmer Business Schools (FBSs), as promoted by FAO need to be strengthened as an effective technology transfer mechanism.

- Outsourcing some extension services to the FPOs like 'Maharashtra State Grape Grower Association', etc.

xi) Involving farm youth and women through focused extension strategies with institutional support (ARYA, RAFTAR).

- The field functionaries of agricultural and allied departments should focus on motivating farm youths, farm women, organizing district level farmers' clubs, developing agri-portals, apps and videos and ensuring an effective involvement of progressive farmers as farmer professors.

- Sensitizing/reorienting the extension services on gender and nutrition issues, promoting nutri-gardens and alternate nutri-foods, women empowerment through access to credit/inputs and gender sensitive home scale nutritional extension services. Establishing nutri-smart villages at least one in each cluster.

- Motivating and attracting youth in agriculture (MAYA) towards high-tech farming, secondary and speciality agriculture, agri-insurance, processing and valueaddition, agri-entrepreneurships, efficient marketing, commercial enterprises, such as floriculture, vertical farming, protected cultivation, etc.

- MSU's Global Youth Advancement Initiative (GYAI) model could also be experimented to motivate youth.

xii) Augmenting R&E linkages at various levels.

- Ensure greater convergence and coordination between development (ATMA) and research (KVK) institutions at cutting edge level with delineated responsibilities, supported fully through requisite manpower and funding.

- Involving of scientists is essential to eliminate dissemination loss especially in areas such as NRM, IPM, INM, conservation agriculture (CA), organic agriculture, farm mechanization, climate-smart agriculture, crop

diversification, etc. Multi-disciplinary, inter-institutional efforts towards translational research could also accelerate adoption of new technologies backed by enabling policies and commensurate funding.

- Promoting outfits like, "Field Extension Labs/ Centres of Excellence" in the critical areas in the selected SAUs/private extension systems. Further the extension research outcomes be ploughed back for reforming existing operations and policies for which suitable State-specific mechanisms also need to be developed.

Collating the feedback from the farmers and field functionaries by the Assistant Technology Managers (ATMs) of ATMA and Subject Matter Specialists (SMSs) of KVKs which could be documented to assess specific needs of farmers to be addressed.

xiii) Funding possibilities - current arrangements and future options

- Current funding arrangements are mainly facilitated through,
  a) Schemes and Projects of Federal and Provincial Governments,
  b) National/International Funding Agencies,
  c) PPPs, International Collaborat ions, Consortia etc..
  d) Trusts, Charitable Organizations, NGOs , Community Organizations etc.

- Exploring enhanced funding for extension services through initiatives like,
  a) doubling allocation for agricultural extension activities by MoA&FW and ICAR,
  b) ensuring higher allocation for extension activities under the CSR by corporate sector related to agriculture and allied fields,
  c) augmenting funding support through Intermediaries like FPOs, PPPs, SPVs, Contractual Arrangements, etc.
  d) revisiting and strengthening National Mission on Agricultural Extension and Technology,
  e) ICAR to initiate urgent action for National Agricultural Extension Project (NAExnP) funded by the World Bank linked to reforms in agricultural extension programs,
  f) seeking international funding support for innovative pilots generated through C - AEPs,
  g) creating a Mission on Youth for motivating them to become extension/ advisory agents and entrepreneurs, and
  h) establishing Agriculture Innovation Fund to promote farmer-led innovations for enhancing production and productivity,
  i) pooled Funds by the Partner Countries in a consortia mode,
  j) self-generated funds (individuals, associations, professional bodies etc.), and
  k) support innovative Pilots jointly operated by partner countries to be identified for national/international funding.

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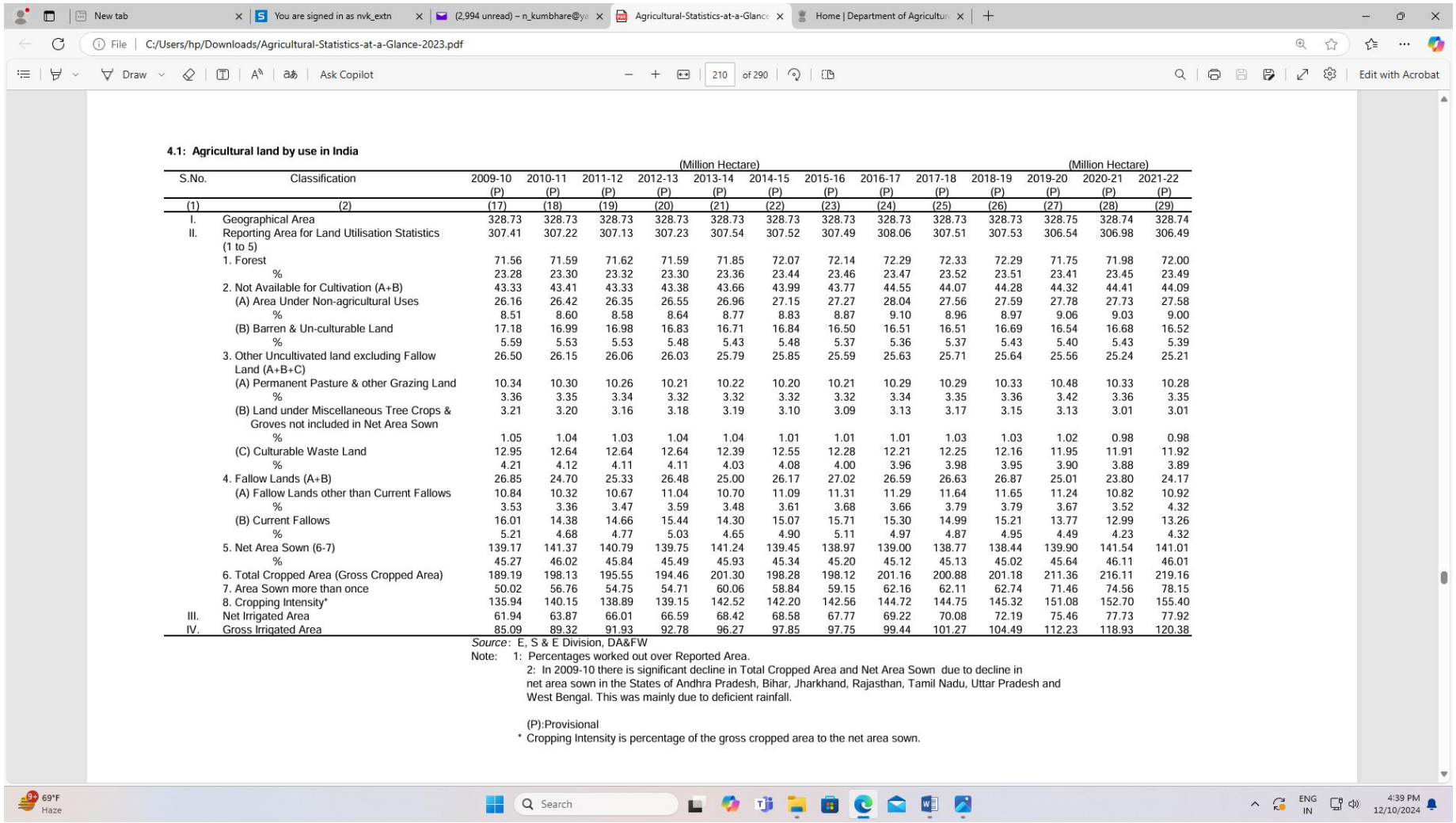
Annexure-I

Agricultural land by use in India



4.1: Agricultural land by use in India

(Million Hectare)

S.No.	Classification	2009-10 (P)	2010-11 (P)	2011-12 (P)	2012-13 (P)	2013-14 (P)	2014-15 (P)	2015-16 (P)	2016-17 (P)	2017-18 (P)	2018-19 (P)	2019-20 (P)	2020-21 (P)	2021-22 (P)
(1)	(2)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)
I.	Geographical Area	328.73	328.73	328.73	328.73	328.73	328.73	328.73	328.73	328.73	328.73	328.75	328.74	328.74
II.	Reporting Area for Land Utilisation Statistics (1 to 5)	307.41	307.22	307.13	307.23	307.54	307.52	307.49	308.06	307.51	307.53	306.54	306.98	306.49
	1. Forest	71.56	71.59	71.62	71.59	71.85	72.07	72.14	72.29	72.33	72.29	71.75	71.98	72.00
	%	23.28	23.30	23.32	23.30	23.36	23.44	23.46	23.47	23.52	23.51	23.41	23.45	23.49
	2. Not Available for Cultivation (A+B)	43.33	43.41	43.33	43.38	43.66	43.99	43.77	44.55	44.07	44.28	44.32	44.41	44.09
	(A) Area Under Non-agricultural Uses	26.16	26.42	26.35	26.55	26.96	27.15	27.27	28.04	27.56	27.59	27.78	27.73	27.58
	%	8.51	8.60	8.58	8.64	8.77	8.83	8.87	9.10	8.96	8.97	9.06	9.03	9.00
	(B) Barren & Un-culturable Land	17.18	16.99	16.98	16.83	16.71	16.84	16.50	16.51	16.51	16.69	16.54	16.68	16.52
	%	5.59	5.53	5.53	5.48	5.43	5.48	5.37	5.36	5.37	5.43	5.40	5.43	5.39
	3. Other Uncultivated land excluding Fallow Land (A+B+C)	26.50	26.15	26.06	26.03	25.79	25.85	25.59	25.63	25.71	25.64	25.56	25.24	25.21
	(A) Permanent Pasture & other Grazing Land	10.34	10.30	10.26	10.21	10.22	10.20	10.21	10.29	10.29	10.33	10.48	10.33	10.28
	%	3.36	3.35	3.34	3.32	3.32	3.32	3.32	3.34	3.35	3.36	3.42	3.36	3.35
	(B) Land under Miscellaneous Tree Crops & Groves not included in Net Area Sown	3.21	3.20	3.16	3.18	3.19	3.10	3.09	3.13	3.17	3.15	3.13	3.01	3.01
	%	1.05	1.04	1.03	1.04	1.04	1.01	1.01	1.01	1.03	1.03	1.02	0.98	0.98
	(C) Culturable Waste Land	12.95	12.64	12.64	12.64	12.39	12.55	12.28	12.21	12.25	12.16	11.95	11.91	11.92
	%	4.21	4.12	4.11	4.11	4.03	4.08	4.00	3.96	3.98	3.95	3.90	3.88	3.89
	4. Fallow Lands (A+B)	26.85	24.70	25.33	26.48	25.00	26.17	27.02	26.59	26.63	26.87	25.01	23.80	24.17
	(A) Fallow Lands other than Current Fallows	10.84	10.32	10.67	11.04	10.70	11.09	11.31	11.29	11.64	11.65	11.24	10.82	10.92
	%	3.53	3.36	3.47	3.59	3.48	3.61	3.68	3.66	3.79	3.79	3.67	3.52	4.32
	(B) Current Fallows	16.01	14.38	14.66	15.44	14.30	15.07	15.71	15.30	14.99	15.21	13.77	12.99	13.26
	%	5.21	4.68	4.77	5.03	4.65	4.90	5.11	4.97	4.87	4.95	4.49	4.23	4.32
	5. Net Area Sown (6-7)	139.17	141.37	140.79	139.75	141.24	139.45	138.97	139.00	138.77	138.44	139.90	141.54	141.01
	%	45.27	46.02	45.84	45.49	45.93	45.34	45.20	45.12	45.13	45.02	45.64	46.11	46.01
	6. Total Cropped Area (Gross Cropped Area)	189.19	198.13	195.55	194.46	201.30	198.28	198.12	201.16	200.88	201.18	211.36	216.11	219.16
	7. Area Sown more than once	50.02	56.76	54.75	54.71	60.06	58.84	59.15	62.16	62.11	62.74	71.46	74.56	78.15
	8. Cropping Intensity*	135.94	140.15	138.89	139.15	142.52	142.20	142.56	144.72	144.75	145.32	151.08	152.70	155.40
III.	Net Irrigated Area	61.94	63.87	66.01	66.59	68.42	68.58	67.77	69.22	70.08	72.19	75.46	77.73	77.92
IV.	Gross Irrigated Area	85.09	89.32	91.93	92.78	96.27	97.85	97.75	99.44	101.27	104.49	112.23	118.93	120.38

Source: E, S & E Division, DA&FW

Note: 1: Percentages worked out over Reported Area.

2: In 2009-10 there is significant decline in Total Cropped Area and Net Area Sown due to decline in net area sown in the States of Andhra Pradesh, Bihar, Jharkhand, Rajasthan, Tamil Nadu, Uttar Pradesh and West Bengal. This was mainly due to deficient rainfall.

(P):Provisional

* Cropping Intensity is percentage of the gross cropped area to the net area sown.

Source: Agricultural Statistics at a Glance (2023)

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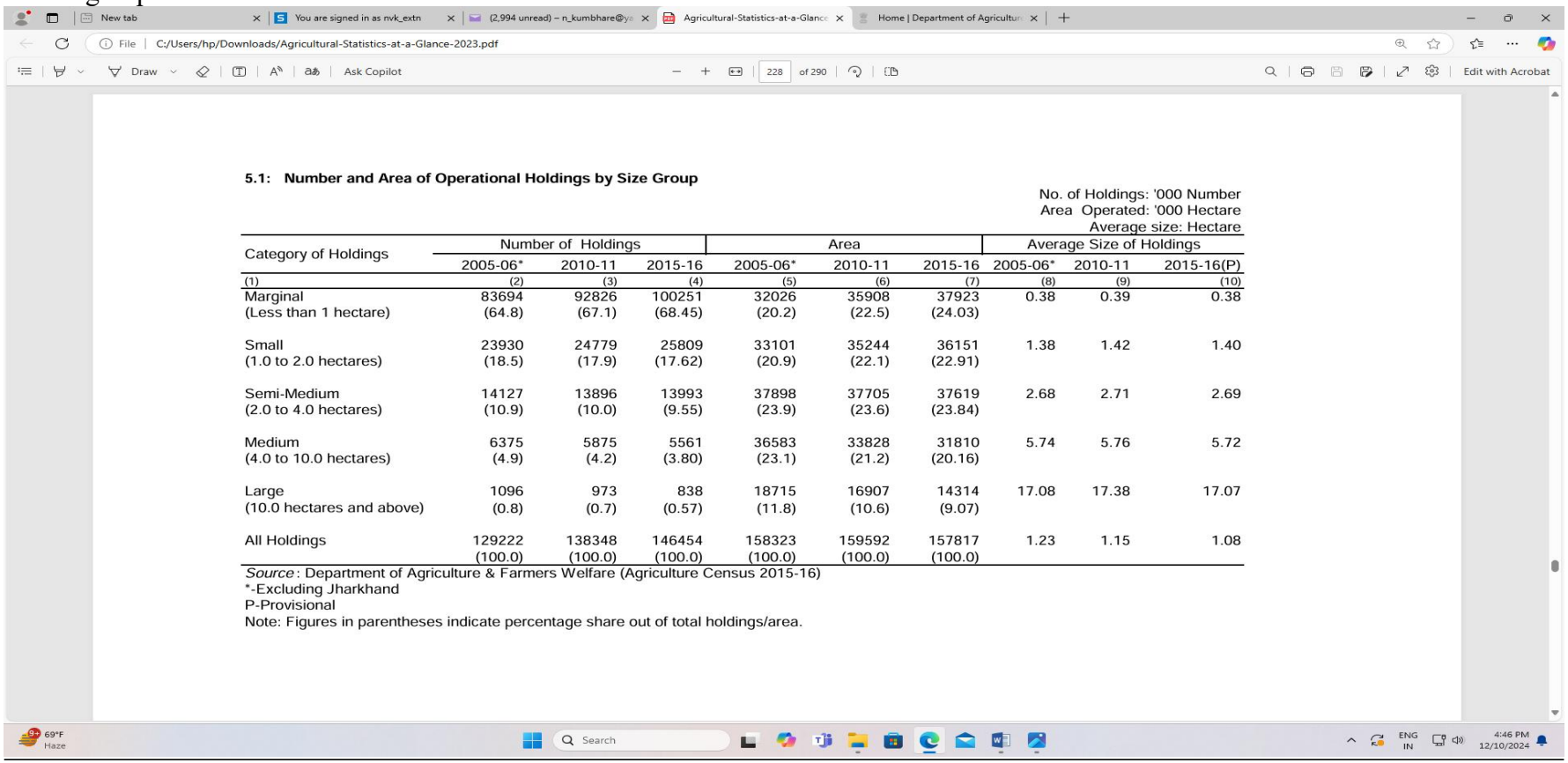
Annexure-II

Farming Population in India



5.1: Number and Area of Operational Holdings by Size Group

No. of Holdings: '000 Number
Area Operated: '000 Hectare
Average size: Hectare

Category of Holdings	Number of Holdings			Area			Average Size of Holdings		
	2005-06*	2010-11	2015-16	2005-06*	2010-11	2015-16	2005-06*	2010-11	2015-16(P)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Marginal (Less than 1 hectare)	83694 (64.8)	92826 (67.1)	100251 (68.45)	32026 (20.2)	35908 (22.5)	37923 (24.03)	0.38	0.39	0.38
Small (1.0 to 2.0 hectares)	23930 (18.5)	24779 (17.9)	25809 (17.62)	33101 (20.9)	35244 (22.1)	36151 (22.91)	1.38	1.42	1.40
Semi-Medium (2.0 to 4.0 hectares)	14127 (10.9)	13896 (10.0)	13993 (9.55)	37898 (23.9)	37705 (23.6)	37619 (23.84)	2.68	2.71	2.69
Medium (4.0 to 10.0 hectares)	6375 (4.9)	5875 (4.2)	5561 (3.80)	36583 (23.1)	33828 (21.2)	31810 (20.16)	5.74	5.76	5.72
Large (10.0 hectares and above)	1096 (0.8)	973 (0.7)	838 (0.57)	18715 (11.8)	16907 (10.6)	14314 (9.07)	17.08	17.38	17.07
All Holdings	129222 (100.0)	138348 (100.0)	146454 (100.0)	158323 (100.0)	159592 (100.0)	157817 (100.0)	1.23	1.15	1.08

Source: Department of Agriculture & Farmers Welfare (Agriculture Census 2015-16)
*-Excluding Jharkhand
P-Provisional
Note: Figures in parentheses indicate percentage share out of total holdings/area.

Source: Agricultural Statistics at a Glance (2023)

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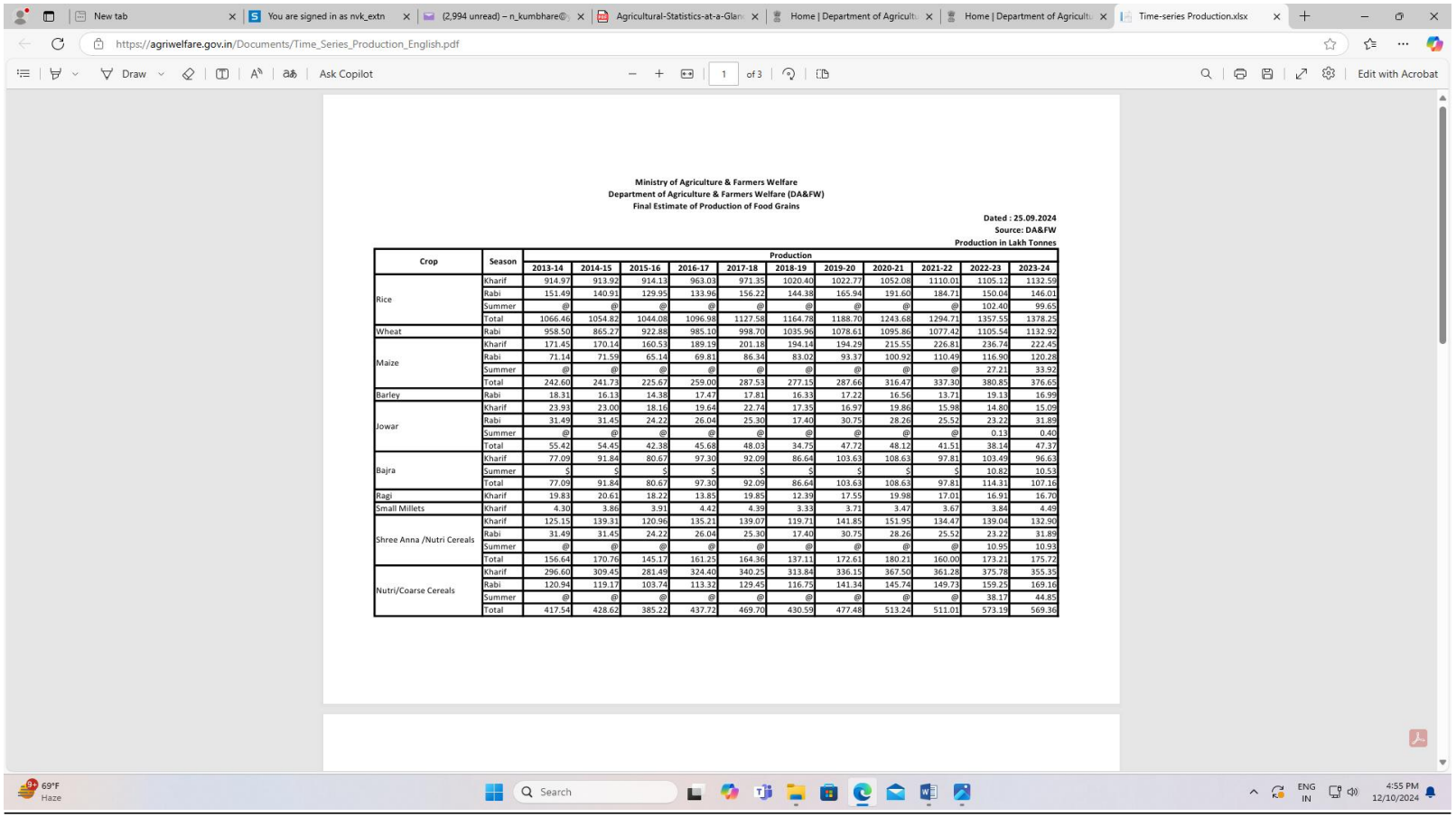
Annexure-III (a)

Production of Food Grain



Ministry of Agriculture & Farmers Welfare
Department of Agriculture & Farmers Welfare (DA&FW)
Final Estimate of Production of Food Grains

Dated : 25.09.2024
Source: DA&FW
Production in Lakh Tonnes

Crop	Season	Production										
		2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Rice	Kharif	914.97	913.92	914.13	963.03	971.35	1020.40	1022.77	1052.08	1110.01	1105.12	1132.59
	Rabi	151.49	140.91	129.95	133.96	156.22	144.38	165.94	191.60	184.71	150.04	146.01
	Summer	@	@	@	@	@	@	@	@	@	102.40	99.65
	Total	1066.46	1054.82	1044.08	1096.98	1127.58	1164.78	1188.70	1243.68	1294.71	1357.55	1378.25
Wheat	Rabi	958.50	865.27	922.88	985.10	998.70	1035.96	1078.61	1095.86	1077.42	1105.54	1132.92
Maize	Kharif	171.45	170.14	160.53	189.19	201.18	194.14	194.29	215.55	226.81	236.74	222.45
	Rabi	71.14	71.59	65.14	69.81	86.34	83.02	93.37	100.92	110.49	116.90	120.28
	Summer	@	@	@	@	@	@	@	@	@	27.21	33.92
	Total	242.60	241.73	225.67	259.00	287.53	277.15	287.66	316.47	337.30	380.85	376.65
Barley	Rabi	18.31	16.13	14.38	17.47	17.81	16.33	17.22	16.56	13.71	19.13	16.99
Jowar	Kharif	23.93	23.00	18.16	19.64	22.74	17.35	16.97	19.86	15.98	14.80	15.09
	Rabi	31.49	31.45	24.22	26.04	25.30	17.40	30.75	28.26	25.52	23.22	31.89
	Summer	@	@	@	@	@	@	@	@	@	0.13	0.40
	Total	55.42	54.45	42.38	45.68	48.03	34.75	47.72	48.12	41.51	38.14	47.37
Bajra	Kharif	77.09	91.84	80.67	97.30	92.09	86.64	103.63	108.63	97.81	103.49	96.63
	Summer	$	$	$	$	$	$	$	$	$	10.82	10.53
	Total	77.09	91.84	80.67	97.30	92.09	86.64	103.63	108.63	97.81	114.31	107.16
Ragi	Kharif	19.83	20.61	18.22	13.85	19.85	12.39	17.55	19.98	17.01	16.91	16.70
Small Millets	Kharif	4.30	3.86	3.91	4.42	4.39	3.33	3.71	3.47	3.67	3.84	4.49
Shree Anna /Nutri Cereals	Kharif	125.15	139.31	120.96	135.21	139.07	119.71	141.85	151.95	134.47	139.04	132.90
	Rabi	31.49	31.45	24.22	26.04	25.30	17.40	30.75	28.26	25.52	23.22	31.89
	Summer	@	@	@	@	@	@	@	@	@	10.95	10.93
	Total	156.64	170.76	145.17	161.25	164.36	137.11	172.61	180.21	160.00	173.21	175.72
Nutri/Coarse Cereals	Kharif	296.60	309.45	281.49	324.40	340.25	313.84	336.15	367.50	361.28	375.78	355.35
	Rabi	120.94	119.17	103.74	113.32	129.45	116.75	141.34	145.74	149.73	159.25	169.16
	Summer	@	@	@	@	@	@	@	@	@	38.17	44.85
	Total	417.54	428.62	385.22	437.72	469.70	430.59	477.48	513.24	511.01	573.19	569.36

Source: Agricultural Statistics at a Glance (2023)

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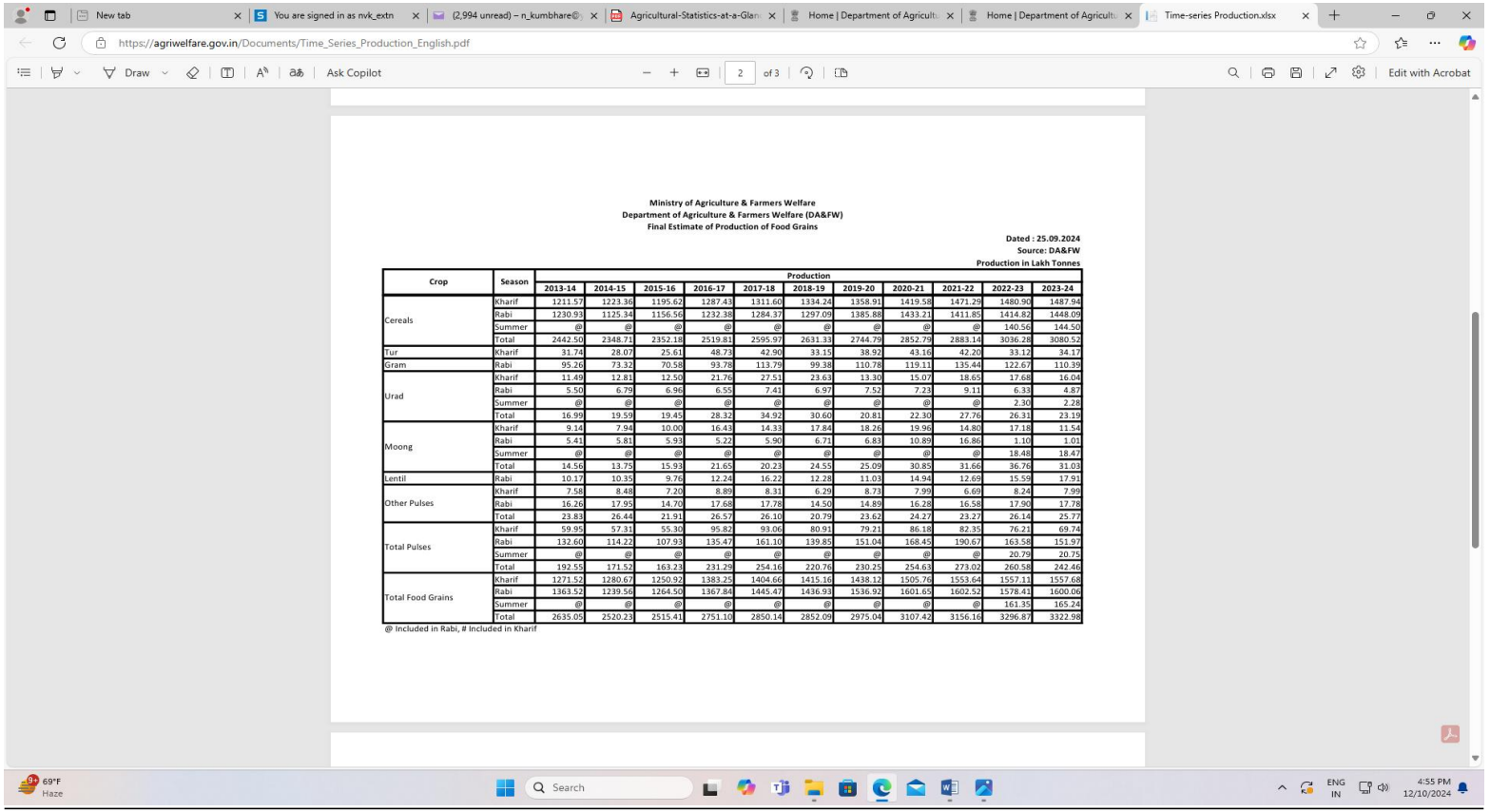
Annexure-III (b)

Production of Pulses



Ministry of Agriculture & Farmers Welfare
Department of Agriculture & Farmers Welfare (DA&FW)
Final Estimate of Production of Food Grains

Dated : 25.09.2024
Source: DA&FW
Production in Lakh Tonnes

Crop	Season	Production									
		2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Cereals	Kharif	1211.57	1223.36	1195.62	1287.43	1311.60	1334.24	1358.91	1419.58	1471.29	1480.90	1487.94
	Rabi	1230.93	1125.34	1156.56	1232.38	1284.37	1297.09	1385.88	1433.21	1411.85	1414.82	1448.09
	Summer	@	@	@	@	@	@	@	@	@	140.56	144.50
	Total	2442.50	2348.71	2352.18	2519.81	2595.97	2631.33	2744.79	2852.79	2883.14	3036.28	3080.52
Tur	Kharif	31.74	28.07	25.61	48.73	42.90	33.15	38.92	43.16	42.20	33.12	34.17
Gram	Rabi	95.26	73.32	70.58	93.78	113.79	99.38	110.78	119.11	135.44	122.67	110.39
Urad	Kharif	11.49	12.81	12.50	21.76	27.51	23.63	13.30	15.07	18.65	17.68	16.04
	Rabi	5.50	6.79	6.96	6.55	7.41	6.97	7.52	7.23	9.11	6.33	4.87
	Summer	@	@	@	@	@	@	@	@	@	2.30	2.28
	Total	16.99	19.59	19.45	28.32	34.92	30.60	20.81	22.30	27.76	26.31	23.19
Moong	Kharif	9.14	7.94	10.00	16.43	14.33	17.84	18.26	19.96	14.80	17.18	11.54
	Rabi	5.41	5.81	5.93	5.22	5.90	6.71	6.83	10.89	16.86	1.10	1.01
	Summer	@	@	@	@	@	@	@	@	@	18.48	18.47
	Total	14.56	13.75	15.93	21.65	20.23	24.55	25.09	30.85	31.66	36.76	31.03
Lentil	Rabi	10.17	10.35	9.76	12.24	16.22	12.28	11.03	14.94	12.69	15.59	17.91
Other Pulses	Kharif	7.58	8.48	7.20	8.89	8.31	6.29	8.73	7.99	6.69	8.24	7.99
	Rabi	16.26	17.95	14.70	17.68	17.78	14.50	14.89	16.28	16.58	17.90	17.78
	Total	23.83	26.44	21.91	26.57	26.10	20.79	23.62	24.27	23.27	26.14	25.77
Total Pulses	Kharif	59.95	57.31	55.30	95.82	93.06	80.91	79.21	86.18	82.35	76.21	69.74
	Rabi	132.60	114.22	107.93	135.47	161.10	139.85	151.04	168.45	190.67	163.58	151.97
	Summer	@	@	@	@	@	@	@	@	@	20.79	20.75
	Total	192.55	171.52	163.23	231.29	254.16	220.76	230.25	254.63	273.02	260.58	242.46
Total Food Grains	Kharif	1271.52	1280.67	1250.92	1383.25	1404.66	1415.16	1438.12	1505.76	1553.64	1557.11	1557.68
	Rabi	1363.52	1239.56	1264.50	1367.84	1445.47	1436.93	1536.92	1601.65	1602.52	1578.41	1600.06
	Summer	@	@	@	@	@	@	@	@	@	161.35	165.24
	Total	2635.05	2520.23	2515.41	2751.10	2850.14	2852.09	2975.04	3107.42	3156.16	3296.87	3322.98

@ Included in Rabi, # Included in Kharif

Source: Agricultural Statistics at a Glance (2023)

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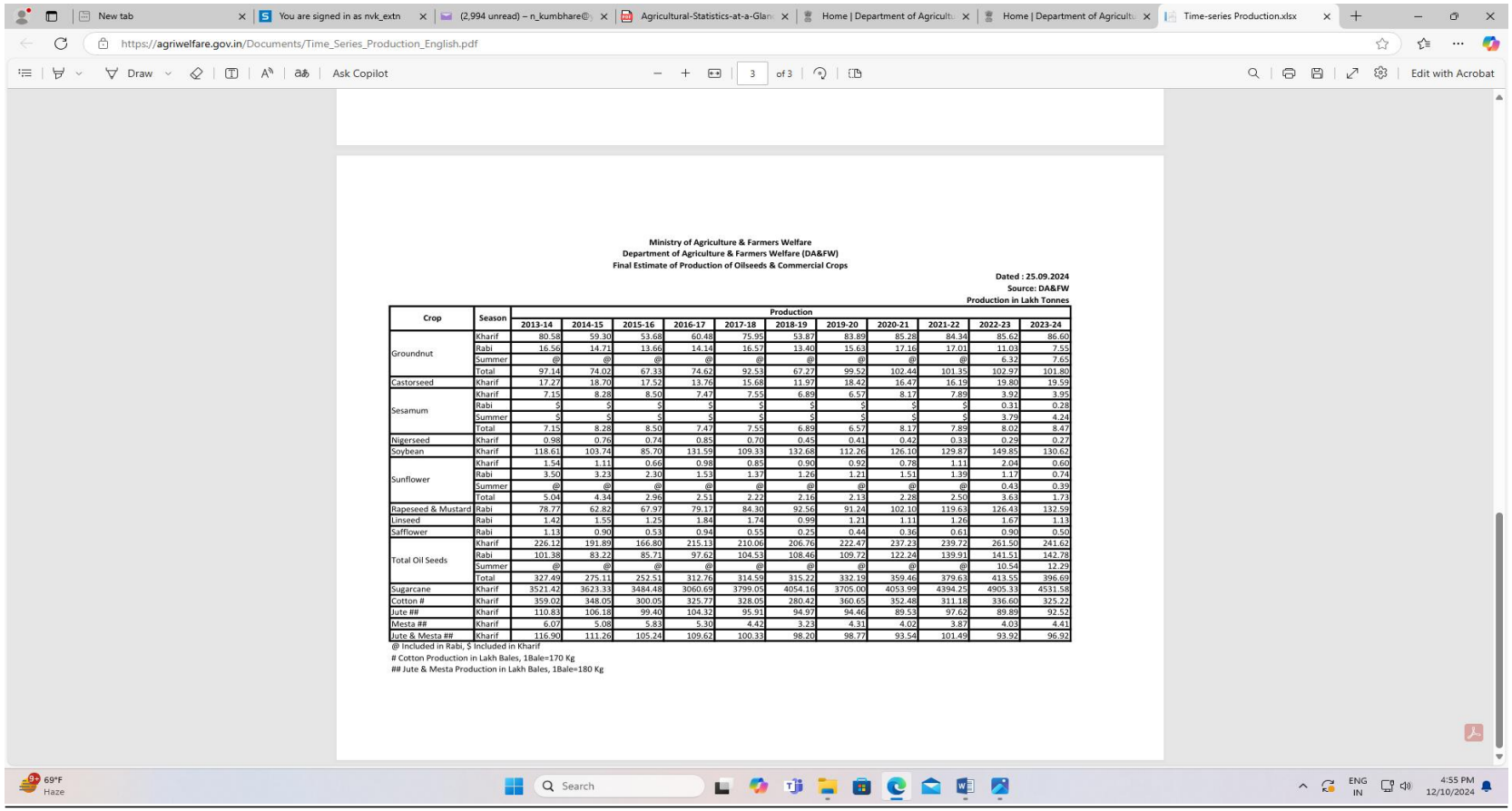
Annexure-III (c)

Production of Oilseeds and Commercial Crops



Ministry of Agriculture & Farmers Welfare
Department of Agriculture & Farmers Welfare (DA&FW)
Final Estimate of Production of Oilseeds & Commercial Crops

Dated : 25.09.2024
Source: DA&FW
Production in Lakh Tonnes

Crop	Season	Production										
		2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Groundnut	Kharif	80.58	59.30	53.68	60.48	75.95	53.87	83.89	85.28	84.34	85.62	86.60
	Rabi	16.56	14.71	13.66	14.14	16.57	13.40	15.63	17.16	17.01	11.03	7.55
	Summer	@	@	@	@	@	@	@	@	@	6.32	7.65
	Total	97.14	74.02	67.33	74.62	92.53	67.27	99.52	102.44	101.35	102.97	101.80
Castorseed	Kharif	17.27	18.70	17.52	13.76	15.68	11.97	18.42	16.47	16.19	19.80	19.59
Sesamum	Kharif	7.15	8.28	8.50	7.47	7.55	6.89	6.57	8.17	7.89	3.92	3.95
	Rabi	$	$	$	$	$	$	$	$	$	0.31	0.28
	Summer	$	$	$	$	$	$	$	$	$	3.79	4.24
	Total	7.15	8.28	8.50	7.47	7.55	6.89	6.57	8.17	7.89	8.02	8.47
Nigerseed	Kharif	0.98	0.76	0.74	0.85	0.70	0.45	0.41	0.42	0.33	0.29	0.27
Soybean	Kharif	118.61	103.74	85.70	131.59	109.33	132.68	112.26	126.10	129.87	149.85	130.62
Sunflower	Kharif	1.54	1.11	0.66	0.98	0.85	0.90	0.92	0.78	1.11	2.04	0.60
	Rabi	3.50	3.23	2.30	1.53	1.37	1.26	1.21	1.51	1.39	1.17	0.74
	Summer	@	@	@	@	@	@	@	@	@	0.43	0.39
	Total	5.04	4.34	2.96	2.51	2.22	2.16	2.13	2.28	2.50	3.63	1.73
Rapeseed & Mustard	Rabi	78.77	62.82	67.97	79.17	84.30	92.56	91.24	102.10	119.63	126.43	132.59
Linseed	Rabi	1.42	1.55	1.25	1.84	1.74	0.99	1.21	1.11	1.26	1.67	1.13
Safflower	Rabi	1.13	0.90	0.53	0.94	0.55	0.25	0.44	0.36	0.61	0.90	0.50
Total Oil Seeds	Kharif	226.12	191.89	166.80	215.13	210.06	206.76	222.47	237.23	239.72	261.50	241.62
	Rabi	101.38	83.22	85.71	97.62	104.53	108.46	109.72	122.24	139.91	141.51	142.78
	Summer	@	@	@	@	@	@	@	@	@	10.54	12.29
	Total	327.49	275.11	252.51	312.76	314.59	315.22	332.19	359.46	379.63	413.55	396.69
Sugarcane	Kharif	3521.42	3623.33	3484.48	3060.69	3799.05	4054.16	3705.00	4053.99	4394.25	4905.33	4531.58
Cotton #	Kharif	359.02	348.05	300.05	325.77	328.05	280.42	360.65	352.48	311.18	336.60	325.22
Jute ##	Kharif	110.83	106.18	99.40	104.32	95.91	94.97	94.46	89.53	97.62	89.89	92.52
Mesta ##	Kharif	6.07	5.08	5.83	5.30	4.42	3.23	4.31	4.02	3.87	4.03	4.41
Jute & Mesta ##	Kharif	116.90	111.26	105.24	109.62	100.33	98.20	98.77	93.54	101.49	93.92	96.92

@ Included in Rabi, $ Included in Kharif
# Cotton Production in Lakh Bales, 1Bale=170 Kg
Jute & Mesta Production in Lakh Bales, 1Bale=180 Kg

Source: Agricultural Statistics at a Glance (2023)

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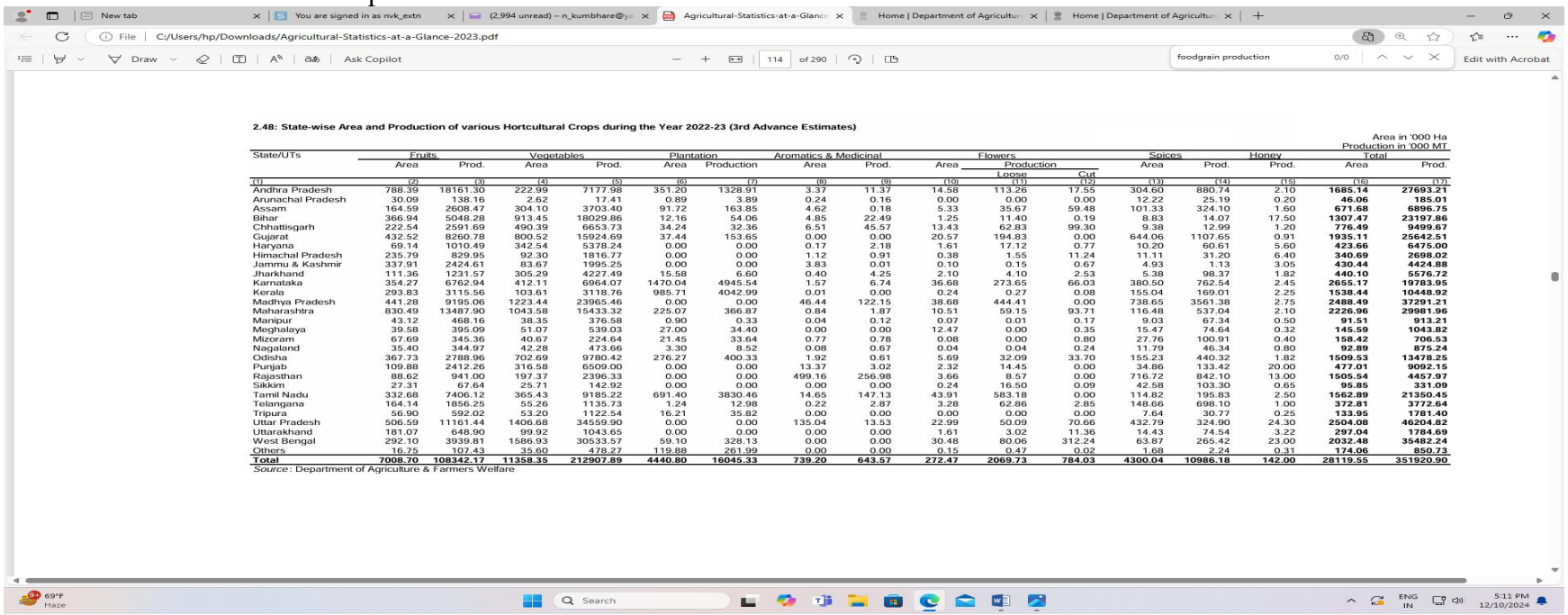
Annexure-IV

Production of Horticultural Crops



2.48: State-wise Area and Production of various Hortcultural Crops during the Year 2022-23 (3rd Advance Estimates)

Area in '000 Ha
Production in '000 MT

State/UTs	Fruits		Vegetables		Plantation		Aromatics & Medicinal		Flowers			Spices		Honey	Total	
	Area	Prod.	Area	Prod.	Area	Production	Area	Prod.	Area	Production		Area	Prod.	Prod.	Area	Prod.
										Loose	Cut					
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
Andhra Pradesh	788.39	18161.30	222.99	7177.98	351.20	1328.91	3.37	11.37	14.58	113.26	17.55	304.60	880.74	2.10	**1685.14**	**27693.21**
Arunachal Pradesh	30.09	138.16	2.62	17.41	0.89	3.89	0.24	0.16	0.00	0.00	0.00	12.22	25.19	0.20	**46.06**	**185.01**
Assam	164.59	2608.47	304.10	3703.40	91.72	163.85	4.62	0.18	5.33	35.67	59.48	101.33	324.10	1.60	**671.68**	**6896.75**
Bihar	366.94	5048.28	913.45	18029.86	12.16	54.06	4.85	22.49	1.25	11.40	0.19	8.83	14.07	17.50	**1307.47**	**23197.86**
Chhattisgarh	222.54	2591.69	490.39	6653.73	34.24	32.36	6.51	45.57	13.43	62.83	99.30	9.38	12.99	1.20	**776.49**	**9499.67**
Gujarat	432.52	8260.78	800.52	15924.69	37.44	153.65	0.00	0.00	20.57	194.83	0.00	644.06	1107.65	0.91	**1935.11**	**25642.51**
Haryana	69.14	1010.49	342.54	5378.24	0.00	0.00	0.17	2.18	1.61	17.12	0.77	10.20	60.61	5.60	**423.66**	**6475.00**
Himachal Pradesh	235.79	829.95	92.30	1816.77	0.00	0.00	1.12	0.91	0.38	1.55	11.24	11.11	31.20	6.40	**340.69**	**2698.02**
Jammu & Kashmir	337.91	2424.61	83.67	1995.25	0.00	0.00	3.83	0.01	0.10	0.15	0.67	4.93	1.13	3.05	**430.44**	**4424.88**
Jharkhand	111.36	1231.57	305.29	4227.49	15.58	6.60	0.40	4.25	2.10	4.10	2.53	5.38	98.37	1.82	**440.10**	**5576.72**
Karnataka	354.27	6762.94	412.11	6964.07	1470.04	4945.54	1.57	6.74	36.68	273.65	66.03	380.50	762.54	2.45	**2655.17**	**19783.95**
Kerala	293.83	3115.56	103.61	3118.76	985.71	4042.99	0.01	0.00	0.24	0.27	0.08	155.04	169.01	2.25	**1538.44**	**10448.92**
Madhya Pradesh	441.28	9195.06	1223.44	23965.46	0.00	0.00	46.44	122.15	38.68	444.41	0.00	738.65	3561.38	2.75	**2488.49**	**37291.21**
Maharashtra	830.49	13487.90	1043.58	15433.32	225.07	366.87	0.84	1.87	10.51	59.15	93.71	116.48	537.04	2.10	**2226.96**	**29981.96**
Manipur	43.12	468.16	38.35	376.58	0.90	0.33	0.04	0.12	0.07	0.01	0.17	9.03	67.34	0.50	**91.51**	**913.21**
Meghalaya	39.58	395.09	51.07	539.03	27.00	34.40	0.00	0.00	12.47	0.00	0.35	15.47	74.64	0.32	**145.59**	**1043.82**
Mizoram	67.69	345.36	40.67	224.64	21.45	33.64	0.77	0.78	0.08	0.00	0.80	27.76	100.91	0.40	**158.42**	**706.53**
Nagaland	35.40	344.97	42.28	473.66	3.30	8.52	0.08	0.67	0.04	0.04	0.24	11.79	46.34	0.80	**92.89**	**875.24**
Odisha	367.73	2788.96	702.69	9780.42	276.27	400.33	1.92	0.61	5.69	32.09	33.70	155.23	440.32	1.82	**1509.53**	**13478.25**
Punjab	109.88	2412.26	316.58	6509.00	0.00	0.00	13.37	3.02	2.32	14.45	0.00	34.86	133.42	20.00	**477.01**	**9092.15**
Rajasthan	88.62	941.00	197.37	2396.33	0.00	0.00	499.16	256.98	3.66	8.57	0.00	716.72	842.10	13.00	**1505.54**	**4457.97**
Sikkim	27.31	67.64	25.71	142.92	0.00	0.00	0.00	0.00	0.24	16.50	0.09	42.58	103.30	0.65	**95.85**	**331.09**
Tamil Nadu	332.68	7406.12	365.43	9185.22	691.40	3830.46	14.65	147.13	43.91	583.18	0.00	114.82	195.83	2.50	**1562.89**	**21350.45**
Telangana	164.14	1856.25	55.26	1135.73	1.24	12.98	0.22	2.87	3.28	62.86	2.85	148.66	698.10	1.00	**372.81**	**3772.64**
Tripura	56.90	592.02	53.20	1122.54	16.21	35.82	0.00	0.00	0.00	0.00	0.00	7.64	30.77	0.25	**133.95**	**1781.40**
Uttar Pradesh	506.59	11161.44	1406.68	34559.90	0.00	0.00	135.04	13.53	22.99	50.09	70.66	432.79	324.90	24.30	**2504.08**	**46204.82**
Uttarakhand	181.07	648.90	99.92	1043.65	0.00	0.00	0.00	0.00	1.61	3.02	11.36	14.43	74.54	3.22	**297.04**	**1784.69**
West Bengal	292.10	3939.81	1586.93	30533.57	59.10	328.13	0.00	0.00	30.48	80.06	312.24	63.87	265.42	23.00	**2032.48**	**35482.24**
Others	16.75	107.43	35.60	478.27	119.88	261.99	0.00	0.00	0.15	0.47	0.02	1.68	2.24	0.31	**174.06**	**850.73**
Total	**7008.70**	**108342.17**	**11358.35**	**212907.89**	**4440.80**	**16045.33**	**739.20**	**643.57**	**272.47**	**2069.73**	**784.03**	**4300.04**	**10986.18**	**142.00**	**28119.55**	**351920.90**

Source: Department of Agriculture & Farmers Welfare

Source: Agricultural Statistics at a Glance (2023)

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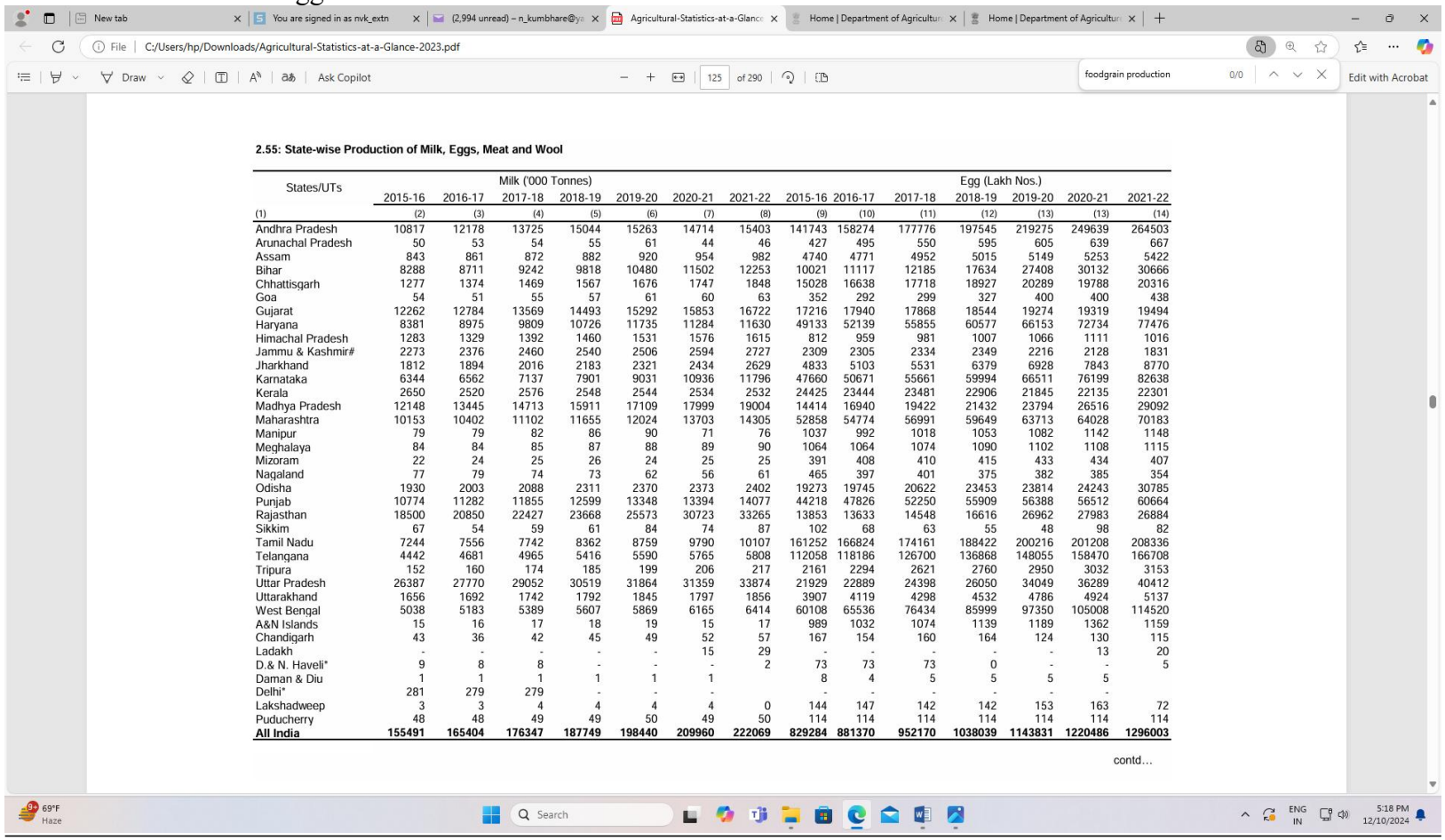
Annexure-V (a)

Production of Milk and Eggs



2.55: State-wise Production of Milk, Eggs, Meat and Wool

States/UTs	Milk ('000 Tonnes)							Egg (Lakh Nos.)						
	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(13)	(14)
Andhra Pradesh	10817	12178	13725	15044	15263	14714	15403	141743	158274	177776	197545	219275	249639	264503
Arunachal Pradesh	50	53	54	55	61	44	46	427	495	550	595	605	639	667
Assam	843	861	872	882	920	954	982	4740	4771	4952	5015	5149	5253	5422
Bihar	8288	8711	9242	9818	10480	11502	12253	10021	11117	12185	17634	27408	30132	30666
Chhattisgarh	1277	1374	1469	1567	1676	1747	1848	15028	16638	17718	18927	20289	19788	20316
Goa	54	51	55	57	61	60	63	352	292	299	327	400	400	438
Gujarat	12262	12784	13569	14493	15292	15853	16722	17216	17940	17868	18544	19274	19319	19494
Haryana	8381	8975	9809	10726	11735	11284	11630	49133	52139	55855	60577	66153	72734	77476
Himachal Pradesh	1283	1329	1392	1460	1531	1576	1615	812	959	981	1007	1066	1111	1016
Jammu & Kashmir#	2273	2376	2460	2540	2506	2594	2727	2309	2305	2334	2349	2216	2128	1831
Jharkhand	1812	1894	2016	2183	2321	2434	2629	4833	5103	5531	6379	6928	7843	8770
Karnataka	6344	6562	7137	7901	9031	10936	11796	47660	50671	55661	59994	66511	76199	82638
Kerala	2650	2520	2576	2548	2544	2534	2532	24425	23444	23481	22906	21845	22135	22301
Madhya Pradesh	12148	13445	14713	15911	17109	17999	19004	14414	16940	19422	21432	23794	26516	29092
Maharashtra	10153	10402	11102	11655	12024	13703	14305	52858	54774	56991	59649	63713	64028	70183
Manipur	79	79	82	86	90	71	76	1037	992	1018	1053	1082	1142	1148
Meghalaya	84	84	85	87	88	89	90	1064	1064	1074	1090	1102	1108	1115
Mizoram	22	24	25	26	24	25	25	391	408	410	415	433	434	407
Nagaland	77	79	74	73	62	56	61	465	397	401	375	382	385	354
Odisha	1930	2003	2088	2311	2370	2373	2402	19273	19745	20622	23453	23814	24243	30785
Punjab	10774	11282	11855	12599	13348	13394	14077	44218	47826	52250	55909	56388	56512	60664
Rajasthan	18500	20850	22427	23668	25573	30723	33265	13853	13633	14548	16616	26962	27983	26884
Sikkim	67	54	59	61	84	74	87	102	68	63	55	48	98	82
Tamil Nadu	7244	7556	7742	8362	8759	9790	10107	161252	166824	174161	188422	200216	201208	208336
Telangana	4442	4681	4965	5416	5590	5765	5808	112058	118186	126700	136868	148055	158470	166708
Tripura	152	160	174	185	199	206	217	2161	2294	2621	2760	2950	3032	3153
Uttar Pradesh	26387	27770	29052	30519	31864	31359	33874	21929	22889	24398	26050	34049	36289	40412
Uttarakhand	1656	1692	1742	1792	1845	1797	1856	3907	4119	4298	4532	4786	4924	5137
West Bengal	5038	5183	5389	5607	5869	6165	6414	60108	65536	76434	85999	97350	105008	114520
A&N Islands	15	16	17	18	19	15	17	989	1032	1074	1139	1189	1362	1159
Chandigarh	43	36	42	45	49	52	57	167	154	160	164	124	130	115
Ladakh	-	-	-	-	-	15	29	-	-	-	-	-	13	20
D.& N. Haveli*	9	8	8	-	-	-	2	73	73	73	0	-	-	5
Daman & Diu	1	1	1	1	1	1		8	4	5	5	5	5	
Delhi*	281	279	279	-	-	-		-	-	-	-	-	-	
Lakshadweep	3	3	4	4	4	4	0	144	147	142	142	153	163	72
Puducherry	48	48	49	49	50	49	50	114	114	114	114	114	114	114
All India	**155491**	**165404**	**176347**	**187749**	**198440**	**209960**	**222069**	**829284**	**881370**	**952170**	**1038039**	**1143831**	**1220486**	**1296003**

contd...

Source: Agricultural Statistics at a Glance (2023)

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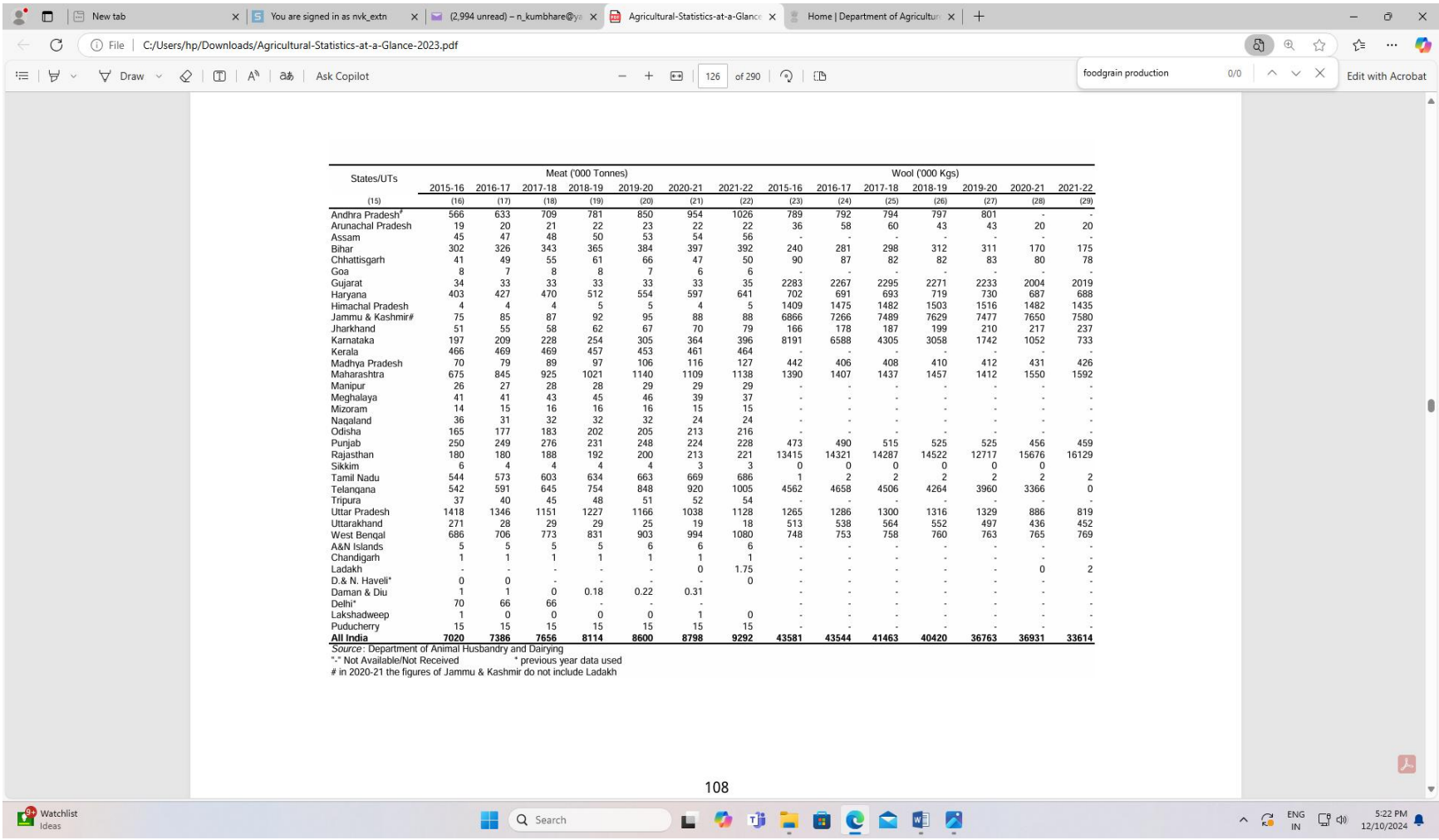
Annexure-V(b)

Production of Meat and Wool



States/UTs	Meat ('000 Tonnes)							Wool ('000 Kgs)						
	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)
Andhra Pradesh#	566	633	709	781	850	954	1026	789	792	794	797	801	-	-
Arunachal Pradesh	19	20	21	22	23	22	22	36	58	60	43	43	20	20
Assam	45	47	48	50	53	54	56	-	-	-	-	-	-	-
Bihar	302	326	343	365	384	397	392	240	281	298	312	311	170	175
Chhattisgarh	41	49	55	61	66	47	50	90	87	82	82	83	80	78
Goa	8	7	8	8	7	6	6	-	-	-	-	-	-	-
Gujarat	34	33	33	33	33	33	35	2283	2267	2295	2271	2233	2004	2019
Haryana	403	427	470	512	554	597	641	702	691	693	719	730	687	688
Himachal Pradesh	4	4	4	5	5	4	5	1409	1475	1482	1503	1516	1482	1435
Jammu & Kashmir#	75	85	87	92	95	88	88	6866	7266	7489	7629	7477	7650	7580
Jharkhand	51	55	58	62	67	70	79	166	178	187	199	210	217	237
Karnataka	197	209	228	254	305	364	396	8191	6588	4305	3058	1742	1052	733
Kerala	466	469	469	457	453	461	464	-	-	-	-	-	-	-
Madhya Pradesh	70	79	89	97	106	116	127	442	406	408	410	412	431	426
Maharashtra	675	845	925	1021	1140	1109	1138	1390	1407	1437	1457	1412	1550	1592
Manipur	26	27	28	28	29	29	29	-	-	-	-	-	-	-
Meghalaya	41	41	43	45	46	39	37	-	-	-	-	-	-	-
Mizoram	14	15	16	16	16	15	15	-	-	-	-	-	-	-
Nagaland	36	31	32	32	32	24	24	-	-	-	-	-	-	-
Odisha	165	177	183	202	205	213	216	-	-	-	-	-	-	-
Punjab	250	249	276	231	248	224	228	473	490	515	525	525	456	459
Rajasthan	180	180	188	192	200	213	221	13415	14321	14287	14522	12717	15676	16129
Sikkim	6	4	4	4	4	3	3	0	0	0	0	0	0	
Tamil Nadu	544	573	603	634	663	669	686	1	2	2	2	2	2	2
Telangana	542	591	645	754	848	920	1005	4562	4658	4506	4264	3960	3366	0
Tripura	37	40	45	48	51	52	54	-	-	-	-	-	-	-
Uttar Pradesh	1418	1346	1151	1227	1166	1038	1128	1265	1286	1300	1316	1329	886	819
Uttarakhand	271	28	29	29	25	19	18	513	538	564	552	497	436	452
West Bengal	686	706	773	831	903	994	1080	748	753	758	760	763	765	769
A&N Islands	5	5	5	5	6	6	6	-	-	-	-	-	-	-
Chandigarh	1	1	1	1	1	1	1	-	-	-	-	-	-	-
Ladakh	-	-	-	-	-	0	1.75	-	-	-	-	-	0	2
D.& N. Haveli*	0	0	-	-	-	-	0	-	-	-	-	-	-	-
Daman & Diu	1	1	0	0.18	0.22	0.31		-	-	-	-	-	-	-
Delhi*	70	66	66	-	-	-		-	-	-	-	-	-	-
Lakshadweep	1	0	0	0	0	1	0	-	-	-	-	-	-	-
Puducherry	15	15	15	15	15	15	15	-	-	-	-	-	-	-
All India	**7020**	**7386**	**7656**	**8114**	**8600**	**8798**	**9292**	**43581**	**43544**	**41463**	**40420**	**36763**	**36931**	**33614**

Source: Department of Animal Husbandry and Dairying
"-" Not Available/Not Received * previous year data used
in 2020-21 the figures of Jammu & Kashmir do not include Ladakh

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Source: Agricultural Statistics at a Glance (2023)

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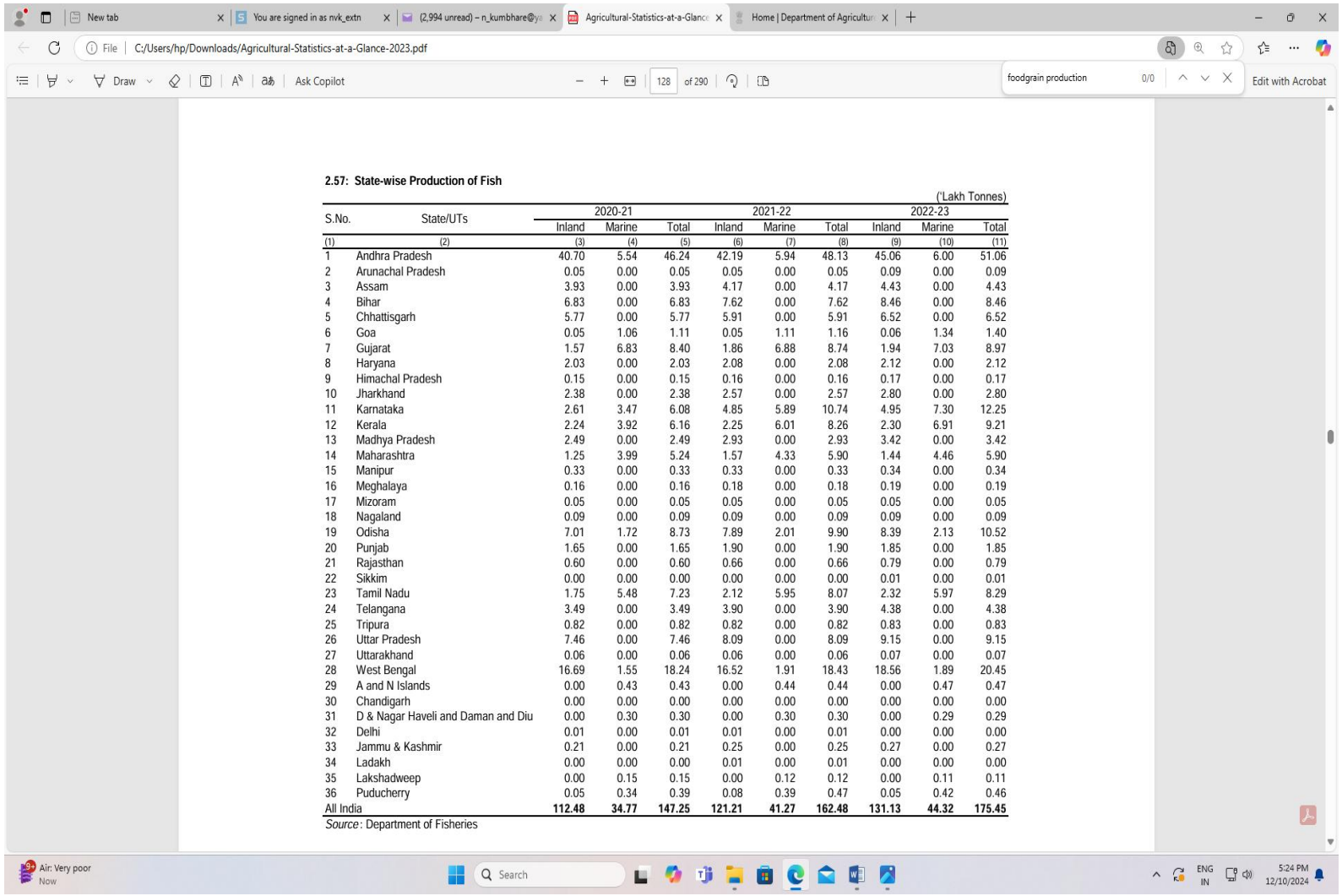
Annexure-VI

Production of Fish



2.57: State-wise Production of Fish

('Lakh Tonnes)

S.No.	State/UTs	2020-21			2021-22			2022-23		
		Inland	Marine	Total	Inland	Marine	Total	Inland	Marine	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1	Andhra Pradesh	40.70	5.54	46.24	42.19	5.94	48.13	45.06	6.00	51.06
2	Arunachal Pradesh	0.05	0.00	0.05	0.05	0.00	0.05	0.09	0.00	0.09
3	Assam	3.93	0.00	3.93	4.17	0.00	4.17	4.43	0.00	4.43
4	Bihar	6.83	0.00	6.83	7.62	0.00	7.62	8.46	0.00	8.46
5	Chhattisgarh	5.77	0.00	5.77	5.91	0.00	5.91	6.52	0.00	6.52
6	Goa	0.05	1.06	1.11	0.05	1.11	1.16	0.06	1.34	1.40
7	Gujarat	1.57	6.83	8.40	1.86	6.88	8.74	1.94	7.03	8.97
8	Haryana	2.03	0.00	2.03	2.08	0.00	2.08	2.12	0.00	2.12
9	Himachal Pradesh	0.15	0.00	0.15	0.16	0.00	0.16	0.17	0.00	0.17
10	Jharkhand	2.38	0.00	2.38	2.57	0.00	2.57	2.80	0.00	2.80
11	Karnataka	2.61	3.47	6.08	4.85	5.89	10.74	4.95	7.30	12.25
12	Kerala	2.24	3.92	6.16	2.25	6.01	8.26	2.30	6.91	9.21
13	Madhya Pradesh	2.49	0.00	2.49	2.93	0.00	2.93	3.42	0.00	3.42
14	Maharashtra	1.25	3.99	5.24	1.57	4.33	5.90	1.44	4.46	5.90
15	Manipur	0.33	0.00	0.33	0.33	0.00	0.33	0.34	0.00	0.34
16	Meghalaya	0.16	0.00	0.16	0.18	0.00	0.18	0.19	0.00	0.19
17	Mizoram	0.05	0.00	0.05	0.05	0.00	0.05	0.05	0.00	0.05
18	Nagaland	0.09	0.00	0.09	0.09	0.00	0.09	0.09	0.00	0.09
19	Odisha	7.01	1.72	8.73	7.89	2.01	9.90	8.39	2.13	10.52
20	Punjab	1.65	0.00	1.65	1.90	0.00	1.90	1.85	0.00	1.85
21	Rajasthan	0.60	0.00	0.60	0.66	0.00	0.66	0.79	0.00	0.79
22	Sikkim	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01
23	Tamil Nadu	1.75	5.48	7.23	2.12	5.95	8.07	2.32	5.97	8.29
24	Telangana	3.49	0.00	3.49	3.90	0.00	3.90	4.38	0.00	4.38
25	Tripura	0.82	0.00	0.82	0.82	0.00	0.82	0.83	0.00	0.83
26	Uttar Pradesh	7.46	0.00	7.46	8.09	0.00	8.09	9.15	0.00	9.15
27	Uttarakhand	0.06	0.00	0.06	0.06	0.00	0.06	0.07	0.00	0.07
28	West Bengal	16.69	1.55	18.24	16.52	1.91	18.43	18.56	1.89	20.45
29	A and N Islands	0.00	0.43	0.43	0.00	0.44	0.44	0.00	0.47	0.47
30	Chandigarh	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
31	D & Nagar Haveli and Daman and Diu	0.00	0.30	0.30	0.00	0.30	0.30	0.00	0.29	0.29
32	Delhi	0.01	0.00	0.01	0.01	0.00	0.01	0.00	0.00	0.00
33	Jammu & Kashmir	0.21	0.00	0.21	0.25	0.00	0.25	0.27	0.00	0.27
34	Ladakh	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00
35	Lakshadweep	0.00	0.15	0.15	0.00	0.12	0.12	0.00	0.11	0.11
36	Puducherry	0.05	0.34	0.39	0.08	0.39	0.47	0.05	0.42	0.46
All India		**112.48**	**34.77**	**147.25**	**121.21**	**41.27**	**162.48**	**131.13**	**44.32**	**175.45**

Source: Department of Fisheries

Source: Agricultural Statistics at a Glance (2023)

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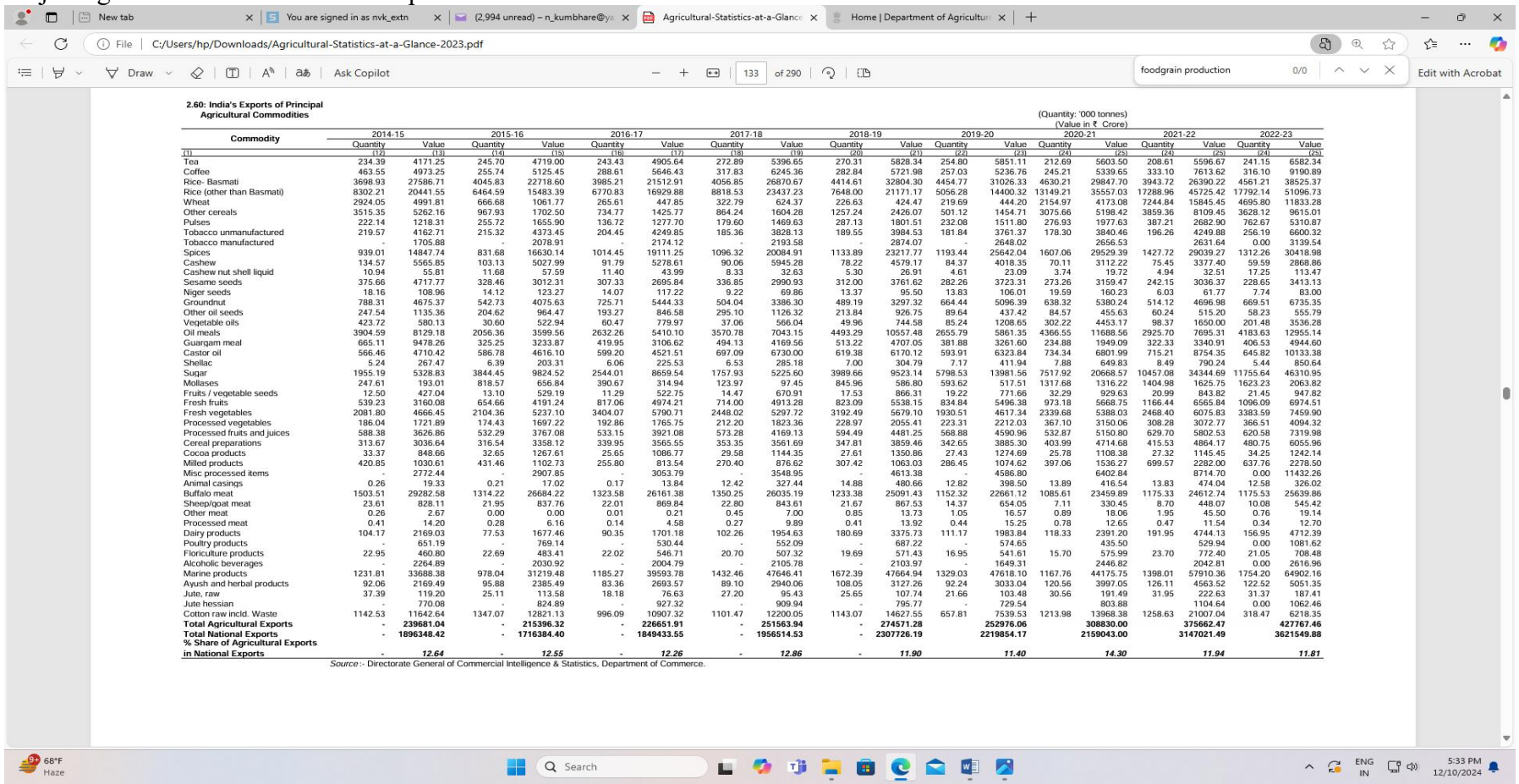
Annexure-VII

Major Agricultural Commodities -Export Status



2.60: India's Exports of Principal Agricultural Commodities

(Quantity: '000 tonnes)
(Value in ₹ Crore)

Commodity	2014-15		2015-16		2016-17		2017-18		2018-19		2019-20		2020-21		2021-22		2022-23	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
(1)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(24)	(25)	(24)	(25)
Tea	234.39	4171.25	245.70	4719.00	243.43	4905.64	272.89	5396.65	270.31	5828.34	254.80	5851.11	212.69	5603.50	208.61	5596.67	241.15	6582.34
Coffee	463.55	4973.25	255.74	5125.45	288.61	5646.43	317.83	6245.36	282.84	5721.98	257.03	5236.76	245.21	5339.65	333.10	7613.62	316.10	9190.89
Rice- Basmati	3698.93	27586.71	4045.83	22718.60	3985.21	21512.91	4056.85	26870.67	4414.61	32804.30	4454.77	31026.33	4630.21	29847.70	3943.72	26390.22	4561.21	38525.37
Rice (other than Basmati)	8302.21	20441.55	6464.59	15483.39	6770.83	16929.88	8818.53	23437.23	7648.00	21171.17	5056.28	14400.32	13149.21	35557.03	17288.96	45725.42	17792.14	51096.73
Wheat	2924.05	4991.81	666.68	1061.77	265.61	447.85	322.79	624.37	226.63	424.47	219.69	444.20	2154.97	4173.08	7244.84	15845.45	4695.80	11833.28
Other cereals	3515.35	5262.16	967.93	1702.50	734.77	1425.77	864.24	1604.28	1257.24	2426.07	501.12	1454.71	3075.66	5198.42	3859.36	8109.45	3628.12	9615.01
Pulses	222.14	1218.31	255.72	1655.90	136.72	1277.70	179.60	1469.63	287.13	1801.51	232.08	1511.80	276.93	1977.63	387.21	2682.90	762.67	5310.87
Tobacco unmanufactured	219.57	4162.71	215.32	4373.45	204.45	4249.85	185.36	3828.13	189.55	3984.53	181.84	3761.37	178.30	3840.46	196.26	4249.88	256.19	6600.32
Tobacco manufactured	-	1705.88	-	2078.91	-	2174.12	-	2193.58	-	2874.07	-	2648.02		2656.53		2631.64	0.00	3139.54
Spices	939.01	14847.74	831.68	16630.14	1014.45	19111.25	1096.32	20084.91	1133.89	23217.77	1193.44	25642.04	1607.06	29529.39	1427.72	29039.27	1312.26	30418.98
Cashew	134.57	5565.85	103.13	5027.99	91.79	5278.61	90.06	5945.28	78.22	4579.17	84.37	4018.35	70.11	3112.22	75.45	3377.40	59.59	2868.86
Cashew nut shell liquid	10.94	55.81	11.68	57.59	11.40	43.99	8.33	32.63	5.30	26.91	4.61	23.09	3.74	19.72	4.94	32.51	17.25	113.47
Sesame seeds	375.66	4717.77	328.46	3012.31	307.33	2695.84	336.85	2990.93	312.00	3761.62	282.26	3723.31	273.26	3159.47	242.15	3036.37	228.65	3413.13
Niger seeds	18.16	108.96	14.12	123.27	14.07	117.22	9.22	69.86	13.37	95.50	13.83	106.01	19.59	160.23	6.03	61.77	7.74	83.00
Groundnut	788.31	4675.37	542.73	4075.63	725.71	5444.33	504.04	3386.30	489.19	3297.32	664.44	5096.39	638.32	5380.24	514.12	4696.98	669.51	6735.35
Other oil seeds	247.54	1135.36	204.62	964.47	193.27	846.58	295.10	1126.32	213.84	926.75	89.64	437.42	84.57	455.63	60.24	515.20	58.23	555.79
Vegetable oils	423.72	580.13	30.60	522.94	60.47	779.97	37.06	566.04	49.96	744.58	85.24	1208.65	302.22	4453.17	98.37	1650.00	201.48	3536.28
Oil meals	3904.59	8129.18	2056.36	3599.56	2632.26	5410.10	3570.78	7043.15	4493.29	10557.48	2655.79	5861.35	4366.55	11688.56	2925.70	7695.31	4183.63	12955.14
Guargam meal	665.11	9478.26	325.25	3233.87	419.95	3106.62	494.13	4169.56	513.22	4707.05	381.88	3261.60	234.88	1949.09	322.33	3340.91	406.53	4944.60
Castor oil	566.46	4710.42	586.78	4616.10	599.20	4521.51	697.09	6730.00	619.38	6170.12	593.91	6323.84	734.34	6801.99	715.21	8754.35	645.82	10133.38
Shellac	5.24	267.47	6.39	203.31	6.06	225.53	6.53	285.18	7.00	304.79	7.17	411.94	7.88	649.83	8.49	790.24	5.44	850.64
Sugar	1955.19	5328.83	3844.45	9824.52	2544.01	8659.54	1757.93	5225.60	3989.66	9523.14	5798.53	13981.56	7517.92	20668.57	10457.08	34344.69	11755.64	46310.95
Molasses	247.61	193.01	818.57	656.84	390.67	314.94	123.97	97.45	845.96	586.80	593.62	517.51	1317.68	1316.22	1404.98	1625.75	1623.23	2063.82
Fruits / vegetable seeds	12.50	427.04	13.10	529.19	11.29	522.75	14.47	670.91	17.53	866.31	19.22	771.66	32.29	929.63	20.99	843.82	21.45	947.82
Fresh fruits	539.23	3160.08	654.66	4191.24	817.06	4974.21	714.00	4913.28	823.09	5538.15	834.84	5496.38	973.18	5668.75	1166.44	6565.84	1096.09	6974.51
Fresh vegetables	2081.80	4666.45	2104.36	5237.10	3404.07	5790.71	2448.02	5297.72	3192.49	5679.10	1930.51	4617.34	2339.68	5388.03	2468.40	6075.83	3383.59	7459.90
Processed vegetables	186.04	1721.89	174.43	1697.22	192.86	1765.75	212.20	1823.36	228.97	2055.41	223.31	2212.03	367.10	3150.06	308.28	3072.77	366.51	4094.32
Processed fruits and juices	588.38	3626.86	532.29	3767.08	533.15	3921.08	573.28	4169.13	594.49	4481.25	568.88	4590.96	532.87	5150.80	629.70	5802.53	620.58	7319.98
Cereal preparations	313.67	3036.64	316.54	3358.12	339.95	3565.55	353.35	3561.69	347.81	3859.46	342.65	3885.30	403.99	4714.68	415.53	4864.17	480.75	6055.96
Cocoa products	33.37	848.66	32.65	1267.61	25.65	1086.77	29.58	1144.35	27.61	1350.86	27.43	1274.69	25.78	1108.38	27.32	1145.45	34.25	1242.14
Milled products	420.85	1030.61	431.46	1102.73	255.80	813.54	270.40	876.62	307.42	1063.03	286.45	1074.62	397.06	1536.27	699.57	2282.00	637.76	2278.50
Misc processed items	-	2772.44	-	2907.85	-	3053.79	-	3548.95	-	4613.38	-	4586.80		6402.84		8714.70	0.00	11432.26
Animal casings	0.26	19.33	0.21	17.02	0.17	13.84	12.42	327.44	14.88	480.66	12.82	398.50	13.89	416.54	13.83	474.04	12.58	326.02
Buffalo meat	1503.51	29282.58	1314.22	26684.22	1323.58	26161.38	1350.25	26035.19	1233.38	25091.43	1152.32	22661.12	1085.61	23459.89	1175.33	24612.74	1175.53	25639.86
Sheep/goat meat	23.61	828.11	21.95	837.76	22.01	869.84	22.80	843.61	21.67	867.53	14.37	654.05	7.11	330.45	8.70	448.07	10.08	545.42
Other meat	0.26	2.67	0.00	0.00	0.01	0.21	0.45	7.00	0.85	13.73	1.05	16.57	0.89	18.06	1.95	45.50	0.76	19.14
Processed meat	0.41	14.20	0.28	6.16	0.14	4.58	0.27	9.89	0.41	13.92	0.44	15.25	0.78	12.65	0.47	11.54	0.34	12.70
Dairy products	104.17	2169.03	77.53	1677.46	90.35	1701.18	102.26	1954.63	180.69	3375.73	111.17	1983.84	118.33	2391.20	191.95	4744.13	156.95	4712.39
Poultry products	-	651.19	-	769.14	-	530.44	-	552.09	-	687.22	-	574.65		435.50		529.94	0.00	1081.62
Floriculture products	22.95	460.80	22.69	483.41	22.02	546.71	20.70	507.32	19.69	571.43	16.95	541.61	15.70	575.99	23.70	772.40	21.05	708.48
Alcoholic beverages	-	2264.89	-	2030.92	-	2004.79	-	2105.78	-	2103.97	-	1649.31		2446.82		2042.81	0.00	2616.96
Marine products	1231.81	33688.38	978.04	31219.48	1185.27	39593.78	1432.46	47646.41	1672.39	47664.94	1329.03	47618.10	1167.76	44175.75	1398.01	57910.36	1754.20	64902.16
Ayush and herbal products	92.06	2169.49	95.88	2385.49	83.36	2693.57	89.10	2940.06	108.05	3127.26	92.24	3033.04	120.56	3997.05	126.11	4563.52	122.52	5051.35
Jute, raw	37.39	119.20	25.11	113.58	18.18	76.63	27.20	95.43	25.65	107.74	21.66	103.48	30.56	191.49	31.95	222.63	31.37	187.41
Jute hessian	-	770.08	-	824.89	-	927.32	-	909.94	-	795.77	-	729.54		803.88		1104.64	0.00	1062.46
Cotton raw incld. Waste	1142.53	11642.64	1347.07	12821.13	996.09	10907.32	1101.47	12200.05	1143.07	14627.55	657.81	7539.53	1213.98	13968.38	1258.63	21007.04	318.47	6218.35
Total Agricultural Exports	**-**	**239681.04**	**-**	**215396.32**	**-**	**226651.91**	**-**	**251563.94**	**-**	**274571.28**		**252976.06**		**308830.00**		**375662.47**		**427767.46**
Total National Exports	**-**	**1896348.42**	**-**	**1716384.40**	**-**	**1849433.55**	**-**	**1956514.53**	**-**	**2307726.19**		**2219854.17**		**2159043.00**		**3147021.49**		**3621549.88**
% Share of Agricultural Exports in National Exports	**-**	***12.64***	**-**	***12.55***	**-**	***12.26***	**-**	***12.86***	**-**	***11.90***		***11.40***		***14.30***		***11.94***		***11.81***

Source:- Directorate General of Commercial Intelligence & Statistics, Department of Commerce.

Source: Agricultural Statistics at a Glance (2023)

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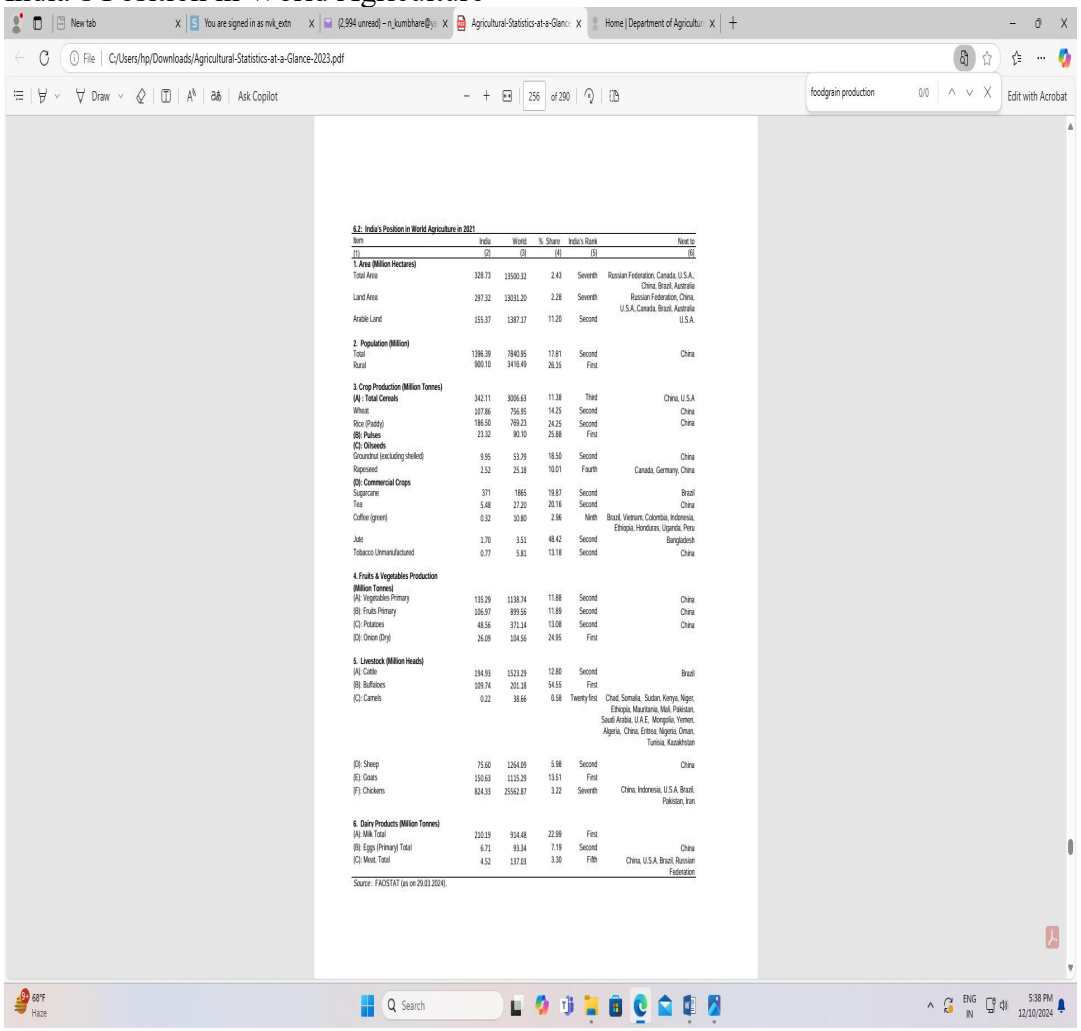
Annexure-VIII

India’s Position in World Agriculture



6.2: India's Position in World Agriculture in 2021

Item	India	World	% Share	India's Rank	Next to
(1)	(2)	(3)	(4)	(5)	(6)
1. Area (Million Hectares)					
Total Area	328.73	13500.32	2.43	Seventh	Russian Federation, Canada, U.S.A., China, Brazil, Australia
Land Area	297.32	13031.20	2.28	Seventh	Russian Federation, China, U.S.A, Canada, Brazil, Australia
Arable Land	155.37	1387.17	11.20	Second	U.S.A.
2. Population (Million)					
Total	1386.39	7840.95	17.81	Second	China
Rural	900.10	3416.49	26.35	First	
3. Crop Production (Million Tonnes)					
(A) : Total Cereals	342.11	3006.63	11.38	Third	China, U.S.A
Wheat	107.86	756.95	14.25	Second	China
Rice (Paddy)	186.50	769.23	24.25	Second	China
(B): Pulses	23.32	90.10	25.88	First	
(C): Oilseeds					
Groundnut (excluding shelled)	9.95	53.79	18.50	Second	China
Rapeseed	2.52	25.18	10.01	Fourth	Canada, Germany, China
(D): Commercial Crops					
Sugarcane	371	1865	19.87	Second	Brazil
Tea	5.48	27.20	20.16	Second	China
Coffee (green)	0.32	10.80	2.96	Ninth	Brazil, Vietnam, Colombia, Indonesia, Ethiopia, Honduras, Uganda, Peru
Jute	1.70	3.51	48.42	Second	Bangladesh
Tobacco Unmanufactured	0.77	5.81	13.18	Second	China
4. Fruits & Vegetables Production (Million Tonnes)					
(A): Vegetables Primary	135.29	1138.74	11.88	Second	China
(B): Fruits Primary	106.97	899.56	11.89	Second	China
(C): Potatoes	48.56	371.14	13.08	Second	China
(D): Onion (Dry)	26.09	104.56	24.95	First	
5. Livestock (Million Heads)					
(A): Cattle	194.93	1523.29	12.80	Second	Brazil
(B): Buffaloes	109.74	201.18	54.55	First	
(C): Camels	0.22	38.66	0.58	Twenty-first	Chad, Somalia, Sudan, Kenya, Niger, Ethiopia, Mauritania, Mali, Pakistan, Saudi Arabia, U.A.E, Mongolia, Yemen, Algeria, China, Eritrea, Nigeria, Oman, Tunisia, Kazakhstan
(D): Sheep	75.60	1264.09	5.98	Second	China
(E): Goats	150.63	1115.29	13.51	First	
(F): Chickens	824.33	25562.87	3.22	Seventh	China, Indonesia, U.S.A, Brazil, Pakistan, Iran
6. Dairy Products (Million Tonnes)					
(A): Milk Total	210.19	934.48	22.99	First	
(B): Eggs (Primary) Total	6.71	93.34	7.19	Second	China
(C): Meat, Total	4.52	137.03	3.30	Fifth	China, U.S.A, Brazil, Russian Federation

Source: FAOSTAT (as on 29.03.2024).

Source: Agricultural Statistics at a Glance (2023)

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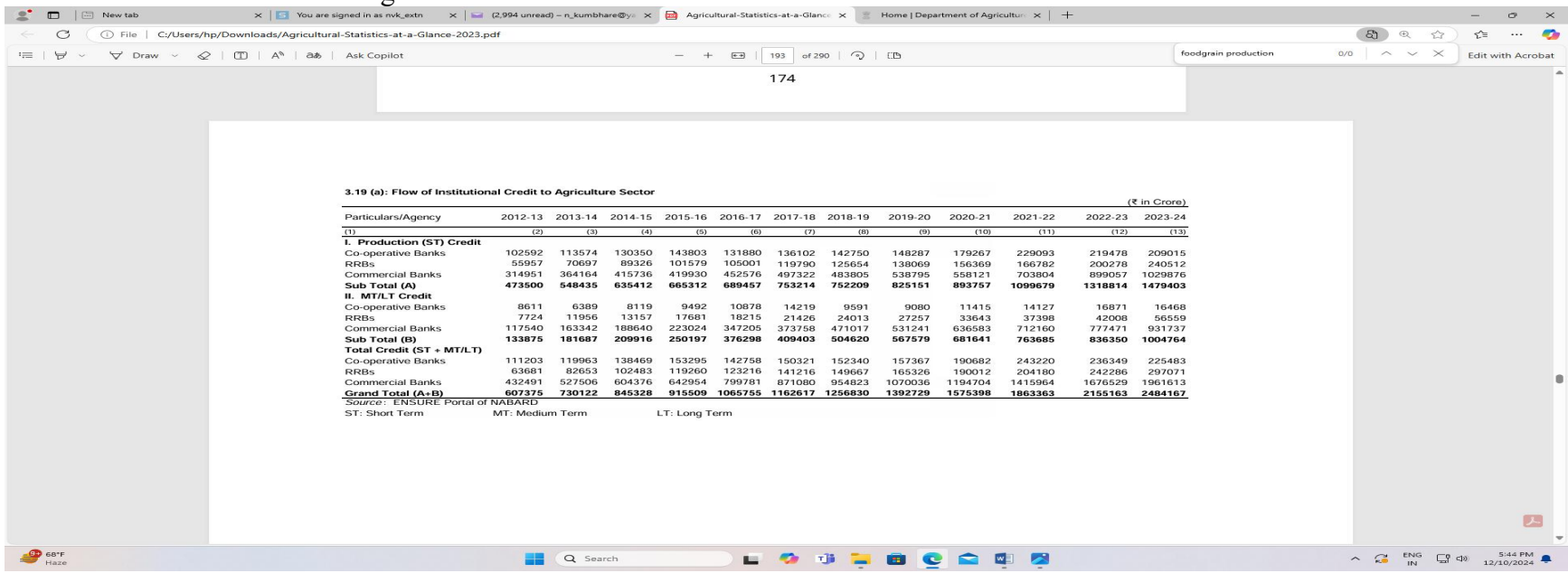
Annexure-IX

Flow of Institutional Credit to Agriculture Sector



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3.19 (a): Flow of Institutional Credit to Agriculture Sector

(₹ in Crore)

Particulars/Agency	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
I. Production (ST) Credit												
Co-operative Banks	102592	113574	130350	143803	131880	136102	142750	148287	179267	229093	219478	209015
RRBs	55957	70697	89326	101579	105001	119790	125654	138069	156369	166782	200278	240512
Commercial Banks	314951	364164	415736	419930	452576	497322	483805	538795	558121	703804	899057	1029876
Sub Total (A)	**473500**	**548435**	**635412**	**665312**	**689457**	**753214**	**752209**	**825151**	**893757**	**1099679**	**1318814**	**1479403**
II. MT/LT Credit												
Co-operative Banks	8611	6389	8119	9492	10878	14219	9591	9080	11415	14127	16871	16468
RRBs	7724	11956	13157	17681	18215	21426	24013	27257	33643	37398	42008	56559
Commercial Banks	117540	163342	188640	223024	347205	373758	471017	531241	636583	712160	777471	931737
Sub Total (B)	**133875**	**181687**	**209916**	**250197**	**376298**	**409403**	**504620**	**567579**	**681641**	**763685**	**836350**	**1004764**
Total Credit (ST + MT/LT)												
Co-operative Banks	111203	119963	138469	153295	142758	150321	152340	157367	190682	243220	236349	225483
RRBs	63681	82653	102483	119260	123216	141216	149667	165326	190012	204180	242286	297071
Commercial Banks	432491	527506	604376	642954	799781	871080	954823	1070036	1194704	1415964	1676529	1961613
Grand Total (A+B)	**607375**	**730122**	**845328**	**915509**	**1065755**	**1162617**	**1256830**	**1392729**	**1575398**	**1863363**	**2155163**	**2484167**

Source : ENSURE Portal of NABARD

ST: Short Term MT: Medium Term LT: Long Term

Source: Agricultural Statistics at a Glance (2023)

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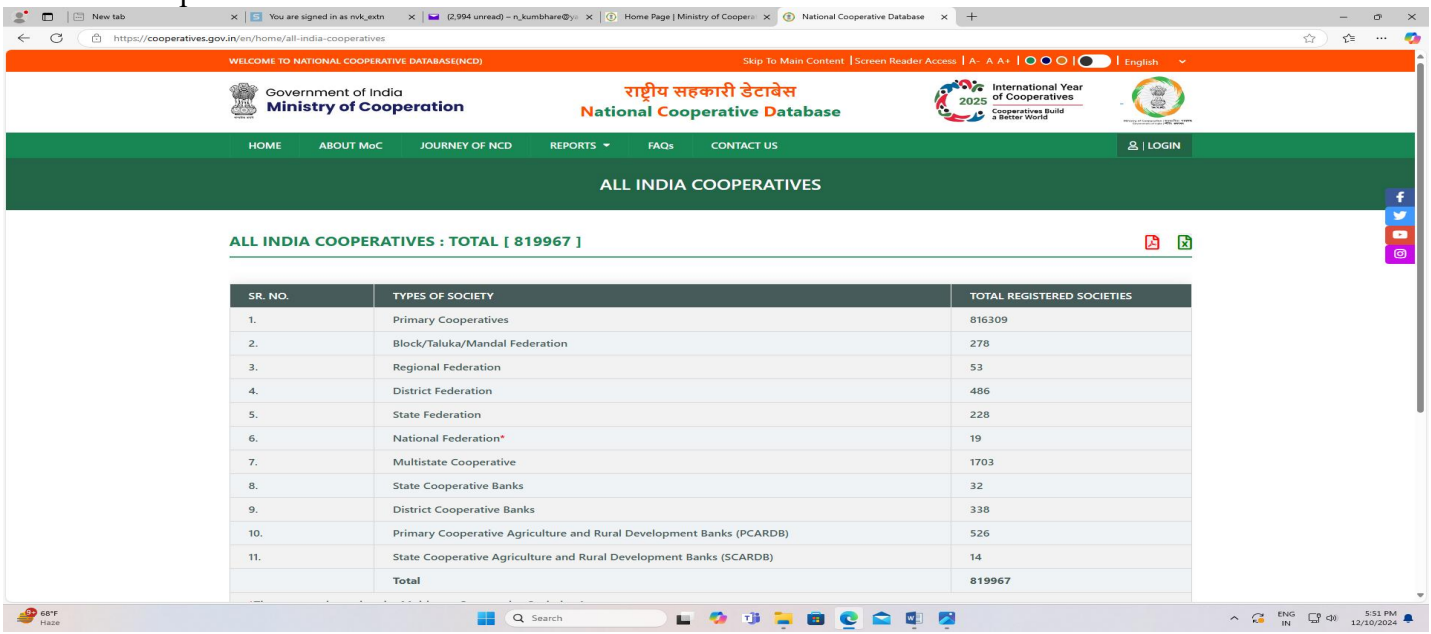
Annexure-X

All India Cooperative Societies



SR. NO.	TYPES OF SOCIETY	TOTAL REGISTERED SOCIETIES
1.	Primary Cooperatives	816309
2.	Block/Taluka/Mandal Federation	278
3.	Regional Federation	53
4.	District Federation	486
5.	State Federation	228
6.	National Federation*	19
7.	Multistate Cooperative	1703
8.	State Cooperative Banks	32
9.	District Cooperative Banks	338
10.	Primary Cooperative Agriculture and Rural Development Banks (PCARDB)	526
11.	State Cooperative Agriculture and Rural Development Banks (SCARDB)	14
	Total	**819967**

Source: Ministry of Cooperation, Govt. of India

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Annexure- XI

Details of KVK Evaluation Studies and Their Key Findings/Observations

1. High Power Committee (2012-13) Headed By Dr. R. S. Paroda, Former DG ICAR & Secretary, DARE

In view of the new activities suggested for Krishi Vigyan Kendras, with enhanced manpower, through a cluster approach, the operational contingency/expenses of Krishi Vigyan Kendras should be increased from the present level of 9% to 25% of KVK budget. Krishi Vigyan Kendras should concentrate more on data generation, need assessment, prioritization for required technological intervention, on farm and outreach activities with focus on cluster of villages in a phased manner for 3 years and assessing the impact against benchmark.

Sectoral designation of KVK viz. Pashu Vigyan Kendra, Matshya Vigyan Kendra, etc. should not be allowed as KVK has to work on Integrated Farming System mode and the farmers as well as other stakeholders have to be provided technology backstopping rather in a holistic manner. The provision of ICAR be supplemented appropriately by the host organizations to ensure proper KVK infrastructure in such a way that the farm is a miniature of the agro climatic situation of the district with major crops and enterprises. To inculcate ownership and sense of belongingness, effective involvement and investment in the activities of KVKs should come from the top leadership of host organization. Also, there is need to generate goodwill among the farming community towards the KVK by promoting interfaces in different blocks and villages of the district.

2. High Level Committee on KVKs (2015) Headed by JNL Srivastava, Former Secretary Agriculture.

KVK is a unique institution in agriculture, which has transformed itself from original mandate of training of farmers, to technology validation, assessment, refinement and now proposed to function as Knowledge Resource Centers and further take up the task of capacity development. The performance of KVKs has been significant as science-based institution at the district level as the source 23 of refined technologies, demonstration of proven technologies, supply of critical inputs and thus enhancing farm productivity and income. KVKs have also been able to contribute for augmenting production in agriculture and allied sectors by developing synergy with the line departments. The contribution in reaching the unreached as carriers of frontier agricultural technologies in difficult and risk prone areas including tribal, hilly and resource poor areas is praiseworthy.

3. Doubling Farmer Income (DFI) Committee Headed by Dr. Ashok Dalwai, Chairman DFI.

KVK has facilities and hires Subject Matter Specialists (SMS) to actively implement mandated activities i.e. technology assessment, refinement and frontline extension. Besides, each KVK is in possession of about 50 acres of land. This provides ample opportunity for Agri-business

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activities on a Public Private Partnership (PPP) mode, supported by KVK by providing space and technical support, whereas production, processing and marketing is done by Agri-preneurs. A profit-sharing arrangement between KVK and Agri-preneurs, can be agreed to. This system ensures income generating activity in the vicinity of KVK which is demonstration in itself, augmenting financial resources for KVK and, most importantly, providing additional extension service to farmers for enhancing the income. Activities such as custom hiring, milk chilling unit, nursery, bio-fertilizer, bio-pesticide, honey processing, fish fingerlings production, processing etc., can be taken in PPP mode. This may be initiated on pilot basis in selected 50 KVKs representing all States including A&N Islands and ATARI Zones. The major activity of KVKs is Technology Assessment and Refinement (TAR) which refers to the process or a set of activities undertaken before taking up new scientific discovery or innovation for its dissemination in a new productive system. It is seen that the situation prevailing at farm condition differs from that of experimental condition under which the scientist develops technologies resulting in performance gap. Therefore, the technologies need to be evaluated/ assessed and refined in terms of specific needs, opportunities and constraints faced by the farmers in different production systems. The reasons for conducting TAR in farmers' field are to find out whether the technologies and farming practices are economically viable, operationally feasible, stable in production, matching with the farmers needs and compatible with the farmers overall farming systems. KVKs have to reorient their focus on acclimatization of technologies to the local situations, rather than mainstream extension work, and may have to provide technical backstopping support to public and private extension functionaries of the District.

4. KVK Impact on Dissemination of Improved Practices and Technologies by National Institute of Labor Economics Research and Development (NILERD) – 2015

On the Efficacy of the services, the study has observed that the KVK is doing only frontline extension activities and it may not reach out larger percentage of the farming community. KVKs are responding well to requests from farmers for information. However, response in dealing with the requests relating to demonstrations is to the extent of only 40%. KVKs carry out the activities as per the broad guidelines for adopting villages and keeping in mind the resources. It has come to the light that generally they cover the villages for their mandated activities in their close vicinity and the villages in remote and far flung areas remain uncovered.

About one fourth farmers covered were not aware of the existence of KVKs or their activities, especially those with low farm holding and low farm education. Farmers were generally being of the opinion that KVKs had a very limited outreach. This finding may be seen in the 24 contexts of KVK's mandate as they are only frontline demonstration system.

5. Evaluation of KVKs for Categorization into ABCD by NILERD, 2017

Comparison of KVKs under four Categories: There are some differences in the four groups of KVKs falling in four rankings i.e. A, B, C & D. These major differences were in weak infrastructure and poor outcomes. However, these differences were only in relative, and a very large percentage of KVKs got placed in A & B ranks and, only miniscule of 9% were in C&D ranks. It was worth noting that basic functions, mandates and scientific approach in terms of process and feedback support was not compromised in any of the KVKs across the ranks.

Need to strengthen Infrastructure of KVKs falling in C & D Categories: Infrastructure is the core of performance and it has direct consequences on the overall performance and directly impinging on the mandated activities. KVKs suffering from insufficient infrastructure are really handicapped to deliver their mandated activities. Around 40% of the KVKs are pushed back in terms of infrastructure. ICAR may thoroughly examine the bottlenecks and make concerted efforts to provide the required infrastructure.

6. KVK Impact on Dissemination of Improved Practices & Technologies (IFPRI Discussion Paper 01832-2015)

The paper examined the impact of access to India's Farm Science Centers (Krishi Vigyan Kendras, or KVKs) on agricultural households' welfare using household – level data from the nationally representative Situation Assessment Survey of Agricultural Households conducted by India's National Sample Survey Office in 2013.

Employing different matching techniques and endogenous switching regression models, it was found that KVKs have positive and statistically significant impact on agricultural households' economic welfare, although that impact is heterogeneous. Further, the investments made in expansion of India's network of KVKs have been quite remunerative, as the benefit to cost ratio of expenditure on KVKs ranges from 8 to 12. Moreover, our findings suggest that expanding rural formal credit markets and promoting literacy can maximize the potential impact of KVKs on the economic welfare of an agricultural households.

7. Direct and Spill Over Effects of Agricultural Advisory Services (IFPRI Discussion Paper 01850 - 2019)

The study is based on primary survey of 1496 wheat farmers adopting HD 2967 modern wheat variety in Uttar Pradesh. Extend information flows are captured by: (a) farmers who visit frontline demonstration (FLD) sites by their own curiosity and are categorized as secondary beneficiary farmers, and (b) farmers who obtain information flows from primary and secondary beneficiaries being in their social network and are categorized as network beneficiary. Findings revealed that 3% of primary beneficiaries of FLDs can generate information spill over to 31% of farmers. For capacity building, the results showed that 3% primary beneficiaries can generate information spill-over of 27%farmers. From the policy perspective study suggests a scaling up KVK's interventions.

8. ISAP Report on KVK Evaluation Key Findings

It has been 45 years since the inception of ICAR's farm science center (KVK) initiative. All agricultural stakeholders have witnessed the growth of the KVK network, but not much attention has been given to 22 empirical evidence of its impact on famers' welfare. A significant positive impact of KVK access on farmers' economic welfare has been observed by empirical study (IFPRI, 2015) the results are consistent and robust in alternative econometric tools used in the study. However, the benefits of KVKs are heterogeneous and non-neutral to scale. This anomaly needs to be rectified, and efforts should be made to focus more on small and marginal landholding farmers. The ratio of return to expenditure on the KVK system is very high, ranging from 8 to 12. The findings underscore the success of KVKs in India by showing significant positive impacts and high return on expenditure. The treatment effect of access to a KVK also depends on specific household characteristics such as formal credit access, education level, household size, age, and land size. The consistent positive and significant impact of formal credit access on these outcome indicators implies that expanding rural financial markets can maximize the potential impact of KVK access on agricultural household welfare. It is also pointed out that the beneficial impact of KVK access is stronger for better educated agricultural households.

These differential impacts suggest a significant policy implication: expansion of rural financial markets and literacy would reinforce the positive impacts of KVK services. Given that ICAR is spending a substantial share of its resources of the KVK model of extension, the need for

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continuous refinement of its outreach strategies cannot be overemphasized

Annexure XII

Institutions/Organisations in Agri and Allied Sectors Providing Extension Support

S. No.	Institutions/ Organisation Name	Address
1	National Institute of Agricultural Extension Management	MANAGE, Rajendranagar, Hyderabad - 500 030, Telangana
2	National Institute of Agricultural Marketing (NIAM)	Bambala, Kota Road, Jaipur-302033 (Rajasthan) · 0141-2795132
3	Vaikunth Mehta National Institute of Cooperative Management (VAMNICOM)	SAVITRIBAI PHULE PUNE UNIVERSITY, Road, near Chatursingi Temple, Ganeshkhind, Pune, Maharashtra 411007
4	National Institute of Plant Health Management (NIPHM)	Rajendranagar, Hyderabad - 500 030 (Telangana) INDIA Ph: 040-24013346
5	National Institute of Rural Development and Panchayati Raj (NIRD)	Rajendranagar, Hyderabad - 500030, T.S, INDIA | Phone: 91-40-24008526
6	National Dairy Development Board (NDDB)	National Dairy Development Board PB No. 40 Anand, Gujrat- 388 001 Telephone: 91-2692-260148,
7	National Fisheries Development Board (NFDB)	Fish Building, Near Pillar No: 235, PVNR Expressway, SVP National Police Academy, Hyderabad-500 052 Phone: 040-24000177/201
8	Tea Board of India	14, B. T. M. Sarani (Brabourne Road), Kolkata - 700 001
9	Coffee Board of India	Ministry of Commerce and Industry P.B. No. 5366, Bangaluru-560 001
10	Coconut Development Board	P.B. No.1021, Kera Bhavan, SRV Road (Near SRV High School), Kochi – 682 011, Ernakulam District, Kerala State,

		India
11	Cashew Export Promotion Council of India (CEPC).	Cashew Bhawan, Mundakkal West, Kollan 691001, Kerala, India
12	Tobacco Board of India	OBACCO BOARD, G.T. Road, Srinivasarao Thota GUNTER-522 004 Andhra Pradesh
13	National Bee Board (NBB)	"B" Wing, IInd Floor, Janpath Bhawan, Janpath, New Delhi-110001.
14	National Horticulture Board (NHB)	Plot No. 85, Institutional Area, Sector 18, Gurugram, Sarhol, Haryana 122015
15	Agricultural and Processed Food Products Export Development Authority (APEDA)	3rd Floor, NCUI Building 3, Siri Institutional Area, August Kranti Marg, opp. Asiad Village, New Delhi, Delhi 110016
16	National Bank for Agriculture and Rural Development (NABARD)	Plot No. C, 2nd Floor, 'D' Wing C-24, 'G' Block, 24, Bandra Kurla Complex Rd, G Block BKC, Bandra East, Mumbai, Maharashtra 400051
16	Bankers Institute of Rural Development (BIRD)	Kanpur - Lucknow Rd, Sector H, LDA Colony, Lucknow, Uttar Pradesh 226012
17	Central Silk Board (CSB)	Central Silk Board, CSB Complex, B.T.M. Layout, Madivala, Hosur Road, Bangalore – 560 068, Karnataka State. INDIA
18	National Institute of Food Technology Entrepreneurship and Management (NIFTEM)	97, Niftem Rd, HSIIDC, Industrial Estate, Kundli, Sonipat, Haryana 131028
19	Central Food Technological Research Institute (CFTRI)	Central Food Technological Research Institute (CFTRI)Ministry of Science & Technology, Govt. of India, Mysuru - 570 020
20	National Institute of Food Technology, Entrepreneurship and Management, Thanjavur (NIFTEM-T)	Pudukkottai Road, Thanjavur - 613 005, Tamil Nadu, India.
21	Central Farm Machinery Training & Testing Institute	Tractor Nagar Colony, Budhni, Madhya Pradesh 466445
22	Northern Region Farm Machinery Training & Testing Institute	NH9, Hisar, Haryana 125001
23	Southern Region Farm Machinery Training & Testing Institute	Tractor Nagar, PO: Garladinne-515731, District-Anantapur (Andhra Pradesh)
24	North Eastern Region Farm Machinery Training & Testing Institutes	P553+H38, Biswanath Chariali, Assam 784176

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Annexure - XIII

List of State Agricultural Management & Extension Training Institutes (SAMETIs)

S. No.	State	Name of the Institute & Address
1.	Andhra Pradesh	Director, SAMETI Government of Andhra Pradesh D.No:130-281, Sri Nilayam Complex, 2nd line, Sai Nath Colony, Inner Ring Road, Gorantla, Guntur - 522034 (Andhra Pradesh) Mobile : 8331056002 Email:sametidirector@gmail.com
2.	Assam	Director, SAMETI Directorate of Agriculture Krishi Bhavan, Khanapara Guwahati – 781022 (ASSAM) Mob-9435868072 Email:sametiassam2021@gmail.com
3.	Bihar	Director , BAMETI PO Sahay Nagar, Jagdeo Path Near CPRS, Opp. Women Polytechnic Post B.V. College Patna – 800014 (BIHAR) Mob:9472121021 Email: diragri-bih@nic.in, bameti.bihar@gmail.com,
4.	Chhattisgarh	Director, SAMETI Labhandi Raipur – 492001 (CHATTISGARH) Email: diagricg.cg@nic.in, Mob-9826427966(Dhurandhar)-DD
5.	Gujarat	Director, SAMETI P-7, M-Floor, Krishi Bhawan Sector 10-A Gandhi Nagar – 382010 (GUJARAT) Mob.-9408137926 Email: sameti.gujarat@gmail.com
6.	Haryana	Director, HAMETI District Jind, Rohtak Road Bypass Rohtak – 126102 (HARYANA) Email: taatmaharyana@gmail.com
7.	Himachal Pradesh	Director, SAMETI, Mashobra, Shimla,

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		Himachal Pradesh-171007 Ph. No. 0177-2740280,2740240, Mobile No. -9418080287 Email:himsameti@gmail.com
8.	Jharkhand	Director (SAMETI), Jharkhand, Ranchi Krishi Bhavan, Lakshmi Nivas, Kanke Road Ranchi – 834001 (JHARKHAND) Email-id: sametijharkhand@rediffmail.com Mobile No. : - 8210977085
9.	Jammu & Kashmir	Director Extension Education & Director-SAMETI Sher-e-Kashmir University of Agril. Sciences & Technology of Kashmir (SKUAST-K) Shalimar, Srinagar – 191121 Director (Extn.) Sher-e-Kashmir University of Agril. Sciences & Technology of Kashmir (SKUAST-K) Chatha, P.O.Bhour Chatha Jammu – 181019 Email: diragrijammu-jk@jk.gov.in; cssdaj-jammu@jk.gov.in
10.	Karnataka	Director (SAMETI) & Director of Extension, Staff Training Unit University of Agril. Sciences (UAS), GKVK Campus Bengaluru–560024 (KARNATAKA) Email-id: deuasbangalore@gmail.com sameti.south@gmail.com Mobile No: 9844055836 Phone No: 080-23638883 Director (SAMETI) & Director of Extension, University of Agricultural Sciences (UAS) Krishinagar, Dharwad – 580005 (KARNATAKA) Email-id: deuasd@rediffmail.com de@uasd.in sametinorth@gmail.com Mobile No: 9481448157 Phone No: 0836-2447494.
11.	Kerala	Director SAMETI Department of Agriculture Government of Kerala Venpalavottom Agri. Wholesale Market Compound

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		Anayara P.O. Thiruvananthapuram–695029 (KERALA) Email: nodalatmakerala@gmail.com Mobile-94477 63776-Asha
12.	Madhya Pradesh	Director (Incharge) State Institute of Agricultural Extension & Training (SIAET) Department of Farmer Welfare and Agriculture Development, Barkhedikalan, Bhadbhada Road Bhopal - 462008 (MADHYA PRADESH) Email-siaetbhopal@gmail.com Mobile : 9993310582
13.	Maharashtra	Director Vasantrao Naik State Agril. Extn. Mgt. Trg. Institute (VANAMATI) 63/1, Civil Lines, VIP Road, Dharmpeth Nagpur – 440001 (MAHARASHTRA) Email: diratmams@gmail.com, commagricell@gmail.com Mob-94230 09492-Dashrath Tambhole
14.	Manipur	Director - SAMETI O/o Director SAMETI Department of Manipur Imphal – 795001 (MANIPUR) Email: dir.sametimanipur@gmail.com
15.	Nagaland	Director, SAMETI Mezdiphema District Medziphema – 797106,NAGALAND Contact no: 9436830791 Email: sameti.nagaland@gmail.com
16.	Odisha	Director, SAMETI, Mobile : 9435321155 / 7002459039 Director Instt. of Mgt. of Agril. Extn. (IMAGE) Siripur, Bhubaneswar – 751003 (ODISHA) Email: imagebbsr@rediffmail.com Mobile -87630 39171(Suvash)
17.	Puducherry	Programme -Co-ordinator-cum-Director Perunthalaivar Kamaraj Krishi Vigyan Kendra, Kurumbapet Puducherry – 605009 Mobile-9442238513 Email id: pkkvk.py@gov.in
18.	Punjab	Director, PAMETI PAU Campus, Opposite SBI Ludhiana – 141004 (PUNJAB)

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		Email: pametiludhiana@gmail.com Mobile: 98729-13253 Tel. 0161-2770059
19.	Rajasthan	Director State Instt. Of Agri. Mgt. (SIAM) Durgapura Jaipur – 302018 (RAJASTHAN) Mob-9928291020 Email: directorsametiatma@gmail.com
20.	Sikkim	Director, SAMETI Government of Sikkim Gangtok – 737102 (SIKKIM) Email:sikkimsameti2020@gmail.com
21.	Tripura	Director, T- SAMETI Address: T-SAMETI, Lembucherra, West Tripura, Pin 7997t0 Phone No,: 9436139291 Email ld : tsameti.govt@gmail.com Mob-82570 19142-Jui Ray
22.	Telangana	Director ATMA (SAMETI) Mobile No:7288894796 telanganaatma@gmail.com Old Malakpeth Hyderabad (Telangana)-5000036 Email: Statenodalofficeratma@gmail.com
23.	Uttar Pradesh	Director, State Institute for Management of Agriculture (SIMA), Rehmankhera, P.O Kakori, Distt. Lucknow, Uttar Pradesh. 0522-2841013, (M) 9415322558; 7839882055 sametiup@gmail.com
24.	Uttarakhand	Director, Extension Education & G.B. Pant University of Agr. & Tech. District-Udham Singh Nagar Uttarakhand. Tel- 05944-233336 Email-direxteduqbp@gmail.com Mob- 7500241561
25.	West Bengal	Director, SAMETI Agricultural Training Centre Rama Krishna Mission Narendrapore, 24 Parganas (South) Kolkata – 700103 (WEST BENGAL) Email: sametiwbrkm@gmail.com
26.	Tamil Nadu	Director, SAMETI Government of Tamil Nadu

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		Kudumiyanmalai, Vayalogam (PO) Pudukkottai-622104 Mobile : 9787705025 Email: tnsameti@gmail.com
27.	Arunachal Pradesh	Director, SAMETI Government of Arunachal Pradesh Nahalagun – 791110 (ARUNACHAL PRADESH) Email: krishiarun06@yahoo.co.in, idarnyori2013@gmail.com
28.	Andaman & Nicobar	Project Director – ATMA Directorate of Agriculture HADDO, Port Blair – 744192 (ANDAMAN & NICOBAR ISLANDS) Email:pdatma.andaman@gmail.com
29.	Mizoram	Director SAMETI, Mizoram, Agriculture Complex Tuikual Complex, Aizawl-796001(Mizoram) Mobile: +919862158446 e-mail: mametimizoram@gmail.com
30.	Goa	Director, SAMETI Directorate of Agriculture Government of Goa Vidhyut Bhavan Panaji – 403001 (GOA) Email: dir-agri.goa@nic.in,
31.	Meghalaya	Director MAMETI 6th Mile, Upper Shillong, Agriculture Farm Pin Code-793009 Mobile 9436103899 Email-mametimeg@gmail.com

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Annexure - XIV

State wise details of FPOs under Central Sector Scheme for Formation and Promotion of 10,000 FPOs by SFAC as on 13-06-2024

S. No.	State Name	Allocated FPOs	Registered FPOs	Under Process of Registration
1	Andhra Pradesh	226	204	22
2	Arunachal Pradesh	39	38	1
3	Assam	177	175	2
4	Bihar	303	294	9
5	Chhattisgarh	69	67	2
6	Gujarat	136	131	5
7	Haryana	120	111	9
8	Himachal Pradesh	61	58	3
9	Jammu & Kashmir	142	135	7
10	Jharkhand	93	93	0
11	Karnataka	52	50	2
12	Kerala	45	44	1
13	Madhya Pradesh	335	328	7
14	Maharashtra	220	207	13
15	Manipur	9	9	0
16	Meghalaya	14	13	1
17	Mizoram	14	14	0
18	Nagaland	8	8	0
19	Odisha	158	151	7
20	Punjab	78	77	1
21	Rajasthan	221	218	3
22	Tamil Nadu	91	89	2
23	Telangana	120	113	7
24	Tripura	22	21	1
25	Uttar Pradesh	757	748	9
26	Uttarakhand	44	43	1
27	West Bengal	157	155	2
		3711	3594	117

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Annexure - XV

SHGs and their Members Social category wise

SN	State Name	Total No of SHGs	Minority Category wise Member					
			SC	ST	Minority	Others	Total Members	PWDs
	State Name							
1	ANDHRA PRADESH	8,45,296	17,42,700	5,51,274	11,955	60,73,907	83,79,836	2,38,192
2	ASSAM	3,50,305	3,76,358	6,73,419	12,02,016	15,80,475	38,32,268	6,414
3	BIHAR	9,82,004	24,217,564	2,11,212	11,04,013	60,68,393	98,11,182	9,622
4	CHHATTISGARH	2,62,362	3,28,677	10,99,041	17,426	12,45,386	26,90,530	1,03,454
5	GUJARAT	2,774,853	2,177,264	8,00,232	77,314	14,31,278	25,86,088	31,723
6	JHARKHAND	2,179,354	4,90,178	9,50,241	1,91,047	13,61,924	29,93,390	20,093
7	KARNATAKA	2,40,521	4,89,359	2,27, 497	1,36,467	17,08,198	25,61,521	98,981
8	KERALA	2,46,090	3,78,477	64,996	5,95,601	21,811,984	32,21,058	87,593
9	MADHYA PRADESH	4,61,556	9,84,380	18,59,631	83,019	22,87,324	52,14,354	70,610
10	MAHARASHTRA	6,08,612	7,74,734	8,72,086	2,12,486	39,74,961	58,34,267	99,414
11	ODISHA	5,32,190	9,47,465	12,06,097	84,692	29,117,058	51,55,312	80,055
12	RAJASTHAN	2,51,528	6,32,000	7,74,693	82,395	10,16,714	25,05,802	53,270
	Total	83,18,929	1,89,77,891	1,16,38,576	74,75,975	4,63,60,124	8,44,52,566	15,89,007
13	TAMIL NADU	2,97,734	9,52,836	60,002	1,33,230	21,29,572	32,75,640	2,74,767
14	TELANGANA	3,91,833	8,34,544	5,05,978	1,24,014	23,79,655	38,44,191	13,394
15	UTTAR PRADESH	17,67,505	27,883,476	92,192	5,12,516	47,04,122	80,92,306	2,172,537
16	WEST BENGAL	10,77,459	35,35,044	7,41,347	27,49,964	36,08,888	1,06,35,243	87,088
	Sub Total	78,69,202	1,79,55,056	1,06,89,938	73,18,155	44,66,98,39	8,06,32,988	15,47,207
	NORTH WEST STATES							
1	HARYANA	57,405	2,69,087	1,747	39,471	2,51,096	5,61,401	2,293
2	HIMACHAL PRADESH	41,578	1,00,268	17,031	2,955	2,11,614	3,31,868	1,942
3	JAMMU AND KASHMIR	82,822	81,053	54,744	3,218	4,99,180	6,38,195	3,705
4	PUNJAB	48,909	3,32,005	248	15,188	1,24,427	4,71,868	5,898
5	UTTARAKHAND	62,627	1,15,442	26,771	22,394	2,89,615	4,54,222	11,039
	Sub Total	2,93,341	8,97,855	1,00,541	83,226	13,75,932	24,57,554	24,877
	NORTH EAST STATES							
1	ARUNACHAL PRADESH	9,874	378	68,330	1,442	5,404	75,554	1,573
2	MANIPUR	10,800	4,404	38,483	9,715	54,837	1,07,439	521
3	MEGHALAYA	44,523	3,879	3,68,375	16,851	4,477	3,93,582	5,498
4	MIZORAM	8,796	75	62,127	10	26	62,238	852
5	NAGALAND	14,208	110	1,07,562	4	294	1,07,970	2,877
6	SIKKIM	5,728	3,050	18,741	5,495	22,251	49,537	690
7	TRIPURA	49,677	99,385	1,47,767	34,069	1,47,709	4,28,930	2,808
	Sub Total	1,43,606	1,11,281	8,11,385	67,586	2,34,998	12,25,250	14,819
	UNION TERRITORIES							
	Total	1,89,77,891	1,16,38,576	74,75,975	4,63,60,124	8,44,52,566	15,89,007	83,18,929
1	ANDAMAN AND NICOBAR	1,244	11	404	1,998	9,516	11,929	122
2	GOA	3,580	1,069	8,168	3,100	31,653	43,990	129
3	LADAKH	1,565	53	10,952	35	36	11,076	36
4	LAKSHADWEEP	341	4	3,836	27	-	3,867	97
5	PUDUCHERRY	4,506	12,185	217	1,823	36,338	50,563	1,644
6	THE DADRA AND NAGAR HAVELI AND DAMAN AND DIU	1,544	377	13,135	25	1,812	15,349	76
	Sub Total	12,780	13,699	36,712	7,008	179,355	1,36,774	2,104
	Total	83,18,929	1,89,77,891	1,16,38,576	74,75,975	4,63,60,124	8,44,52,566	15,89,007

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Annexure XVI

List of National Cooperatives

"National Cooperative Society" means a multi-state cooperative society, at present there are following 19 National cooperative societies which are mentioned below:

1.	National Federation of Fishermen's Cooperative Limited, New Delhi	http://fishcopfed.in
2.	NationalFederationofStateCooperative Bank Limited, Mumbai	https://nafscob.org
3.	NationalFederationofCooperativeSugar Factories Limited, New Delhi	https://coopsugar.org
4.	NationalCooperativeDairyFederationof India Limited, Anand	https://ncdfi.coop
5.	National Cooperative Consumer's Federation of India Limited, New Delhi	https://www.nccf-india.com
6.	NationalFederationofLabourCooperative Limited, New Delhi	http://labcofed.org
7.	NationalCooperativeHousingFederation Limited, New Delhi	https://www.nchfindia.net
8.	National Federation of Urban Cooperative Banks and Credit Societies Limited, New Delhi	https://www.nafcub.org
9.	TribalCooperativeMarketingDevelopment Federation of India Limited, New Delhi	https://trifed.tribal.gov.in
10.	NationalAgricultureCooperativeMarketing Federation of India Limited, New Delhi	https://www.nafed-india.com
11.	NationalCooperativeUnionofIndiaLimited, New Delhi	https://ncui.coop
12.	Krishak Bharati Cooperative Limited,New Delhi	https://kribhco.net

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13.	Indian Farmer's Fertilizer Cooperative Limited, New Delhi	https://www.iffco.in
14.	National Cooperative Organics Limited, Anand, Gujarat	https://ncol.coop
15.	Bhartiya Beej Sahakari Samiti Limited, New Delhi	https://sahakarbeej.in
16.	National Cooperative Exports Limited, New Delhi	https://ncel.coop
17.	National Cooperative Land Development Banks Federation Limited, Mumbai	
18.	All India Handloom Fabrics Marketing Cooperative Society Limited, New Delhi	
19.	All India FederationofCooperative Spinning Mills Limited, Mumbai	

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Annexure - XVII

IARI-ATIC in the Service of Farmers – A Case

Agricultural Technology Information Centre (ATIC)

Agricultural Technology Information Centre (ATIC) was established in 1999 at ICAR-IARI to serve as a '**Single Window Delivery System'** for the Institutes' products, services and technologies to the farmers/entrepreneurs etc. IARI being a premier institute in agricultural sector and located in the capital city, is frequently visited by a large number of farmers, extension workers, entrepreneurs, etc., from different parts of the country every year for inputs, services and advice. There is a lot of demand from farming community and urban visitors for Pusa seed of different seasonal crops varieties including vegetables kits. It is important that products, technologies and services are delivered directly from single window of the Institute to the ultimate users, so that they clearly understand and there is no scope of distortion of information. ATIC is playing crucial role of single window technology, information, advisory services over Pusa helpline, exposure visit of farmer, sale of Pusa seed, biofertilizers, farm literature etc. for the benefit of the farming community

Summary of Achievements:

Pusa Helpline: ATIC is effectively providing products, technologies and information services to the different stakeholders through a 'Single Window Delivery System'. Besides farm advisory services, farmers are given farm advice through Pusa Helpline (011-25841670, 25846233, 25841039 and 25803600-PRI line), Pusa *Agricom* 1800-11- 8989, exhibitions, farm literatures and letters. A IInd level of *Kisan Call Centre* (1800-180-1551) has also been established at ATIC to solve the problems/queries of farmers of Delhi and Rajasthan.

A total number of **5,895** farmers calls from 12 states were received and queries answered through Pusa *Agricom* (A toll free Helpline Number-1800-11-8989) Pusa Help-line (011-25841670, 25841039, 25846233, 25803600) and *Kisan Call Centre* 1800-180-1551 (IInd level) on various aspects of agriculture.

Advisory Services: Farm advisory services to **14,650** farmers and other stakeholders were provided at ATIC during the year. Visitors (farmers'/ farm women/ entrepreneurs/officials/ students) visited ATIC for exposure visit, seeking advisory services, purchase of Pusa seed, farm publication, biofertilizers and enquiry about training programme and also contacted over Pusa Helpline. Information & advisory needs of the visitors are also being catered through LED display boards, farm literature, information museum, plant clinic, farm library and exhibits related to agriculture implements, seed samples and bio-fertilizers displayed at the centre.

Pusa Seed and Publication sale: Pusa seeds of worth Rs.5,80,570/- and farm publication of Rs. 13,045/- have been sold to the farmers during the year.

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Crop *cafeteria*: Laid out live demonstrations in ATIC crop *cafeteria* of following crops and recently releases varieties of the Institute:

- **Wheat**: HD 3086, HD 3386, HD 3406, HD3388, HD 3385, HD 3390, HD 3410;
- **Paddy**: PSB 1850, PB 1718, PB 1885, PB 1985, PB 1882, PB 1947, PB 1979;
- **Mustard:** Pusa Mustard 28, Pusa Mustard 31;
- **Maize:** APQH-5 and Pusa Super Sweetcorn-2;
- **Pigeonpea:** Pusa Arhar 16;
- **Summer vegetables**: Brinjal var. Pusa Uttam and Pusa Ankur; Okra var. Pusa A-5; Cowpea var. Pusa Dharni; Sponge gourd var. Pusa Sneha; Bottle Gourd var. Pusa Naveen; Chilli Var. Pusa Sadabahar; Amaranthus var. Pusa Kiran.
- **Winter vegetables:** demonstrations of Cauliflower var. Pusa Hybrid -2; *Broccoli* (KTS- 1); Radish (Pusa Hybrid -1, Pusa Chetki); Beet (Crimson globe); *Knol Khol* (White Vienna); Tomato (Pusa Rakshit); Onion (Pusa red); Methi (PEB; Sem var. Pusa Garima; Palak (Pusa Bharti, All Green); Vegetable mustard (Pusa Sag 1); Pea (Pusa Shree); Faba Bean/*Bankla* (Pusa Udit); Coriander (Pusa Selection-1); and Carrot (Pusa Rudhira).
- **Nutri-garden**: 25 winter & summer vegetable varieties and small fruit orchard (guava, mango, *ber, kinnow*) were demonstrated for the visiting farmers.
- **Herbal garden:** For awareness of farmers and visitors, herbal block has been developed in crop *cafeteria* which includes medicinal plants of Aloevera, Ashwagandha, Satavar, Coleus, Giloe, Mushkdana, Sadabahar, Mint, Tulsi (Basil), Lemon grass, Java Citronella and Turmeric etc.

Publication of *Prasar Doot*: Four issues of Hindi farm magazine *Prasar Doot* have been published by the Centre during the reporting period. Besides, about 250 farmers queries on farm advisory services were given through e-mails during the period. ATIC is providing a mechanism for getting direct feedback from the technology users to the technology generators.

Feedback and linkages: The feedback of farmers on different technologies collected at ATIC, which provides a ground for need based technologies. The ATIC has also developed functional linkages with various agencies working for the farming community to effectively cater the information needs of the different stakeholders. Centre has developed linkages with KVKs, State Line departments, SAUs, ICAR Institutes, Farmers Producer Organizations due to exposure visits of students and farmers at IARI.

Pusa Agri *Krishi Haat*: Pusa Agri *Krishi Haat* an innovative model of a direct marketing platform of 60 shops has been created by IARI for the farmers to sell their agri-products directly to the consumers. It is an initiative of the Institute to empower and facilitate the agri-preneurs as well as Farmer Producer Organizations (FPOs), farmers and farm women in marketing of their fresh as well as value added farm products through direct linkages with urban consumers. The *Haat* has been made operational from April 2023 for the benefit of the

farmers and urban consumers. Various promotional activities and programmes like Yoga programme, Vegetables Gardeners Exhibition, Diwali Mela etc. were organized for popularization of Pusa Agri *Krishi Haat* among urban consumers.

Number of scientists who participated in scientific meetings etc.

i) In India

a.	Seminars/conference	:	Scientist	: 02
			Technical Officer	: 01
b.	Scientific meetings	:	Scientist	: 10
			Technical Officer	: 02
c.	Workshops	:	Scientist	:00
			Technical Officer	: 00
d.	Trainings	:	Scientist	: 01
			Technical Officer	: 02

Number of Publications

A)	Research / Symposia papers	: 02
B)	Books/ Chapter in books (in training manuals)	: 01
C)	Technical bulletins:	: 01
D)	Popular Articles	: 04
D)	Others/ Trainings (manuals)	: 01

1. A visit of farmers from Bhuj, Gujarat

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2. A visit of farmers from Rajasthan

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5. International delegates visits Pusa Agri Krishi Haat

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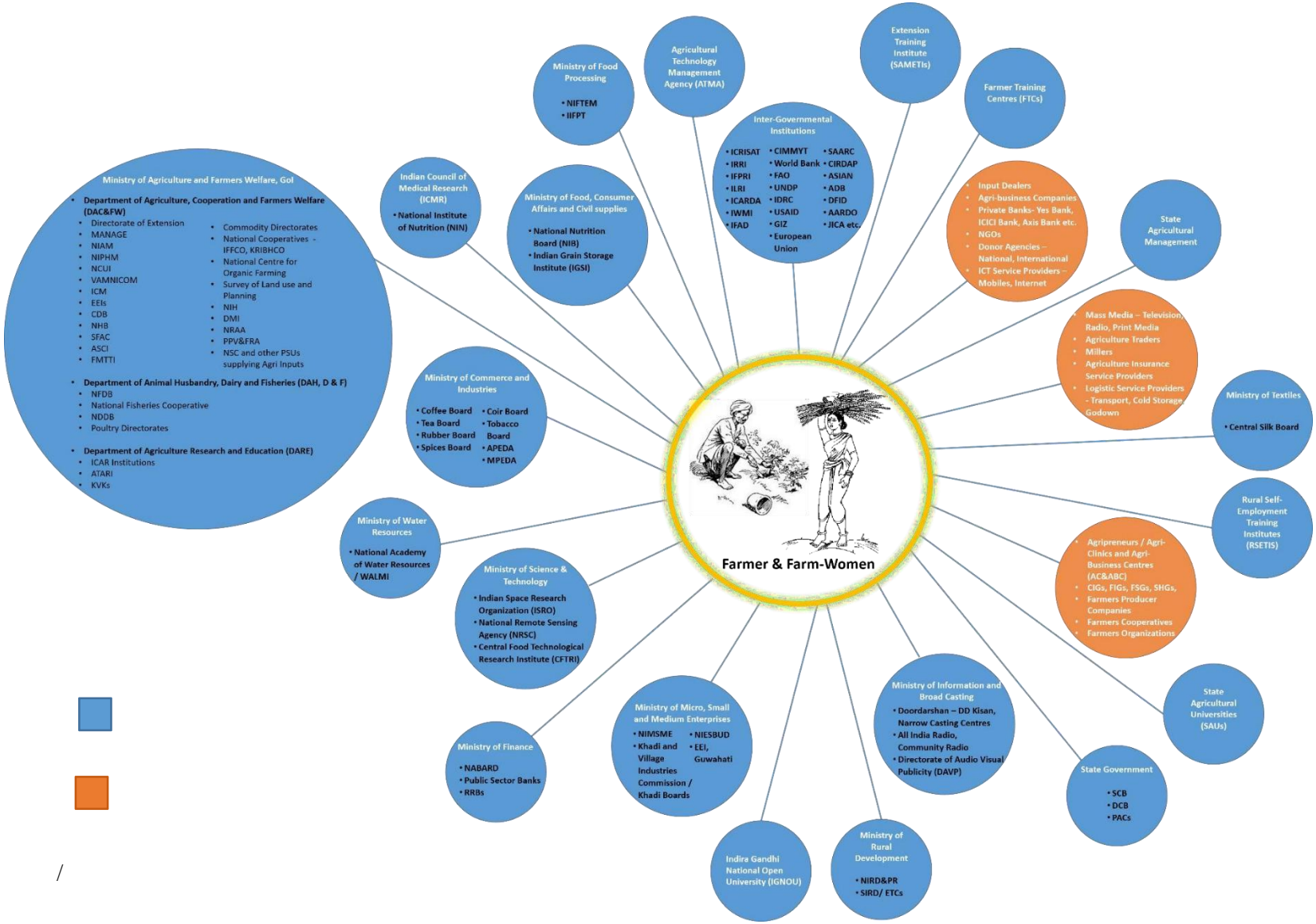
Annexure – XVIII

Broad categories of Extension Service Providers (Public and Private)



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Annexure - XIX

All India Co-Ordianted Research Projects

Sl.No.	NameofAllIndiaCo-ordinatedResearchProjects
1.	AICRPonPesticideResidues, NewDelhi
2.	AICRPonNematodes,New Delhi
3.	AICRPonMaize, NewDelhi
4.	AICRPRice,Hyderabad
5.	AICRPonChickpea, Kanpur
6.	AICRPonMULLARP,Kanpur
7.	AICRPonPigeonPea,Kanpur
8.	AICRPonAridLegumes,Kanpur
9.	AICRPonWheat&BarleyImprovementProject,Karnal
10.	AICRPSorghum,Hyderabad
11.	AICRPonPearlMillets,Jodhpur
12.	AICRPonSmallMillets,Bangalore
13.	AICRPonSugarcane,Lucknow
14.	AICRPonCotton, Coimbatore
15.	AICRPonGroundnut,Junagarh
16.	AICRPonSoybean,Indore
17.	AICRPonRapeseed &Mustard, Bharatpur
18.	AICRPonSunflower,Safflower,Castor,Hyderabad
19.	AICRPonLinseed, Kanpur
20.	AICRPonSesameandNiger, Jabalpur
21.	AICRPonIPMandBiocontrol, Bangalore
22.	AICRPonHoneyBeeand Pollinators,IARI,Pusa,NewDelhi
23.	AICRPonSeed(Crops)
24.	AICRPonForageCrops, Jhansi
25.	AICRPonFruits, Bangaluru
26.	AICRPAridZoneFruits, Bikaner
27.	AICRPMushroom, Solan
28.	AICRPVegetablesincludingNSPvegetable,Varanasi
29.	AICRPPotato,Shimla
30.	AICRPTuberCrops,Thiruvananthapuram
31.	AICRPPalms,Kasaragod
32.	AICRPCashew,Puttur
33.	AICRPSpices,Calicut
34.	AICRPonMedicinalandAromaticPlantsincludingBetelvine,Anand
35.	AICRPonFloriculture, NewDelhi
36.	AICRPinMicroSecondary&PollutantElementsinSoilsandPlants, Bhopal
37.	lAICRPonSoilTestwithCropResponse,Bhopal
38.	AICRPonLongTermFertilizerExperiments, Bhopal
39.	AICRPonSaltAffectedSoils&UseofSalineWaterinAgriculture, Karnal
40.	AICRPonWaterManagementResearch,Bhubaneshwar

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41. AICRPonGroundWaterUtilisation,Bhubaneshwar
42. AICRPDrylandAgriculture,Hyderabad
43. AICRPonAgrometeorology,HyderabadincludingNetworkonImpact adaptation &VulnerabilityofIndianAgri.toClimateChange

44. AICRPIntegratedFarmingSystemResearch,Modipuramincluding Network OrganicFarming
45. AICRPWeedControl,Jabalpur
46. AICRPonAgroforestry,Jhansi
47. AICRPonFarmImplements&Machinery,Bhopal
48. AllIndiaCoordinatedResearchProject onErgonomicsandSafetyinAgriculture
49. AICRPonEnergyinAgricultureandAgroBasedIndus, Bhopal
50. AICRPonUtilizationofAnimalEnergy(UAE),Bhopal
51. AICRPonPlasticultureEngineeringandTechnologies,Ludhiana
52. AICRPonPHT,Ludhiana
53. AICRPonGoatImprovement, Mathura
54. AICRP-ImprovementofFeedSources&NutrientUtilisationforraisinganimal production,Bangalore
55. AICRPonCattleResearch, Meerut
56. AICRPonPoultry,Hyderabad
57. AICRP-Pig,Izzatnagar
58. AICRPFootandMouthDisease,Mukteshwar
59. AICRPADMAS,Bangalore
60. AICRPonHomeScience, Bhubaneshwar

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Annexure – XX

Activities of Extension Education Institutes (EEIs): A Case (2023-24)

i. Extension Education Institute Hyderabad

Type of Training	Details of Training programmes for the year2023-24		Details of trainee participation for the year 2023-24		Achievement percentage
	No. Targeted	No. Completed	No. Targeted	No. Attended	
On-Campus	37	36	720	801	**111.25%**
Off-Campus	20	15	300	445	**148.33%**
Online	5	5	100	258	**258.00%**
Webinars	10	13	160	929	**464.50%**
Consultancy Training Programmes	3	3	60	70	**116.66%**
Skill Training Programmes	3	3	75	75	**100.00%**
Collaborative Training Programmes with MANAGE	4	4	80	283	**353.75%**
Total	**82**	**79**	**1595**	**2861**	**179.37%**

ii. Extension Education Institute Jorhat

Academic Calendar of EEI-NE Region, 2024-2025

S. No.	Types of Programmes	Number
A	**Training Programmes/ Workshop**	
1	On-campus Training Programme / Workshop	08
2	Off-campus Training Programme	18
3	Collaborative Training Programme	06
4	Skill Development Training Programme	03
5	Regional Workshop on Training Planning	01

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Total Training Programmes/ Workshop		**36**
B	Consultancy program	03
C	Action Research	01
D	PGDAEM Programmes (Assam and Nagaland)	06
E	Other Programmes	03
	Total Programmes	**49**

iii.**Extension Education Institute Anand**

Summary of All Training Programmes for 2023-24

S. No	**Type of Trainings**		**No of programmes**	**No of Participants**
1	At EEI, Anand	On campus	30	600
2		Collaborative	10	200
3	Peripatetic	Off campus	44	880
	Total		**84**	**1680**

iv.**Extension Education Institute Nilokheri**

The extension education institute, Nilokheri will organize four different kinds of 50 training programs during year 2023-24.

S. No	**Training Program**	**No of Training**
1	On -campus training	28
2	Off –campus training	09
3	Off campus training proposal received from different SAU's	07
4	Colloborative training at campus	06
	Total	**50**

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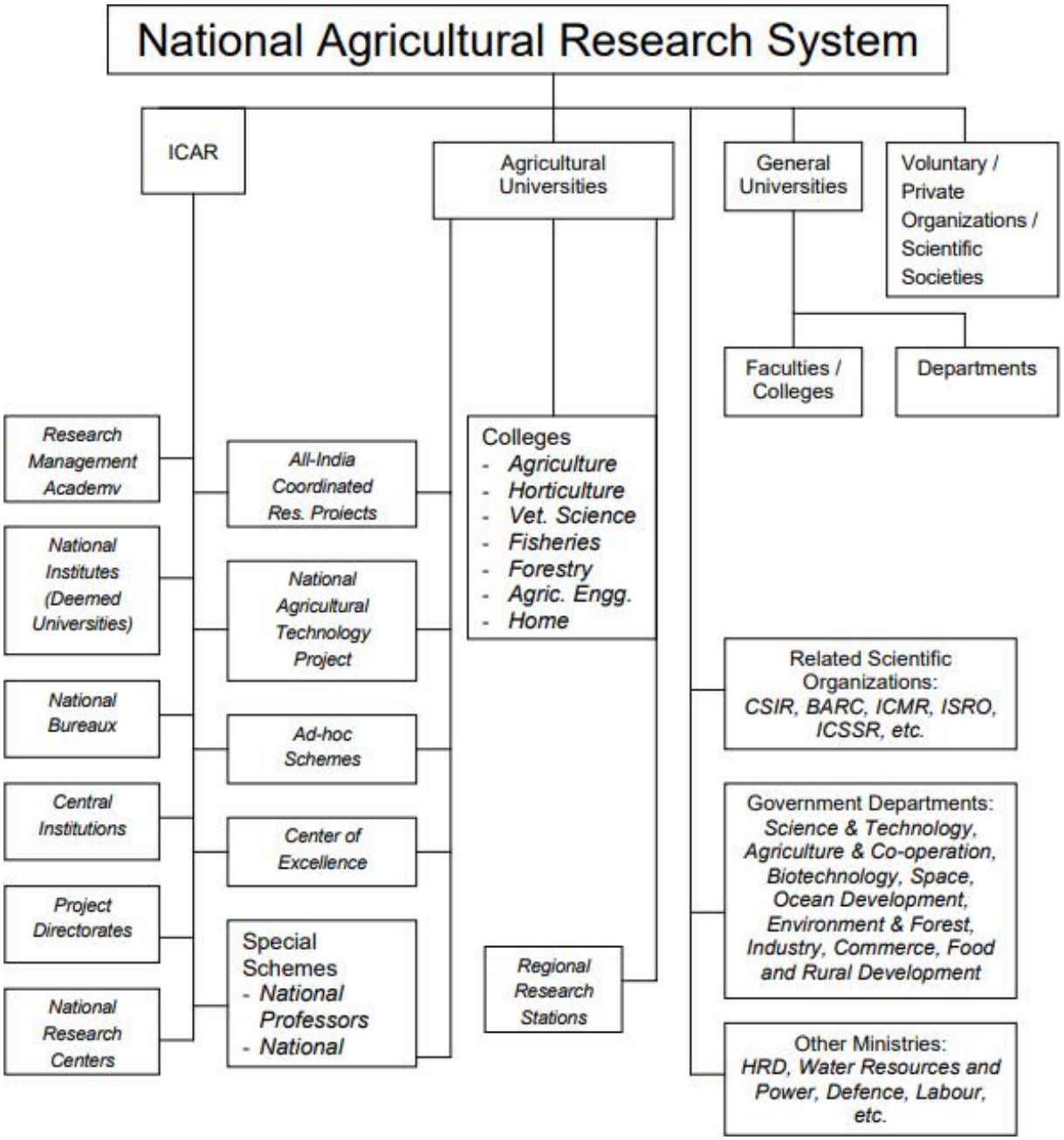
Annexure - XXI

The Organizational Structure of NARS



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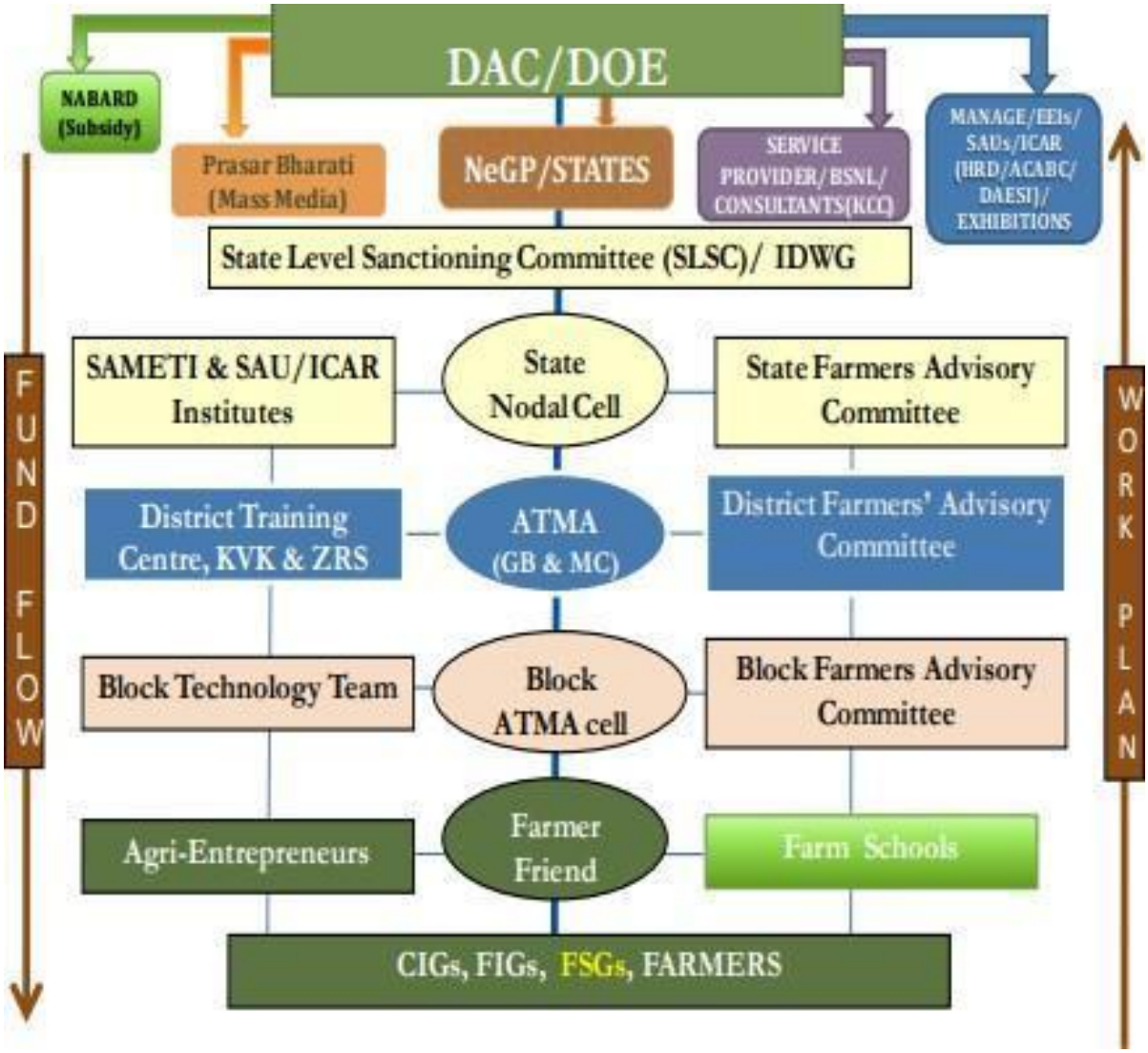
Annexure - XXII

Organizational Structure of ATMA at Various levels



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Annexure – XXIII

AMULModel – A Pictorial Depiction

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Annexure – XXIV (a)

Agriculture & Allied Sector Portals

S.No.	Category	Agency/Institutes	Portal Adress
1	International	1.Food and Agriculture Organization (FAO)	https://www.fao.org/
		2.Consortium of International Agricultural Research Centres (CGIAR)	https://www.cgiar.org/
		3. Africa Rice Centre	https://www.africarice.org/
		4. Alliance of Bioversity International and the International Center for Tropical Agriculture (CIAT)	https://alliancebioversityciat.org/
		5. Center for International Forestry Research (CIFR)	https://www.cifor-icraf.org/
		6. International Maize and Wheat Improvement Center (CIMMYT)	https://www.cimmyt.org/
		7. International Potato Centre (CIP)	https://cipotato.org/
		8. International Center for Agricultural Research in the Dry Areas (ICARDA)	https://icarda.org/
		9. International Crops Research Institute for the Semi-Arid Tropics (ICRISAT)	https://www.icrisat.org/
		10. International Food Policy Research Institute (IFPRI)	https://www.ifpri.org/
		11. International Institute of Tropical Agriculture (IITA)	https://www.iita.org/
		12. International Livestock Research Institute (ILRI)	https://www.ilri.org/
		13. International Rice Research Institute (IRRI)	https://www.irri.org/
		14. International Water Management Institute (IWMI)	https://www.iwmi.org/
		15. World Fish Centre (WFC)	https://worldfishcenter.org/
		16. SAARC Agriculture Centre (SAC)	https://www.sac.org.bd/

		17. Australian Centre for International Agricultural Research (ACIAR)	https://www.aciar.gov.au/
2	National	● ICAR	Kisan Sarathi
		● KVK	KVK Portal
		● IMD	Mausam Gram
		● DIKMA	Kisan Dikma
		Ministry of Agriculture	M-kisan Kisan Suvidha App
		Network Prog on Precision Agriculture	NePPO
		Agril Marketing	e-Nam Agropedia Krishinet PM Kisan PRYASH Portal DIKSHA Portal Jan Samarth Portal Krishi Nivesh Portal Agri Stack Portal Pusa Krishi Rice Knowledge Management Portal NAC Portal NSAI.co.in Portal Dashboard Kisan Knowledge Management Portal Integrated Portal on Agricultural Technology Management Agencies. (www.atmanet.gov.in Agricultural Prograemmes & Schemes e-Governance Portal. (www.agrischems.gov.in) Agricultural Trade Portal Domestic & Global Commerce. (www.agritrade.gov.in) AGMARTNET APHNET FISHNET AGRISNET HORTNET SEEDNET

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			AGRISNET ACIN IWBR Seed Portal ICAR- Indian Institute of Horticultural Research agriwatch KKMS Farmers Portal DACNET InDC DEAL iKissan e-Krishi IFFCO Agri-portal ASHA, iShakti
		Ministry of Agriculture	i) https://agriwelfare.gov.in/ ii) https://www.upag.gov.in/ - Unified Portal for Agricultural Statistics iii) https://www.india.gov.in/topics/agriculture - National portal of India iv) https://www.india.gov.in/farmers-portal v) https://mawf.gov.na/ vi) https://seedtrace.gov.in/ms014/english vii) https://www.data.gov.in/about - Open government data platform viii) https://mkisan.gov.in/ - M-kisan Portal
		Ministry of Fisheries & Animal Husbandry	i) https://services.india.gov.in/service/ministry_services ii) https://www.india.gov.in/topics/agriculture/fisheries
		Imp Boards like: NDDB, NFDB, Spice Board, Coffee board, tea board, etc	i) https://teaboard.gov.in/home i) https://oar.icrisat.org/
		Important links	Department of Animal Husbandry and Dairy Development, GoI https://dahd.nic.in/ Bharat Pashudhan-National Digital Livestock Mission

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			(NDLM) https://bharatpashudhan.ndlm.co.in/ Animal Welfare Board of India https://awbi.gov.in/ National Livestock Mission https://nlm.udyamimitra.in/ Animal Husbandry Infrastructure DevelopmentFunds https://ahidf.udyamimitra.in/ National Dairy Development Board (NDDB) https://www.nddb.coop/ e-Gopala https://play.google.com/store/apps/ details?id=coop.nddb.pashuposhan Veterinary Council of India https://vci.dahd.gov.in/ World Health Organization https://www.who.int/ Hon. Balasaheb Thackeray Agribusiness & Rural Transformation (smart) project (SMART) https://www.smart-mh.org/
		Web portals for Agricultural Extension and advisory services	I) Portals providing technical and market knowledge to end users at grassroot level- 1.Knowledge portals (www.knowledgebank.irri.org, www.rkmp.co.in), 2. e-Extension portals (www.eXtension.org, www.agritech.tnau.ac.in, www.e-agriculture.gov.gh), 3. video-based portals (www.accessagriculture.org, www.digitalgreen.org), 4. market information portals (www.agmarknet.nic.in), 5. information portals for rural people (www.vikaspedia.in), and 6. institutional portals for extension and advisory services

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			(www.nafis.go.ke, www.kilimo.go.ke). II) Portals for capacity development of extension personnel 1. Portals like Agricultural Extension in South Asia (AESA) (http://www.aesa- gfras.net/) and 2. Modernizing Extension and Advisory Services (MEAS) (http://www.meas- extension.org/) contain numerous resources and tools to enable knowledge sharing and networking among service stakeholders.
		State Level-	
		1- Kerala 2- Andhra Pradesh	AIMS- VAIGA D Krishi
		3- Maharastra	Krishak App
		4- Gujarat	i-Farmer
		5- Odisa	k-Kisan
		6- Karnataka	TNAU Agritech Portal
3	ICAR Insitutions	ICAR	(i) https://krishi.icar.gov.in/: (ii) ICAR Library:Home – ICAR library (iii) ICAR Reseach Data Repository For Knowledge Management – ICAR – IPR iv) E-Learning Portal v) Indian Agricultural Research Journals vi) https://ecourses.icar.gov.in/ vii) https://agridiksha.krishimegh.in/ viii) https://pusabeej.iari.res.in/index.php ix) https://kvk.icar.gov.in - KVK Knowledge Network portal/KVK portal x) https://naarm.org.in/itk/ - Indigenous Technical Knowledge (ITK)
4	Private Sector	Coopertive Sector 1- Jio Reliance	JioKrishi
			Ninjakart
		2- ITC	e- Choupal
		3- Meterology Services	Skymate

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		4- Lawrencedale Agro Processing India ltd	" LEAF Farmer Network"
		5-FICCI	FICCI B2B, FICCI Frames
5	NGOs/Trust & Foundations	Seed Related Matters 1- TAFE Foundation	Sathi Portal JFarm Services Platform
6	Agriculture Technology Related Portals		1- Agri Infotech Portal 2- Agricultural Extension in South Asia (AESA) 3- Modernizing Extension and Advisory Services (MEAS) 4- Knowledgebank.irri. portal 5- Rkmp.co.in 6- extension.org 7- E-agriculture.gov.gh 8-Accessagriculture.org 9- Digitalgreen.org 10- Agmarknet.nic.in 11- Vikaspedia.in 12- Kisan Rin Portal

Annexure – XXIV (b)

List of Important Websites in Agriculture

S. No	Description	URL
1	Tamil Nadu Government website	http://www.tn.gov.in/
2	Agrisnet, Tamil Nadu	http://www.tnagrisnet.tn.gov.in/
3	Department of Agriculture, Cooperation and Farmers Welfare, Govt of India	http://agricoop.nic.in/
4	Farmers Portal, Government of India	https://farmer.gov.in/
5	Department of Horticulture, Tamil Nadu	http://tnhorticulture.tn.gov.in/
6	Agricultural Engineering Department, Tamil Nadu	http://www.aed.tn.gov.in/
7	National Agriculture Development Programme (NADP/RKVY)	https://rkvy.nic.in/
8	Pradhan Mantri Krishi Sinchayee Yojana	http://pmksy.gov.in/
9	National Mission for Sustainable Agriculture	https://nmsa.dac.gov.in/
10	Mission for Integrated Development of Horticulture	https://midh.gov.in/
11	National Seednet Portal	https://seednet.gov.in/
12	National Food Security Mission	https://www.nfsm.gov.in/
13	TNAU Agritech Portal	http://agritech.tnau.ac.in/
14	Indian Council of Agricultural research	https://www.icar.org.in/
15	International Crop research Institute for Semi Arid Tropics (ICRISAT)	https://www.icrisat.org/
16	mKisan Portal of GoI	https://mkisan.gov.in/default.aspx
17	India Meteriological Department	http://www.imd.gov.in/pages/main.php
18	Agriculture Skill Council of India	http://asci-india.com/
19	Farm Mechanization, GoI Web Portal	https://farmech.dac.gov.in/
20	Extension Reforms Monitoring System-ATMA	https://extensionreforms.dacnet.nic.in/Hometest. aspx
21	e-NAM	http://enam.gov.in/NAM/home/index.html
22	Soil Health Card	https://soilhealth.dac.gov.in/
23	Pradhan Mantri Fasal Bhima Yojana	http://agri-insurance.gov.in/Login.aspx
24	AGMARKNET	http://agmarknet.gov.in/
25	Agriculture Market Information System (AMIS)	http://agritech.tnau.ac.in/amis/index.html
26	Bhuvan-RKVY-Geotagging of RKVY Assets	https://bhuvan-app1.nrsc.gov.in/rkvy/
27	Bhuvan-PDMC-Geotagging of PMKSY Assets	https://bhuvan.nrsc.gov.in/governance/moafw_ pmksy
28	APEDA	http://apeda.gov.in/apedawebsite/

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29	ICAR-Indian Institute of Soil & Water Conservation	http://www.cswcrtiweb.org
30	Ministry of New & Renewable Energy	https://mnre.gov.in/
31	National Institute of Agricultural Extension Management	http://www.manage.gov.in/
32	Small Farmers Agri Business Consortium, GoI	http://sfacindia.com/
33	Ministry of Food Processing Industries	mofpi.nic.in
34	Central Insecticides Board and Registration Committee	www.cibrc.nic.in
35	Tea Board	http://www.teaboard.gov.in/
36	Coffee Board	https://www.indiacoffee.org/
37	Spices Board	https://www.indianspices.com/
38	Directorate of Marketing and Inspection, GoI	https://dmi.gov.in
39	Agri Marketing and Agri Business Department	https://www.agrimark.tn.gov.in
40	PMFME Website	https://pmfme.mofpi.gov.in
41	Agriculture Infrastructure Fund	https://agriinfra.dac.gov.in

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Annexure – XXIV (c)

Important ICT Initiatives in Agriculture and Allied Sectors

S No.	Name	Project Initiator(type)	Area	Target Group	Implementing Agency	Sponsoring Agent	Year
1.	aAQUA	IIT, Bombay	Pune district, Maharashtra	Farmers	IIT, Bomaby	Media Lab Asia and Development Gateway Foundation	2003
2.	e-Arik		India	Tribal Farmers	College of Horticulture and Forestry, CENTRAL AGRICULTURAL UNIVERSITY (CAU)	Department of Scientific and Industrial Research (DSIR), Ministry of Science and Technology, Govt. of India	2007
3.	**AGRISNET (Agricultural Informatics and Communicatio ns Network)**	Department of Agriculture and Cooperation, Ministry of Agriculture, GoI	Rural areas of India	State/District Agriculture Departments, Allied Departments, Agri- Clinics, Agri-Business Centres and the Farming Community.	NICNET	Indian Council of Agricultural Research (ICAR)	2002
4.	**Agriwatch Portal**	Indian Agribusines Systems Pvt. Ltd. (IASL)	India	Farmers, traders, processors of agricultural outputs, suppliers of agricultural inputs etc	IASL	IASL	2001
5.	**AKASHGANGA**		Western part of India (Mainly Gujarat & Maharashtra)	Dairy farmers of Anand and other Gujarat & Maharashtra Districts	Shree Kamdhenu Electronics Pvt. Ltd. (“AKASHGANGA”)		1996
6.	**ASHA**	National Informatics Centre(Public Sector)	Assam	Farmers, functionaries, scientists, bankers and other stakeholders of the farm sector	NIC-Assam	Dept. of IT, Govt. of India	2001
7.	**Ashwini**	Byrraju Foundation	152 villages in over 5 districts of Andhra Pradesh - East Godavari, West Godavari, Guntur, Krishna and Ranga Reddy	Rural Population	Byrraju Foundation	NISG-UNDP	2005

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8.	**Chalao Ho Gaon Mein**	National Foundation for India (NFI)	Palamau, Jharkhand	Local populace	Alternatives for India Development (AID), grassroots NGO and Manthan Yuva Sangathan (run by journalists)	National Foundation for India (NFI)	2001

9.	**Coil-Net (Content Development and IT Localization Network): A Cultural Heritage Digital Library**	Dept. of IT, Ministry of Communication s and Information technology (MoCIT), Govt. of India (GoI)	Rajasthan, Haryana, Delhi, Uttaranchal, Uttar Pradesh, Madhya Pradesh, Chattisgarh, Jharkhand and Bihar	Local populace of Hindi speaking areas.	Indira Gandhi National Centre for the Arts (IGNCA)	Ministry of Communication and Information Technology, Government of India.	2005
10.	**Community Information Centres (CICs)**	Department of Information Technology, Ministry of communications and Information Technology, Government of India.	Arunachal Pradesh, Manipur, Assam, Meghalaya, Mizoram, Sikkim, Tripura, Manipur and Nagaland	Rural Population	National Informatics Centre(NIC) and National Informatics Centre Services Incorporation(NICSI)	Ministry of Development of North Eastern Region	2002
11.	**Community Radio - Deccan Development Society**	Deccan Development Society	Medak District, Andhra Pradesh	Dalit women	DDS	UNESCO	1998
12.	**Computers on Wheels**	Global Catalyst Foundation	Telengana region of Andhra Pradesh	Rural population of Mahboob Nagar, AP	Global Catalyst Foundation & partners	Digital Partners	2003
13.	**Creating Rural Entrepreneurs through ICT enabled Enterprise Development Services**	Development Alternatives (Tarahaat Informational & Marketing Services Ltd.)	Jhansi (Tikamghar) / Lalitpur - 7 states of India	Youth, women, self- help groups, landless and small land holders	Development Alternatives	UNDP-NISG	2005
14.	**Deccan Development Society – Community Genebank Project**	Deccan Development Society (DDS)	Medak district of Andhra Pradesh	Women of DDS Sanghams	Women's group, Vahirabad	Integrated Rural Development Programme - EED, Germany and Food Security Programme in Andhra Pradesh – Christian Aid, U.K/Germany	1996

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15.	**Department of Agriculture and Cooperation Network (DACNET)**	National Informatics Centre (NIC), Ministry of Agriculture, Govt. of India	Himachal Pradesh	Citizen	NIC Jammu&Kashmir	Govt. of India	2003
16.	**Digital Mandi**	Media Lab Asia	India	Farmers	Media Lab Asia	Media Lab Asia, Kanpur – Lucknow (MLAKLH) hub	2003
17.	**Digital Payment System**	Vidya Pratishthan's Institute Of Information Technology ,Baramati-India(Public Sector)	Pune district, Maharashtra	Rural communities of Baramati and western Maharahstra	Vidya Pratishthan's Institute Of Information Technology (VIIT), Baramati, India	Govt. of Maharashtra	2002
18.	**AGMARKNET**	Ministry of Agriculture	India	Haryana and North Indian Farmers	National Informatics Centre (NIC)	Directorate of Marketing and Inspection (DMI) - Ministry of Agriculture (GOI)	2000
19.	**e-Krishi / Agri-Business centers**	Akshaya e- Kendra Entrepreneurs	Malappuram District, Kerela	Farmers, Agricultural Input Providers, Agricultural Activists, NGOs and Government organizations	Kerala State IT Mission	UNDP-NISG	2005
20.	**e-KRISHI VIPANAN**	State Government	Madhya Pradesh	Agriculturists and farmers	Madhya Pradesh Agricultural Marketing Board (Mandi Board) and Madhya Pradesh Agency for Promotion of Information Technology (MAP_IT)	Govt. of Madhya Pradesh	2003
21.	**e-Sagu**	International Institute of Information Technology – Hyderabad	India	Farmers	International Institute of Information Technology, Hyderabad	Ministry of Communication and Information Technology, Govt. of India	2004
22.	**Gender Resource Center (GRC)**	Ministry of Agriculture (GoI)	All India	Rural women	Women Cell of Directorate of Extension, Department of Agriculture & Cooperation, Ministry of Agriculture (GoI)	Govt. of India	2004
23.	**Grasso PCO Project**	Grameen Sanchar Society, BSNL	West Bengal	Farmers & Villagers	GRASSO	GRASSO, Dept. of IT - Govt. of West Bengal	2003

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24.	**Gyandoot**	Government of Madhya Pradesh	311 Gram Panchayats and over 600 villages have been covered by 20 Soochanalayas of Dhar district	Tribal and rural population	Govt. of MP, NIC	Govt. of MP	2000
25.	**Gyansanchar**	CIDA, BSNL, Govt. of MP	Hoshangabad and Harda districts, Madhya Pradesh	Rural population	Gyan Sanchar and local entrepreneurs	Canadian International Development Agency (CIDA)	2002
26.	**HP iCommunity**	HP, Govt. of AP	Chittor District, Andhra Pradesh	Youth	Hewlett Packard Ltd	Hewlett Packard Ltd	2002
27.	**i-Shakti**	Unilever	Nalgonda, Vishakapatnam, West Godavari and East Godavari districts of Andhra Pradesh	Women & Youth	Unilever, e-Seva and other NGOs	Hindustan Level Ltd	2004
28.	**ICT Intervention for farmers through Query Redress Services**	Indian Agribusiness Systems Private Limited(Private sector)	Villages in Maharashtra	Farmers, professionals and stakeholders involved in agricultural and allied sectors	Indian Society of Agribusiness Professionals (ISAP) along with partner NGOs in the state of Maharashtra: MAITREE, AVANI, MANAVLOK	Microsoft	2006
29.	**IndiaRuralWorld.Com**	CoOptions Technologies Limited	Andhra Pradesh	Rural Population	CoOptions Technologies Limited	CoOptions Technologies Limited	1999
30.	**Information and Communicatio ns Technologies for Development (ICTD): Making ICT work for people.**	Department of IT GOI (Gachi Bowli)	All India	Rural and Urban areas.	National Institute for Smart Governance (NISG)	United Nations Development Programme (UNDP)	2003 -07
31.	**Information Village Centers of MSSRF**	MSSRF(M.S.Swaminathan Research Foundation)	12 villages in Pondicherry region	Rural families particularly marginal farmers, fishermen and assetless	M S Swaminathan Research Foundation	International Development Research Centre (IDRC), Canada	1998
32.	**Interlingua Web**	Media Lab Asia hub at IIT, Mumbai	All India	Citizens of India	Media Lab Asia	Media Lab Asia	2003
33.	**ITC eChoupal**	ITC Limited ,Private Funding Agency(Profit sector)	Madhya Pradesh, Haryana, Uttaranchal, Karnataka, Andhra Pradesh, Uttar	Farmers	ITC's International Business Division (IBD)	ITC's IBD	2000

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			Pradesh, Maharashtra, Rajasthan and Kerela				

34.	**Jagriti e-Sewa**	Jagriti (NGO)	Punjab	Rural Population	Jagriti-eSewa	Jagriti e-Sewa	2003
35.	**Jamset Ji Tata National Virtual Academy for Rural Prosperity**	MSSRF	Pondichery	Vulnerable rural communities	M.S Swaminathan Research Foundation	Sir Dorabji Tata SchoolWelfare Trust	2003
36.	**Kisan Call Centers**	Department of Agriculture & Cooperation (DAC), Ministry of Agriculture, Govt. of India	India	Farmers	Coconut Development Board	DAC	2004
37.	**Kisan Soochana Kendra (KSK)**	IIT-Roorkee	Uttaranchal	Youth	Jai Kisan	UNDP, Dept. of IT – Govt. of Uttaranchal, NIC Uttaranchal	2005
38.	**KISSAN Kerala**	Indian Institute of IT and Management-Kerala (IIITM-K)	Kerala	Farmers	Indian Institute of IT and Management (IIITM-K)- Kerala	Dept. of agriculture, Govt. of Kerala	2003
39.	**Krishi Bazar Mahiti**	VIIT-Baramati,Govt.o f Maharashtra	Baramati District of Maharahstra	Farmers & Youth	VIIT and Franchise	Maharashtra Knowledge Corpn Ltd, Indian Council of Agricultural Research, New Delhi	NA
40.	**Kudumbhashr ee**	Government of Kerala	Kerala (991 Panchayats and 58 municipalities)	Family as a whole and women in particular.	Govt.of Kerala	Government of Kerala	1999
41.	**Muruggappa Groups' EID Parry**	EID Parry	Tamil Nadu	Farmers	EID Parry	EID Parry Ltd	2002
42.	**Online Integrated Computerized Systems (OICS) - Sumul Dairy**	Surat District Co-operative Milk Union Ltd (SUMUL)	12 district unions, Gujarat	Rural population, farmers	SUMUL	SUMUL	1999
43.	**OSCAR (Open Source Simple**		India and neibouring	INDIA	IFP (French Institute of Pondicherry)	(OSCAR) is a collaborative effort,	2006

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	Computer for Agriculture in Rural Areas)		countries under gangetic plaine			initiated by IFP (French Institute of Pondicherry) with Rice-Wheat Consortium for Indo-Gangetic Plains, India, French Agricultural Research Centre for International Development (CIRAD), and Communication and Innovation Studies of Wageningen University, The Netherlands as partners in action.	
44.	**Pravara Village IT Project (PRAGATI)**	KVK (Krishi Vikas Kendra)	Ahmednagar district, Maharastra	Rural population specially women	Convergent Communications	Convergent Communications, Pravara Group	1999
45.	**RASI (Rural Access to Services through Internet) MAIYAMS**	FOOD	Kanchipuram, Thoothukudi and Kanyakumari districts of Tamil Nadu	Rural population	Foundation of Occupational Development (FOOD)	Govt. of Tamil Nadu	2003
46.	**Rural Knowledge Center (RKC)**	Microsoft Corporation India Private Limited, NASSCOM (National Association of Software and Services Companies) Foundation and the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT)	Nine coastal states of India –West Bengal, Orissa, Andhra Pradesh, Tamilnadu, Kerala, Karnataka, Goa, Maharashtra and Gujarat.	Villagers and people of other remote areas	Microsoft-NASSCOM Foundation-ICRISAT	Microsoft (Nasdaq "MSFT")	2004
47.	**Sahaj Tathya**	Srei	Darjeeling,	Rural populace	Srei Infrastructure	Srei Infrastructure	2007

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	Mitra: Common Service Centers	Infrastructure Finance Ltd. (a non-banking finance institution)	Jalpaiguri , Cooch Bihar, Uttar Dinajpur and Dakhin Dinajpur, Malda, Murshidabad, Nadia and South 24 Parganas, Purba Midnapur, Bankura, Birbhum, Haowra and Hoogly.		Finance Ltd. and West Bengal Government	Finance Ltd. and West Bengal Government	
48.	**Society for Andhra Pradesh Network (SAPNET)**	Department of IT & C, Government of Andhra Pradesh	Andhra Pradesh	Citizen	APTS, ISRO	Govt. of Andhra Pradesh	2002
49.	**Soochna Se Samadhan**		Himachal Pradesh, Madhya Pradesh and Uttar Pradesh	Villages of India	One world south Asia	UNDP	2006
50.	**Sustainable Dryland Agriculture**	Govt. of Andhra Pradesh	Mahaboobnagar, Medak, Nizamabad, Karimnagar and Adilabad districts of Andhra Pradesh	Information is disseminated through a computerized network to the women farmers who are mostly illiterate. This includes agronomic practices, farming methods, methods to access and use technologies etc.	Mahila Sangams (Andhra Pradesh) and South Asia Poverty Alleviation Programme (SAPAP)	Ministry of Agriculture, GoI and UNDP	1993
51.	**Sustainable Livelihood Improvement**	JIBAN BIKASH(NGO)	Nuapada District, Orissa	BPL rural families - youth, adults, women, men	Jiban Bikash	Govt. of India	NA
52.	**Swajaldhara**	Department of Drinking Water Supply	11 districts of Uttaranchal	Rural population	Uttaranchal Peyjal Nigam, Uttaranchal Jal Sansthan and PMU Swajal	Govt. of India	2002
53.	**Swayam Krishi Sangam (SKS) Microfinance**	Swayam Krishi Sangam	Andhra Pradesh, Karnataka, Maharashtra, Orissa and Madhya Pradesh	Rural poor, landless laborers or marginal farmers, women and Dalits	Swayam Krishi Sangam	Women's World Banking, CGAP, Grameen Foundation USA, American India Foundation	1998
54.	**Tamil Nadu Women in Agriculture (TANWA)**	Ministry of Agriculture, (GoI)	Tamil Nadu	Rural women	Directorate of Agriculture	DANIDA and Govt. of India	1994 - 2003
55.	**Tara Haat -**	Development	Jhansi, Gwalior,	Youth	Tara Haat	Development	2001

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	TARA Nirman Kendras	Alternatives	Datia, Tikamgarh and Bhind districts of Uttar Pradesh and Madhya Pradesh			Alternatives	
56.	**Tata Kisan Kendra**	Tata Sons	Uttar Pradesh, Haryana and Punjab	Farmers	Tata Chemicals Limited (TCL)	Tata Chemicals Limited (TCL)	2003
57.	**VASAT Project**	ICRISAT	Villages of Mahboobnagar district, Andhra Pradesh	Farmers, Youth & Children	ICRISAT and NGOs	ICRISAT	2003
58.	**Village Information Kiosks, Andhra Pradesh**	National Institute of Agricultural Extension Management (MANAGE), Ministry of Agriculture	Ranga Reddy district of Andhra Pradesh	Farmers' community and rural women	MACTCS (Mutually Aided Cooperative Thrift and Credit Societies), Ranga Reddy district	Ministry of Agriculture, GoI	2000 - 2003
59.	**Village Resource Centres (VRCs)**	Indian Space Research Organisation (ISRO), M S Swaminathan Research Foundation (MSSRF)	Tamil Nadu	Villagers	Satyabama Universit;Chennai, Indian Space Research Organisation (ISRO)	ISRO-MSSRF	2004
60.	**Warna Wired Villages Project**	Warna Co-operative Society	Kolhapur and Sangli district, Warna Nagar, (70 villages in and around Warna) Maharashtra	Farmers and rural population of Warna Nagar	National Informatics Centre (NIC), Directorate of Information Technology, Government of Maharashtra (GoM) and Warana Sahakari Dudh Utpadan Prakriya Limited (WSDUPL)	National Informatics Centre (NIC) and Directorate of Information Technology, Government of Maharashtra (GoM)	1998

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61.	**West Bengal Citizen Portal**	Govt. of West Bengal	West Bengal	Citizen	West Bengal Electronics Industry Development Corporation Ltd.: A Govt. of WB undertaking	State Govt.	
62.	**Wireless Internet Post Office**	Department of Computer Science and Technology	India	Needy people and the villagers	Department of Computer Science and Technology	Asia Pacific Development Programme (APDIP)	2003

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Agri Extension in Action: A Photographic View

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